



Section 12

Thematic
Reviews

12.1. Climate Change

State of the Climate Indicators in 2018

This publication marks the twenty-fifth anniversary of the [WMO Statement on the State of the Global Climate](#), where the following key climate indicators are provided.

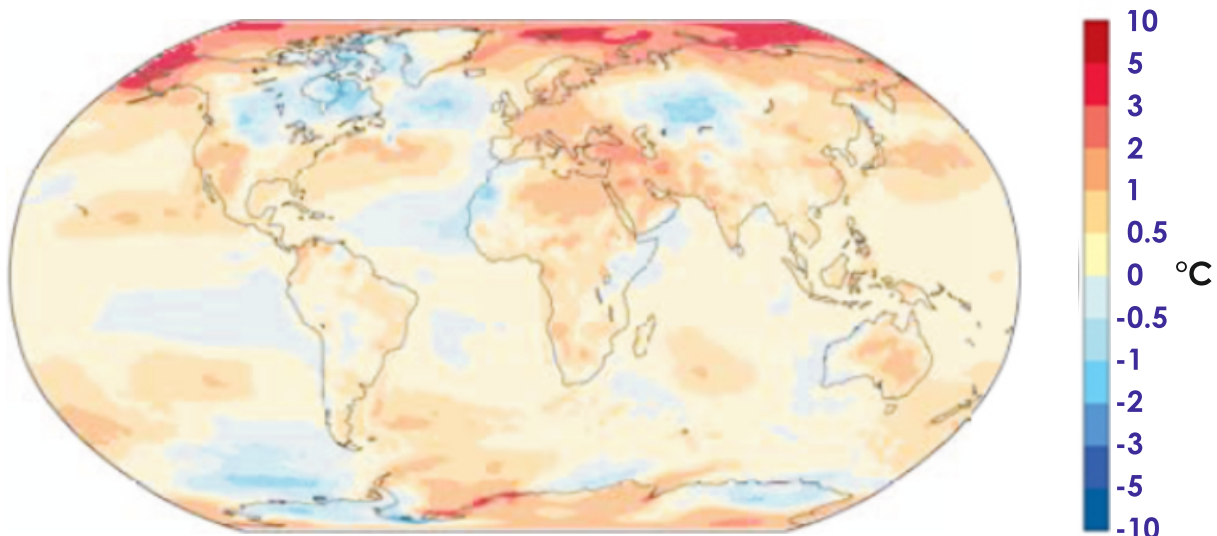
Temperature. The global mean temperature for 2018 is estimated to be 0.99 ± 0.13 °C above the preindustrial baseline (1850–1900). The year 2018 was the fourth warmest on record and the past four years – 2015 to 2018 – were the top four warmest years in the global temperature record. The year 2018 was the coolest of the four. In contrast to the two warmest years (2016 and 2017), 2018 began with weak La Niña conditions, typically associated with a lower global temperature. Above-average temperatures were widespread in 2018 (see Figure below). According to continental numbers from NOAA, 2018 was ranked in the top 10 warmest years for Africa, Asia, Europe, Oceania and South America.

Greenhouse Gases and Ozone. In 2017, GHG concentrations reached new highs. Real-time data from a number of specific locations, including Mauna Loa (Hawaii) and Cape Grim (Tasmania) indicate that they continued to increase in 2018. It is anticipated that a new record high of 36.9 ± 1.8 billion tons of CO₂ was reached in 2018. Ozone depletion started relatively early in 2018 and remained above the

long-term average until about mid-November. The ozone hole area reached its maximum for 2018 on 20 September, with 24.8 million km². Despite a relatively cold and stable vortex, the 2018 ozone hole was smaller than in earlier years with similar temperature conditions, such as, for example, 2006. This is an indication that the size of the ozone hole is starting to respond to the decline in stratospheric chlorine as a result of the provisions of the Montreal Protocol.

Oceans. Ocean heat content is at a record high and global mean sea level continues to rise. Sea-surface waters in a number of ocean areas were unusually warm in 2018, including much of the Pacific. The oceans absorb more than 90% of the energy trapped by greenhouse gases and 25% of anthropogenic CO₂ emissions, making them warmer and more acidic. For each 3-month period until September 2018, ocean heat content was the highest or second highest on record. 2018 set new records for ocean heat content in the upper 700 m (data since 1955) and upper 2,000 m (data since 2005), exceeding previous records set in 2017. Global Mean Sea Level from January to July 2018 was around 2 to 3 mm higher than the same period in 2017 and the highest on record. Ocean acidification continues – global pH levels continue to decrease.

Surface-air temperature anomaly for 2018 with respect to the 1981–2010 average



Source: ECMWF ERAInterim data, Copernicus Climate Change Service

Cryosphere. Arctic sea-ice extent was well below average throughout 2018 and was at record low levels for the first two months of the year. The annual maximum occurred in mid-March and was the third lowest on record. The minimum extent in September was the 6th smallest on record, meaning that all 12 smallest September extents have been in the past 12 years. Antarctic sea-ice extent was also well below average throughout 2018, with its annual maximum in late September and early October. Greenland witnesses the largest surface mass budget (SMB) net gain since 1996 and the highest snow fall since 1972. Despite the gain in overall SMB in 2017 and 2018, it is only a small departure from the trend over the past two decades, which has witnessed the loss from the Greenland ice sheet of approximately 3,600 gigatons of ice mass since 2002. Preliminary results for 2018, based on a subset of glaciers, indicate that the hydrological year 2017/18 was the thirty-first consecutive year of negative mass balance, with a mass balance of -0.7 m water equivalent. The cumulative loss of ice since 1970 amounts to 21.1 m water equivalent. During 2018, the average northern hemisphere snow cover extent was 25.64 million km². This was 0.77 million km² greater than the 1981–2010 average.

Precipitation. Although weak La Niña conditions were present at the beginning of 2018, later changing to neutral, the usual effects on precipitation were absent. In 2018 large positive precipitation anomalies with respect to a 1951–2010 climatology, in some places above the 90th percentile, were observed in some regions in northern and eastern Africa, the Arabian Peninsula, central and south-east Asia and the Malay Archipelago, south-western Australia, New Zealand and eastern North America.

Extreme Weather

Tropical Storms. The tropical cyclone season in the northern hemisphere was active in 2018. There were 74 northern hemisphere cyclones in 2018, well above the long-term average of 63. Two of the strongest tropical cyclones were Mangkhut, which impacted the Philippines, Hong Kong SAR and China, and Yutu, which brought devastation in the Mariana Islands.

Flooding, Extreme Rainfall and Extratropical Storms. In August, the southwest Indian state of Kerala suffered the worst flooding since the 1920s, displacing more than 1.4 million people from their homes and affecting more than 5.4 million. Large parts of western Japan experienced destructive flooding in late June and

early July, killing at least 230 people and destroying thousands of homes. Flooding affected many parts of east Africa in March and April. This included Kenya and Somalia, which had previously been suffering from severe drought, as well as Ethiopia and northern and central Tanzania. An intense low-pressure system in the Mediterranean Sea in late October brought flooding, high winds and loss of life.

Heatwaves and drought. Large parts of Europe experienced exceptional heat and drought through the late spring and summer. Eastern Australia experienced significant drought during 2018, especially New South Wales and southern Queensland, with much of the region receiving less than half its average rainfall for the period from January to September. Severe drought affected Uruguay, and northern and central Argentina, in late 2017 and early 2018, leading to heavy agricultural losses. Both Japan and the Republic of Korea saw new national heat records (41.1 °C and 41.0 °C, respectively.). Oman reported one of the highest known minimum overnight temperatures of 42.6 °C in June. Algeria saw a new national record of 51.3 °C in July.

Cold and Snow. One of the most significant cold outbreaks in recent years affected Europe in late February and early March. In southern Africa, Lesotho received an unusual snow event in mid-August with 5–30 cm of snow accumulation across the nation. In South America, two rare snow events occurred in Chile, Bolivia, Uruguay, and Argentine.

Wildfires. Major wildfires affected Athens (Greece) on 23 July, with many fatalities. British Columbia in Canada broke its record for the most area burned in a fire season for the second successive year. California suffered devastating wildfires, with November's Camp Fire being the deadliest fire in over a century for the U.S.A.

Severe Storms. The most significant European windstorm of the 2017–18 winter was Friederike. An intense low-pressure system in the Mediterranean Sea in late October brought flooding and high winds to several countries. Italy was the worst affected. The severe weather season in the United States had below-average levels of activity about 10% below the 1991–2010 average.

Main Conclusion. We are not on track to meet climate change targets and rein in temperature increases.

Source: WMO,
https://library.wmo.int/index.php?lvl=notice_display&id=20799#.XVT3GdSLShu

Paris Agreement on Climate

By 1 January 2018, 185 Parties have ratified the Paris Agreement, which came into force on 4 November 2016. Many countries have drafted their National Climate Action Plans (INDCs) as part of the Agreement¹⁶ and proceed to their implemen-

tation. Among the Central Asian countries, Uzbekistan ratified the Paris Agreement and presented its Nationally Determined Contributions (NDC) in April 9, 2018. The Summary Table on all Central Asian states is provided below.

Major events, reports and significant events

Almost 200 states have agreed on measures to limit global warming in Katowice, Poland, after a two-week marathon of negotiations in December 2018. The state representatives participating at the Conference of the Parties (COP24) agreed on a 156-page rulebook on Saturday night, listing measures and controls to limit the global rise in average temperatures to well below two degrees Celsius. International climate policy has once again gotten away with it. With the conclusion of Katowice the implementation of the Paris Agreement can be continued. But far-reaching announcements to increase the ambition of NDC are still lacking. The USA has officially withdrawn from the Paris Agreement; former frontrunners within the EU, such as Germany, France or the United Kingdom, are fighting on various domestic political fronts. Major emerging economies such as China and India are not yet willing to fill this gap. However, the 24th Climate Conference has also showcased encouraging dynamic climate policy development in numerous countries and at the subnational level. Local governments claim a leading role in the implementation of the Paris Agreement and will meet in Heidelberg in early summer to underpin this role.

On 11 July 2018, the UN Security Council held debates on climate-related security risks (for details see Section "[Security Council](#)").

The Global Climate Action Summit was held in September 2018 in San-Francisco. It brought together many non-state and subnational actors actively involved in addressing climate-related problems.

In 2018, the Global Commission on Adaptation (GCA) was launched to bring scale and speed to climate adaptation solutions. It is led by former UN Secretary-General Ban Ki-moon, Bill Gates, Co-Chair of the Bill and Melinda Gates Foundation, and World Bank CEO Kristali-

na Georgieva. It includes 17 convening countries and 28 commissioners, representing all regions and all sectors. The GCA aims to raise awareness of decision makers and the public about the opportunities of increased resilience to climate impacts and natural hazards; ensure that governments and businesses incorporate climate change risks into their social and economic development plans and investments; ensure that adaptation efforts help the world's poorest and most vulnerable; and raise the level of global leadership on the issue. In its first year, the Commission prepared a report explaining why adapting to climate risks and accelerated action is essential, describing new actions that should be taken and what must be done differently, and calling on governments, companies and citizens to act urgently. The GCA will present its findings and recommendations at the UN Climate Summit in September 2019. The Commission also will convene champions, coalitions, the private sector and civil society representatives to advance activities related to food security and rural livelihoods, global supply chains, cities, infrastructure, finance, social protection and nature-based solutions.

