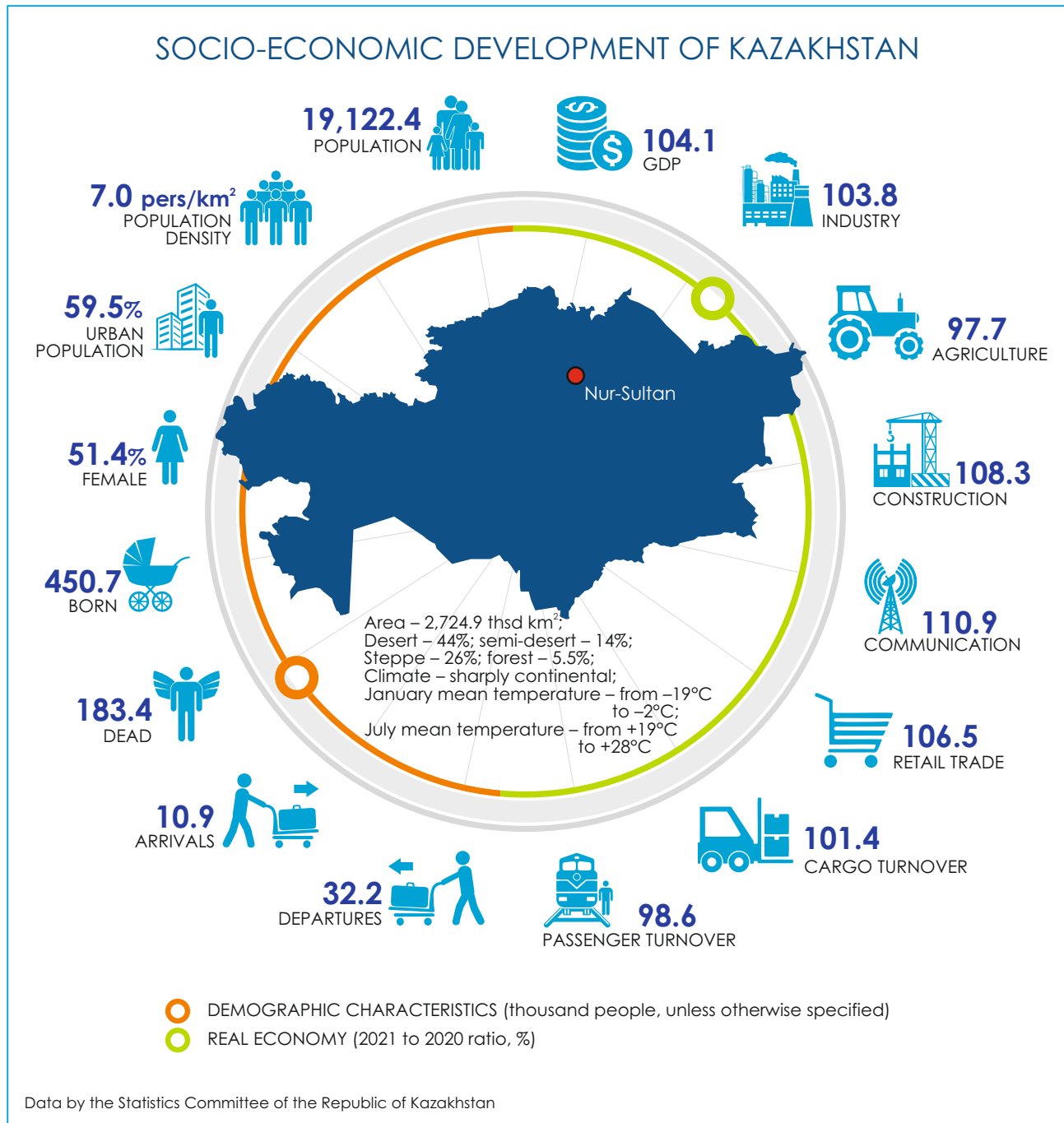




Section 5

Key Water Developments
in the Countries
of Central Asia

5.1. Kazakhstan



Water Sector

Water resources. There are 85 thousand rivers, with the largest of them the Irtysh, Ishim, Ural, Syr Darya, Ile, Chu, Tobol, and 48 thousand large and small lakes in Kazakhstan. The largest lakes are the Caspian Sea and the Aral Sea, followed by Balkhash, Zaisan and Alakol lakes. Glaciers are one of major sources of river water. The total quantity of water in rivers is 101 km³, of which 57 km³ are formed within the republican boundaries. The remaining quantity the country gets from neighboring countries: Russia – 8 km³; China – 19 km³; Uzbekistan – 15 km³; Kyrgyzstan – 3 km³. The available water supply in Kazakhstan is 37 thousand m³/km² or 6 thousand m³ per inhabitant a year.

Latest developments in legislation. (1) Law on amending and supplementing the Water Code of Kazakhstan in part of division of powers between local and central authorities in subsidizing drinking water supply (411-VI of 25.01.2021); Law on ratification of the Protocol for the protection of the Caspian Sea against pollution from land-based sources and activities to the Framework Convention for the protection of the marine environment of the Caspian Sea (71 of 01.11.2021);

(2) Resolutions of the Government of Kazakhstan: on amending and supplementing the Resolution on the list of hydrostructures of strategic importance that can be leased or transferred to fiduciary manage-

ment (214 of 07.04.2021 and 379 of 04.06.2021); on implementation of the Investment Agreement for establishment of a network of demonstration farms and construction of a plant for production of irrigation facilities together with the VALLEY KUSTO GB BV (768 of 26.10.2021);

(3) Resolution of the Kostanai province Akimat (government) on approval of the list of particularly important local water supply systems as having no alternative option for the province (221 of 04.04.2021) and of the Karaganda province Akimat on establishment of water buffer zones in Balkhash Lake around Zelyoniy island and mode of their use (33/03 of 17.05.2021);

