



# Section 11

Key Water Developments  
in the World

## 11.1. Africa

**Construction of the Grand Ethiopian Renaissance Dam on the Nile River in Ethiopia.** Successive negotiation rounds between Ethiopia, Sudan and Egypt about the filling and operation of the Grand Ethiopian Renaissance Dam (GERD) have ended in stalemate. After yet another, US-mediated, round failed in February 2020, the African Union (AU) took up the matter. On 26 June 2020, an AU communiqué stated that “90 % of the issues of the Tripartite Negotiations between Egypt, Ethiopia and Sudan [had] already been resolved”. A few weeks later, however, Ethiopia announced that the “first-year filling” (estimated at 4.9 billion m<sup>3</sup>) of the dam had been reached. It is unclear whether this filling had been the result of heavy rainfalls or had been deliberately sped up in order to allow the testing of the turbines. Egypt and Sudan had separately written in June to the UN Security Council that such a move, in the absence of binding rules for filling and operating the GERD, would risk threatening international security. Negotiations officially resumed on 21 November 2020, but failed to produce an agreement. The main points of disagreement remained the speed at which the reservoir would be filled, the annual replenishment plan and the settlement of future disputes. Importantly, Egypt and Sudan insist on a legally binding agreement, while Ethiopia seeks a less stringent accord.

Source:

[www.europarl.europa.eu/meetdocs/2014\\_2019/plmrep/D/ELEGATIONS/DMAS/DV/2021/04-22/EPRS-Briefing-659412-New-Ethiopian-dam-Nile-controversy-V2\\_EN.pdf](http://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/D/ELEGATIONS/DMAS/DV/2021/04-22/EPRS-Briefing-659412-New-Ethiopian-dam-Nile-controversy-V2_EN.pdf)

**Developments with the Inga III project on the Congo.**

In January 2020, the Spanish construction group ACS announced its exit from the project. Apart from a withdrawal by the Spanish company ACS, two other factors could call the project into question. The first one is the new Congolese President Félix Tshisekedi's desire to revert the project to a previous plan of building a smaller dam to produce 4.8GW, saying it might reach 11GW at a later stage. The second factor has to do with a possible withdrawal of South Africa, which is committed to purchase 2.5 GW of the electricity generated by Inga III. Without its guarantee to purchase Inga III's power, the project may not be bankable or feasible. However, for South Africa to buy electricity from Inga III is risky and may be more expensive than most other sources available to South Africa.

**Locust plague.** In 2020, the worst invasion of desert locusts was experienced in Ethiopia and Somalia for 25 years and in Kenya for 70 years. An adult desert locust can eat its own bodyweight, or about 2g, in vegetation every day. Swarms can swell to 70 billion insects and can destroy 136,000 tonnes of crops in a single day. Even a more modest gathering of 40 million desert locusts can eat as much in a day as 35,000 people. UN experts are concerned the infestation could push up to 25 million East Africans into hunger.

**Excessive rains in spring and autumn 2020 led to massive flooding and landslides in Central and Eastern Africa.** The floods were a natural disaster in Rwanda, Kenya, Somalia, Burundi, Ethiopia, Uganda, Democratic Republic of Congo, Djibouti and Tanzania, affecting at least 700,000 people. They caused more than 430 deaths. Water levels of the largest tropical lake in the world – Lake Victoria, which receives most of its water directly from rainfall, not from rivers, and loses most by evaporation – have just reached the highest point ever in the 120 year record, displacing thousands and flooding infrastructure. Climate change is expected to have increased the probability of this event and so the rapid lake level rise.

**The Great Green Wall** is a project led by the African Union to combat desertification in the Sahel region. Rough-



A woman from the Turkana tribe walks through a swarm of desert locusts at Lorengippi village near the town of Lodwar, Turkana county, Kenya. July 2, 2020 (Credit: REUTERS / Baz Ratner)



ly 15% underway, the project has already brought life back to degraded landscapes at an unprecedented scale than initially expected. In order to hold back expansion of the Sahara, it is planned to plant a wall of trees stretching on 8,000 km. Since 2007, millions of trees have been planted to [restore 100 million ha of currently degraded land](#). Nigeria, Senegal, Burkina Faso and Ethiopia are more successful in this endeavor than others. More than 17 million trees have been produced and planted and about 30,000 ha of lands have been restored in Burkina Faso. In Nigeria, 709 km of wind-breaks have been created, 2,801 ha have been reforested and about 8 million trees have been planted. Senegal and Ethiopia made similar progress.

Several new hydropower projects were started in 2020. Africa has an installed hydropower capacity of over 37 GW and the highest untapped potential across the world. The continent has so far only utilized around 11% of its capacity, with 906 MW placed into operation in 2019 (2020 IHA Hydropower Status Report). An electricity demand is expected to triple by 2040. A number of projects across the continent received funding in 2020, including: 143 MW Bumbuna Hydro II in Sierra Leone; 200 MW Sendje in Equatorial Guinea; 205 MW Sahofika in Madagascar; 15 MW Kaptis in Kenya; and, eight small renewable energy projects, including hydro with capacity ranging from 1-10 MW. The **Neckartal Dam** – the largest dam in the southern African country of **Namibia** – has officially been inaugurated. With the storage volume of 857 Mm<sup>3</sup>, the infrastructure is part of the first phase of the Neckartal Irrigation Scheme. The project will guarantee the area's agricultural development, especially for cultivating products such as lucerne, grapes and

dates. Construction of the Polihali Dam in Lethostho, an important part of the Lethostho Highlands Water Project (LHWP) Phase II, was restarted. Phase II will increase the current supply rate of 780 million m<sup>3</sup> incrementally to more than 1.27 billion m<sup>3</sup> per annum for the Gauteng region of South Africa. At the same time, it will increase the quantity of electricity generated at the “Muela hydropower station”. See also [The 2020 Hydropower Development: Global Trends](#).

Multiconsult has been tasked with conducting a pre-feasibility study for floating solar PV potential on three main dam reservoirs - Kamburu, Kiambere and Turkwell – for more flexible and sustainable energy system in Kenya.

Source: <https://www.nsenenergybusiness.com/features/hydropower-africa/>

### **The Government of Egypt announced on conversion of 5 million feddans to drip and sprinkler irrigation.**

Egypt suffers from significant water shortages, due to the combined effects of climate change, pollution and a growing population with increasing water demands. A new mega-dam upstream on the Nile River in Ethiopia also makes the country's access to river water – which it heavily depends on – less certain. The Government's [new irrigation initiative](#), launched in January, is part of a wider 20-year water management plan that started in 2017. The responsibility for paying for, overseeing and maintaining the switch to more modern irrigation systems falls to the farmers. But to help, the government is offering loans and access to subsidized fertilizers, pesticides and seeds.



The Neckartal hydropower project in Namibia  
(Credit: Webuild)

## 11.2. Asia

The AIIB “Water Sector Strategy” was approved in May 2020. NGOs hoped that this new document will be more environmentally and socially minded, as well as more strategic and forward-looking, than other sectoral strategies that the AIIB has adopted. The document does not discuss at any length the rights, needs and participation of local communities and indigenous people, who supposedly are the primary beneficiaries. The Strategy acknowledges importance of water for “economic growth, food security and trade”, but failing to do the same for “healthy environment and resilient ecosystems”. The document calls for “harnessing water’s productive potential and mitigating its destructive force”, which reflects a refined technocratic approach to development that has been long abandoned by most international institutions as unsustainable. The Strategy neither contains specific criteria for selection and design of projects nor sets forth clear intended objectives for AIIB involvement in a given sub-sector (e.g. “water supply” or “water treatment”). Equally worrisome the Strategy does not spell out water-specific safeguard mechanisms.

### Afghanistan

According to the National Statistics and Information Authority, the population of the country is 32.9 million people; its territory covers 653 square kilometers.

In November 2020, the Geneva Conference on Afghanistan took place. Donors reaffirmed their commitments to Afghanistan for 2021-2024. Particularly, Japan will allocate US \$720 million; UK – US \$227 million, France – about US \$104 million, Canada – about US \$207 million. The U.S. pledges US \$600 million in Afghan aid, but half depends on peace talks. EU is ready to allocate €1.2 billion (US \$1.43 billion) within 4 years. India announced to build the Shahtoot dam, which will provide safe drinking water to Kabul residents.

**Natural disasters and humanitarian assistance.** In 2020, Afghanistan received from donors US \$564.5 million (50 percent of required aid) for coordinated response, in addition to US \$96 million left from 2019. These funds were used to provide life-saving assistance to 11.75 million people nationwide. Denmark contributed US \$3 million to help Afghan farmers affected by natural disasters. Assistance is expected to be provided to 129,000 farmers. The Afghanistan Humanitarian Fund has contributed US \$9.5 million to a FAO-led project that aims to boost the resilience of farmers affected by conflict and natural disasters in 16 of Afghanistan’s most food insecure provinces. The Republic of Korea and FAO will provide emergency assistance to around 1,600 vulnerable and severely drought and flood-affected farming families. The German Federal Ministry for Economic Cooperation and Development has committed to invest €240 million to create jobs, fight hunger and poverty, strengthen Afghan institutions, and build and maintain infrastructure.

**Dams.** Work on the Palto Dam in Sharana, the capital of south eastern Paktika province, kicked off. The dam

would be completed in three years at a cost of 17.5 million afghanis. The 30 metres high Palto Dam would irrigate 2,500 hectares of land in the province. Work on the second phase of the Kajaki dam was launched in southern Helmand province. With the completion of the second phase, the dam’s power-generating capacity would increase from 52 to 102 MW. Electricity from the dam would be supplied to neighboring Uruzgan and Kandahar provinces, as well as Helmand. The project is executed and financed by a Turkish company.

The Afghan Minister of Agriculture, Irrigation & Livestock (MAIL) said that it plans to establish commercial farming programs by offering thousands of acres of land to farmers who intend to raise cash crops. The Agriculture Ministry says that the new program will help farmers to eventually increase their crops “ten-fold”. Afghanistan, despite having fertile lands and excellent fruit always imports fruits from other countries because of the lack of facilities. Farmers said that the establishment of commercial farmland would help to reduce imports and increase domestic production. MAIL said that the government has begun implementing around 430 projects in Baghlan province to manage agricultural products. Officials said that the projects include dozens of refrigeration systems, vegetable stocks, raisins storages, and other accessories aimed to improve the agricultural earnings of Baghlan farmers. The projects could provide job opportunities for 4,200 of the Baghlan residents during the implementation of these projects.

### ADB Operations in Afghanistan

Since 1966, ADB has committed almost US \$5.39 billion in grants and provided US \$120.4 million in technical assistance to Afghanistan. These amounts include ADB-administered co-financing. Cumulative lending totals US \$977.1 million.

**Agriculture, water resources, and rural development.** ADB has confirmed an additional US \$18.3 million in funding for the “Panj-Amu River Basin Sector” project that is aimed at enhancing agricultural productivity in northeast Afghanistan. These new funds will be used to bolster disaster and climate risk resilience in watersheds in additional three provinces; improvements in water management and expansion of networks are also planned in six different provinces. The increased financing is directed to expand forestry and range-land protection programs, revegetation and reforestation programs, and to improve water availability to households for irrigation purposes.

In 2020, Afghanistan received a total of US \$240 million grant co-financing from IFAD and WB for the “Arghandab Integrated Water Resources Development” project.

**Energy.** In 2020, US \$118 million grant was provided from the Afghanistan Reconstruction Trust Fund (ARTF) for the Energy Supply Improvement Investment Program – Tranche 7. In 2020, commitments from ADB’s own funds



amounted to US \$10 million for the Mazar gas-fired power project in Afghanistan. The project is the first private sector gas-fired plant in Afghanistan to be funded by development finance institutions. The project cost a total \$89 million, will use indigenous gas and is expected to generate 404 gigawatt-hours of power annually.

ADB approved a [\\$110 million grant](#) to boost power supply and strengthen Afghanistan's energy sector by improving its sustainability and promoting cross-border energy supplies from main Central Asian Suppliers. The project will facilitate the Afghan system's synchronous operation with the Uzbek system and the Central Asia Power System (CAPS). The project will help address Afghanistan's power deficit by immediately increasing power import capacity by 900 MW. The project is financed from ADB's Special Funds resources and is part of an overall US \$1.2 billion Energy Supply Improvement Investment Program (2015-2024).

### Future Directions

In September 2020, ADB approved the [Country Operations Business Plan, 2021-2023](#) for Afghanistan, which is consistent with national development strategies and reflects the government's priority areas. Under the plan, ADB will continue to assist with pandemic recovery while focusing on agriculture, natural resources, rural development, energy, and transport along with capacity building, institutional development, and sector reform.