Source: <https://sdg.iisd.org/news/global-commission-launches-with-calls-to-accelerate-climate-adaptation/>

In October 2018, the UN Intergovernmental Panel on Climate Change (IPCC) issued its Special Report on Global Warming of 1.5 °C. It has been described as the most important report ever published in the 30-year history of IPCC and an "ear-splitting wake-up call to the world." The new report made headline news around the world with its stark message that limiting warming to 1.5 °C would require unprecedented transitions in all aspects of society. The report stresses the huge benefits to human welfare, ecosystems and sustainable economic development in keeping warming to 1.5 °C compared to 2 °C, or higher.

¹⁶ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

Summary Table on International Climate Commitments of the Central Asian Countries

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
United Nations Framework Convention on Climate Change (UNFCCC): approved on 9 May 1992; came into force on 21 March 1994					
Signing	08.06.1992				
Ratification/ accession	17.05.1995	25.05.2000 (a)	07.01.1998 (a)	05.06.1995 (a)	20.06.1993 (a)
Kyoto Protocol to UNFCCC: approved on 11 December 1997, entered into force on 16 February 2005					
Signing	12.03.1999			28.09.1998	20.11.1998
Ratification/ accession	19.06.2009	13.05.2003 (a)	29.12.2008 (a)	11.01.1999	12.10.1999
National Communications (NC) under UNFCCC					
	1NC – 05.11.1998 2NC – 04.06.2009 3-6NCs – 24.12.2013 7NC – 31.12.2017	1NC – 31.03.2003 2NC – 01.12.2008 3NC – 24.01.2017	1NC – 08.10.2002 2NC – 31.12.2008 3NC – 29.12.2014	1NC – 11.11.2000 2NC – 29.11.2010 3NC – 05.01.2016	1NC – 22.10.1999 2NC – 03.12.2008 3NC – 21.02.2017
National Focal Points under UNFCCC					
	Ministry of Energy Resources	State Agency on Environment Protection and Forestry	Agency for Hydro-meteorology of the Committee for Environment Protection	State Committee of Turkmenistan for Environment Protection and Land Resources	UzHydromet
Paris Agreement: approved on 12 December 2015, entered into force on 4 November 2016					
Signing	02.08.2016	21.09.2016	22.04.2016	23.09.2016	19.04.2017
Ratification	06.12.2016		22.03.2017	20.10.2016	09.11.2018
Nationally Determined Contributions under the Paris Agreement					
Data	06.12.2016		22.03.2017	21.10.2016	09.11.2018
Content	Unconditional target: (without support) 15% reduction in GHG emissions by 2030 compared to 1990 Conditional target: (with support) 25% reduction in GHG emissions by 31.12.2030 compared to 1990 Details	Unconditional target: (without support) reduction in GHG emissions in the range of 11.49-13.75% below BAU in 2030 Conditional target: (with support) reduction in the range of 29.00-30.89% below BAU in 2030 Details	Unconditional target: (without support) not exceeding 80-90% of the 1990 level by 2030 Conditional target: (with support) not exceeding 65-75% of the 1990 level by 2030 Details	Conditional target: (with support) suspend the growth of GHG emissions by 2030 Details	Conditional target: (with support) decrease specific emissions of GHG per unit of GDP by 10% by 2030 from level of 2010 Details

Sea level will continue to rise well beyond 2100, when it is projected to be 26 to 77 cm higher than the 1986-2005 baseline under a 1.5 °C temperature increase, about 10 cm lower than for a global warming of 2 °C. The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5 °C, compared with at least once per decade with 2 °C. With 1.5 °C, coral reefs are expected to decline by 70-90%, whereas more than 99% would be lost with 2 °C. Pathways limiting global warming to 1.5 °C with no or limited overshoot in temperature above that level would require rapid and far-reaching transitions concerning land, energy, industry, as well as buildings, transport, and cities. Global net anthropogenic CO₂ emissions need to be declined by about 45% from 2010 levels by 2030, reaching net zero around 2050. This means that all remaining emissions must be balanced by the removal of CO₂.

In October 2018, UNEP issued the 9th edition of the [UN Environment Emissions Gap Report](#). It assesses the latest scientific studies on current and estimated future greenhouse gas emissions and compares these with the emission levels permissible for the world to progress on a least-cost pathway to achieve the goals of the Paris Agreement. It includes the following key conclusions:

- Current commitments expressed in the NDCs are inadequate to bridge the emissions gap in 2030.
- Global greenhouse gas emissions show no signs of peaking.
- The gap in 2030 between emission levels under full implementation of conditional NDCs and those consistent with least-cost pathways to the 2 °C target is 13 GtCO₂e.
- Countries need to strengthen the ambition of NDCs and scale up and increase effectiveness of domestic policy to achieve the temperature goals of the Paris Agreement.
- Non-state and subnational action plays an important role in delivering national pledges.
- Fiscal policy reform can play a key role in creating strong incentives for low-carbon investments and reducing GHG emissions.
- Accelerating innovation is a key component of any attempt to bridge the emissions gap, but it will not happen by itself.

Summary:

https://wedocs.unep.org/bitstream/handle/20.500.11822/26879/EGR2018_ESEN.pdf?sequence=10

Yearbook of Global Climate Action 2018. The Marrakech Partnership for Global Climate Action, established at the 22nd session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), aims to mobilize action quickly and to reap the benefits in efficiency and effectiveness that come through partnerships and coordination between different actors. The [Yearbook of Global Climate Action 2018](#) takes stock of what is happening on the ground to reveal progress and opportunities for increased action. The 2018 Yearbook shows that action is increasing, in terms of number, location and scale. Key messages for 2018: Global climate action by non-Party stakeholders is crucial to deliver existing NDCs and raise ambition. Parties and non-Party stakeholders acting together have the potential to put the world on a path to global warming of well below 2°C. To achieve this potential, this Yearbook identifies priorities for Parties in NDC and policy development and on international cooperation. For non-Party stakeholders, priorities include making and delivering on ambitious commitments and working with others to amplify the results. Together, Parties and non-Party stakeholders can deliver new and innovative financial and business models and develop and implement the technological solutions needed to transform to a zero-carbon and resilient economy.

The Global Commission on the Economy and Climate Report. The Global Commission on the Economy and Climate is a major international initiative to examine how countries can achieve economic growth while dealing with the risks posed by climate change. The Commission comprises former heads of government and finance ministers and leaders in the fields of economics and business, and was commissioned by seven countries – Colombia, Ethiopia, Indonesia, Norway, South Korea, Sweden and the United Kingdom – as an independent initiative. The New Climate Economy (NCE) is the Commission's flagship project. It provides independent and authoritative evidence on the relationship between actions which can strengthen economic performance and those which reduce the risk of dangerous climate change.

In September 2018, we released our latest report, *Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times*, which highlights the economic benefits of climate action across five sectors of the economy: clean energy systems, smarter urban development, sustainable land use, wise water management (see details below), and a

circular industrial economy. We are on the cusp of a new economic era: one where growth is driven by the interaction between rapid technological innovation, sustainable infrastructure investment, and increased resource productivity. This is the only growth story of the 21st century. The next 2-3 years are a critical window when many of the policy and investment decisions that shape the next 10-15 years will be taken. While recognizing the shortcomings of current economic models, analysis produced for this Report found that bold action could yield a direct economic gain of US \$26 trillion through to 2030 compared with business-as-usual. Seizing the economic benefits of low-carbon and resilient growth will only be possible if we act boldly over the next 2-3 years.

The Global Commission calls upon economic decision-makers in the public and private sectors to take the following actions immediately:

- First, governments should put a price on carbon and move toward mandatory climate risk disclosure for major investors and companies. The major economies, led by the G20, should put a price on carbon of at least US \$40-80 by 2020, with a predictable pricing pathway to around US \$50-100 by 2030, as recommended by the High-Level Commission on Carbon Pricing. Companies and investors should be required, as a matter of good corporate practice, to disclose their climate-related financial risks and how their business strategy is compatible with the Paris Agreement.
- Second, all economies should place much greater emphasis on investing in sustainable infrastructure as a central driver of the new growth approach. The first step is not about the money. Rather, it is to build stronger leadership and technical capacity to shape robust growth strategies, investment plans, and institutional structures that can align with sectoral policies and facilitate the flow of private investment to sustainable infrastructure.
- Third, the full power of the private sector and innovation needs to be harnessed. Private-public partnerships need to be put in place and capitalized in each major sector to pilot, scale and share learning around the deployment of new low-carbon and climate-resilient techno-

logies. We have plenty of examples about how to do this well (and badly). What is currently lacking is sufficient political and business leadership.

- Fourth, a people-centred approach is needed to ensure lasting, equitable growth and a just transition. It is good economics and good politics. If managed well, the low-carbon transition offers the potential for new opportunities and more equitable growth. In developing and emerging economies, the low-carbon transition provides an opportunity to leap-frog the inefficient and polluting models of the past. All governments should establish clear Energy Transition Plans to reach net-zero energy systems.

Water – A Key Direction. Flowing through every part of our economy, water is a fundamental necessity for lives and livelihoods. Yet the world is not managing water well or making the most of it, due above all to failures of policies, governance, leadership and markets. The existing challenges include inadequate access, poorly managed risks and increasing competition for water resources. Irrigated agriculture already uses around 70% of available freshwater, and the world will need to produce 55-70% more food to feed its people by 2050. With demand in other sectors set to rise by 55% globally over the same period – mainly for electricity generation, manufacturing, and domestic use – competition is set to increase.

Climate change has the potential to amplify extremes and further disrupt the delicate balance between water demand and supply. Better governance, policy, and planning is urgently needed to allocate water resources and the risks and benefits arising from water more equitably, efficiently, and sustainably.

Accelerators:

- Governments should put in place robust water allocation policies and plans that establish the full value of water, protect the poor as well as ecosystems, and factor in population growth and a changing climate. The World Bank estimates that improved policies for water allocation could increase GDP in 2050 by 6% in some regions.
- Businesses should identify water risks, develop water-smart business models, and monitor progress in their operations and supply chains against context-relevant targets. Targets to drive ambition

and innovation should be set contextually, according to the capacity of surrounding river basins to provide water and absorb pollution.

- Water users, including businesses, utilities, public agencies, and households, should collaborate via watershed protection schemes. Improving water management requires finding innovative ways to incentivize collective action, for example, by better allocating benefits and costs.
- Governments and regional organizations should promote tailored policy packages to reduce exposure, minimize losses from natural disasters, and increase resilience, at least cost. A wide range of policies and investments from improving water management to slum-upgrading, land zoning, and titling and investments in early warning, can reduce exposure and vulnerability of people and infrastructure before disaster strikes. Additional policies to improve financial inclusion and establish social safety nets, contingency funds, and insurance can increase resilience. Implemented globally, a comprehensive package of policies for disaster risk reduction and improved resilience could avoid losses of around \$100 billion per year.