(4) Orders by: the Minister of Finance on amending the Order 404 of March 26, 2018, on approval of the format of information about the users who pay for surface water, animals, forests, and specially protected natural territories (508 of 31.05.2021); the Minister of Ecology, Geology and Natural Resources approving the Safety criteria of water systems and structures (172 of 02.06.2021) and the Rules for setting standards of admissible anthropogenic impact on water sites (254 of 16.07.2021); the Minister of Industry and Infrastructure Development on approval of the methodology for charging one cubic meter of drinking water supplied for population from particularly important group or local water supply systems having no alternative (470 of 27.08.2021).

New appointments. S. Bekeshev has been appointed the Minister of Ecology, Geology and Natural Resources of Kazakhstan by Presidential Decree (657 of 10.09.2021).

Results of the growing season. The south of Kazakhstan faced drought again in 2021. To overcome the situation, the irrigation queue was set, additional pumps were installed, and drainage water was put into re-use. Additionally, the acreage under water-intensive crops was reduced: cotton – by 17.9 thousand ha in Turkestan province; rice – by 7.1 thousand ha and 2.4 thousand ha in Kyzylorda and Almaty provinces, respectively. By the beginning of the growing season, the Toktogul reservoir was 52% full of the norm. As a result of negotiations with the upstream countries in the Syr Darya Basin (Kyrgyzstan, Tajikistan, and Uzbekistan), farmers in Turkestan and Kyzylorda provinces has got additional 700 Mm³ of water (by 24% more than in 2020) from the Toktogul reservoir and the Bakhri Tojik reservoir. The Kirov reservoir (Talas River, Kyrgyzstan) accumulated 20% less water than in 2020. Small inflow into the Orto-Tokoy reservoir (Shu River, Kyrgyzstan) was observed during the growing season due to low temperatures in mountains. Negotiations with the Kyrgyz side allowed supplying peasant farms in Zhambyl province with irrigation water.