In line with the [Country Partnership Strategy, 2017-2021](#) for Afghanistan, ADB will work to expand access to economic opportunities, markets, and services; build stronger institutions and human capital through better governance and skills development; and increase environmental sustainability and resilience to climate change and disasters. It is formulating a new country partnership strategy for 2021-2025.

#### Source:

<https://www.adb.org/sites/default/files/publication/27747/afg-2020.pdf>

### WB Operations in Afghanistan

Since April 2002, the International Development Association (IDA) has committed over US \$5.1 billion for development and emergency reconstruction projects, and 8 budget support operations in Afghanistan. This support comprises over US \$4.7 billion in grants and US \$436.4 million in no-interest loans known as "credits". As of 30 August 2020, the Bank has 11 active IDA-only projects (US \$840 million) and 17 projects jointly funded with ARTF, with net commitment value of over US \$1.4 billion from IDA.

### Ongoing operations

**Agriculture and water management, and land management.** National Horticulture and Livestock project (US \$190 million – grant; US \$12.5 million re-allocated to GoIRA COVID-19 response; US \$28.2 million – Afghan

Farmers' Contribution); the work program has been adjusted to facilitate priority activities that can be completed by the project closing date on December 31, 2020. The project covers 291 districts in all 34 provinces, and, so far, has reached over 580,000 farmers/beneficiaries, including around 242,000 women. Overall, over 80% of the targeted clients were satisfied with the agricultural services; almost 55 percent of farmers have adopted elements of the horticulture technology packages; about 83,000 producers were provided with improved postproduction facilities, tools, and market access. 1,353 small water-harvesting structures were constructed; over 2,000 raisin drying houses were successfully established; more than 150,000 kitchen gardening plots were established; 25,000 backyard and 3,000 small-scale poultry production units were created for 28,000 women. Work for construction of 25 dairy collection centers has been completed.

Irrigation Restoration and Development project (IDA Grant – US \$97.8 million/ARTF Grant – US \$118.4 million/Government of Afghanistan – US \$3.5 million): progress has been made in all areas of the project. In the irrigation component, 200 irrigation schemes have been rehabilitated, covering 284,000 ha of irrigation command area and 521,300 farmers. A total of 25.68 kilometers (out of 58.26 kilometers end target) of critical river basin erosion protection in various parts of the country have been completed so far. In the small dam component, a prefeasibility review of 22 small dams resulted in a feasibility study being conducted on the six best ranked dams in the northern river basin (which is not on international rivers). Minor repair works for Qargha dam in Kabul have been completed, while Darunta dam in Jalalabad is in progress. Dam safety guidelines for Afghanistan have been developed and completed under the project. Dam Safety Inspection reports have been prepared for 10 existing dams in various parts of the country. In the Hydromet component, installation of 127 hydrological stations and 56 snow and meteorological stations was completed in 5 river basins of the country. Hydrogeological maps have been prepared for the Preliminary National Ground Water Potential Map and National Data Availability/Well Depth-Water Level/Water Quality Maps. The project will be completed as scheduled on December 31, 2020. The current project focus is to complete the 56 ongoing contracts by the project closing date. The National Water Affairs Regulation Authority is working to prepare the project exit strategy and work plan to complete the ongoing contracts.

Afghanistan Land Administration System Project (IDA Grant – US \$25 million/ARTF Grant – US \$10 million): the project's objective is to support the development of the Afghanistan land administration system and provide the population in selected areas with improved land registration services, including issuance of titles and occupancy certificates (OCs). The project also focuses on women's economic empowerment through policy development to enhance female ownership and inheritance of land and other family assets.

Afghanistan Strategic Grain Reserve project (IDA Grant – US \$20.3 million; US \$9.7 million – JSDF<sup>85</sup>). The project is designed to establish a strategic wheat reserve to be available to Afghan households to meet their needs following any unforeseen emergency that affects access to wheat for their consumption, and to improve the efficiency of grain storage management. It was mutually agreed to close the project on 31 August 2020 (ahead of the original closing date of 1 July 2022), as the project did not witness any substantive implementation progress, neither on the construction and rehabilitation of the grain silos, which was delayed because of procurement-related issues, nor on the establishment of the state-owned corporation.

**Energy.** CASA-1000 (IDA Grant/Credit – US \$526.5 million): Afghanistan is expected to receive 300 MW of electricity import from Tajikistan and the Kyrgyz Republic through the lines from Sangtuda substation, and Tajikistan to Chimtala substation in Kabul via Pule-Khumri. Of the total project financing, Afghanistan has received US \$316.5 million in the form of an IDA grant. The grant will support construction of about 560 km of an overhead HVDC transmission line from Sangtuda converter station in Tajikistan to Nowshera converter station in Pakistan. In addition, Afghanistan has received a US \$40 million grant from the ARTF for the CASA Community Support Program. The last procurement of the HVDC transmission line from the Afghanistan border to Nowshera in Pakistan was signed on 20 May 2020.

Herat Electrification project (IDA Grant – US \$60 million) The project aims to support DABS<sup>86</sup> to provide new or improved electricity services to over 230,000 people and 1,600 institutions and businesses in selected areas in Herat province. As a remarkable accomplishment during the COVID-19 pandemic, the project successfully supplied and installed solar backup systems for 10 hospitals designated for COVID-19 patients in Herat province.

Naghlu Hydropower Rehabilitation project (US \$83 million): two additional turbine type pumps required to completely drain both galleries were installed (August); a bathymetric survey of the section of the Naghlu reservoir near the face of the dam was conducted (April). DABS also performed an internal interim sediment assessment. Sediment samples were delivered to GSG laboratory in India and the result of the interim sediment assessment was provided in June. The Darunta HPP will be renovated, and the closing date of the project will be extended.

**Gender.** Strengthening Women's Economic Project (US \$2.7 million by JSDF); Women's Economic Empowerment National Priority Program (US \$5 million).

**Source:** World Bank Group in Afghanistan: Country Update; <https://documents1.worldbank.org/curated/en/733171601494842102/pdf/The-World-Bank-Group-in-Afghanistan-Country-Update.pdf>

**Due to COVID-19, WB:** (1) **approved** a US \$400 million grant to help Afghanistan sustain the pace of key economic and public finance reforms, and support the country to manage current risks and uncertainties compounded by the COVID-19 crisis to improve business regulation and encourage private investment, expand social inclusion and support civil service reforms, increase resilience to natural disasters, improve tax administration and public financial management, and safeguard fiscal sustainability; (2) **approved** a US \$100 million grant to assist in stabilization of the financial sector and support micro, small and medium-sized enterprises in the country's effort to recover from COVID-19.

### FAO Operations in Afghanistan

The **Country Programming Framework** (CPF 2017-2021) sets out 4 strategic pillars of expertise to guide FAO partnership with and support to the Government of Islamic Republic of Afghanistan: (1) Better governance through improved capacity for policy planning, land reform, decentralization, and management of common natural resources; (2) Fostering expansion of irrigation and field water management; (3) Intensive agriculture for surplus commercialization, value chains development, and job creation; (4) Supporting vulnerable farmers for improved food & nutrition security, resilience, and emergency response to natural and man-made disasters and climate change.

FAO and the Ministry of Energy and Water (MEW) jointly organized a nine-day **training workshop** on bathymetric survey and HEC-RAS (hydrological module) dam break analysis (**14-23 January, Kabul**). The workshop served as a platform for the stakeholders to discuss and brainstorm the major challenges faced by water sector, in particular by the Dam Safety Unit of MEW.

The Government of the Kingdom of Sweden and FAO **have joined hands** to provide agriculture assistance to 84,000 vulnerable and food insecure smallholder farmers in 3 most food insecure provinces of Afghanistan, namely Daikundi, Ghor and Uruzgan. Under this project, the vulnerable smallholder farmers in the most food-insecure areas will receive improved and certified wheat seeds and training on improved agriculture practices, which will enable them to rebuild their agricultural livelihoods and enhance their resilience to future shocks.

FAO in close collaboration with MAIL **supported** the development of Afghanistan's Agro-Climatic Zoning Atlas (under the FAO project "Strengthening Afghanistan Institutions' Capacity for the Assessment of Agriculture Production and Scenario Development"). The development of this Atlas has enabled the experts to understand the possible climatic change scenarios for the country for the next 100 years using four Representative Concentration Pathways (RCP) characterizing a range of possible future climate distortions for the periods of 2011-2040, 2041-2069 and 2070-2099. The **job training** on Provincial

<sup>85</sup> Japan Social Development Fund

<sup>86</sup> Afghanistan Power Company

Agroecological Zoning & GIS/RS was held for Provincial and District Agriculture, Irrigation and Livestock Offices of Nangarhar, Kunar and Laghman provinces.

Under a GEF funded project in Afghanistan, FAO in collaboration with MAIL supported the rural communities in Kunar province by providing more than 50 000 walnut saplings for reforestation. This effort aimed to raise the awareness of the communities about sustainable forest management, rehabilitation and restoration of degraded forest areas, increasing biomass and promoting biodiversity conservation, reducing soil erosion, enhancing carbon sequestration, and reducing GHG emission.

**GEF approves over US \$78 million to support FAO-led projects.** 16 countries, including Afghanistan, will benefit from projects designed to conserve biodiversity, enhance ecosystem services, combat land degradation, and preserve natural resources on land and water. In December 2020, GEF approved the grant for the 5-year project "Institutionalizing Transboundary Water Management between Tajikistan and Afghanistan for the Panj River Sub Basin" for US \$7.9 million. The aim of the project is to establish new operational mechanisms and foster effective transboundary water management between Tajikistan and Afghanistan to manage nexus trade-offs in the Panj River basin. The project has 4 components: (1) Jointly agreed Transboundary Diagnostic Analysis considering climate change, environmental flows, and development related nexus trade-offs; (2) Transboundary water management strategy and action program and underpinning institutional arrangement for the Panj River basin; (3) Demonstration projects to pilot interventions for improved transboundary water management; (4) Enhanced capacity of key stakeholders, reinforced participatory processes, mainstreamed gender equality focus, and effective project progress monitoring.

Source: <http://www.fao.org/countryprofiles/index/en/?iso3=AFG>

### USAID Operations in Afghanistan

**Agriculture and water management.** USAID is working with MAIL to increase the productivity and income of Afghan farmers; create value chains connecting farmers, processors, and wholesalers; and increase opportunities for exporting Afghan goods to international markets. In 2020, the following projects were continued: Strengthening Watershed and Irrigation Management (2016-2021); Promoting Value Chains (2017-2020); Grain Research and Innovation (2017-2022); On-Farm Water Management.

Source: <https://www.usaid.gov/afghanistan/agriculture>

**Economic growth.** The following projects were continued: Women in the Economy (2015-2020); Afghanistan Investment Climate Reform Program (2015-2022); Multi-Dimensional Economic Legal Reform Assistance Program (2018-2023).

Source: <https://www.usaid.gov/afghanistan/economic-growth>

**Energy.** USAID will finance four energy projects in Afghanistan. DABS has signed four US \$160 million agreements with private power producers. After the completion of the projects, Afghanistan will have 110 MW of electricity.

**Infrastructure.** Rural Water, Sanitation and Hygiene Project (2016-2020) to support the Afghan Government and civil society in improving access to safe drinking water and community sanitation facilities, and improving hygiene practices in households, schools, and health centers.

Kabul Managed Aquifer Recharge (2015-2020) project to pilot-test managed aquifer recharge and aquifer storage and recovery technologies as one solution to addressing the rapidly diminishing domestic water supply for Kabul City.

U.S. Geological Survey (USGS) Water Supply Data Monitoring and Analysis (January 2018 – December 2022). USGS, through support from USAID, is building the capacity of the Ministry of Energy and Water (MEW) in order to improve management of the Kabul River Basin through increasing water-data availability and analysis.

Power Transmission Expansion and Connectivity (2011-2023). USAID is funding the construction of a 500 km transmission line connecting the two networks, as well as improvements to the existing southeastern grid. Once the project is completed, DABS will be capable of providing affordable power to about 2 million Afghans who have never had power or who are underserved.

USAID Engineering Support Program (2016-2020) provides architectural, engineering, and construction management services for infrastructure projects related to energy, transportation, drinking water, sanitation, health, education, and agriculture.

Source: <https://www.usaid.gov/afghanistan/infrastructure>

### China

The Fifth Plenum of the 19<sup>th</sup> Central Committee of the Communist Party of China, held in late October, issued a [guide to action – Proposals for Formulating the 14<sup>th</sup> Five Year Plan \(2021–2025\)](#) for national economic and social development and the long-range objectives through the year 2035. It also provided interpretation on the meaning of "green development" and offers a view into what China's leadership is thinking about climate action. Proposals stipulate that by 2035 "China's carbon emissions will gradually decline in a state of stabilisation after peaking, and there will be fundamental ecological and environmental improvements". Even though the Proposals only briefly and qualitatively touch upon climate change, they nevertheless lay an important political foundation for key 14<sup>th</sup> FYP climate and energy targets. Particular attention will be paid to binding targets on carbon intensity, the proportion of non-fossil fuels in the primary energy mix, and coal power capacity.