Source: https://newclimateeconomy.report/2018/wpcontent/uploads/sites/6/2018/09/NCE_2018_FULLREPORT.pdf

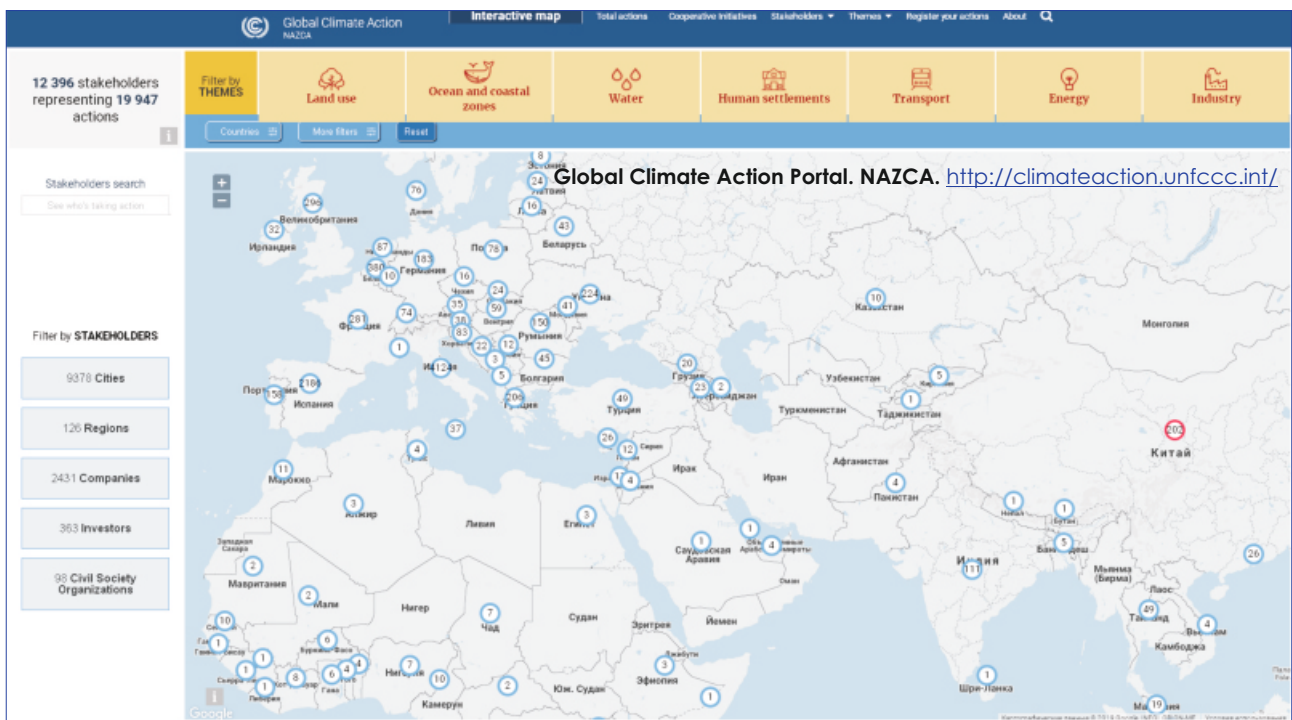
The 50th Nobel Prize in Economic Sciences 2018 was awarded to William D. Nordhaus “for integrating climate change into long-run macroeconomic analysis” and Paul M. Romer “for integrating technological innovations into long-run macroeconomic analysis”.

Source: www.nobelprize.org

In 2018, the revamped version of the Global Climate Action **portal** (NAZCA; <http://climateaction.unfccc.int/>) **dedicated to climate actions of non-state stakeholders** was launched. It is an online platform where companies, cities, subnational regions, investors and civil society organizations can display their commitments to act on climate change focused on seven thematic sections (land use, oceans and coastal area, water, human settlements, transport, energy, and industry). As of March 2019, the portal includes 12,396 stakeholders representing 19,947 actions, of which 10 actions are presented in Kazakhstan, 5 actions – in Kyrgyzstan, and 1 action – in Tajikistan.

Juliana v. United States climate change lawsuit.

The first case of its kind, Juliana v. the United States continued in 2018. 21 American teenagers aged from 9 to 20 filed a lawsuit against the US Government. Their complaint asserts that, through the government's affirmative actions that cause climate change, it has violated the youngest generation's constitutional rights to life, liberty, and property, as well as failed to protect essential public trust resources¹⁷.



¹⁷ Our children's trust. Juliana v. U.S. Climate Lawsuit. www.ourchildrenstrust.org/us/federal-lawsuit/

12.2. Caspian Sea: Special Legal Status

General information

The Caspian Sea is the world's largest inland water body, which lies at the interface of Europe and Asia. The area of the Sea is 393,000 km² and the maximum depth is 1,025 m. 130 rivers flow into the Caspian Sea, 9 of which have a delta-shaped mouth. The Volga, Terek, Sulak, Samur (Russia), Ural, Emba (Kazakhstan), Kura (Azerbaijan), Atrek (Turkmenistan), Sefid-Rud (Iran) are the largest rivers flowing into the Caspian Sea.

The coastline of the Caspian Sea is shared by five riparian states: Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan. There are many oil and gas fields under development in the Caspian Sea region; shipping and fishery (sturgeon, bream, carp, pike-perch, sprat), as well as caviar extraction and seal hunting are also very well-developed.

In the Soviet times, activities in the Caspian Sea were regulated by the Soviet-Iranian treat-

ties of 26 February 1921 and 25 March 1940. After the collapse of the Soviet Union, the status of the Caspian Sea was the subject of unresolved disagreements related to division of the Caspian shelf resources – oil and gas, and biological resources as well. For a long time, the riparian states have been negotiating the status of the Caspian Sea: Azerbaijan, Kazakhstan and Turkmenistan were insisting on dividing the Caspian Sea along the midline, and Iran was insisting on maintaining the Caspian Sea as a common-property resource based on the principle of condominium, while allowing the creation of five equal sectors (20% each).

Russia was supporting delimitation of the subsoil resources and shelf of the Caspian Sea but was against the division of its aquatic area, since it would have required a radical revision of the regime of economic use of this water body existing for the past 70 years¹⁸.

More than 20 years of negotiations and cooperation

In 1996, a Special Working Group was created (SWG) at the level of Deputy Ministers of Foreign Affairs of the “Caspian Five States”. Since then, 52 meetings of SWG, more than ten meetings of the Ministers of Foreign Affairs and four Presidential Summits in Ashgabat (2002), Teheran (2007), Baku (2010), and Astrakhan (2014) have been held.

On 4 November 2003, the representatives of five littoral states signed the [Framework Convention for the Protection of the Marine Environment of the Caspian Sea](#) in Teheran. The purpose of the Convention is “to protect marine environment of the Caspian Sea from pollution, including protection, conservation, restoration, and sustainable and rational use of its biological resources”.

On 20 July 2018, the Protocol on Environmental Impact Assessment in a Transboundary Context to this Framework Convention was signed in Moscow¹⁹.

On 18 November 2010, an Agreement on cooperation in the field of security in the Caspian Sea was signed. To this Agreement, three Protocols were signed on cooperation for fighting terrorism and organized crime and on interaction of frontier agencies.

On 29 September 2014, an Agreement on Conservation and Rational Use of Aquatic Bio-Resources of the Caspian Sea was signed. The Agreement entered into force in 2018.

Since it was impossible to resolve all disagreements in the format of “Five”, some of the Caspian littoral states were negotiating in bi- and trilateral formats. Particularly, the controversial issues between Russia, Kazakhstan and Azerbaijan were resolved through the documents signed in 1998 and 2001 on delimitation of bed and subsoil resources of the Caspian Sea (based on the documents, water surface remains in common use; delimitation

¹⁸ Five countries agree to share the resource-rich Caspian Sea after more than two decades of dispute (in Russian), <https://tass.ru/mezhdunarodnaya-panorama/3450294>

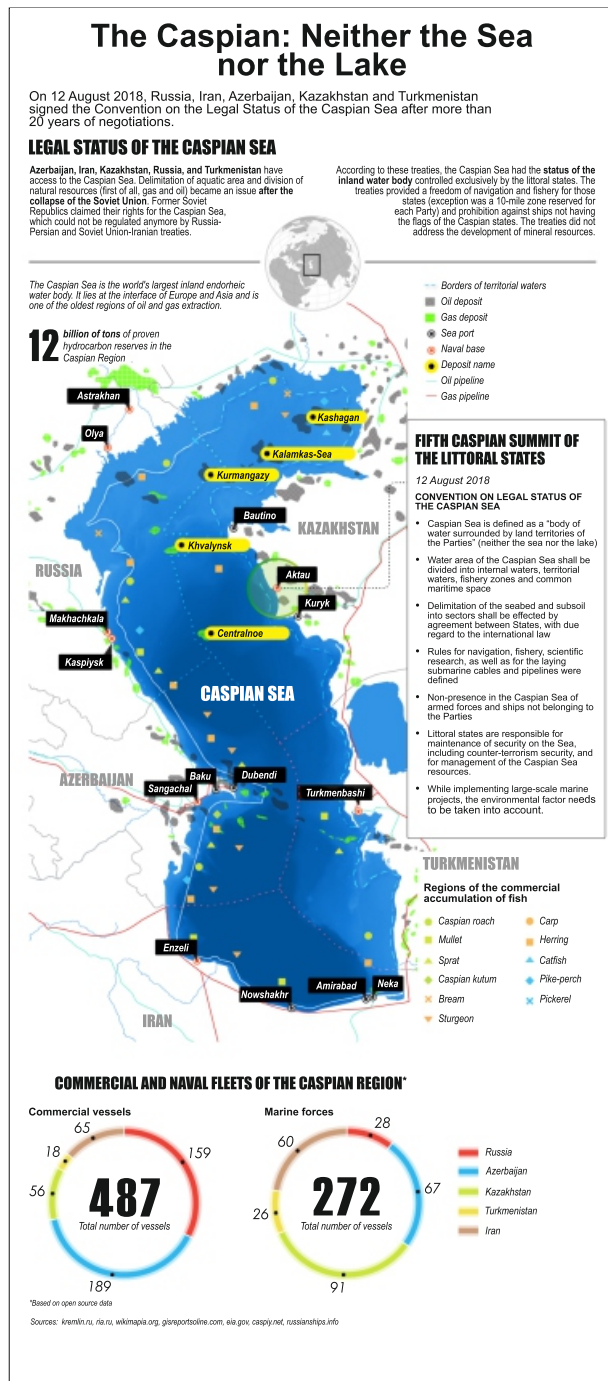
¹⁹ Protocol on Environmental Impact Assessment in a Transboundary Context to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea,

http://www.tehranconvention.org/IMG/pdf/PROTOCOL_ON_ENVIRONMENTAL_IMPACT_ASSESSMENT_IN_A_TRANSBOUNDARY_CONTEXT_EN.pdf

follows the agreement on the basis of the midline method). In 2003, Russia, Kazakhstan and Azerbaijan signed an Agreement on junction of the demarcation line of adjacent areas of the Caspian Sea bed. According to the Agreement, approximately, 19% of the seabed

was allotted to Russia, 29% was allotted to Kazakhstan, and about 20% was allotted to Azerbaijan. In 2014, an Inter-State Agreement on delimitation of the bed of the Caspian Sea was also signed between Kazakhstan and Turkmenistan.

Fifth Caspian Summit and Convention on the Legal Status of the Caspian Sea



Source: www.ria.ru (in Russian)

The Fifth Caspian Summit was held on 12 August 2018 in Aktau, where the Heads of all Caspian littoral State participated. A key result of the high-level event was the signature by the leaders of five states of the basic treaty – the Convention on the Legal Status of the Caspian Sea²⁰. This fundamental document creates a new legal regime for the Caspian Sea, which meets modern requirements and is aimed at further strengthening of cooperation between the states. The Convention defines and regulates the rights and obligations of the Parties with respect to the use of the Caspian Sea, including its waters, bed, subsoil resources, natural resources and airspace over the Sea.