Water infrastructure. 60% of 3,298 irrigation networks extending to about 20 thousand km is in poor condition. Reconstruction of this poor network is performed on regular basis. Over 2019-2020, 1,734 km of canals were repaired and 111.5 thousand ha of irrigated land were put into use, while in 2021, these were 1,050 km of canals and 78 thousand ha of irrigated land,

respectively. Reconstruction and repair of 42-Mm³ Kyzylgash reservoir, re-conservation of 2-MW Nurly-Shyrak HPP, and construction of the Kensai-Koskorgan-2 reservoir in Turkestan province were completed.

CONSTRUCTION AND RECONSTRUCTION OF WATER INFRASTRUCTURE	
Outcomes of 2021	
4	emergency reservoirs and hydroschemes (Kizilgash, head Uydine, Aytek, Dosan Karabas) rehabilitated
1	reservoir (Kensay-Koskorgan-2) built
1050 km	canals reconstructed
16	canals digitized
271 km	collectors reconstructed
5971	hydraulic structures reconstructed
95	pumped drain wells rehabilitated
AS A RESULT	
13 thsd ha	water availability improved
78 thsd ha	irrigated land reclaimed
273 Mm ³	water losses reduced



Kyzylgash reservoir (Almaty province)



Big Bukon reservoir (East Kazakhstan province)

<https://www.primeminister.kz/ru/news/reviews/ekologicheskie-iniciativy-i-sovershenstvovanie-zakonodatelstvazavitie-sfery-geologii-i-prirodnih-resursov-kazahstana-poitogam-2021-goda-2812150>

Projects. In Turkestan province, (1) first pilot project on digitization of 12-km long K-19 main canal (Makhtalar district) was implemented. This helped to detect up to 45% of irrigation water over-use. The 2021-2025 plan was prepared for automation of 119 main canals, with the total water diversion of about 6 km³ and the total length of 2,830 km, in Almaty, Zhambyl, Turkestan and Kyzylorda provinces. Briefing for Kazakh companies wishing to participate in the tender for irrigation canal automation projects was held; (2) the project "Improvement of irrigation and drainage systems, phase 2" (PUID-2) aimed to improve water availability and conditions of 62.3 thousand ha of irrigated land is implemented. The project will help to reduce 199 million m³ of water losses annually, increase water availability for crops from 65% to 100% and create 12,400 new jobs.

USAID Central Asia water and vulnerable environment project, which is to strengthen regional capacities for management of water resources and reduction of environmental risks in Syr Darya and Amu Darya basins, has been continued. First meeting of the regional steering committee was held in Almaty on November 6.

Capacity building. A training workshop was organized on "Climate Change Adaptation and Mitigation in Central Asia: Climate Change, Water Security and Governance" for young civil servants of Central Asia and Afghanistan, with the support of OSCE Program Office in Nur-Sultan and CAREC on September 21-22. The training was also held for the staff of district water organizations belonging to Almaty, Zhambyl, Turkestan and Kyzylorda branches of RGP "Kazvodkhoz" on October 19 to build capacities of more than 3,000 staff-members (KazNIVH training base, Taraz).

Kazakh experts took part in the international conference "Promoting regional water sector dialogue and cooperation in Central Asia through knowledge networking, partnerships and education" held annually as part of CAWEP (online, March 3-4).

Events. The MEGNR organized a meeting with water sector long-service employees, scholars, and representatives of SIC ICWC, Institute of Geography and Water Security, and KazNIVH to address the issues of water development (November 11).

Interstate cooperation. In 2021, Kazakhstan took part in: 80th (May 11) and 81st (December 7) meetings of ICWC (see [ICWC Meetings](#)); IFAS Board meeting (Dushanbe, June 29); and, 4th (online, May 27), 5th (Dushanbe, October 18), and extraordinary meetings (online, August 16) of the Working group on institutional and legal improvement of IFAS (see [International Fund for Saving the Aral Sea](#)).