Source: <https://chinadialogue.net/en/energy/chinas-14th-five-year-plan-climate-and-energy/>



At the [Twin Sessions](#) – National People's Congress (NPC) and Chinese People's Political Consultative Conference (CPPCC) – held in May 2020, 11 NPC members made a **joint proposal to strengthen biodiversity conservation**. In June 2020, a few weeks after China ended its nationwide lockdown, the central government published a comprehensive 15-year strategy (2021-2035) aiming to achieve 26% forest cover, put 60% of wetlands under protection, designate 18% of China's land areas as national parks and "thoroughly protect the habitats of endangered species." By the end of 2019, roughly a quarter of China's landmass had already been designated under so-called "ecological redlines", a celebrated model of spatial planning to align developmental needs with ecological considerations. The draft measures for managing ecological redlines, published in November, determine certain human activities that, subject to regulation, will continue to happen there, including subsistence farming, herding, and fishing by indigenous people, and heavily regulated mining and infrastructure building.

The outbreak of Covid-19 has essentially torpedoed [China's ambitious 2020 biodiversity agenda](#). China had been scheduled to preside over crucial United Nations talks in Kunming in October, to reach a new global deal for biodiversity protection post-2020. The whole negotiation process is now postponed to 2021.

On 3 March 2020, the [General Office of the Chinese Communist Party's Central Committee and the State Council jointly released](#) a Guideline on Building a Modern Environmental Governance System. It is a part of China's long-term strategy of establishing an 'Ecological Civilisation'. With the Guideline's target of putting in place a sound environmental governance system by 2025, the top policy-makers put ever greater emphasis on fundamentally transforming China's environmental governance system at all levels. To this end, the Guideline specifies the responsibilities of government agencies, corporate entities, civil society and the public, and emphasizes the joint efforts to be made by all actors.

**2020 overall trends of Chinese Belt and Road Initiative (BRI) investments:** Chinese overseas investments into countries of the BRI were about US\$47 billion in 2020, about 54% less than in 2019; Several countries, such as Vietnam, saw an increase in BRI investments in 2020 compared to 2019; Countries of the Belt and Road Initiative (BRI) were less affected by the slow-down of Chinese overseas investments compared to non-BRI countries: Chinese investments in non-BRI countries dropped by 70% compared to 2019 to about US\$17 billion in 2020; BRI investments accelerated in the logistics sector, and slowed in all other sectors; Renewable energy investments (solar, wind, hydro) for the first time were the majority of Chinese overseas energy investments – increasing their share from 38% in 2019 to 57% in 2020; SOEs are the dominant partner for investments in the BRI – with only Alibaba as a non-SOE being a major investment partner in 2020; China's BRI investments in 2020 declined faster than global FDI flows, which were expected to decline by 16% into emerging economies.

**Global Civil Society Call on Chinese Authorities.** On April 29, 2020, the Rivers without Boundaries along with other 260 civil society groups across the world called on the Chinese government to ensure that COVID-19 related financial relief for struggling Belt and Road projects flows only to high quality investments satisfying specific criteria, and avoid bailing out projects already mired in environmental, social, biodiversity, climate, or financial risks prior to the onset of COVID-19. In February 2020, China's Ministry of Commerce and the China Development Bank (CDB) jointly issued a notice creating a mechanism for directing finance to Belt and Road projects that have been impacted by the COVID-19 pandemic. Crucially, the notice states that projects that are "high quality", "legally compliant", and have "controllable risks" can qualify to receive COVID-19 related financial relief. In the statement, civil society groups set out ten specific principles that if present could help to ensure that projects are "high quality". Environmentalists also highlighted 60 Chinese sponsored projects in the mining, pulp and paper, hydropower, infrastructure, fossil fuel, and other sectors which do not meet these criteria. Six out of 60 listed projects are located in Russia. The RwB also supported inclusion on the list of a dam on Rufiji River in Tanzania that destroys the largest UNESCO World heritage wildlife reserve in Africa and several other similar outrageous cases. Full Statement and annotated list of risky projects [available here](#).

**China more than doubled its construction of new wind and solar power plants in 2020 from a year earlier.** China, the world's biggest greenhouse gas emitter, added 71.67 GW of wind power capacity last year, the most ever and nearly triple 2019's levels, according to data released by the National Energy Administration (NEA). China's 2020 figure is ahead of the 60.4 GW of new wind capacity added globally in 2019, according to data from the Global Wind Energy Council. New solar power capacity also rebounded in 2020 to 48.2 GW after falling for two straight years. By the end of 2020, China had 281.5 GW of wind generation capacity, and 253.4 GW of solar generation capacity. However, China continued to build new thermal power capacity in 2020, according to the data, with 56.37 GW the highest level since 2015. Studies have shown that China completed 11 GW of new coal-fired power capacity in the first half of 2020, and had an additional 53 GW in its planned project pipeline, 90% of the global total.

**Vast River Diversion Plan Afoot In Western China.** China's premier, Li Keqiang, has called for options to be examined for the hugely ambitious western section of the South-to-North Water Diversion project. The idea of diverting water from China's wet south to its dry north was first proposed in 1952. Today, the project consists of an eastern, a central and several potential western routes. The central one, completed in 2014, takes water on a 15-day journey from Hubei province more than 1,400 kilometres north to Beijing and Tianjin. The eastern one began transferring water from Jiangsu to Shandong and Tianjin in 2013. The even more challenging western route, which would link the Yangtze and Yellow rivers across the Tibetan plateau, has never left the drawing board due to



concerns about its environmental and social impacts. Talk of it has now resurfaced amid an economic slowdown in China.

Source: <https://chinadialogue.net/en/nature/11762-vast-river-diversion-plan-afoot-in-western-china-2/>

**China experienced intense floods** starting in June. The floods affected more than 35 million people, and left at least 278 dead or missing. The cost of the floods has been estimated at \$32 billion. Some of the most affected areas were around the densely populated Yangtze river basin, including the provinces of Sichuan and Guizhou, and the city of Chongqing, where more than 30 million people live. This year's floods are consistent with projections that, as the planet warms, a greater proportion of China's rain would fall as more concentrated downpours. A 2016 study found that China is the country with the highest risk of floods in the world – a situation that will worsen if carbon emissions continue to rise unchecked.

Source: Counting the cost 2020: A year of climate breakdown, Christian Aid, December 2020

**Chinese paddlefish, native to the Yangtze River, declared extinct by scientists.** One of the world's biggest freshwater fish species, growing up to 7 metres long, is believed to have died out between 2005 and 2010. The last confirmed sighting of the fish was in 2003. Dam-building, overfishing, busy water traffic and pollution have taken a toll, with the fish population disappearing.

Source: [https://www.scmp.com/news/china/society/article/3044520/chinese-paddlefish-native-yangtze-river-declared-extinct?module=perpetual\\_scroll&pgtype=article&campaign=3044520](https://www.scmp.com/news/china/society/article/3044520/chinese-paddlefish-native-yangtze-river-declared-extinct?module=perpetual_scroll&pgtype=article&campaign=3044520)

## Other Asian Countries

**India faces serious water risks.** 21 major cities (including New Delhi, Bengaluru, Chennai and Hyderabad) are expected to run out of water by the end of 2020 & 80% of groundwater has been withdrawn – yet, it still lacks efficient water management policies. More than 50% of the population today has no access to safe drinking water and about 2 lakh people die every year due to lack of access to safe water. It is predicted that at least 40% of the Indian population will have no access to drinking water by the year 2030. The Central Water Commission states that a maximum of 3,000 billion cubic meters of water a year is needed, and what India receives is 1,000 billion cubic meters in excess – i.e., 4,000 billion cubic meters of rain per year. This reveals that water is in abundance. Only 8% of this water is captured, with the rest of the water being runoff. In this context, the Times of India launched an initiative, the **Times Water Summit 2020** under the banner of “Make India Water Positive” for stronger and unified water infrastructure by bringing key stakeholders of the ecosystem – the people, the policymakers, the corporates, and the agricultural community – all under one roof. It aims to create awareness and action to support the country's water infrastructure and propagate policy-level interventions.

In September, tens of thousands of farmers from different states of India left their homes and took to the streets to **protest against the farm reforms** passed by Narendra Modi. The reforms have left many farmers in a difficult situation. Some fear their long ongoing struggles will worsen and others fear the reforms will only add to the disturbing rash of farmer suicides across the country. For its own part, Prime Minister Modi's government stated that the reforms will benefit farmers. It further says the reforms will allow farmers to market their produce and boost production through private investment.

**Pakistan signed on May 14 a 442 billion Pakistan rupees contract** for a joint venture with the Chinese state-run China Power and Frontier Works Organisation (FWO), the commercial arm of the Pakistan military despite India's repeated objections for **the Diamer-Bhasha Dam project is on the Indus river** between the Kohistan district in Khyber Pakhtunkhwa and the Diamer district in Gilgit Baltistan, Pakistan administered Kashmir. The project involves the construction of an RCC dam (Roller Compact Concrete) to a height of 272 metres that will result in a reservoir of eight million acre feet and potential for generation of over 4,500 MW of electricity. It has been mentioned that the reservoir could flood 100 kilometers of the Karakoram Highway and a total of 31,000 persons living in the area will be displaced, and the reservoir will also submerge tens and thousands of rock carvings and other artifacts dating back to 6<sup>th</sup> millennium in this earthquake prone region. It is said by experts that never before in the history of the world has an RCC dam of this size ever been built, or attempted, in such “unforgiving” conditions.

**In Bangkok the tap water turns salty.** It is **reported** that seawater is infiltrating the Chao Phraya river, a source of much of central Thailand's water, as it dries. The river's flow is too weak to prevent saltwater from moving upstream and that is affecting drinking water in many parts of Bangkok. Outside the capital, the country's severe drought is harming farm production. The Thai government told rice farmers not to plant their winter crops, to prevent further water draws that would have been needed for irrigation. Rather than divert the water for farming, the plan is to use it to counteract the saltwater intrusion plaguing the city.

**In Indonesia, environmental groups are urging officials in Jakarta to invest in the city's natural resources to help reduce future flood damages.** Activists say protecting groundwater, planting trees, and focusing on long-term prevention can help avert more flooding disasters. Jakarta experienced record-breaking rainfall this month, which has displaced 175,000 people and killed more than five dozen.

Similar to what happened in 2019, 2020's **monsoon season has been abnormally rainy in Asia.** Scientists note that as the planet warms, the total monsoon rain will increase, though some areas will receive less rainfall due to changes in wind patterns. This means that heavy rainfall events such as those seen in Pakistan this year will likely become more frequent. Heavy rains during the monsoon caused 410 deaths in **Pakistan.** The cost of the damage cau-

sed by the floods and landslides has been estimated at more than \$1.5 billion. In **India** in the second consecutive year between June and October, there were at least 2,067 deaths and damages amounting to \$10 billion. The city of Hyderabad, where almost 10 million people live, saw a record rainfall of 29.8cm in 24 hours – almost 6 cm more than the previous record. Extreme rains in July in the island of Kyushu, in **Japan** caused 82 fatalities and had an estimated cost of more than \$8.5 billion. In some parts of the island, rainfall exceeded 410 mm in 24 hours. The 2020 monsoon season brought massive floods across Southeast Asia, with Vietnam one of the most affected countries. In just two months, October and November, the country was hit by at least nine tropical storms and typhoons. The most destructive of them was Typhoon Molave. The Philippines were hit by two of the most damaging tropical cyclones of 2020: Typhoon Goni and Typhoon Vamco.

**Source:** Counting the cost 2020: A year of climate breakdown, Christian Aid, December 2020

**Mongolia markets its Blue Horse programme as adaptation to climate change** and is securing climate funding on that basis. The Mongolian government has set its sights on a major expansion of heavy industry in the **Gobi desert**. Supported by development banks, corporations and Chinese demand, over the coming years southern Mongolia will become home to at least 20 mega projects, including eight coal mines, four coal processing plants, two coal power plants and a copper smelter. All this heavy industry demands a lot of water. A report analysing the gap in supply and demand, sponsored by the World Bank, was published in January 2021. It predicts that by 2040 demand for water in the south Gobi region may increase by two-and-a-half times, which will exceed supply by more than 20 million cubic metres annually (about 8,000 Olympic swimming pools). To this end, the World Bank has praised Mongolia's "Vision 2050" development programme. This is where the Blue Horse programme comes in: a nationwide masterplan for water infrastructure development. The programme involves building at least 33 multipurpose dams and hydropower reservoirs on 12-13 rivers. Mongolia has only 13-15 perennial rivers, with renewable freshwater annual resources of about 30 cubic kilometres. This is a small amount to support these megaprojects as well as wetlands and river ecosystems. The Blue Horse programme largely consists of projects designed during Soviet-Mongolian cooperation era in the 1970-80s. These were abandoned after the dissolution of the Soviet Union. The Blue Horse is promoted as acting on climate change. In early 2020, 265 civil society organizations from 70 countries **called on the Chinese government** and its policy banks to ensure that Covid-19 financial relief along the Belt and Road is provided only to investments that satisfy specific criteria. Among the **60 most dangerous projects** was the Blue Horse, along with Erdeneburen Hydro.