The main provisions of the Convention are as follows:

- Special Legal Status, under which the name "Caspian Sea" is retained, but it will be recognized as neither sea nor a lake and is defined as "a body of water surrounded by the land territories of the Parties" (Article 1);
- The water area of the Caspian Sea shall be divided into internal waters, territorial



²⁰ Convention on the Legal Status of the Caspian Sea, <http://en.kremlin.ru/supplement/5328>

waters, fishery zones and the common maritime space (Article 5);

- Each Party shall establish the breadth of its territorial waters up to a limit not exceeding 15 nautical miles (Article 7) and a 10 nautical miles-wide fishery zone adjacent to the territorial waters (Article 9);
- Delimitation of the Caspian Sea bed and subsoil into sectors shall be effected by agreement between States with due regard to the generally recognized principles and norms of international law (Article 8);
- Non-presence in the Caspian Sea of armed forces not belonging to the Parties (Article 3);
- Ships flying the flags of the Parties shall enjoy freedom of navigation beyond the outer limits of the territorial water of the Parties (Article 10), may navigate through territorial waters (Article 11), and shall have the right to free access from the Caspian Sea to other seas and the Ocean, and back;
- Each Party shall have the exclusive right to regulate, authorize and conduct marine scientific research related to aquatic biological resources in its fishery zone, as well as marine scientific research related to the exploration and

exploitation of seabed and subsoil resources (Article 13);

- The Parties may lay submarine cables and pipelines on the bed of the Caspian Sea, on the condition that their projects comply with international environmental standards and requirements (Article 14);
- The Parties shall undertake to protect and preserve the ecological system of the Caspian Sea and all elements thereof; any activity damaging the biological diversity of the Caspian Sea shall be prohibited (Article 15);
- The Parties shall cooperate in combating international terrorism and financing thereof, trafficking in arms, drugs, psychotropic substances and their precursors, as well as poaching, and in preventing and suppressing smuggling of migrants by sea and other crimes in the Caspian Sea (Article 17);
- The Parties shall establish a mechanism of five-party regular high-level consultations under the auspices of their Ministries of Foreign Affairs (Article 19).

During the Fifth Caspian Summit, a number of five-sided documents were signed in various fields of cooperation in the Caspian Region. Following the results of the Summit, the joint Communiqué has been adopted²¹.

Other events related to the Caspian Sea in 2018

In course of 2018, the Caspian littoral states held a number of events that were aimed at preservation and rational use of the Caspian aquatic bio-resources.

- On 5-16 March, the International Seminar – "[Caspian Sea Sustainable Development and Management](#)" was held in the "Awaza" tourist zone (Turkmenistan), according to the Memorandum of Understanding and Cooperation signed between the Public Entity for the Caspian Sea Issues at the President of Turkmenistan and the International Ocean Institute;
- Seminar on implementation of the Protocol concerning Regional Preparedness,

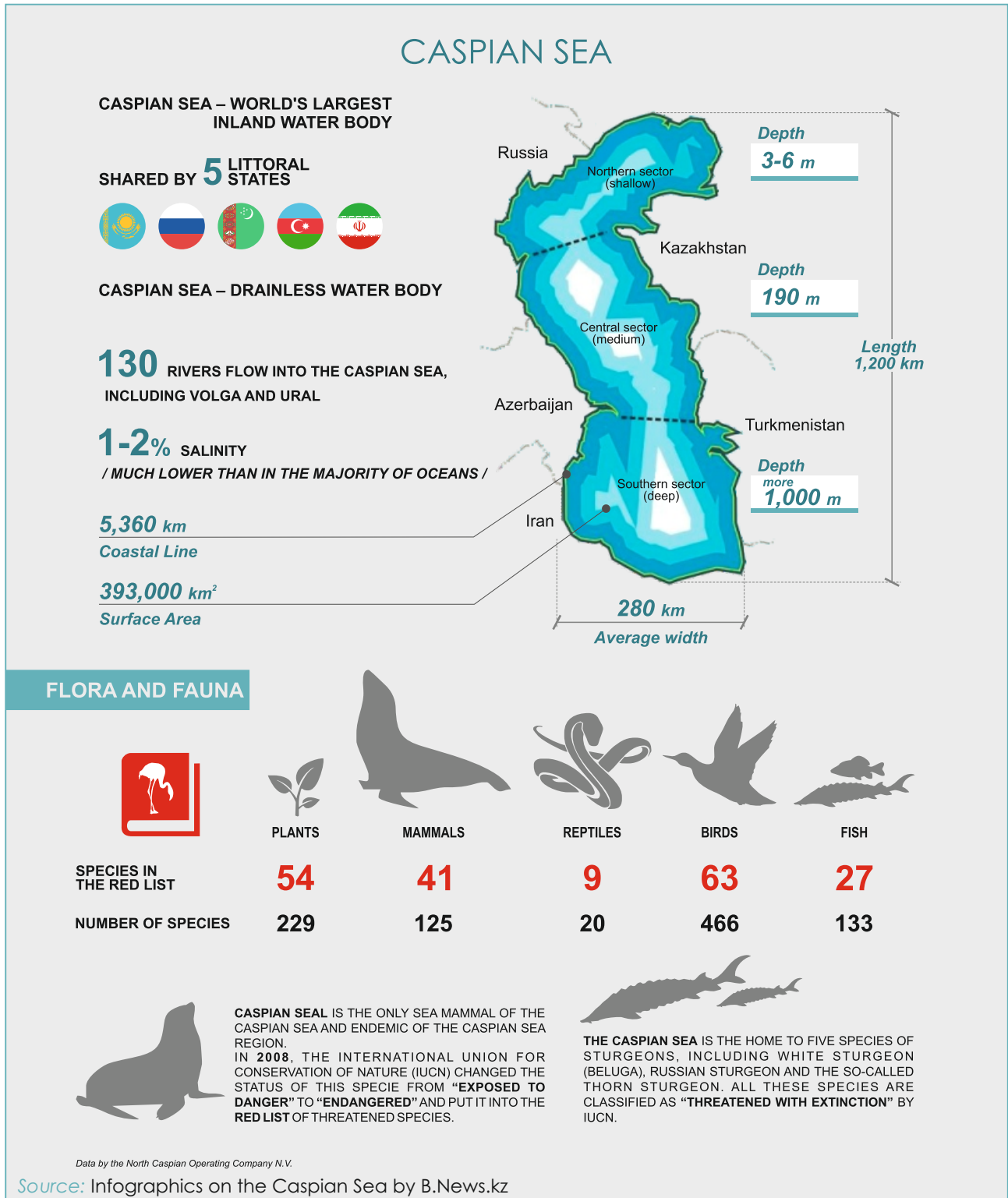
Response and Cooperation in combating Oil Pollution Incidents (Aktau Protocol) was held on 18-20 June in Baku with support of the International Maritime Organization and UNEP;

- Final [52nd Meeting of the Ad Hoc Working Group](#) for Development of the Convention on the Legal Status of the Caspian Sea at the level of Deputy Foreign Ministers of the Caspian Littoral States was held on 10 August in Aktau. The Parties reviewed preparation to the Fifth Caspian Summit, discussed and agreed the Agenda for the Meeting of the Foreign Ministers of the Caspian Littoral States;

²¹ Joint Communiqué of the Fifth Caspian Summit, <http://kremlin.ru/supplement/5330>

■ The First International Conference “[The Caspian Sea in the 21st Century: Cooperation and Security](#)” was held on 28th of September in Astana. Following the discussion, the participants agreed to conduct annually such international conferences in Astana, as well as to organize the Caspian International Investment and Economic Forum every two years in one of the Caspian states;

■ The [23rd Session of Coordinating Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea \(CASPCOM\)](#) was held on 30-31 October in Ashgabat. The participants discussed the progress of work of CASPCOM and National Hydrometeorological Services in 2017-2018, as well as the implementation of the Intergovernmental comprehensive program on hydrometeorology of the



Caspian Sea for the period until 2023, strengthening of cooperation with international organizations and other matters;

- The 11th International Economic Forum “[Caspian Dialogue 2018](#)” was held in Moscow on 14th of November;
- From November 27 to 29, the second session of the Commission for the Conservation and Rational Use of Aquatic Biological Resources and Management of Shared Stocks of such resources of the Caspian Sea was held in Baku. The Commission is designed to coordinate conservation, reproduction and rational use of shared aquatic biological resources, determine annually the total

allowable catch and allocate national quotas. Delegations from all Caspian littoral states participated in the work of the Commission;

- The International Roundtable “Future of the Caspian. Research projects and studies” was held on 28-29 November in Moscow in form of 6 sessions: “Science for sustainable development of the Caspian Region”; “The Caspian Region in the context of global change”; “Caspian Dynamics in the context of global change”; “Eco-system and bio-resources of the Caspian Sea”; “Hazardous phenomena in the Caspian Region”; and, “Hydro-carbon and other energy resources of the Caspian Region. Impact of their mining on the state of the marine environment”.

12.3. Sustainable Development Goals: Tracking the Progress

12.3.1. High-Level Political Forum 2018

More than 125 Heads and Deputy Heads of State and Government, Ministers, Vice-Ministers and other Ministerial level officials, and over two thousand representatives from governments, UN system and other organizations, civil society, NGOs and the private sector participated in the annual 2018 High-level Political Forum (HLPF) on 9-18 July to take stock of progress on the Sustainable Development Goals (SDGs). The High-Level Political Forum is the central UN platform for monitoring and evaluating the implementation of the 2030 Agenda for Sustainable Development. They discussed progress, successes, challenges and lessons learned on the road to a fairer, more peaceful and prosperous world and a healthy planet by 2030.

This year’s forum, under the theme “Transformation towards sustainable and resilient societies,” concluded with the adoption of a Ministerial Declaration. 46 countries presented



HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT

their Voluntary National Reviews on their efforts to achieve the 2030 Agenda: 15 countries from Europe, 13 from Asia and Pacific, 9 from Africa, 8 from Latin America and Caribbean basin, and 1 from North America. The Forum also reviewed in depth six out of the 17 SDGs: Water and sanitation for all (SDG 6); sustainable and modern energy for all (SDG 7); cities and human settlements (SDG 11); sustainable consumption and production patterns (SDG 12); sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (SDG 15); and global partnership for sustainable development (SDG 17).

Source:

<https://sustainabledevelopment.un.org/hlpf/2018>

12.3.2. Progress towards SDG 6 on Water

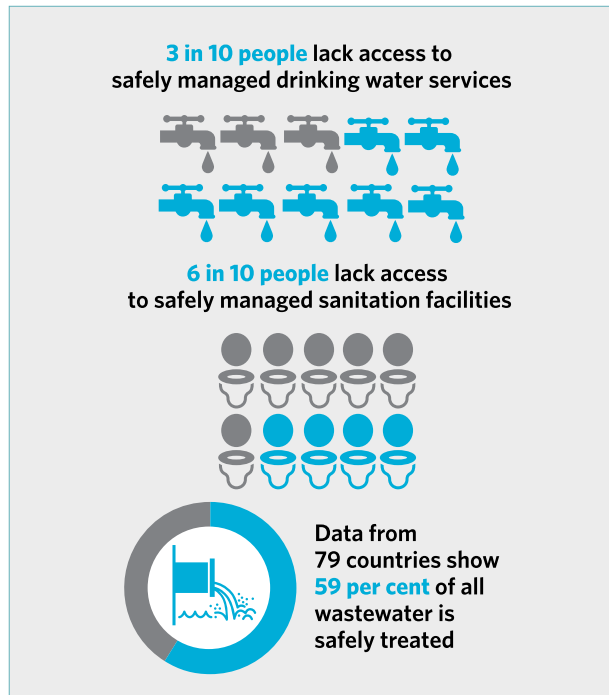
The Sustainable Development Goals Report 2018 reviews progress in the third year of implementation of the 2030 Agenda for Sustainable Development. While people overall are living better lives than they were a decade ago, progress to ensure that no one is left behind has not been rapid enough to meet the targets of the 2030 Agenda.