Among other meetings held as part of interstate water cooperation were: (1) 28th meeting of the Kazakh-Kyrgyz Chu-Talas River Commission to agree upon the operation modes of reservoirs, schedules of water conveyance along interstate canals and the Strategic Action Program (April); (2) 4th meeting of the Uzbek-Kazakh joint Working Group on environment and water quality in the Syr Darya basin, after which the 2022 Work Plan was adopted (December 13); meetings with relevant ministries of riparian countries: Tajikistan – an agreement was reached on additional releases of 315 million m³ of water from the Bakhri Tojik reservoir over June-August 2021; Uzbekistan – water releases from the interstate Dostyk canal were increased for farmers in Turkestan province, an agreement was reached to increase inflow into the Shardara reservoir, a draft Interstate agreement on transboundary water sharing and the preparation to the

growing season 2021 were discussed; Russian Federation – progress on Kazakh-Russian cooperation programs for ecosystem conservation and restoration in transboundary Ural and Irtysh basins was considered, a water-related situation in the Zhayik basin was considered and an agreement was reached on daily exchange of data on operation regimes of Irlikla, Aktyubinsk, and Kargala reservoirs; Kyrgyz Republic – progressing of the growing season 2021 in the Syr Darya, Chu and Talas basins was reviewed, topical aspects of cooperation under the Chu-Talas Commission and a need for an agreement on the Chumysh waterworks facility were discussed, the dates and amounts of electricity re-delivery by the Kyrgyz party to Kazakhstan as part of water-energy exchange were agreed upon, etc. See also [Bilateral Water Cooperation between the Countries of Central Asia](#).

Drinking Water Supply

Construction of new and reconstruction of old water supply systems were continued as part of the Kazakhstan's 2020-2025 State Housing and Communal Development Program. A fully automated water supply system equipped with up-to-date facilities and energy-saving units has been launched in Turkistan. In 2021, a water conduit and intake structures from the Kishkentay aquifer were constructed to supply Makinsk town in Akmola province, a group water mains were put into operation in two settlements in Aktyubinsk province, and the freshwater group water mains were reconstructed in North-Kazakhstan province.

DRINKING WATER SUPPLY

There are **76 clustered water mains** (hereinafter – CWM), **15.6 thousand km long**, in the Republic; of which **39 CWM, 13.4 thousand km long**, are in the republican property. These CWM provide safe drinking water to **655 rural communities (RC)** of **1.4 mln. people**.

5 projects were commissioned:

- Reconstruction of Presnovsk CWM (II phase) in North Kazakhstan province. Adjustment
- Relocation of Eskulin CWM at the mine site 55 in Karaganda province
- Reconstruction of Eskulin water intake for water supply, Zhezhgazan city
- Reconstruction of Nurin CWM in Akmola province
- Construction of CWM of Kishkintay field to water supply facilities, Makinsk city, Akmola province

3 projects were launched in test mode:

- Construction of Talap CWM in Kyzylorda province
- Construction of Eskulin CWM in Karaganda province. Adjustment
- Construction of Janis-Bi CWM in Aktobe province