**Source:** [www.thethirdpole.net/en/energy/analysis-blue-horse-mongolia-water-infrastructure/](http://www.thethirdpole.net/en/energy/analysis-blue-horse-mongolia-water-infrastructure/)

## Large River Basins in South Asia

### Mekong River Basin

Water levels in the lower Mekong have perked up after last year's severe drought. But rainfall is not the

only variable that influences river flows. Chinese dams have been the source of much consternation among the four downstream countries of Cambodia, Laos, Thailand, and Vietnam. When water levels in Thailand dropped suddenly by more than a meter in the first days of 2021, it was because China cut dam releases in half for electric grid maintenance. Experts said to watch for rising tensions over water use in the basin, which is already beset by sand mining, saltwater encroachment, land subsidence, and a dam-building spree in countries besides China. The basin took a step toward defusing the conflict last October, when China **agreed to share data year-round** on water levels and dam releases via an **online information sharing platform**. Independent reports based on satellite monitoring are being produced, as well. The **Mekong Dam Monitor**, a project of the Stimson Center, a think tank, and Eyes on Earth, a remote sensing firm, debuted last December.

**Source:** [https://www.circleofblue.org/2021/world/four-international-water-stories-to-watch-in-2021/?mc\\_cid=0b99180665&mc\\_eid=db7dc5ba26](https://www.circleofblue.org/2021/world/four-international-water-stories-to-watch-in-2021/?mc_cid=0b99180665&mc_eid=db7dc5ba26)

In February, the Thai cabinet **cancelled a rapids blasting project on the Mekong** after two decades of resistance and advocacy by grassroots communities and civil society networks supported by International Rivers. This means that a highly biodiverse 600 km area of the Mekong, which is critical to the livelihoods of thousands of local and traditional peoples, will be protected from destruction. The Cambodian government also recently announced that it has **suspended all dam building on the mainstream of the Mekong River** for at least 10 years, assuring that at least this part of the Mekong River will continue to flow freely.

In June 2020, a draft Mekong basin development strategy (BDS) to respond to critical environmental and social pressures from ongoing and planned developments and climate change in the Mekong River Basin received a greenlight. This will pave the way for a final consideration and approval by the MRC's higher governance body, the Council of ministers, and for the MRC and all relevant actors to begin implementation timely next year. The BDS sets five strategic priorities to respond to demanding challenges facing the basin; these include maintaining the ecological function of the Mekong River Basin, enabling inclusive access and utilization of the basin's water and related resources, improving optimal and sustainable development of water and related sectors, strengthening resilience against disasters, and boosting cooperation among all basin countries and stakeholders. Among key outputs to be delivered in the next ten years by all relevant actors in their cooperation are maintenance of acceptable flows and water quality that cover tackling plastic waste, putting in place a basin-wide sediment management plan, and ensuring there are effective fish passes. They will be extended to include improved flood and drought forecasting and communication with the public, and cooperation and coordination mechanisms for data and information sharing on water infrastructure and related water emergencies.

**Source:** [www.mrcmekong.org/news-and-events/news/bds-20200612/](http://www.mrcmekong.org/news-and-events/news/bds-20200612/)

**Developments on the Xayaburi Dam.** Although the Mekong River Commission led prior consultation process over the construction of the Xayaburi Dam in Laos ended without agreement in 2011, the Commission made strong technical assessment and provided a set of recommendations. Despite significant opposition from Cambodia (harm to fisheries) and Vietnam (harm to sediment transport, flow regimes) and NGOs (anti-dam, harm to livelihoods), Laos proceeded with the construction of the Xayaburi project. [Government officials and stakeholders' visit](#) to the construction site of the the Xayaburi Dam in early 2020 showed that the Lao government and developer made significant investments in the fish pass and sediment transport related mitigation measures to address the recommendations provided in a Commission's technical review report. Also the Mekong River Commission is partnering with the Lao government and the developers of the dam to monitor its transboundary environmental impacts through Joint Environmental

Monitoring Program, with view of collecting, generating and sharing reliable and scientific data and information on site-specific issues regarding hydrology and hydraulics, sediment, water quality, aquatic ecology and fish and fisheries.

**Cooperation under the Lancang-Mekong Cooperation Mechanism in 2020.** China launched the Lancang-Mekong Cooperation Mechanism in 2015. All six riparian countries (Cambodia, China, Laos, Myanmar, Thailand, and Vietnam) participate in this mechanism. Since then, regular meetings are organized, joint working groups have been established, different thematic centers have been opened and strategies and action plans have been drafted to build trust and accelerate cooperation. A timeline of important events, milestones, achievements and regional events can be consulted [here](#).<sup>87</sup> The following events were held in 2020:

Date	Activities, Meetings and Milestones
20.02.2020	5 <sup>th</sup> Lancang-Mekong Cooperation Foreign Minister's Meeting in Vientiane, Laos <i>Documents:</i> <a href="#">Joint Press Communiqué of the 5<sup>th</sup> LMC Foreign Minister's Meeting</a>
26.03.2020	3 <sup>rd</sup> Lancang-Mekong Cooperation Week Activity on Water resources (Online)
April-August, 2020 (Ongoing)	Ongoing Discussion on Regional Drought (Online) <i>Documents:</i> <a href="#">EoE Report</a> , <a href="#">Stimson Report</a> , <a href="#">MRC Report</a> , <a href="#">Regional Responses (1, 2)</a> , <a href="#">Tsinghua Report</a> , <a href="#">China Daily Article</a>
21.05.2020	Online Meeting Regarding Information Sharing Platform/Water resources Management; <a href="#">Record of the Video Meeting of JWG on Lancang-Mekong Water Resources Cooperation in 2020</a>
24.08.2020	3 <sup>rd</sup> Mekong-Lancang Cooperation (MLC) Leaders' Meeting – "Enhancing Partnership for Shared Prosperity". China Commits to Year-Round Information Sharing with Lancang-Mekong Riparians <i>Documents:</i> <a href="#">Vientiane Declaration</a>
24.09.2020	2 <sup>nd</sup> Virtual Meeting of the Joint Working Group on Lancang-Mekong Water Resources Cooperation
01.12.2020	China launches the LMC Water Resources Cooperation Information Sharing <a href="#">Platform</a>

### Brahmaputra and Indus River Basins

Tensions spiked between China and India in December 2020 after the Chinese government announced plans to build a dam across one of the major waterways flowing from Tibet. If built, the dam would be the biggest hydropower project in the country, a 60-gigawatt facility that would aid China in reaching carbon neutrality by 2060. The dam's exact location is still unknown, but Chinese officials in Beijing suggested it could be close to where the Yarlung Tsangpo flows into India, an area called "The Great Bend." The

river is called the Brahmaputra in downstream India and Bangladesh. On the other side of the border, Indian officials are concerned a new dam could lead to increased flash floods downstream, water scarcity, and the possibility of weaponized water. The project also prompted Indian officials to announce that they are considering a dam on their side of the river, to mitigate the effects of the Chinese dam. The possibility of two dams raised questions about ecological stability. The dam also could inflame a border dispute that has been stewing between India and China for nearly seven decades. Over the last year, the two

<sup>87</sup> Devlaeminck D. Timeline of the Lancang-Mekong Cooperation Mechanism. February 2021. [www.academia.edu/36426349/Timeline\\_of\\_the\\_Lancang\\_Mekong\\_Cooperation\\_LMC\\_Mechanism\\_Last\\_Updated\\_February\\_2021\\_](http://www.academia.edu/36426349/Timeline_of_the_Lancang_Mekong_Cooperation_LMC_Mechanism_Last_Updated_February_2021_)



countries have clashed over the 2,100-mile segment of border in the Himalayan region that is imprecisely drawn. The area has seen violent altercations recently, including one in June where 20 Indian soldiers were killed and in September when China claimed Indian troops fired shots at Chinese soldiers. This mutual mistrust, along with the fact that the two countries do not have a water-sharing treaty, has laid groundwork for the current conflict. The countries did sign a 2002 agreement to share hydrological data, yet the border dispute has cut relations in that field as well. The Chinese embassy in New Delhi has since assured India that the new dam is still in its early stages, and its downstream impacts will be thoroughly tested.

Source: [www.circleofblue.org/2020/world/hotspots-h2o-tensions-rise-as-india-china-clash-over-proposed-chinese-dam/](http://www.circleofblue.org/2020/world/hotspots-h2o-tensions-rise-as-india-china-clash-over-proposed-chinese-dam/)

National Geographic published in 2020 a detailed report on the status and a possible future of the Indus River region. Unlike the Brahmaputra, which is mostly fed by the summer monsoon, most water in the Indus comes from the snows and glaciers of the Himalaya, the Karakoram, and the Hindu Kush. Most of the

glaciers are now shrinking. At first, that will increase the flow in the Indus. But if temperatures rise as predicted, and the glaciers continue to melt back, the Indus will reach “peak water” by 2050. After that, the flow will decline. Humans already use 95 percent of the Indus, and the population of the basin is growing fast. An international group of scientists analyzed glacial water towers worldwide. According to them, the Indus is the most critical, given the region’s “high baseline water stress and limited government effectiveness”. Pakistan will suffer most. Local experts advocate a radical overhaul of the system. Both Pakistan and India have ancient water-harvesting traditions, adapted to the rhythms of the river and the rains, that have been neglected since British times. Instead the two countries have focused on huge engineering projects – on dams and canals. Both have plans for new dams in the Indus Basin. Local activists are campaigning for a law that would grant personhood-and rights-to the Indus. They propose checks on hydro projects, pollution controls, and a fund to restore the river.

Source: [www.waterpolitics.com/2020/06/16/looming-water-crisis-for-270-million-south-asians/](http://www.waterpolitics.com/2020/06/16/looming-water-crisis-for-270-million-south-asians/)

## 11.3. America

In August, [California's Death Valley National Park](#) recorded one of the highest temperatures ever reliably recorded on Earth – 130F. In addition, California has suffered its [biggest ever wildfire season](#) in 2020, including five of the six largest fires ever recorded in the state.

**The 2020 Atlantic hurricane season** was record-breaking, with 30 named storms. It caused at least 400 fatalities and a combined cost of \$41 billion. Hurricane Eta alone, killed 153 people in Central America, most of them in Honduras and Guatemala. In the US, Hurricanes Laura and Sally caused the most damage. While the number of tropical cyclones around the world has remained largely constant globally over the last century, in the Atlantic basin there has been an increase in the number of named storms since 1980. At least nine of the season’s tropical storms experienced “rapid intensification”, a phenomenon by which tropical cyclones acquire high wind speeds in a short period of time and which is becoming more common due to global warming.

Source: [Counting the cost 2020: A year of climate breakdown](#), Christian Aid, December 2020

Every year Brazil’s Ministry of Mines and Energy publishes a **“Decennial Plan for Energy Expansion”**, which includes the “large” dams (since 2004 defined in Brazil as having at least 30 MW installed capacity) to be completed within the ten-year time horizon. The number of Amazonian dams listed has steadily declined in the last few plans. The most recent plan, which is for 2020-2029, lists only three dams: Tabajara (in Rondônia), Bem Querer (in Roraima), and Castanheiras (in Mato Grosso). The 2020-2029 plan contains an ominous paragraph (p. 264) making clear that unnamed

dams could be built depending on the “treatment” of conservation units (protected areas for biodiversity) and Indigenous Lands. In other words, more and more-damaging dams could be built if regulations are changed, as is proposed in bills currently moving through committees in Brazil’s National Congress. This process has accelerated enormously since Jair Bolsonaro became president in January 2019. Several proposed laws would effectively eliminate environmental licensing. There is also a proposed law introduced by President Bolsonaro that would open Indigenous lands for exploitation by non-indigenous people – hydroelectric development is one of the uses specifically mentioned, development which could be carried out without requiring consent of the Indigenous groups impacted.

Source: <https://news.mongabay.com/2020/10/brazils-amazon-dam-plans-ominous-warnings-of-future-destruction-commentary/>

**In Brazil, senior military experts predict that climate change will put the country’s energy and water security at risk.** The experts warned that deforestation in the Amazon region could alter rainfall patterns in Brazil, affecting hydropower plants and water supplies for major urban areas. About 63 percent of Brazil’s electricity comes from hydropower and water-related sources, according to last year’s government data. Brazil’s armed forces are responsible for monitoring the Amazon where deforestation is surging, and the military report said that troops could be stretched thin as they also respond to humanitarian crises spurred by climate change.