A brief summary of the status of implementation of SDG 6 on water is provided below:

Goal 6: Ensure Access to Water and Sanitation for all

- In 2015, 29 per cent of the global population lacked safely managed drinking

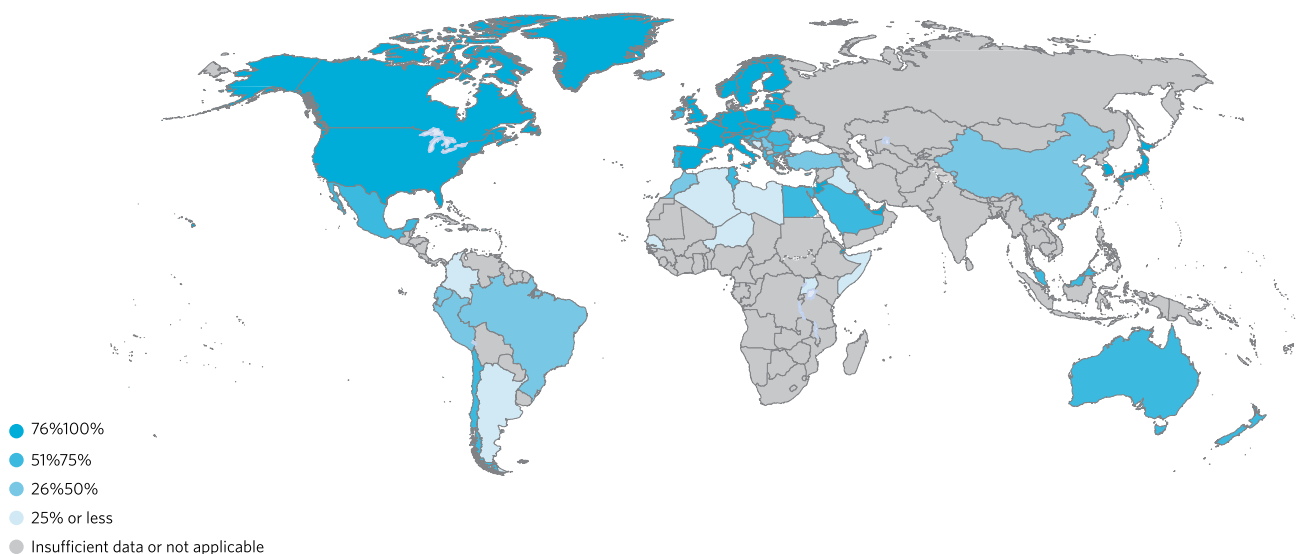


water supplies, and 61 per cent were without safely managed sanitation services. In 2015, 892 million people continued to practice open defecation;

- In 2015, only 27 per cent of the population in LDCs had basic handwashing facilities;
- Preliminary estimates from household data of 79 mostly high- and high-middle-income countries (excluding much of Africa and Asia) suggest that 59 per cent of all domestic wastewater is safely treated;
- In 22 countries, mostly in the Northern Africa and Western Asia region and in the Central and Southern Asia region, the water stress level is above 70 per cent, indicating the strong probability of future water scarcity;
- In 2017-2018, 157 countries reported average implementation of integrated water resources management of 48 per cent;
- Based on data from 62 out of 153 countries sharing transboundary waters, the average percentage of national transboundary basins covered by an operational arrangement was only 59 per cent in 2017.

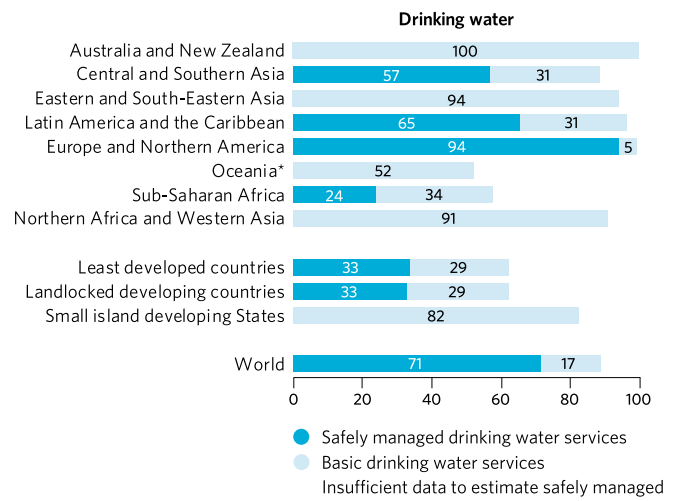
Untreated household wastewater poses a risk to both public health and the environment

Proportion of safely treated wastewater flows from households, 2015 (percentage)



A majority of the world's population still lack safe sanitation, and 3 in 10 lack safe drinking water

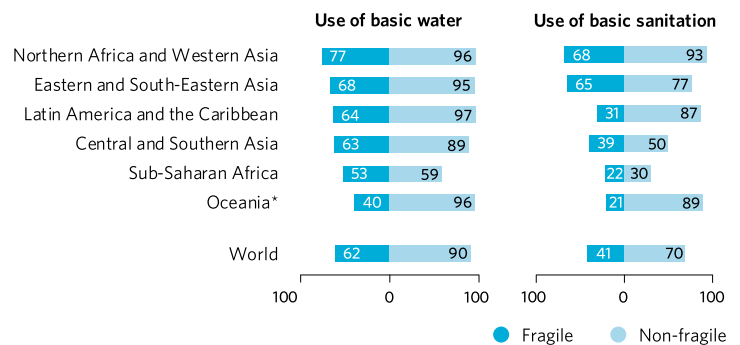
Proportion of the population using safely managed and basic drinking water, sanitation and hygiene services, 2015 (percentage)



Note: Oceania* refers to Oceania excluding Australia and New Zealand, throughout the publication.

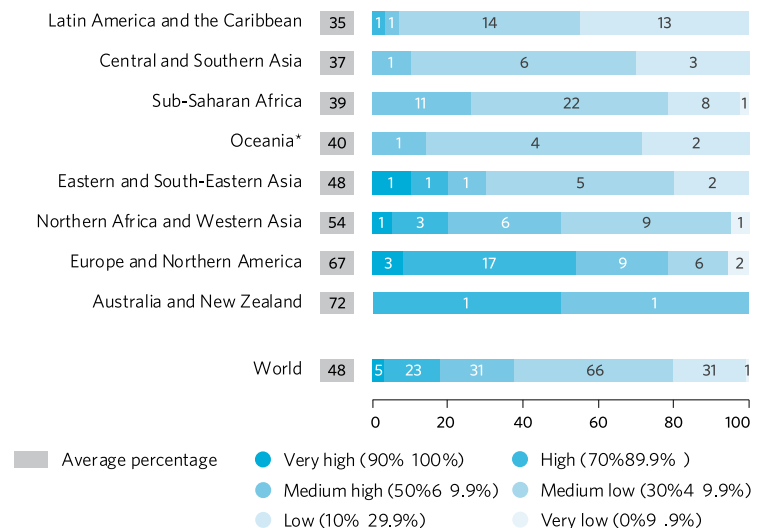
Conflict, violence and instability are curtailing progress on water and sanitation

Proportion of the population using basic water and basic sanitation services in fragile and non-fragile states, 2015 (percentage)

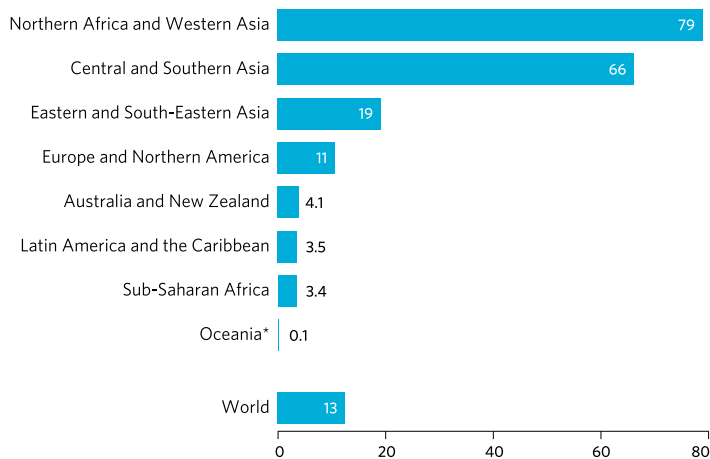


Redoubled efforts are needed in most countries to better manage their water resources

Average percentage of implementation of integrated water resources management (IWRM) and the number of countries in each IWRM implementation category, 2017

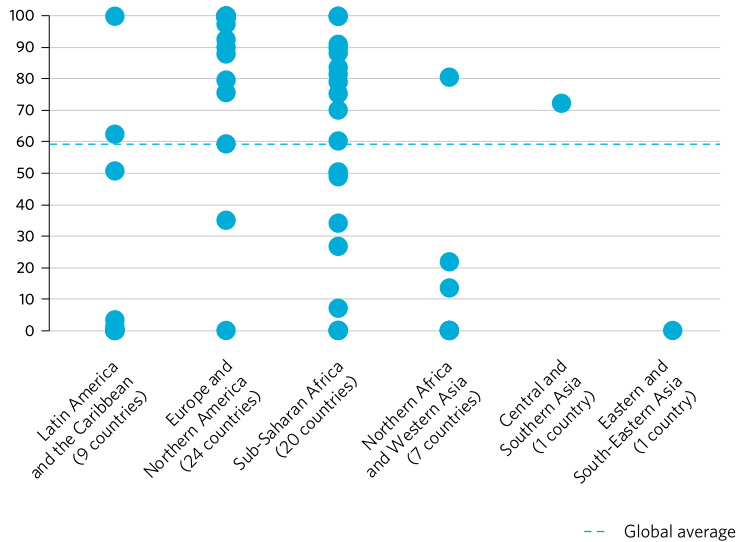


Level of water stress: freshwater withdrawal as a proportion of available freshwater sources, around 2014 (percentage)



Northern Africa and Western Asia are hardest hit by water stress, indicating the strong probability of future water scarcity

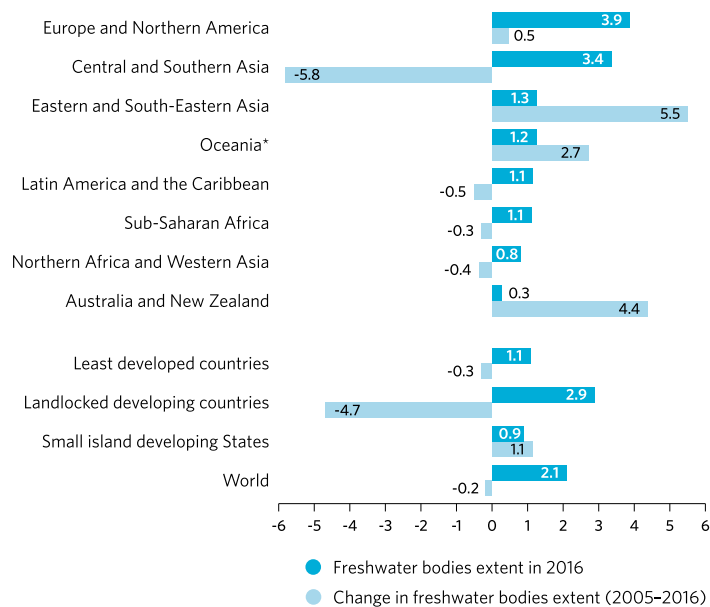
Proportion of transboundary basin areas with an operational arrangement for water cooperation, 2017 (percentage)



Cooperation among countries sharing rivers, lakes and aquifers needs to accelerate

Note: No data available for Oceania*.