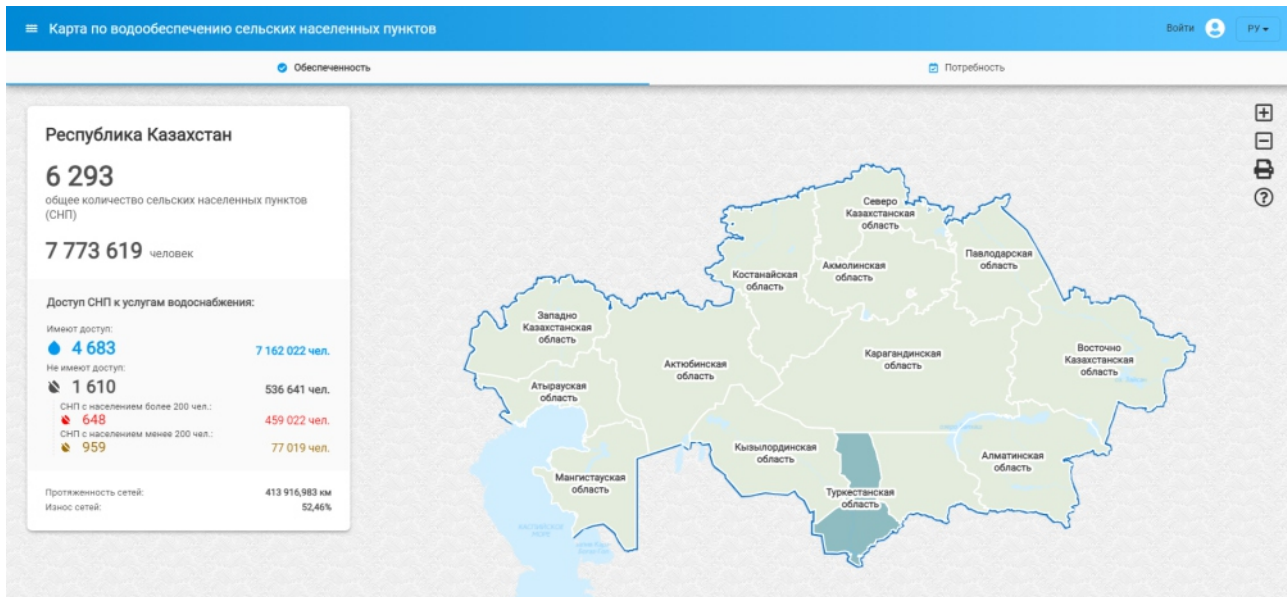
800 km of water mains were constructed or reconstructed



Pumping station of Makinsk CWM (Akmola province)

Improved Water Supply
3 cities
56 RC
209 thsd people

Free interactive map of rural water supply showing the information on access to water, financing availability and needs, population, network extension and deterioration, and other aspects has been launched (<https://auylsu.kz/provision>).



Agriculture

In 2021, the gross agricultural production was 7,515,433.5 million KZT, including 4,387,236.5 million KZT from crop production and 3,116,973.5 million KZT from animal husbandry.

Latest developments in legislation. (1) Laws: on amending national legislative enactments on the cotton sector and invalidating the law on cotton sector development (409-VI of 05.01.2021); on amending and supplementing some national legislative enactments on land relations (39-VII of 13.05.2021 and 59-VII of 30.06.2021).

(2) Resolutions of the Government of Kazakhstan: on amending Resolution 172 of 2009 on approval of the Rules for translation of land within the especially protected natural territories into the reserve land (607 of 03.09.2021); on approval of the national agro-industry development project for 2021-2025 (732 of 12.10.2021); on amending Resolution 1071 of 2003 on approval of maximum sizes of agricultural land plots within one administrative district (city) that can be owned by a Republican citizen for farming purposes, a non-state legal person of the Republic and its affiliated persons for agricultural commodity production purposes and that can be leased by foreigners, persons without citizenship and foreign legal persons for agricultural commodity production purposes (839 of 24.11.2021); on approval of the Concept of agro-industry development in Kazakhstan for 2021-2030 (960 of 30.12.2021).

The **Fisheries Development Program 2021-2030** was approved by Governmental Resolution 208 of 04.05.2021 to supply population with fish products and create conditions for development of fishery (aquaculture). Another Governmental Resolution (732 of 12.10.2021) approved the **National Project for agro-industry development in Kazakhstan for 2021-2025**. The Project aims to create competitive agro-industrial sector by increasing productivity 2.5 times, increasing exports of agro-industrial products 2 times and

providing domestically the socially important foodstuffs.