Source: [www.circleofblue.org/2020/world/whats-up-with-water-december-7-2020/](http://www.circleofblue.org/2020/world/whats-up-with-water-december-7-2020/)

**In the United States, water temperatures in the Great Lakes continue to rise.** In Lake Michigan, the average surface temperature is 74 degrees Fahrenheit, which is 11 degrees above historical averages. Certain spots in Lake Erie and Lake Michigan exceed 80 degrees. Warming lake waters are most damaging when combined with other factors. In warm water, nutrients such as nitrogen and phosphorus result in algal blooms that kill fish, poison drinking water, and prohibit water recreation. Warming can also be lethal to fish because warmer waters hold less oxygen. A study published in the journal *Science* found that more than 400 freshwater and saltwater species would not be able to reproduce in their current ranges if the climate warms by 7 to 9 degrees Fahrenheit. But if the temperature rise is kept to 3 degrees, then only six dozen or so species would be pushed out of their range.

Source: [www.circleofblue.org/2020/wef/whats-up-with-water-july-13-2020/](http://www.circleofblue.org/2020/wef/whats-up-with-water-july-13-2020/)

In 2020, the entire Colorado state was in **some level of drought**. The dry, hot spring gave way to a dry, hot summer. The water year ended with almost every part of the state in a precipitation deficit. The southwest corner of the state was hit the hardest, with precipitation levels below 30% of normal in April, May, August and September. Statewide, reservoir levels were at 49% of capacity. The total inflow into Lake Powell for the 2020 water year was just 55% of average. The low inflow to Lake Powell puts Colorado and the three other states in the upper basin of the Colorado River at risk in the future. Under the 100-year-old Colorado River Compact, the upper-basin states (Colorado, New Mexico, Utah and Wyoming) must be able to release 7.5 million acre-feet of water from Lake Powell to the lower-basin states (Arizona, California and Nevada) every year. Failing to meet this obligation would trigger mandatory water cuts in the upper basin. Climatologists warn that the trend seen throughout the basin where high temperatures and low soil moisture wiped out healthy snowpack levels is likely to become more normal in the future.

Source: <https://aspenjournalism.org/weak-2020-water-year-comes-to-a-close/>

**US and Mexico sign agreement for Rio Grande water delivery by Mexico** in October. The International Boundary and Water Commission, United States and Mexico, has signed Minute No.325, "Measures to End the Current Rio Grande Water Delivery Cycle without a Shortfall, to Provide Humanitarian Support for the Municipal Water Supply for Mexican Communities, and to Establish Mechanisms for Future Cooperation

to Improve the Predictability and Reliability of Rio Grande Water Deliveries to Users in the United States and Mexico." The agreement ensures Mexico will meet the October 24, 2020 deadline to deliver Rio Grande water to the United States. In accordance with the 1944 Water Treaty, the United States is entitled to a portion of the water arriving in the Rio Grande from six Mexican tributaries for a total of at least 1,750,000 acrefeet (2,158.6 million cubic meters) over five years. The current five-year cycle ends on October 24, 2020. Mexico will deliver the final pending amount of approximately 105,000 acre-feet (130 mcm) by transferring water from Mexican ownership to U.S. ownership at Amistad and Falcon International Reservoirs on the Rio Grande. Minute No.325 also establishes work groups to analyze and develop water management tools to provide for increased reliability and predictability in Rio Grande water deliveries to users in the United States and Mexico. Moreover, it includes a provision for U.S. humanitarian support to Mexico, if needed, to guarantee municipal water supplies for Mexican communities along the Rio Grande downstream from Amistad Dam.

Source: [www.ibwc.gov/Files/Press\\_Release\\_102220.pdf](http://www.ibwc.gov/Files/Press_Release_102220.pdf)

At the same time, on September 17, 2020, in Monterrey around 100 farmers protested outside Conagua's offices **demanding equal distribution of water of the Rio Grande**. The participants claimed that Conagua has reduced the amount of water that they should receive to comply with the water agreement with the United States.

Source: [www.waterpolitics.com/2020/10/12/water-conflicts-in-international-rivers/](http://www.waterpolitics.com/2020/10/12/water-conflicts-in-international-rivers/)

Between August and November, **several fires destroyed large swathes of forests across South America**. The fires affected areas rich in unique wildlife such as the Amazon rainforest, the Pantanal wetlands, the Parana delta, and the Gran Chaco forest. Regions in Brazil, Paraguay, Argentina and Bolivia were forced to declare a state of emergency due to the intensity of the fires. The impact of the fires was extremely high. In Bolivia, the government said that 2.7 million acres have burnt this year. In the Pantanal, the estimate is that the fire affected 22% of the wetlands, equivalent to 8.1 million acres. Another 490,000 acres were burnt in the Parana River delta, in Argentina. And the Amazon forest experienced more fires this year, than in 2019, when it made global headlines.

Source: Counting the cost 2020: A year of climate breakdown, Christian Aid, December 2020

## 11.4. Australia and Oceania

**Record high temperatures and severe drought fuelled months of devastating bushfires across Australia at the start of 2020.** Starting in late 2019, and affecting more than 18 million hectares, the Australian bushfires made headlines around the world. The fires destroyed thousands of buildings, killed more than a billion wild animals and caused at least 34 deaths. The smo-

ke from the fires travelled long distances and affected millions of people, covering the skies of cities like Sydney, Melbourne and Canberra. The cost of smoke-related health issues alone has been estimated at \$1.4 billion and insured losses were estimated at \$3.6 billion, although other estimates have put the total costs as high as US\$70 billion. **Engineering experts are**

sounding the alarm about what this might mean for drinking water supplies and infrastructure. Power outages associated with the fires can compromise the water treatment process and introduce unwanted pollutants. In the longer-term, the fires increase the risk of surface water contamination. Heavy rains can flush ash, sediment, and debris into reservoirs and rivers. Water treatment equipment is often not designed to handle such a large influx of small particles.

**After two years of drought ends, Southeastern Australia turns green.** As the 2019-2020 summer brought record heat to Australia, New South Wales appeared to be heading into its third year of severe drought. From January 2017 through October 2019, the south-east Australian state experienced its lowest amount of rainfall in nearly a century. During that time, farmlands were parched, lakes dried up, and millions of fish died. After more than 34 consecutive months of dry conditions, steady and occasionally heavy rain finally arrived in New South Wales. From January to May 2020, southeastern Australia received above-average rainfall and even broke records in Victoria. The wet start to 2020 has alleviated short-term water deficiencies in eastern Australia and helped provide a better start to the winter farming season. However, the rainfall has not yet compensated for the effects of the long-term drought, which is still evident in the Murray-Darling Basin. It will take several significant rainfall events to erase the long-term rain deficiencies across the region.

Source: <https://scitechdaily.com/after-two-years-of-drought-ends-southeastern-australia-turns-green/>

**Central Sydney, Australia is now entirely powered by renewable energy.** By using locally sourced clean energy from wind and solar farms in New South Wales, the region will now see CO<sub>2</sub> emissions reduced by around 20,000 tonnes each year. The move will save an estimated €308,000 per annum over the next decade. The City of Sydney is one of Sydney's central boroughs, and includes the central business district (CBD) and many inner-city residential areas too. The

City is home to around 250,000 people who will benefit from green energy. All the City's operations, including street lights, swimming pools, council buildings, and even the historic Sydney Town Hall, will run off entirely renewable sources. This is the biggest green energy deal in Australia's history, with a value of over €37m overall.

Source: [www.euronews.com/green/2020/07/01/city-of-sydney-now-runs-on-100-renewable-energy](http://www.euronews.com/green/2020/07/01/city-of-sydney-now-runs-on-100-renewable-energy)

**Drought-hit New Zealand.** Since the beginning of 2020, Auckland has received significantly less rainfall than normal. This has had a big impact on water supply. On 15<sup>th</sup> April 2020, the total volume of water stored in dams dropped below 50 per cent for the first time in more than 25 years. In this context a number of water restrictions were adjusted for residential water users. Work was also underway to bring back to service two former water sources – the Hays Creek Dam in Papakura and a bore in Pukekohe. New Zealand has deployed soldiers to help prevent drought-stricken North Island towns from running dry. The situation has become so dire that there were cases of water theft.

Severe Tropical Cyclone Harold was a very powerful tropical cyclone which caused widespread destruction in the Solomon Islands, Vanuatu, Fiji, and Tonga during April 2020. It was the first Category 5 tropical cyclone in 2020.

**Palau is the first country in the world to change its immigration policies so that they benefit the climate.** Visitors are now required to sign an environmental pledge upon arrival, which asks them to act in an "ecologically and culturally responsible way". Located in the Micronesia region in the western Pacific, Palau is regarded as one of the top marine tourism destinations in the world with its outstanding natural beauty and pristine seas. The pledge is one of a number of incentives to make Palau the first carbon neutral tourist destination in the world.

Source: [www.euronews.com/travel/2020/12/16/visitors-to-palau-are-now-required-to-sign-an-eco-pledge-on-arrival](http://www.euronews.com/travel/2020/12/16/visitors-to-palau-are-now-required-to-sign-an-eco-pledge-on-arrival)

## 11.5. Europe

### 11.5.1. Western and Southern Europe

In 2020, Europe was hit by several windstorms (or extra-tropical cyclones). The two with the highest costs were Ciara and Alex, whose combined damage amounts to more than \$5.9 billion. Windstorm Ciara hit the United Kingdom and Ireland in early February and continued moving eastwards over the following weeks. It caused 14 fatalities in eight countries and had an estimated cost of \$2.7 billion. In October, floods caused by windstorm Alex in Southeast France and Northwest Italy killed 16 people and destroyed infrastructure valued at \$3.2 billion. The Italian region of Piedmont experienced its highest rainfall since 1958, with one station recording 630 mm of rain in 24 hours.

Source: Counting the cost 2020: A year of climate breakdown, Christian Aid, December 2020

At the same time, the dry spell that's scorching parts of the European Union's eastern wing was devastating harvests and exacerbating what's expected to be the region's deepest economic downturn since at least the fall of communism. In parts of Romania and Poland, the drought is the worst in a century. In the Czech Republic it's the worst in five. It's raising questions of how to ensure food security.

Source: [www.bloomberg.com/news/articles/2020-05-20/100-year-drought-hits-poor-eu-region-already-reeling-from-virus](http://www.bloomberg.com/news/articles/2020-05-20/100-year-drought-hits-poor-eu-region-already-reeling-from-virus)

**Almost 83% of Europe's bathing waters met the European Union's most stringent 'excellent' water quality standards in 2020.** The annual Bathing Water report



from the European Environment Agency (EEA) shows the results of the monitoring of 22,276 bathing sites across Europe. The share of “excellent” coastal and inland swimming sites has stabilised in recent years at around 85%. [In 2020 excellent bathing waters were reduced to 82.8% across Europe.](#) The minimum “sufficient” water quality standards were met at 93% of the sites monitored in 2020. In five countries – Cyprus, Austria, Greece, Malta and Croatia – 95 % or more bathing waters were of excellent quality. The UK was the poorest performer with only 17.2 percent of its waters meeting the excellent standard.

**On World Water Day a European Coalition of Drinking Water Suppliers adopted a European River Memorandum (ERM).** The [suppliers call for transparency](#) in discharges, strict entry requirements for chemicals and the implementation of the polluter pays principle. In the Memorandum they set out minimum quality standards for a sustainable drinking water supply for 188 million citizens living in the river catchment areas of the Rhine, Danube, Elbe, Meuse, Scheldt and Ruhr. The [memorandum](#) wants to assist and guide decision makers in authorities and political bodies with regard to the continuing necessity to improve the quality of water used to produce drinking water.

The European Commission presented the **results of the fitness check on water legislation** early in 2020. The water legislation fitness check is a comprehensive policy evaluation of the Water Framework Directive (WFD) and its so-called daughter directives – the Environmental Quality Standards Directive (EQSD), the Groundwater Directive (GWD) and the Floods Directive (FD). It assesses whether the directives are fit for purpose by examining their performance against their effectiveness, efficiency, coherence, relevance and EU added value. It concluded that even though the legislation is broadly fit for purpose, it could still be improved. The European Commissioner for the Environment confirmed that the WFD will not be revised.

**The Drinking Water Directive (DWD)** was adopted by the European Parliament in December 2020 and became law soon after. The directive reflects the WHO recommendations and establishes an EU wide Framework for hygienic requirement for materials that are in contact with drinking water. The adopted legislation will enable European water services to continue providing safe and affordable drinking water to consumers although the impacts of some elements have still to be clarified at national level.