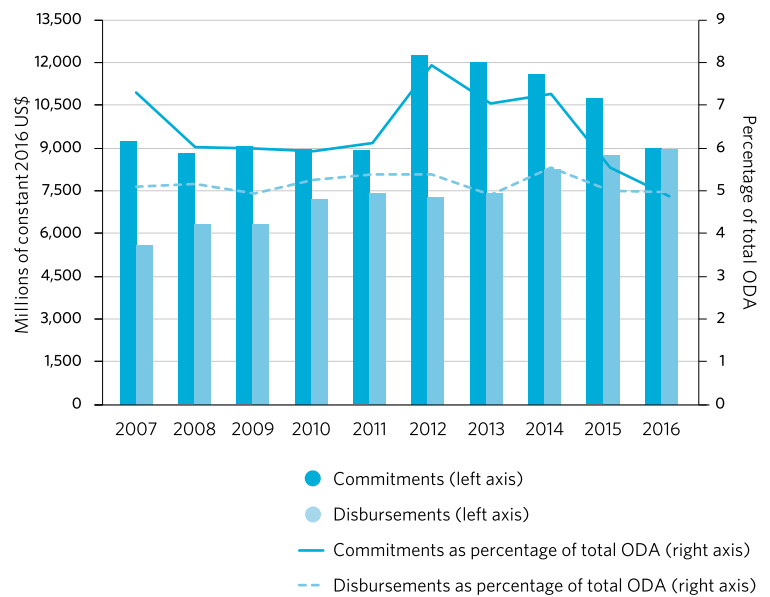
Proportion of land area covered by freshwater bodies, 2016 and change in proportion of land area covered by freshwater bodies 2005–2016 (percentage)



Lack of abundant surface water in the poorest countries heightens their vulnerability to climate change and water scarcity

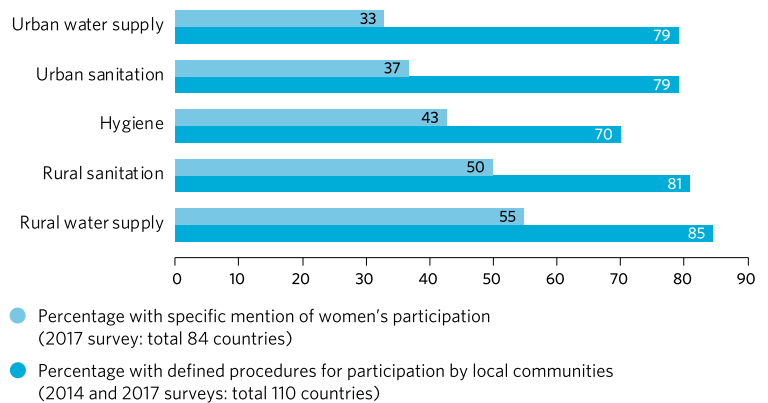
Funding commitments to the water sector dropped by more than 25 per cent from 2012 to 2016

Official development assistance commitments and disbursements to the water sector, 2007-2016 (millions of constant US\$ and percentage of total ODA)



Over half of countries have policies or procedures for the participation of women in rural water

Proportion of countries with defined procedures in law or policy for participation by service users/communities, and proportion of countries with policies specifically mentioning women's participation, 2014 and 2017 (percentage)



Source: <https://unstats.un.org/sdgs/report/2018/>

12.3.3. Focus on SDG 15: Forest Restoring and Desertification Combating

Forests cover 30.7 per cent of the Earth's surface and, in addition to providing food security and shelter, they are key to combating climate change, protecting biodiversity and the homes of the indigenous population. At the current time, thirteen million hectares of forests are being lost every year while the persistent degradation of drylands has led to the desertification of 3.6 billion hectares. Between 2010 and 2015, the world lost 3.3 million hectares of forest areas. Due to drought and desertification, 12 million hectares are lost each year (23 hectares per minute). Within one year, 20 million tons of grain could have been grown.



Deforestation and desertification – caused by human activities and climate change – pose major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty.

One of the Sustainable Development Goals is to address these issues. SDG 15 is called “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land

degradation and halt biodiversity loss". Specific tasks set to achieve this goal include, but are not limited to, the following:

- 15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements;
- 15.2** By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally;
- 15.3** By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

Forest plays an important role in the 2030 Agenda. It is a source of livelihood and it maintains bio-

diversity and mitigates climate change. Consequently, an increase in forest areas contributes to the achievement of virtually all SDGs, particularly 1, 2, 6, 7, 9, 10, 11, 13 and 17.²²

Progress towards SDG 15

According to the [UN Report](#), implementation of Goal 15 is showing some encouraging signs. Forest loss has slowed. A growing number of forest areas are being sustainably managed, integrating policies and practices that protect forest ecosystems and address drivers of degradation. All regions continue to make progress on conferring official protection status to areas critical to global biodiversity. However, land degradation is increasing due to competing pressures for food, energy and shelter. Biodiversity loss is occurring at an alarming rate. In addition, invasive species, the illicit poaching and trafficking of wildlife, and falling trends in ODA in support of biodiversity continue to thwart efforts to protect and restore vital ecosystems and species. Accelerated action is urgently needed to preserve and promote the sustainable use of ecosystems on which all life depends.

Full implementation of sustainable forest management plans is needed to halt deforestation

Progress toward sustainable forest management dashboard

Region	Forest area annual net change rate, change from 2005-2010 to 2010-2015	Above-ground biomass stock in forest, change from 2010 to 2015	Proportion of forest area within legally established protected areas, change from 2010 to 2015	Proportion of forest area under a long-term forest management plan, change from 2005 to 2010	Forest area certified, change from 2015 to 2017
Central and Southern Asia	▲	▼	●	▲	▼
Eastern and South-Eastern Asia	▲	▼	▲	▲	▲
Northern Africa and Western Asia	▼	▲	▲	▲	●
Sub-Saharan Africa	●	●	▲	▲	▲
Europe and Northern America	▲	▲	●	●	▲
Latin America and the Caribbean	●	▲	▲	▲	▲
Oceania*	●	●	▲	▲	▼
World	●	●	▲	▲	▲

▲ Positive change ● No/small change ▼ Negative change

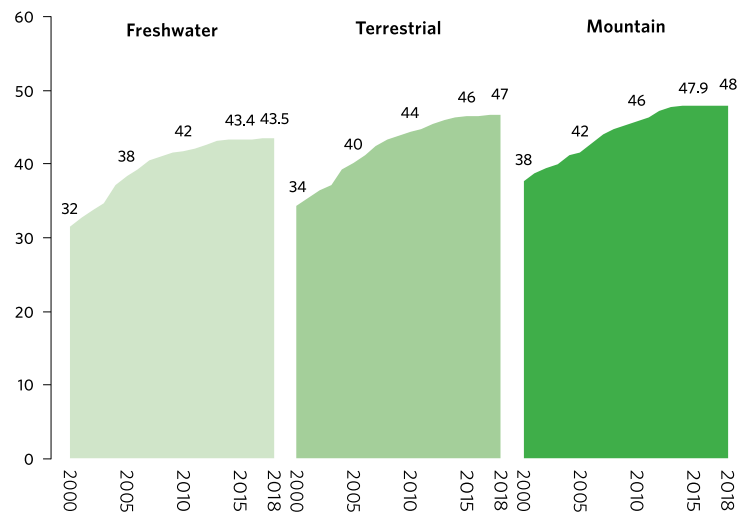
Note: The forest area annual net change rate is calculated using a compound annual change formula.

²² www.un.org/sustainabledevelopment/ru/biodiversity/

More areas critical to global biodiversity are being protected.

Areas critical to global biological diversity are known as key biodiversity areas (KBAs). The proportion of KBAs covered by protected areas continues to increase in freshwater, terrestrial and mountain ecosystems.

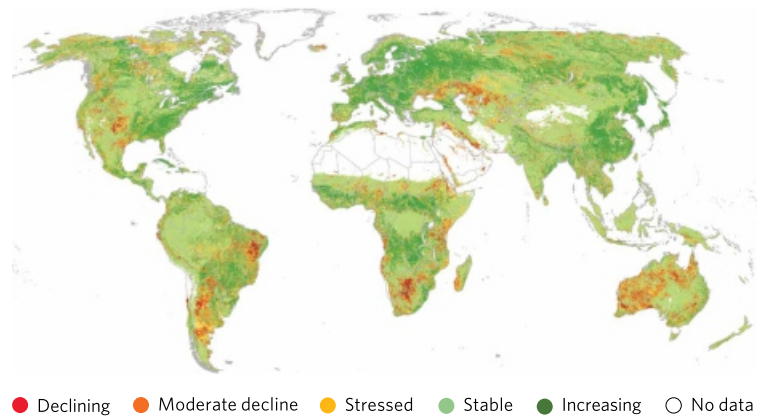
Average proportion of each freshwater, terrestrial and mountain KBA that is covered by protected areas, 2000–2018 (percentage)



Land degradation threatens the livelihoods of over one billion people.

From 1999 to 2013, approximately one fifth of the Earth's land surface covered by vegetation showed persistent and declining trends in productivity, primarily due to land and water use and management. Up to 24 million square kilometers of land are affected.

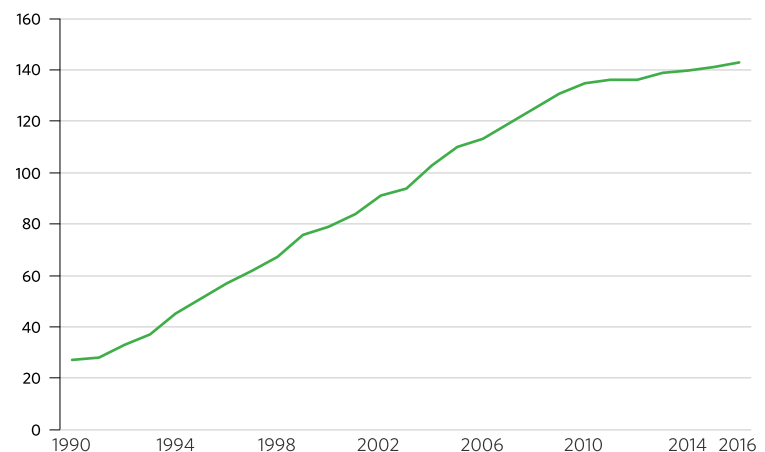
Global map of land productivity, 1999–2013



Note: The map shows five classes of persistent land productivity trajectories over the period 1999–2013. Land productivity is an essential variable for detecting and monitoring active land transformations typically associated with land degradation processes. It can be expressed as an equivalent of terrestrial net primary productivity per unit of area and time, and reflects the overall capacity of land to support biodiversity and provide ecosystem services.

Action to combat invasive species is intensifying, though they remain a major contributor to biodiversity loss.

Cumulative number of countries reporting to the Convention on Biological Diversity on national legislation relevant to the prevention or control of invasive alien species (1990–2016)



Source: <https://unstats.un.org/sdgs/report/2018/>

New York Declaration on Forests and Reviewing Progress towards its Goals in 2018

The New York Declaration on Forests (NYDF) was adopted on 23 September 2014 at the Climate Summit in New York, which was attended by Heads of State and Government and business leaders. The participants pledged to cut natural forest loss in half by 2020 and end it by 2030, including through afforestation. It calls for restoring 350 million hectares of forests and croplands of an area larger than India.

Meeting the goals of the Declaration is expected to cut between 4.5-8.8 billion tons of carbon pollution every year.

The NYDF Assessment Partners annually track progress toward meeting the goals of the Declaration. The 2018 brief assessments of Goals 1-10 find that we are not on track to meet the goal to halve natural forest loss globally by 2020. The focus report on Goal 10 finds slow progress in strengthening forest governance and empowerment.