A Land Reform Commission was established for deliberations on the **draft Land Code of Kazakhstan** and to develop proposals on the improvement of land legislation. A draft Law on individual subsidiary farming (PP RK 985 of 31.12.2021) is under debate.

State strategies and programs. In 2021, as part of the State agro-industry development program in Kazakhstan for 2017-2021 (PP RK 423 of 12.07.2018), a steady inflow of investments in agriculture was continued: investments increased by 33.3% and amounted to 773.2 billion KZT, and food production increased by 3.1% and amounted to 114.4 billion KZT. Labor productivity per person employed in agriculture was 2,153.5 thousand KZT for 9 months (1,823.5 thousand KZT for 9 months of 2020). The state program for productive employment and mass entrepreneurship development for 2017-2021 (PP RK 746 of 13.11.2018) allocated 20 billion KZT from the republican budget and 15.3 billion KZT from the national fund. These funds were used in full: 11,118 loans were given and 9,051 jobs were created.

As part of the 2025 National Development Plan, National priority 8 "Build diversified and innovative economy", Task 5 "Agro-industrial reformation for adaptation to new context", the **Concept of agro-industry development in Kazakhstan for 2021-2030** was developed and adopted. The agro-industrial reforms will be focused on: re-orientation of associated cost policies to achieve the long-term competitiveness; knowledge and digitization as drivers of productivity; value chains.

Agro-industry reform and modernization. By the end of 2021, more than 67.7 billion KZT of budget funds (65%) was allocated for subsidizing agricultural machinery, about 13.3 billion KZT (13%) subsidized investment projects in animal husbandry, and 23 billion KZT (22%) was directed to support crop production projects.

The Ministry of Agriculture approved the list of insurance products in agro-industry, including on the index of soil moisture deficit and soil moisture excess. Farmers can ensure the safety of their capital with the Agroinsurance information system (www.goldau.kz/). In 2021, insurance companies provided insurance for 144.8 thousand ha of crops (121.3 thousand ha against drought and 23.5 thousand ha against moisture excess). Agricultural producers received 825 million KZT under 92 insurance contracts.

The RS monitoring of agricultural land use has been introduced countrywide since January 2021. Measures have been taken to return wasteland to the state: preliminary, 22.4 million ha have been identified in the Republic and 3.2 million ha were returned to the state property.

Digitization of agriculture is underway:³¹ (1) Kazakh agrarian universities together with leading IT universities have introduced curricula for training of agricultural staff in digital skills (Digital agrosystems, Bio-informatics, Agro-informatics); (2) Kazakh Beeline has developed the Egistic digital product (<https://egistic.kz/>), which helps to timely respond to emergencies and adjust crop or animal production schedules, analyzes RS-data, identifies hotspots at field level, and provides recommendations on differentiated fertilization.

International cooperation. An investment agreement was signed with the Valmont Industries to create in Kazakhstan a network of demonstration farms and construct a plant for manufacturing modern irrigation systems.

The National Agrarian Research Education Center and Belorussian Agrarian Technical University have signed the cooperation agreement in the field of research, education and training.

Agricultural ministers of Kazakhstan and Hungary signed the Memorandum of Understanding, which provided for the establishment of an International Kazakh-Hungarian Center for Agro-industrial Innovations on the base of National Agrarian Research University of Kazakhstan (KazNAIU). The Minister of agriculture and the WB have agreed to cooperate under the technical assistance to agricultural development.

A "Smart Greenhouse" based on South Korean technology was created at the educational experimental farm of KazNAIU.

Events. Among the events organized in 2021, the following can be cited: (1) International scientific-practical conference "Current problems of agro-science in adaptation context" (June 17-18); (2) International specialized agricultural exhibition "AgriTek Astana" (June 23-25). The Minister of Agriculture participated in the 3rd Meeting of Central Asian Ministers of Agriculture on March 15.