The EU adopted **the Water Reuse Regulation** with new minimum requirements defined and will mean that reclaimed water can be used in agriculture and for irrigation while protecting human and environmental health. Water reuse means reduced pressure on the drinking water resources that are usually used for irrigation. The adoption of this regulation that will apply from June 2023 facilitates the transition of the water sector to the circular economy.

[Source:](#) EurEau Annual Report 2020

The Rivers without Boundaries International Coalition provided in 2020 recommendations [“On Hydropower](#)

[and Infrastructure for Water Transport Impacts on Freshwater Bodies, Ecosystems and Species”](#) as its submission on Draft Delegated Act (DA) on Sustainable-finance and EU classification-system-for-green-investments. The text of draft DA dilutes and weakens recommendations made to European commission by special Technical Expert Group. The RwB raises six important points: 1) EC does not follow the TEG’s advice that “Construction of new hydropower should not lead to increase fragmentation of rivers” is a fundamental requirement; 2) the draft DA abandons the TEG’s recommendation that “construction of small hydropower <10 MW should be avoided”; 3) on the infrastructure for water transport, the draft DA unacceptably expanded the scope advised by TEG, which proposed only infrastructure that is needed to ensure the day-to-day delivery of a transport service. The TEG specifically excluded the canalization and fragmentation of rivers; 4) regarding the operation of existing hydropower plants and infrastructure for water transport the DA should refer consistently to the Water Framework Directive; 5) dam decommissioning and removal of other barriers in natural streams must be explicitly included as activity in its own right into the draft DA; 6) requirements should be strengthened with full consideration for legal protection of endangered and migratory species.

[Source:](#) [www.transrivers.org/2020/3212/](http://www.transrivers.org/2020/3212/)

**Montenegrin Government takes tough line on harmful hydropower plants.** Small hydropower plants boomed under Montenegro’s once-ruling Democratic Party of Socialists. Now the new government is promising a halt, responding to the complaints of local residents and environmental activists. They already terminated concession contracts for several hydro plants, stressing that investors already filed lawsuits against the state. The Government said they will have to pay compensation to investors, accusing former authorities of making spontaneous hydropower construction planning. It has proposed to review all concession agreements and introduce a ban on such plants in the future. Of 85 small hydropower plants for which authorities have signed concession contracts, 42 are privately owned, of which 24 are already in use and 18 are under construction. Civic activists say that most of the small hydropower plants in Montenegro do not meet EU standards. Moreover, activists say the state saw little benefit from such power plants but the damage to the environment was considerable. There have been a number of protests in the country over hydropower plants in recent years, most recently on the Bukovica river in the central Savnik municipality where local residents are manning protests in shifts and blocking excavators.

[Source:](#) <https://balkaninsight.com/2021/02/09/montenegrin-government-takes-tough-line-on-harmful-hydropower-plants/>

Despite the recently finished MOSE flood barrier San Marco square flooded again the 9<sup>th</sup> of December. This time due to a failing procedure. According the weather forecasts the sea level would only rise 125 centimetres, but at its peak the sea rose 145 centimetres. The system is activated at 130 centimetres, so

the national government did not act. The result was disastrous. [Venice was flooded again](#). The decision to activate the MOSE flood barrier must be made 48 hours before the high water arrives. This is partly because of shipping. The water-filled caissons of the barrier are designed to be raised within 30 minutes. The Municipality of Venice cannot manage the defence system. That responsibility rests with the national government in Rome. According to Mayor Brugnaro it would be better to transfer the responsibility, because these decisions should be made quickly. It is easier to judge the situation locally. The construction of the MOSE barrier took a total of 17 years, and its construction led to multiple scandals. It has costed about 6 billion euros. The costs ultimately turned out to be more than four billion euros higher than the 1.6 billion euros initially budgeted.

**Romania: New wetland connected to Danube to improve water availability.** [The Project of connecting the Garla Mare wetland to the river Danube](#) is initiated by the Living Danube Partnership. The Natura 2000 site is an area of marsh covering about 700 hectares formed in a former side branch of the Danube River. Historically, it was modified for fish farming. The natural marsh was isolated from the river and divided by dykes. The project will restore a more natural flow regime across the marsh. The flood storage capacity will be improved for a volume of water up to 5,197 million m<sup>3</sup> and enlarging the capacity of a supply channel. At a number of locations breaches in dykes will be opened and at certain points the dykes will be reinforced to protect the surrounding area against flood peaks.

## Rhine River Basin

The states in the Rhine catchment have been cooperating in the International Commission for the Protection of the Rhine (ICPR) for 70 years. In 2001, the states adopted the "Rhine 2020" programme. Some achievements in the implementation of the "Rhine 2020" programme include better flood management, removed obstacles for migratory fish, improved water quality and species diversity. Despite considerable

success, not all objectives have been fully achieved. The "Rhine 2040" programme adopted on 13 February 2020 is intended to reconcile the various uses with the protection of the ecosystem. It includes new, ambitious targets for different fields of action: Adapt to climate change, Cope with low water, Complete fish passability, Contain micropollutants, Reactivate further floodplains, Reduce flood risk. The "Rhine 2040" programme follows the overall concepts of the solidarity principle as well as a sustainable and climate-resilient water management.

Source:

[www.iksr.org/fileadmin/user\\_upload/DKDM/Dokumente/Pressemitteilungen/EN/press\\_En\\_RMC\\_2020.pdf](http://www.iksr.org/fileadmin/user_upload/DKDM/Dokumente/Pressemitteilungen/EN/press_En_RMC_2020.pdf)

The International Commission for the Protection of the Rhine (ICPR) has published the [Rhine Atlas 2020 and the draft 2<sup>nd</sup> International Flood Risk Management Plan Rhine](#) in December 2020. The Rhine Atlas shows the flood-prone areas along the Rhine from the Alps to the North Sea. Citizens from the Swiss Alps to the Rhine delta in the Netherlands can use the map service to find out whether they live in an area classified as at risk of flooding. Three scenarios (frequent, medium and extreme floods) are available. In addition, links are provided to the national map services, which contain more detailed information. The Flood Risk Management Plan describes the measures to be taken by the states in the Rhine river basin from 2022 to 2027 to reduce flood risks. Interested parties can comment on the draft version until June 2021.

Nova Innovation has secured £1.2 m investment from the Welsh government for the Enlli tidal energy project in north Wales, UK. The Enlli tidal energy project involves the installation of five of Nova's 100 kW tidal turbines between Ynys Enlli and the Llŷn Peninsula mainland. The project is expected to generate electricity from the natural ebb and flow of the tide between the two regions. It is anticipated to support The Island in the Currents in shifting away from diesel generation and become a blue energy island.

Source: [www.nsenenergybusiness.com/news/welsh-government-invests-in-nova-innovation/](http://www.nsenenergybusiness.com/news/welsh-government-invests-in-nova-innovation/)

## 11.5.2. Eastern Europe and Caucasus

### Armenia

**Water resources.** Relevant amendments and additions have been made to the Land and Water codes and related laws in order to develop more efficient mechanism of agricultural land use and strengthen requirements to unions of water users. It is planned to develop a platform for better accounting of water resources, enhancing monitoring of water releases and raising awareness of the general public.

The Ministry of Environment has developed a project for management of bio-resources in Lake Sevan. €5 million was allocated for restoration of the lake ecosystem balance. EU supported the [second public consultation](#) on the River Basin Management Plan for Lake Sevan (11 June-17 July). The aim of the consultation was to contribute to the program of measures for Lake Sevan and Hrazdan river basin districts.

As part of the Irrigation System Modernization Program<sup>88</sup>, (1) construction of gravity irrigation systems

<sup>88</sup> The Program consists of 4 components: replacement of mechanical irrigation by gravity irrigation; replacement of old conduits by new ones; modernization of on-farm networks; and, institutional improvement

in Tsitsernakaberd and Artashat on 712 ha has been completed and helped to save more than 1.8 MWh; (2) construction of 21.6-km irrigation system was planned with the financial support of EBRD to improve watering of 3,200 ha in 13 settlements, and rehabilitation of 80 km of irrigation systems in Ararat province was started.

**Energy.** The Armenian Government approved the Strategic Program for Energy Sector Development until 2040 and the related plan of activities. The maximum utilization of the RES potential, energy saving, extension of the life of the second power unit of the Armenian NPP, full implementation of the North-South Energy Transit Corridor Program, and gradual liberalization of the Armenian energy market are among the focus areas of the Strategic Program.

An agreement was reached with IFC<sup>89</sup>, EBRD and EU on the investment of about \$50 million in the Masrik-1 solar project. Upon completion, the project is to generate up to 120 MWh. This would allow reducing annual CO<sub>2</sub> emissions by 40,000 tons.

As part of Masdar's investment program, it is planned to build a 200 MW Aig-1 photovoltaic power plant.

**Green financing.** UNICEF and the Austrian Development Agency (ADA) launched a three-year project entitled "Adolescents for Climate Action in Communities" (until 2022). It is planned to reach and engage 28,000 adolescent boys and girls from 496 schools in 52 consolidated communities in Armenia not only to improve their knowledge on climate change but also empower them to act as climate agents in their communities through their schools.

CGF has approved \$660,000 for its first grant program to advance green financing in Armenia. The grant will be used to attract best international and local experts and consultants in a bid to analyze the current state of green financing in Armenia and to survey international best practices. The processes will also include surveys of the experience of the beneficiary financial institutions and the implemented projects. The project fulfillment will enable developing a comprehensive roadmap.

The "EU Green Agriculture Initiative" project was officially launched on 4 March. The project will support the development of sustainable, inclusive, innovative and market-based agribusiness particularly in the northern provinces of Armenia – Shirak, Lori and Tavush. The project has a budget of € 11.7 million and will be implemented over the course of three years.

## Azerbaijan

**Water resources.** In April, the President of Azerbaijan formed a Special commission for water resources in order to ensure their efficient use and improve water management and coordination of activities in the water sector.

A Plan of measures of rational water use for 2020-2022 was adopted by Presidential Decree. According to this Plan, the Government is to approve the water management balance on annual basis and the rules of water charging and ensure accounting of water use.

**Water supply and sanitation.** For 2020, 443 sub-artesian wells were planned to be drilled to better watering of 10.707 thousand ha of agricultural land. 235 wells were drilled, and 45 are used by water consumers. In order to improve irrigation of cropland and homestead plots and meet demand for drinking water, more than 378 sub-artesian wells were drilled in 316 settlements in 29 districts, with the population of over 892 thousand. Water supply and sanitation projects have been completed in 31 cities and districts.

The "Azərsu" company (national water operator) started laying water supply lines in Baku suburbs, including Binagad and Suraxhan districts, Sabunchi, Zabrat, and Balakhany settlements in Sabunchi district.

**Energy.** The State Agency for Renewables was established at the Ministry of Energy. As informed by the Ministry, power production in 2020 decreased by 1.1% (to 25.8 billion kWh) as compared to 2019. In 2020, hydropower plants produced 1.07 billion kWh (31.4% drop), and 343.5 MWh were produced from renewables (wind – 96.1 MWh, solar – 46.9 MWh, solid wastes – 200.6 MWh).

An agreement was reached with the French company "Qairo" for implementation of joint alternative energy projects. Investments will be made in 100 to 500-600 MW projects.

The Ministry of Energy signed contracts with ACWA Power (Saudi Arabia) for construction of 240-MW wind station and Masdar (UAE) for 200-MW solar station. The projects totaling \$400 million will be implemented in two years.

**Environment.** A large-scale digital map of environmental risks in Azerbaijan was generated. The map shows the sources of natural phenomena that pose environmental risk (mudflow, landslides, floods), the demographic and anthropogenic load, surface water and groundwater pollution, level variations in the Caspian Sea, soil salinization, climatic risks (drought, heavy frost, heat, hot dry wind, etc.), urban development and earthquakes. As mapped, 37.2% of the country territory is at very low risk; 19.8%, at low risk; 23.9%, at moderate risk; 12.4%, at high risk; and, 6.8%, at very high risk. The map can be useful for infrastructure projects, construction, residential planning, and insurance.

**International cooperation.** On 1 January, Azerbaijan assumed the [Chairmanship](#) of the [Energy Charter Conference](#) for 2020 with Parviz Shahbazov, the country's Minister of Energy taking over as Chair. Rotating on an annual basis, the Conference is the highest decision-making body of the [Energy Charter process](#).

<sup>89</sup> International Finance Corporation



Water experts from Azerbaijan and the European Environment Agency started holding [online capacity development training](#) for managing EcoPortal<sup>90</sup>.

## Belarus

**Water resources.** Within the framework of the UNECE pilot application on strategic environmental assessment for the draft national 2030 Strategy of Water Resources Management in the context of Climate Change<sup>91</sup>, a group of Belarusian experts jointly with international experts has developed the draft Strategy of Water Resources Management.