Source:

<https://forestdeclaration.org/wpcontent/uploads/2018/11/20181129-NYDF-2018-Summary.pdf>

United Nations Strategic Plan for Forests 2017–2030

The agreement on the first-ever UN Strategic Plan for Forests was forged at a special session of the UN Forum on Forests held in January 2017 and provides an ambitious vision for global forests in 2030. The plan was adopted by the UN Economic and Social Council on 20 April 2017, and was subsequently adopted by the UN General Assembly on 27 April 2017.

- The Strategic Plan features a set of six Global Forest Goals and 26 associated targets to be reached by 2030, which are voluntary and universal.
- It includes a target to increase forest area by 3% worldwide by 2030, signifying an increase of 120 million hectares, an area over twice the size of France.

- It builds on the vision of the 2030 Agenda and recognizes that real change requires decisive, collective action, within and beyond the UN System.

Resolutions and Documents

General Assembly Resolution 71/285: United Nations Strategic Plan for Forests 2017-2030 A/RES/71/285 | [English](#) |

ECOSOC Resolution 2017/4: United Nations Strategic Plan for Forests 2017-2030 and quadrennial program of work of the United Nations Forum on Forests for the period 2017-2020 E/RES/2017/4 | [English](#) |

Report of the Special Session of the UN Forum on Forests (20 January 2017) E/CN.18/SS/2017/2 | [English](#) |

The State of the World's Forests 2018

In 2018, FAO published the report on "[The State of the World's Forests 2018](#)", which highlights that by halting deforestation, managing forests sustainably, restoring degraded forests and increasing the global forest area, potentially damaging consequences for the planet and its people can be avoided. While the importance of forests and trees to a healthy, prosperous planet is universally recognized, the depth of those roots may be greater than imagined. They play a crucial role in ensuring food security, drinking water supply, renewable energy and rural economic development.

The Global Forest Resources Assessment found that the world's forest area decreased from 31.6 per cent of the global land area to

30.6 per cent between 1990 and 2015, but that the pace of loss has slowed in recent years (see Picture).

The report also underlines a **particular role of forests for water security**. More than one-third of the world's population lives in drylands, which account for 35 per cent of global land area. These populations are dependent on dryland forests and trees outside forests for their food security, livelihoods, and water security.

These dryland tree systems are well adapted to arid conditions and maximize the little precipitation available. In addition, they have expansive root systems that improve ground-water recharge through preferential flow, a

Forest Area as a Proportion of Total Land Area in 1990, 2010 and 2015



NOTE: *Excluding Australia and New Zealand
SOURCE: Based on UN, 2017a

process whereby water flows through large pores in the soil created by roots and soil fauna. The trees also reduce water loss from evaporation from the soil, and maintain its health by reducing erosion and adding nutrients through leaf litter and organic matter. Tree density, canopy cover and the spatial distribution of trees in dryland areas are key variables that affect hydrology. The balance between the positive effects of the trees (higher infiltration and preferential flow) and their negative effects (higher evapotranspiration) needs to be taken into account in their management, using appropriate techniques such as thinning and pruning. In this case, 5-10 per cent tree cover was found to improve water availability.

Key messages of the report are as follows:

- To achieve our global goals, urgent action is needed to sustain the planet's forests;

- The branches of forests and trees reach out across the SDGs;
- It is time to recognize that food security, agriculture and forestry can no longer be treated in isolation;
- To reach those furthest behind first, we must go down the forest path and empower agents of change;
- Landscape approaches balance sustainability;
- Coherent policy frameworks encourage partnerships and stakeholder engagement in forests;
- Healthy cities need trees;
- Evidence is the key in achieving recognition of the true value of forests in the 2030 Agenda.

Source: <http://www.fao.org/3/i9535en/i9535en.pdf>

Forest and Water on a Changing Planet: Vulnerability, Adaptation and Governance Opportunities. A Global Assessment Report

More than 50 scientists from 20 countries contributed to the major assessment of the climate-forests-water-people link, which was carried out by the Global Forest Expert Panels (GFEP). In 2018, GFEP launched the report "Forest and Water on a Changing Planet: Vulnerability, Adaptation and Governance Opportunities", which constitutes the most comprehensive sys-

tematic scientific syntheses on the interactions between forests and water on the global level to date. Presenting the results of the sixth global scientific assessment undertaken in the framework of GFEP, the report provides a structured synthesis on the state of the knowledge on the forest-water relationship.

Trees and people both need water. With a growing global population and continued forest loss and degradation – a key question becomes: are trees and people competitors or friends? The relationship between forests, trees and water is an issue of considerable complexity and uncertainty, but of high priority for both people and the environment. Forests and trees are important modulators of water flows, with water flows being among the most prominent determinants of human health and wellbeing. However, as the rate of climate change and the uncertainty of climatic variability continue to increase, the relationship between forests and water flow will also change. Would it help to plant more trees? Would this make water scarcity worse? Does it matter what type of trees? Does it matter where and how they are integrated into the landscapes? Are floods and droughts linked? To respond to these concerns, this assessment focuses on three key questions:

1) “Do forests matter?”: To what degree, where and for whom, is the ongoing change in forests and trees outside forests increasing (or decreasing) human vulnerability by exacerbating (or alleviating) the negative effects of climate variability and change on water resources?

2) “Who is responsible and what should be done?”: What can national and international governance systems and co-investment in global commitments do in response to changes in water security?

3) “How can progress be made and measured?”: How can the UN SDG framework of Agenda 2030 be used to increase the coherence and coordination of national responses in relation to forests and water across sectors and from local to national and international scales?

The GFEP on Forest and Water recognized that the answers to the three questions would depend on the region of focus and require a timeframe and resources beyond those available at the time. However, the Panel presented 10 key conclusions and their implications intended to inform relevant international policy processes such as the 2030 Agenda for Sustainable Development and related SDGs.

Conclusions and their implications for decision-makers

1. Water is central to all 17 SDGs and ambitions. Governments and other stakehol-

ders that want to achieve the SDGs need to understand the centrality of water and its relations with social, environmental and economic outcomes. Increasingly, it is recognized that SDGs cannot be dealt with individually.

2. A systems approach to climate-forest-water-people relations that integrates hydrological processes and their interactions at all scales is needed. Limited public understanding of complex ecosystem interactions prevents rational decision-making and can lead to unintended consequences.

3. Forests, especially natural forests, contribute to the resilience of water supply for humans in the face of global change. Investments in the preservation of existing native forests are needed as part of a multiple disaster prevention strategy, as well as to improve resilience in the face of increasing risk.

4. Forests can be managed for resilience of water supplies to enable adaptation to change if locally relevant data and resources are available. Investments in data collection and interpretation are essential to support evidence-based risk management planning and adaptation.

5. Multiple water-related objectives across the portfolio of SDGs present new challenges for policymakers and managers of forests and landscapes with partial tree cover. New institutional responses are needed to tackle multiple water-related objectives across the portfolio of SDGs, taking a multiple benefits approach.

6. International and regional institutional and governance frameworks can play a key role in optimizing climate-forest-water management. New or improved levels of collective action and coordination are needed, including those that coordinate across sectors and across spatial scales.

7. A clear policy gap in climate-forest-water relations exists, waiting to be filled. Forest-water relations deserve at least as much policy attention, from local to global scales, as forest-carbon relations.

8. Regulations and rights-based approaches to climate-forest-water relations provide an essential foundation for innovation in forest-water governance. Incentive-based mechanisms present opportunities for coordination of interests and concerns in climate-forest-water

management but must respect the rights of local, indigenous and other vulnerable communities.

9. To successfully achieve SDGs, social and environmental justice, along with equity targets, must be integrated into climate-forest-water policies and management strategies. Already marginalised and vulnerable communities should not be exposed to further risks; opportunities to improve community health and well-being need to be explored when developing forest-water adaptive management strategies.

10. The global nature of the current assessment limited the scope to be quantitative and geographically explicit. More quantitative regional-scale case studies that include atmospheric relations, surface and groundwater flows are needed that can be extrapolated to other areas with different social and economic conditions.

Source: www.iufro.org/science/gfep/forestsand-water-panel/report/

Forests and Water - Valuation and Payments for Forest Ecosystem Services

In 2018, FAO and UNECE jointly published the study "[Forests and Water – Valuation and payments for forest ecosystem services](#)", which is aimed to further improve our understanding about the ways in which payments for ecosystem services schemes can be applied to forests for the mutual benefit of both humans and the environment. This study contains the most comprehensive currently available database of case studies on water-related payment for forest ecosystem services schemes in the UNECE region. A total number of 259 schemes were identified in 26 EU countries. EU and North America have the highest number of such schemes. Among the national authorities in Eastern Europe, Caucasus and Central Asia, there is a limited interest for PWS approaches and economic instruments in general. However, an unconventional case demonstrating payment for ecosystem services is found in the Chon-Aksuu watershed (Issyk-Kul region, Kyrgyzstan). The problem addressed by the scheme is overgrazed pasture and degraded forests, which is leading to erosion and increased levels of suspended sediments in rivers, and lower water quality. This resulted in the reforestation of 14 hectares, representing 37,000 seedlings of spruce and birch trees in mountain areas, and poplar and willow trees in the valley, which amounted to a total contribution of ecosystem services beneficiaries of about \$ 9,600.

Analysis of diverse case studies shows that watershed services (PWS) schemes can provide important co-benefits, such as carbon mitigation, biodiversity conservation and social benefits. Key recommendations:

- Establish platforms for mutual understanding of PES principles and practices to

ensure that key authorities responsible for policy-making – including finance and tax authorities – are more forcefully engaged in the dialogue on the development of new forest-related PWS schemes.

- Promote a legal framework that provides guidance and support for forest-related PWS scheme designs that are adapted and appropriate for the local level.
- Strengthen appropriate scientific knowledge, technical competencies and skills, as well as foster stakeholder consultation and participation to overcome limitations in defining, measuring and economically assessing forest-related watershed services.
- Define sound monitoring systems by identifying clear proxy indicators and ecosystem service metrics.
- Focus on ecosystem service bundling for cost-effectiveness, recognizing that forests are a single ecosystem that provide multiple related services that can be combined in a single credit.
- Incorporate measures that fully recognize the potential limitations and challenges inherent in economic valuation, taking account of the multiplicity of values and the potential exclusion of local communities. Equally, the structural factors influencing PES outcomes need to be taken into consideration.

Source: www.unece.org/fileadmin/DAM/timber/publications/sp-44-forests-water-web.pdf

Global Landscapes Forum and Proposed UN Decade on Ecosystem Restoration

UNEP Headquarters hosted the [Global Landscapes Forum](#) (29-30 August, Nairobi, Kenya).

At the Forum, the [Global Partnership on Forest and Landscape Restoration](#) presented its new report "[Restoring Forests and Landscapes: the Key to a Sustainable Future](#)".

The Report discusses how ambitious goals for forest and landscape restoration can be

achieved, although there is no multi-faceted approach to forest and landscape restoration.

The Forum also discussed [Salvador's proposal](#) to approve the period 2020-2030 as the UN Decade on Landscape Connectivity and Ecosystem Restoration. Outcomes of the Forum are available on:

www.globallandscapesforum.org/wpcontent/uploads/docs/GLF%20Nairobi%20-%20Outcome%20statement_v06.pdf

Over 2.5 million hectares committed to the Bonn Challenge by the Caucasus and Central Asia



Over 2.5 million hectare of forest landscape will be restored by countries in the Caucasus and Central Asia under the Bonn Challenge by 2030. The commitment was made by Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan at the first [Ministerial Roundtable on Forest Landscape Restoration and the Bonn Challenge in the Caucasus and Central Asia](#), held on 21-22 June 2018 in Astana, Kazakhstan. The Bonn Challenge is a global effort to bring 350 million hectares of the world's deforested and degraded land into restoration by 2030. It was launched in 2011 by Germany and the International Union for Conservation of Nature (IUCN).