Energy

As of January 2022, the total installed capacity was 23.959 thousand MW (23.55 in 2020), while the available capacity was 20.2 thousand MW (20.04 in 2020). In January-December, energy generation amounted to 114.4 billion kWh (by 5.8% more than in 2020), including 91.16 billion kWh by thermal stations, 10.7 billion kWh by gas-turbine thermal stations, 9.18 billion kWh by hydropower plants, 1.76 billion kWh by wind stations, 1.64 billion kWh by solar stations, and 0.0025 billion kWh by biogas installations. Consumption increased by 6% as compared to 2020 and amounted to 113.89 billion kWh. Electricity exports reached 2.65 billion kWh (1.33 to Russia and 1.32 to CA), while imports were 2.09 billion kWh (1.79 and 0.31, respectively).

By orders of the Minister of Energy, changes were made to the: Development Plan of the Ministry of Energy for 2020-2024 (345 of 11.11.2021); Tariffication rules to support renewables (252 of 31.07.2022); Rules for centralized purchase and sale by the Financial Settlement Center of electricity generated from renewables, waste utilization and flood energy (252 of 30.04.2021). The forecast balances of electricity and capacities have been also approved for 2022-2028 (16 of 14.01.22).

New appointments. M.M. Mirzagaliev was appointed Minister of Energy by UP RK 655 of 09.09.2021.

Hydropower. The total hydropower potential of 170 billion kWh a year in Kazakhstan is formed by river basins of Irtys (Bukhtarma, Shulbinsk, Ust-Kamenogorsk HPPs), Ily (Kapshagai, Moynak HPPs) and Syr Darya, Talas and Chu (Shardara HPP). The technically feasible potential is 62 billion kWh, of which 30 billion kWh are estimated as economically feasible. Charyn, Chilik, Karatal, Koksau, Tetek, Khorgos, Tekes, Talgar, Usek, Aksu and Lepsy rivers are most promising for hydropower construction.

According to the 2020-2030 Hydropower Development Plan³²: (1) Turgus-1 and 2 on the Chazha River and HPP on the Keles River, with commissioning 90 MW in 2021, are to be completed; (2) by 2030, the installed capacity of operating HPPs is to be increased by 464 MW and the total volume of operating HPPs is to be raised by 6 km³; (3) 1 500 MW of small hydropower and 1 300 MW of large hydropower are to be commissioned by 2030.

AO Samruk-Energy³³ started constructing a counter-regulating 40-MW Kerbulak HPP on the Ily River (2021-2026) downstream of Kapshagai HPP to increase regulating capacity of the latter to 300 MW, balance non-uniform weekly and daily water releases and

³¹ As part of the State Program "Digital Kazakhstan", Task 3. Agricultural digitization

³² Approved in 2020

³³ By January 2022, the established capacity of AO Samruk-Energy's stations was 6,214.1 MW (26% of total installed capacity in the Kazakhstan energy system) and the production was 35,609 million kWh (31% of total production in Kazakhstan)

compensate peak loads in the capacity- and energy deficit Almaty energy system and South Kazakhstan energy zone.

Thermal power. Thermal power stations still dominate in the national energy balance contributing 88% to generation (including gas-turbine stations)³⁴.

Alternative energy sources. In 2021, power generation from renewables amounted to 4.22 billion kWh (by 30.1% more than in 2020). Kazakhstan has 134 RES facilities (19 new facilities were commissioned in 2021), with the total capacity of 2,010 MW (wind – 684; solar – 1,038; small hydropower – 280; bio – 8). It is planned to commission 10 facilities with the total capacity of 290.6 MW by the end of 2022. RES potential in Kazakhstan is estimated as follows: wind – 920 billion kWh/yr; hydro – 62 billion kWh/yr; solar – 2.5 billion kWh/yr; geothermal – 4.3 GW.

To develop alternative energy and convert the half of total country consumption to alternative and renewable sources by 2050³⁵, the Consultation document of regulatory policy to the draft law on alternative energy development was developed.