The second meeting of the Pripyat Basin Council was held on 16 October in the city of Mozyr. During the meeting, where the draft Pripyat RBMP was presented, the Council assessed the possibility of surface irrigation in Kalinkovitch and Khoinik districts for adaptation of agriculture, considered the water-regulation actions along the Ubort River in Gomel province, analyzed the effectiveness of collection and treatment of wastewater runoff formed in Mozyr, and discussed measures for prevention of pollution of the Pripyat River and the Council's work plan for 2021.

**Water supply and sanitation.** Agreements were signed between the Ministry of Housing, NDEP<sup>91</sup> and E5P<sup>92</sup> on mobilization of grant funds for the Belarus Water Framework Program, Phase 3. The activities will facilitate critical water and wastewater management improvements in the participating cities, such as Kletsk, Lyuban, Fanipol, Baranovichi, Bereza, Zhlobin, and Shklov (implementation period – 2020-2024).

In 2020, about 120 iron removal stations were put into operation and conditions of artesian wells were checked in Minsk province.

**Energy.** Under the State Energy Efficiency Program for 2016-2020, by the third quarter of 2020 280.5 MW of renewables-based plants were put into operation in Belarus. By 1 July 2020, the total installed capacity of RES-based plants reached 418 MW; this is five times more than in 2014 (88 MW). The largest share in RES is taken by solar plants with the total capacity of 159 MW (38%), followed by wind plants – 109.1 MW (26%) and hydropower – 96.1 MW (23%). The share of biogas plants was 9.2% (38.6 MW) and that of biomass power plants – 3.7% (15.5 MW).

**Climate change.** The Long-term Low Greenhouse Gas Emission Development Strategy of the Republic of Belarus until 2050 is in the process of drafting. The Strategy will include measures for the reduction of generation of thermal and electric energy, improvement of energy efficiency, and relevant actions for industrial, transport, building and housing sectors.

Emissions of polluting substances into the atmosphere have decreased by 2.2% since 2015 in Belarus.

In 2020, all environmental monitoring clubs and other institutions involved in the educational project "Green Schools" got special equipment, such as snow gauges, weather stations, pH-meters, conductivity meters, gas detectors and rainfall collectors. Besides, an online platform for data collection and processing – [eco-school.by](#) – was launched.

**SDGs.** The Interdepartmental Expert Group on Environmental Dimension of SDGs had a meeting on 12 November to discuss the general trends of SDG indicators development in Belarus, the results of monitoring, key aspects and priorities for the achievement of SDG environmental indicators in 2021-2025.

**International cooperation.** The Governments of Belarus and Poland signed a cooperation agreement on transboundary water protection and use in Białowieża, Poland on 7 February.

VI meeting of the Interstate Environmental Council of the CIS member states was held in Minsk on 27 August. The participants exchanged on ways they lessen environmental pollution and improve the environmental situation, use modern IT in environmental sector and discussed the draft plan of joint actions of the CIS Electric Power Council and the Interstate Environmental Council and other issues.

Belarus and China signed an agricultural cooperation agreement on the project of an international cooperation industrial park (Caofeidian zone) under the One Belt, One Road Initiative.

## Georgia

**Water supply and sanitation.** ADB has approved \$150 million in loans to improve water supply and sanitation services in Georgia and help the government craft an integrated approach to the sector's development.

A loan agreement worth €130 million was signed with KfW<sup>93</sup> for reconstruction and modernization of public utilities in Bagdadi, Vani, Samtredia and Kazbegi.

The Algeti reservoir served for industrial and drinking purposes of dozens of villages in Marneuli and Tetrtskaroy districts is to be modernized. The cost of the project, which will improve irrigation water supply for thousands of hectares in the Kvemo Kartli region, is estimated at \$300 thousand.

**Energy.** On 12 February, the EU4Energy High-Level Policy Talks event took place in Tbilisi to discuss develop-

<sup>90</sup> A platform containing water datasets, indicators, dynamic maps and reports. The platform allows national water agencies to exchange and share data and information

<sup>91</sup> Northern Dimension Environmental Partnership

<sup>92</sup> The Eastern Europe Energy Efficiency and Environmental Partnership

<sup>93</sup> German government-owned development bank

ments in the country's National Energy and Climate Plan. The focus of the discussion was the design of the Climate Action Plan and the preparation of the nationally determined contributions in accordance with the Paris Agreement.

Georgia successfully adopted the Law on Energy Efficiency and the Law on Energy Performance of Buildings. The new legal acts will allow the country to make energy savings of 14% by 2025 and help to transit to a green economy.

The selection of an investor for the project of construction of the first 5-MW solar power plant in the village of Udabno will begin at the end of 2020. The plant will produce 7 MWh a year. The project cost is estimated at \$4 million.

Repair operations have been completed in the tunnel of the largest hydropower plant in Georgia – Inguri.

**COVID-19 recovery.** Georgia has agreed the anti-crisis program with IMF. The Programs provides for the support of tourism, agriculture (taking care for village and farmers), education, and the construction and development sector that employs more than 120,000 thousand people.

**International cooperation.** As part of the EU-funded project “European Union Water Initiative Plus for Eastern Partnership Countries” (EUWI+), experts from Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine gathered in the Georgian capital Tbilisi on 26-27 February to discuss the river basin management plans in the Caucasus region.

UN and Georgia have signed the Sustainable Development Cooperation Framework 2021-2025. The document sets the vision on such outcome areas as effective, transparent and accountable institutions, equal and inclusive access to quality services, inclusive economy and human capital development, human security and resilience, environment and climate change.

Georgia's carbon dioxide emissions amount to over 17 million tons per year (over 2 tons per capita), which is around 0.03% of global greenhouse gas (GHG) emissions. Georgia's Low-Emission Development Strategy is expected to be finalized by August 2021. EU and UNDP will help Georgia to create a low-emission future.

## Moldova

**Water resources.** The third meeting of Steering Committee of the GEF Project “Enabling transboundary cooperation and integrated water resources management in the Dniester River Basin” was held on 15 April. The participants discussed the transboundary diagnostic report, the legal status of the Strategic Action Plan and how to adopt it, and the proposal on cooperation with UNIDO in order to optimize the “Start up Eco-Dniester”.

As part of the EUWI+ Project, the Steering Committee of the National Policy Dialogue on integrated water resources management met at its sixth meeting and considered progress made by Moldova on modernization of the national water policy in part of access to water supply and sanitation and improvement of border cooperation (19 November, Chisinau).

The Ministry of Agriculture, Regional Development and Environment organized a work meeting to address the issues related to excessive pollution of rivers by untreated wastewater, the illegal construction in river zones and required actions for river restoration.

The Government of Moldova has approved: (1) Provision on the use of groundwater for drip irrigation of horticultural crops. For better monitoring of groundwater, 63 automatic monitoring sensors were installed in a number of zones; (2) Program of land reclamation for sustainable soil management for 2021-2025 and the related Action Plan.

**Water supply and sanitation.** The new rules for design and construction of small water supply and sanitation systems have been approved.

An additional grant agreement for €10 million has been signed with KfW for the project “Improvement of the water infrastructure in Central Moldova”. It would ensure the reorganization of water operators in Straseni and Calarasi districts.

In order to improve energy efficiency of water supply by 30%, 26 submerged pumps and 2 pressure buildup stations were installed in 10 settlements all over the country.

**Climate change.** UNDP with financial support from Sweden will implement a grant program “Sustainable and resilient communities through women empowerment” (\$2.4 million) in the regions of Moldova. 30 communities will be assisted in identifying, formulating, planning, and implementing initiatives to reduce environment degradation and increase resistance to climate change at local level.

The Ministry of Agriculture, Regional Development and Environment and the Academy of Public Administration signed a Memorandum of Understanding aimed at developing a green economy and environmental management system on the 5<sup>th</sup> of June.

The Republic of Moldova has started the process of updating its low-emission development strategy by 2030. The strategy will be modified based on the updated, more ambitious greenhouse gas (GHG) reduction targets set in the country's nationally determined contributions as per the Paris Agreement.

The consultations on adoption of the more robust climate change monitoring, verification and reporting system (MRV) and a new law that would gra-

dually abolish the use of so-called "F-gases" were held on 17 December among the representatives of public institutions, civil society, academia, business and environmental journalists.

In July, the Minister of Agriculture of Moldova presented a project on the establishment of a National Commission for Climate Change to achieve better coordination of mitigation actions.

**International cooperation.** Experts from Moldova and Ukraine discussed formation of a transboundary union on the Dniester River.

EU supported the second public consultation on Danube–Prut and Black Sea River Basin Management Plan in Moldova. The aim of the consultation is to support the country's water management authorities in the development and implementation of river basin management plans, following the EU Water Framework Directive principles.

## Russia

**Water resources.** As a result of drought in Crimea, 7 reservoirs have dried up and one of the longest rivers in the peninsula – Suuk-Su – has gone low.

From 12 to 18 July, the federal state-owned institution "Water Research and Information Center" and the non-profit fund "Bez Rek kak Bez Rouk" (meaning *One can't do without rivers*) carried out a research expedition in the Volga upper reaches (extended to 370 km in the Tver region) in order to assess microplastics content in river water and identify potential pollution sources.

The Federal project on the improvement of Siberian and Ural rivers "Digital Ob-Irtysh Basin" was presented at the All-Russian Water Congress. It is expected that as early as in 2021 first automatic water monitoring stations will be installed in the Uskat River Basin as part of the pilot project "Digital Uskat".

An innovative blended material technology for repair and rehabilitation of metallic water conduits at HPPs was developed by researchers of the "Vedeneev VNIIG", the largest scientific center in Russia. This technology will ensure reliable operation of water conduits and extend their service life.

**Agriculture.** As part of the sectoral program "Land Improvement System in Russia" and the federal project "Agroindustry output export", agricultural producers received federal subsidies for reclamation work.

An 'innovative agricultural valley' is created at the Crimea Federal University for training highly skilled personnel. This 'innovative valley' will include a modern biotechnology cluster, a cyber-agronomy center and a production cluster.

The Farmer School federal education project has been launched. The aim was to teach all who wish in how to start and do successful agricultural business.

To facilitate digitization of the Russian agricultural sector and provide assistance to farmers in managing agricultural inputs and farming business as a whole, a digital agrosystem started to be developed. This system will have a single interface, algorithms for analysis and processing of big data, mobile applications from Digital Agro, a system of autonomous agricultural equipment control – Cognitive Agro Pilot – on the base of AI and a digital platform "Agro-signal" for collection of telemetry data.

## Federal Programs and Projects in 2020

As part of the Federal Special Program "Water Development in the Russian Federation in 2012-2020", the share of low-safety hydraulic structures decreased to 49.1% as a result of reconstruction, and the modernized and new gauging stations and laboratories of the Federal Hydrometeorological and Environmental Monitoring Service's observation network accounted for 41.3% of the total needs. 71 hydraulic structures has been rehabilitated and 94 modernized gauging stations and laboratories have been re-opened. Within the framework of the Federal Program "Protection of Lake Baikal and the Social and Economic Development of Lake Baikal Nature Territory in 2012-2020", the State environmental monitoring covered 78% of Lake Baikal nature territory and provided highly reliable, timely and full data through reporting of authorized state bodies; the length of engineering protection structures accounted for 2.46% of the total extension of lake shores to be protected.

A number of federal sub-projects were implemented as part of the **National "Ecology" Project** in 2020. Those included (1) "Clean water": construction or reconstruction of 171 water supply and production structures (100 ones in 2020); (2) "Environmental improvement of the Volga": cleaning of river reaches stretching to 17.38 km in Astrakhan and Volgograd regions, cleaning and dredging of Gandura and Kirov fish-pass channels (66.26 km), cleaning of water conveyance and discharge canals of spawning grounds in eastern delta of the Volga River (118.636 km), a system of hydraulic structures to provide additional watering of the Volga-Akhtubinsk floodplain, control and supervision activities aimed at detecting and suppressing unauthorized discharges of polluted wastewater into the Volga River and its tributaries, information and analytical support of the federal project; etc. (3) "Preservation of unique water bodies": actions on restoration and environmental rehabilitation of water bodies, on environmental improvement of lakes and reservoirs, on cleaning of banks from garbage and wood scrap. The cleaned bank extension totaled 42,150 km.

**Source:** The Russian Federation National Environmental Report for 2020



**Latest developments in legislation.** A number of legal documents were adopted in 2020. Those included, among others: orders of the RF's Ministry of Agriculture on the approval of the Procedure for certification of irrigation and drainage systems and detached hydrotechnical constructions (No.182 of 9 April) and on the approval of the Rules for operation of irrigation and drainage systems and detached hydrotechnical constructions (No.438 of 31 July); governmental decrees on the approval of the criteria for referencing the sites that have a negative environmental impact to categories I, II, III and IV (No.2398 of 31 December) and the approval of the procedure and terms of work of the liaison officer on agroindustry to promote the agroindustrial interests of the Russian Federation abroad (No. 1210 of 12 August).