The meeting adopted the [Astana Resolution](#), committing the region to go beyond 2.5 million ha, and strengthen partnerships and regional cooperation to this end. The Ministers agreed to: (i) Identify degraded lands within our respective countries and work to restore and afforest them by 2030; (ii) Assess the national potential for forest landscape restoration; (iii) Reinforce regional cooperation; (iv) Call on development partners, international finance institutions and the private sector, to support efforts and investment at the national and regional level; (v) Cooperate among interested partners to develop a strategy for the financing; (vi) Periodically assess our respective efforts through alignment with the Bonn Challenge Barometer of Progress.

Significant progress in forest landscape restoration has already been achieved in many of the countries, for example the green belts around Astana and Ashgabat, and the extensive afforestation of the dried out bed of the Aral Sea.

"In the period between 1997 and 2008, Kazakhstan established forests on an area of over 83,000 ha around the city of Astana. This is one of our country's many initiatives aimed at

the creation and restoration of forest landscapes. By 2021 the green belt surrounding Astana will exceed 100,000 ha", said Yerlan Nysanbayev, Deputy Minister of Agriculture of Kazakhstan. In the Caucasus and Central Asia, forests near settlements, mining sites, riparian forests, and forests on slopes require urgent attention.

However, taking into account the scale of the restoration challenge, it is of great importance to mobilize internal and external resources to increase forest areas whilst improving livelihoods. Committing to and implementing national pledges under the Bonn Challenge can therefore boost countries' efforts as they progress towards the goals of the 2030 Agenda for Sustainable Development and their national commitments under the Paris Agreement. National commitments under the Bonn Challenge can also help to provide a coherent policy investment framework for restoration, and support countries in reaching other targets including the Aichi Biodiversity Targets and the Global Forest Goals.

Source: <http://www.fao.org/europe/news/detail-news/en/c/1142410/>

Afforestation on the Dried Bed of the Aral Sea in Uzbekistan

The area of the dried bed of the Aral Sea within the Republic of Uzbekistan is about 3.4 million hectares, of which about 2 million hectares are suitable for afforestation, according to the GEF Agency of IFAS. Afforestation, namely, plantation of drought-tolerant plants and fixation of shifting sand dunes in the South Aral region (or South Priaralie) have been started by local forest farms as early as in the 1980s, when the Aral Sea was rapidly shrinking.

Since 2000, international organizations, specifically, GIZ, IFAS, the Ecological Fund of Japan, France, etc. have been taking part in this activity.

For the last 18 years, afforestation in South Priaralie was undertaken on about 740,000 hectares, including 350,700 hectares on the dried seabed. The work was financed mainly from the state budget of the Republic of Uzbekistan. A contribution of the international organizations was quite limited: GIZ financed afforestation on 27,000 hectares; non-governmental organization "Kofütis" (France) financed relevant activities on 1,500 hectares; and, IFAS allocated funds for 20,000 hectares.

Based on the results of 9 ground-based expeditions conducted in 2005-2011 by SIC ICWC with the assistance of Germany, it was revealed that in addition to afforestation undertaken during the abovementioned period of time, self-organized vegetation appeared on an area of approximately 200,000 hectares of the dried bed of the Aral Sea.

In August 24, 2018, at the Summit of the Heads of IFAS founder-states in Turkmenbashi, the President of the Republic of Uzbekistan proposed to activate afforestation on the dried

bed of the Aral Sea. In November 2018, the Government approved the List of priority national programs and projects on organization of regular afforestation on the dried seabed to fix shifting sands and prevent salt and dust storms. According to the Government Decree "On measures to accelerate the creation of "green cover" – protective forest plantations on the dried bed of the Aral Sea" (No.132 of 15 February 2019), large-scale activities will be undertaken on the dried seabed and in the Republic of Karakalpakstan. During 2019, 100 billion sums will be allocated in stages from the state budget to this end.

As of 1 April 2019, afforestation has already been completed on an area of 451,600 hectares out of the total planned 500,000 hectares. With the help of local population and a team of engineers of the Ministry of Emergencies, 1,532 tons of saxaul and 73 tons of Halostachys seeds were prepared. These seeds were planted on an area of 323,150 hectares using 2 airplanes; 119,440 hectares were planted using agricultural machinery, and 3,000 hectares were planted with the help of hang-gliders.

Additionally, the total area of 15,473 hectares was planted with the salt-tolerant plant seedlings, including 4,855,100 saxaul, 2,495,600 tamarix and 759,750 Halostachys. Another 8,154,250 seedlings of saxaul were prepared for planting.

For fixation of shifting sands, mechanical protection was made of reeds along 85.7 km and furrows were ploughed for seedlings on the total area of 118,222 hectares.

Source: GEF Agency of IFAS

Uzbekistan develops a forest monitoring system

Uzbekistan took another step for sustainable forest management in support of the Sustainable Development Goals.

On 8-10 August 2018, more than 30 forestry experts from Uzbekistan, Turkey and the Russian Federation met in Tashkent, Uzbekistan, to review a draft set of criteria and indicators for sustainable forest management.

National forest monitoring and assessment systems are designed to provide reliable

information on how forests are managed and used, thus helping to improve national forest policy development, planning and sustainable management.

This was a priority noted by President Shavkat Mirziyoyev during a 2017 address to the Parliament. There, he pointed out a need to develop criteria for assessing the effectiveness of relevant public bodies in Uzbekistan.

Source: www.unece.org/index.php?id=49757

12.3.4. Selected Indicators and Results of other SDGs



Goal 1: No Poverty

- The rate of extreme poverty has fallen rapidly: in 2013 it was a third of the 1990 value. The latest global estimate suggests that 11 per cent of the world population, or 783 million people, lived below the extreme poverty threshold in 2013;
- In 2017, economic losses attributed to disasters were estimated at over \$300 billion. This is among the highest losses in recent years, owing to three major hurricanes affecting the United States of America and several countries across the Caribbean.



Goal 2: Zero Hunger

- The proportion of undernourished people worldwide increased from 10.6 per cent in 2015 to 11.0 per cent in 2016;
- Aid to agriculture in developing countries totalled \$12.5 billion in 2016, falling to 6 per cent of all donors' sector-allocable aid from nearly 20 per cent in the mid-1980s;
- Progress has been made in reducing market-distorting agricultural subsidies, which were more than halved in five years – from \$491 million in 2010 to less than \$200 million in 2015;
- In 2016, 26 countries experienced high or moderately high levels of general food prices, which may have negatively affected food security.



Goal 3: Good Health and Well-being

- Unsafe drinking water, unsafe sanitation and lack of hygiene continue to be major contributors to global mortality, resulting in about 870,000 deaths in 2016. These deaths were mainly caused by diarrhoeal diseases, but also from malnutrition and intestinal nematode infections;
- In 2016, household and outdoor air pollution led to some 7 million deaths worldwide.



Goal 4: Quality Education

- In 2016, only 34 per cent of primary schools in LDCs had electricity and less than 40 per cent were equipped with basic handwashing facilities.



Goal 5: Gender Equality

- Based on data between 2000 and 2016 from about 90 countries, women spend roughly three times as many hours in unpaid domestic and care work as men;
- Globally, the percentage of women in single or lower houses of national parliament has increased from 19 per cent in 2010 to around 23 per cent in 2018.

Goal 7: Affordable and Clean Energy

- From 2000 to 2016, the proportion of the global population with access to electricity increased from 78 per cent to 87 per cent;
- In 2016, 3 billion people (41 per cent of the world's population) were still cooking with polluting fuel and stove combinations;
- The share of renewables in final energy consumption increased modestly, from 17.3 per cent in 2014 to 17.5 per cent in 2015. Yet only 55 per cent of the renewable share was derived from modern forms of renewable energy.



Goal 8: Decent Work and Economic Growth

- In 2016, real gross domestic product (GDP) per capita grew at 1.3 per cent globally, less than the 1.7 per cent average growth rate recorded in 2010–2016.



Goal 9: Industry, Innovation and Infrastructure

- Globally, the carbon intensity decreased by 19 per cent from 2000 to 2015 – from 0.38 to 0.31 kilograms of carbon dioxide per dollar of value added.



Goal 10: Reduced Inequalities

- Between 2010 and 2016, in 60 out of 94 countries with data, the incomes of the poorest 40 per cent of the population grew faster than those of the entire population.



Goal 11: Sustainable Cities and Communities

- In 2016, 91 per cent of the urban population worldwide were breathing air that did not meet the World Health Organization air quality guidelines value for particulate matter.



Goal 12: Responsible Consumption and Production

- For all types of materials, developed countries have at least double the per capita footprint of developing countries. In particular, the material footprint for fossil fuels is more than four times higher for developed than developing countries;
- By 2018, a total of 108 countries had national policies and initiatives relevant to sustainable consumption and production.





Goal 13: Climate Action

- As of 9 April 2018, 175 Parties had ratified the Paris Agreement and 168 Parties had communicated their first nationally determined contributions to the United Nations Framework Convention on Climate Change Secretariat; 10 developing countries had successfully completed and submitted the first iteration of their national adaptation plans for responding to climate change; developed country Parties continue to make progress towards the goal of jointly mobilizing \$100 billion annually by 2020 to address the needs of developing countries in the context of meaningful mitigation actions.



Goal 14: Life below Water

- Global trends point to continued deterioration of coastal waters due to pollution and eutrophication. Without concerted efforts, coastal eutrophication is expected to increase in 20 per cent of large marine ecosystems by 2050.



Goal 15: Life on Land

- The Earth's forest areas continue to shrink, down from 4.1 billion hectares in 2000 (or 31.2 per cent of total land area) to about 4 billion hectares (30.7 per cent of total land area) in 2015. However, the rate of forest loss has been cut by 25 per cent since 2000-2005;
- About one fifth of the Earth's land surface covered by vegetation showed persistent and declining trends in productivity from 1999 to 2013, threatening the livelihoods of over one billion people. Up to 24 million square kilometers of land were affected.



Goal 16: Peace, Justice, and Strong Institution

- Freedom-of-information laws and policies have been adopted by 116 countries, with at least 25 countries doing so over the last five years. However, implementation remains a challenge.



Goal 17: Partnerships for the Goals

- Total ODA for capacity-building and national planning amounted to \$20.4 billion in 2016, representing 18 per cent of total aid allocable by sector, a proportion that has been stable since 2010.

Source: <https://unstats.un.org/sdgs/report/2018/>

12.4. Earth Overshoot Day 2018

In 2018, Earth Overshoot Day fell on August 1, with 153 days of resources deficit. The date when humanity's annual demand on nature exceeds what Earth can regenerate over the entire year. It is calculated using the following formula: $(\text{planet's bio-capacity}) / (\text{humanity's ecological footprint}) * 365$. This means that for the remaining months of 2018 the humanity will use resources on "credit" – continuing reducing natural resource reserves accumulated over the past years and emitting more

carbon dioxide into the atmosphere. The first "ecological debt" was recorded on December 29, 1970 – resource deficit then was only two days. It is coming earlier each year: in 2000 – beginning of October, 2013 – August 20, 2014 – August 19, 2015 – August 13, 2016 – August 8, and 2017 – August 1. But if business continues as usual, the world would be using the resources equivalent to two Earths by 2030, with Earth Overshoot Day moving up on the calendar to the end of June²³.

²³ <https://www.overshootday.org/>