**Energy.** The "green" energy sector created from scratch in Russia has already mobilized additional investments in the amount of 177 billion rubles. A decision has been made to extend the renewable energy support program with certain adjustments until 2035.

**International cooperation.** Active cooperation continued in the format of BRICS. A number of topical issues and promising areas of cooperation were discussed on the margins of a meeting of environment ministers and the meetings of the Working Group on Environment. Emphasis was placed on the content of the Environmentally Friendly Technologies Platform (BEST Platform) aimed at developing environmental PPPs (July). At the initiative of Russia, a new vector of development under the umbrella program "BRICS Clean Rivers" was set, with the focus on plastic litter in the aquatic environment.

**Transboundary water cooperation.** Kazakhstan and Russia discussed sharing of transboundary rivers and approved a common roadmap for active research cooperation in large river basins, such as the Zhaiyk (Ural), the Irtys and others. The Programs of Russian-Kazakhstan cooperation for preservation and restoration of ecosystems in the transboundary Ural River and Irtys River basins were signed for 2021-2024.

The following meetings were held in 2020: XVI meeting of the Joint Coordination Commission and the Joint Working Group of Experts on Russian-Chinese monitoring of transboundary water quality. The results of joint work in 2020 and the program of measures for the next year were discussed at the meeting; XXIII meeting of the Joint Russian-Estonian Commission for Protection and Rational Use of Transboundary Waters, during which the current issues of cooperation were addressed; 3<sup>rd</sup> meeting of the Russian-Mongolian Working Group for package treatment of the issues related to planned hydro-technical construction in the Selenga catchment in Mongolia (25 December). The final protocol of the 58<sup>th</sup> session of the Joint Finnish-Russian Commission on the Utilization of Frontier Water was signed in November 2020.

**COVID-19 recovery.** In the midst of lockdown, many community organizations has put forward the green recovery principles, i.e. such economic revival plan that would rely on sustainable renewables development, improved life quality and health rather than on increased mining of hydrocarbon fuel.

On 2 June 2020, the Russian Government launched the Plan of Economic Recovery that focused on small business through reduced tax burden and repayment holidays and on mobilization of new investments. Earlier, non-governmental organizations applied to the Chairman of the Governmental Commission for Economic Resilience A. Belousov with the statement that the proposed Plan should be based on principles that ensure climate and environmental protection and transition to carbon neutral development path. After publication of the document, Greenpeace claimed that the Plan of Economic Recovery did not take into account climate change and the global trend to low-carbon development, neither contained concrete measures for green economic development and reduced anthropogenic load on the natural environment. Given the recent Norilsk tragedy, where 20,000 ton of oil products spilled over water and soil, the constant public protests in coal mining regions, and the global course towards green energy, the Government should revise measures for economic recovery by paying much more attention to environmental protection. The recently established platform "Green deal for Russia" will help to accumulate all community proposals and submit them to the Government in more effective manner.

Though coal burning is the main cause of climate change, posing a threat to human health, the adopted (on 9 June) Energy Strategy of the Russian Federation for the period until 2035 makes provisions for the support and development of the coal industry.

## Ukraine

**Water resources.** In 2020, several Basin Councils held their meetings: (1) the Preazovia rivers. Development of RBMP in 2020 and hydromorphological monitoring of surface water were discussed among other issues during the meeting; (2) the Pripyat River. The Council's members listened to the progress on development of the Program of subbasin surface water monitoring and discussed the main problems of small rivers and implementation of projects and programs for the improvement of the environmental status of water resources; (3) the Seversky Donets and lower Don. The agenda included the development of Don RBMP – the strategic document on the key goal of the EU Water Framework Directive, namely the achievement of "good" environmental status of water; (4) the Southern Buh River. The problems that would hamper the achievement of "good" status of river water in the nearest future were analyzed. Additionally, cleaning of the tributaries of small rivers and raising the level of

the Alexandrov reservoir to the design mark of 20.7 m as one of the ways to solve the problem of water shortage in the lower reaches were discussed.

As part of the EUWI+, Ukrainian and European experts demonstrated the progress on drafting RBMP for the Dnepr – the largest river basin in Ukraine – on 18 October. They also discussed the key water and environmental problems in the basin, the results of relevant public consultations, and draft sections of the Dnepr RBMP.

The Cabinet of Ministers approved the Plan for implementation of Irrigation and Drainage Strategy 2030 in October 2020.

**Latest developments in legislation.** A number of legal acts were adopted in 2020, including: the law on amending the Land Code of Ukraine and other legal acts related to land use planning, the law on agricultural cooperation that governs legal relations in establishment, functioning and termination of agricultural cooperatives in Ukraine, the law on national infrastructure of geospatial data that sets free access for citizens and economic entities to available information, the draft law for the development of a single information system – State Agricultural Registry – and improvement and extension of state support to agricultural producers, and the decree on transferring agricultural land to communal ownership of communities.

**Energy.** The European largest onshore wind power project (792.5 MW) is to be built in the vicinity of Zaporozhe. The project, with the total investments of €1.2 billion, will be completed in 2022.

Hydropower Unit 6 of the Kyiv Pumped-Storage Power Plant (PSP) was [back in operation](#) after

reconstruction activities implemented with financial support from EIB and EBRD. Thanks to the newly installed turbine and generator, the total capacity of the unit increased from 41.5 MW to 46.8 MW (an increase of 13%) and its service life was extended by 40 years.

**International cooperation.** The State Water Resources Agency and UNICEF has signed a Memorandum of Understanding to achieve good environmental status of water resources and ensure access to clean water.

A working meeting was held online as part of work on the Agreement between Ukraine and Hungary on frontier water management. The authorized representatives of both states have discussed the implementation of the Concept for rehabilitation of the Verke and Sipa canals for watering of the joint Beregovskaya system.

The XVIII International Exhibition AQUA Ukraine-2020 was organized on 10 to 12 November in Kiev. The Exhibition is held every year and usually is comprised of different events for wider circle of experts.

**COVID-19 recovery.** The Economic Stimulus Program to overcome the consequences of the COVID-19 pandemic was approved, but with the condition that it would be further finalized. One point of the Program proposes to keep within reasonable national targets on CO<sub>2</sub> emission reduction (27 May, meeting of the Government). The law that cuts spending on energy efficient and environmental measures by nearly 96% and, at the same time, increases financing for the coal industry under the guise of anti-COVID-19 measures was went into effect on 18 April. The Ukrainian office of [350.org](#) [launched a petition](#) for a Green Deal for Ukraine.

## 11.6. Middle East

**Turkey's Ilisu Dam starts generating electricity at full capacity.** The Ilisu Dam, located on the Tigris River in the southeastern province of Mardin, is expected to contribute 2.8 billion Turkish liras (366 million U.S. dollars) a year to the country's economy. With a total installed power of 1,200 megawatts, the dam will produce an average of 4,120 GWh of energy annually. Turkey was facing a serious drought and water shortage in 2020 due to insufficient rainfalls, and dams in many parts of the country are drying up at an alarming rate. The construction of Ilisu, the second-largest dam in the country in terms of filling volume, started in 2006, but following several setbacks, the first turbine only became operational in May 2020. Meanwhile, construction of the dam had [disastrous social, cultural and ecological impacts on the 12,000 years old town Hasankeyf](#) which is one of the most magnificent cultural and natural heritage sites at our planet.

Source: [www.xinhuanet.com/english/2020-12/24/c\\_139616723.htm](http://www.xinhuanet.com/english/2020-12/24/c_139616723.htm)

**Iraq will face severe water shortages** if agreements are not forged with neighboring Turkey over Ankara's irrigation and dam projects that have decreased river inflows to Iraq's parched plains. Descending from the mountains of southeast Turkey and coursing through Syria and then Iraq before emptying out in the Persian Gulf, the Tigris and Euphrates rivers are Iraq's main water source and essential for agriculture. But tensions have mounted over the years as Turkey pressed ahead with dam projects. Measurements of inflows from the border with Turkey in northern Iraq were 50% below average in 2020 in addition to a reduction in annual rainfall by 50% compared to last year. The Ilisu Dam on the Tigris, part of a Turkish megaproject, is at the heart of the dispute. The dam is to be one of 22 power dams in southeastern Turkey.

Negotiations over water allocations resumed when Ankara began to make progress on plans to fill the Illisu reservoir last year but have since stalled.

Source: [www.waterpolitics.com/2020/07/18/iraq-faces-severe-shortages-as-river-flows-drop/](http://www.waterpolitics.com/2020/07/18/iraq-faces-severe-shortages-as-river-flows-drop/)

**Kurdistan to be dammed?** According to the UNDP, the water discharge of the Tigris-Euphrates Rivers is set to decrease by 50% between 2009 and 2025. To tackle the issues of climate change, upstream dam construction and mismanagement, the strategic goal of the Kurdistan Regional Government (KRG) is to construct a large number of dams across its territory, with the aim of storing water for irrigation and hydropower and achieving water self-sufficiency. An astonishingly 245 dams have been proposed by the KRG since 2014, on top of 17 large and moderate existing dams. Documenting the KRG's dam construction practices, Save the Tigris has published the report "Damming the Kurdistan Region of Iraq: Structural gaps in the KRG dam construction policies", to share information on the development of dam infrastructure in the Kurdistan Region and provide an alternative view on the generally supposed social and economic benefits of dams, and shed a light on the high costs for humans and environment. The Kurdistan Region contains many examples of dam failure. There is little or no debate inside the KRG about the destructive impacts of its proposed dams. Detailed information of dams is often missing due to lack of transparency on behalf of authorities and the public is not involved in the process of dam development. This publication aims to fill that gap, by providing an analysis of planned dams and the political economy of dam construction. The publication concludes with a list of possible alternatives to dam construction for policymakers.

Source: [www.transrivers.org/2020/3120/](http://www.transrivers.org/2020/3120/)

**The World Bank said it had canceled \$244 million in undisbursed funds for the Bisri Dam project in Lebanon.** In a statement, the World Bank said it had notified the Lebanese government about its decision, which takes effect immediately. It said it has also repeatedly underscored the need for "an open, transparent and inclusive consultative process." The World Bank committed \$474 million to fund the project, of which \$244 million have not yet been disbursed. Initially approved by Lebanon's government in 2015 at a total cost of \$617 million, the dam had long sparked criticism from environmental activists, who also claimed that many cheaper and less destructive ways to supply water to Beirut have not been assessed by dam proponents. Concerns about large infrastructure projects have spiked since the massive

port explosion in Beirut on August 4 that killed more than 190 people. The World Bank began raising concerns about the slow pace of the project to build the large dam in the Bisri Valley only in January 2020. The Bank said the Lebanese government had failed to address questions about an ecological compensation plan and arrangements for operations and management of the dam.

Source: [www.transrivers.org/2020/3151/](http://www.transrivers.org/2020/3151/)

**Water levels in Iran's southern dams rising after years.** Deluge in the past few days in southern and south-eastern Iran has inflicted damages on cities, villages and roads and endangered lives. But at the same time it has helped fill dams that saw little water in years. There are 30 dams in Sistan-Baluchestan Province, with a capacity of around 2 billion cubic meters, of which 64% is full now.

Source: <https://theiranproject.com/blog/2020/01/15/water-levels-in-irans-southern-dams-rising-after-years/>

**Water scarcity in occupied Palestinian territories** continues to put health and agriculture at risk as conflict over water supplies between Jordan, Israel, and Palestinians flares. Palestinians depend on Israeli-controlled underground water sources and rain, and in order to solve scarcity, the Palestinian Authority says the territories need control. Water has been an ongoing conflict between Israel and Palestine for more than fifty years. In 1967, Israeli officials outlawed the construction of Palestinian water infrastructure in key parts of the territories of Gaza and the West Bank without a permit from the Israeli army, which has become incredibly difficult to receive. This ruling limited the installation of new water wells and pumps, and the reconstruction of existing operations. The ruling also denies Palestinians access to the Jordan River, fresh water springs, and any control of the collection of rain water. This also affects farming. According to the director general of the Palestinian Hydrology Group, Palestinian irrigated areas have dwindled from 27 percent on the West Bank to 3.4 percent. He predicts that within a decade there will be no more irrigated lands due to water scarcity. Palestinian farmers and villagers also struggle with water scarcity due to the destruction of water pipelines by the Israeli army. Water talks between Israel, Jordan, and the Palestinian Authority have largely stalled in the last few years as tensions over future Israeli annexation of both the West Bank and the Jordan Valley ramp up.

Source: [www.circleofblue.org/2020/wef/hotspots-h2o-water-scarcity-in-palestinian-territories-puts-farming-at-risk/](http://www.circleofblue.org/2020/wef/hotspots-h2o-water-scarcity-in-palestinian-territories-puts-farming-at-risk/)