Small hydropower. In 2021, generation by small hydropower decreased by 18% as compared to 2020 and amounted to 799.7 million kWh.

As part of One Belt, One Road, the Turgusun HPP was put into operation in Altay mountains, East-Kazakhstan province in 2021. The total installed capacity of the plant is 24.9 MW, and the average annual generation is 79.8 million kWh. The 25.8-MW HPP-2 on the Chazha River was commissioned in Almaty province.

AO Samruk-Energy conducts the pre-design work on construction of HPP-29. Also, reconstruction and modernization of the hydropower cascade in Almaty province is planned for 2022-2028 for more efficient utilization of hydro-resources of the Bolshaya Almatinka River.

Solar power took the second position among RES by generation in 2021 – 1,641 million kWh (38.9%). 50-MW Shoktas station with the forecast annual production of 102,000 MWh and 10-MW Kushata station to generate 20,100 MWh annually were commissioned by the Khevel company group³⁶ in Turkistan province. The solar stations would allow avoiding 62,000 t of CO₂ emissions.

Wind power was the leader by generation in 2021 – 1,776 million kWh (42.1% of green generation). This is 61% more than in 2020.

The 50-MW Ybray station was commissioned in Kostanai province and 48-MW Badamsha-2 was laun-

ched in Aktyubinsk province. In 2021, AO Samruk-Energy³⁷ implemented solar projects with the established capacities from 45 MW to 60 MW in Almaty and Akmolinsk provinces.

Events. For the first time in CA, Kazakhstan hosted the **World Energy Week 2021: Energy for better lives**³⁸ in Nur-Sultan in October 4-8.

International cooperation. A memorandum of cooperation was signed with EBRD for development and implementation of the long-term Power and Gas Infrastructure Development Strategy aimed to ensure carbon neutrality of power and gas infrastructure in Kazakhstan by 2060.

Agreements were reached with the Arabian ADQ and French "Total Energies" on gradual commissioning of new RES capacities of 5 GW in the near decade. Such joint investment project will help to reduce emissions by 8 million t, generate additional 20 billion kWh of green energy, and create 3 thousand jobs.

Environment and Climate Change

Latest developments in legislation. The new Environmental Code of the Republic of Kazakhstan went into effect in January 2021.³⁹ This latest edition provides for the stronger responsibility of industrial enterprises for environmental pollution, the waste management hierarchy, and the construction of plants for waste-to-energy. Laws were adopted on amending and supplementing the Code on administrative offences in environmental area (403-VI of 02.01.2021) and on ratification of the Protocol on environmental impact assessment in a transboundary context in the Caspian Sea Region to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (66-VII of 04.10.2021).

The national project "Green Kazakhstan" was approved in October 2021 for environmental improvement in the Republic. The Project includes four directions: (1) Clean Kazakhstan, for air quality improvement, sustainable waste management, and aquatic ecosystem conservation; (2) Economical Kazakhstan, for better productivity through water saving and energy efficiency; (3) Nature, for development of especially protected nature territories, restoration of rare and endangered fauna, conservation of fish and other aquatic animals, and preservation of forests; (4) Future of ecology, for mainstreaming of environmental aspects in education and formation of ecologically oriented information space.

Strategies. The ongoing strategy "Kazakhstan 2050: new policy course of the established state" sets clear

³⁴ In 2021, the stations of AO Samruk-Energy provided 5,766 thousand Kcal of thermal energy

³⁵ Strategy "Kazakhstan 2050: new policy course of the established state"

³⁶ The total capacity of solar generation projects by Khevel is 288 MW

³⁷ AO Samruk-Energy has five RES projects, with the total generation amounting in 2021 325.3 million kWh. This is 7.7% of electricity generated by all RES facilities in Kazakhstan

³⁸ Organized by KAZENERGY Association together with the World Energy Council

³⁹ First Environmental Code was adopted in 2007

targets for building sustainable and effective economy based on green transition.

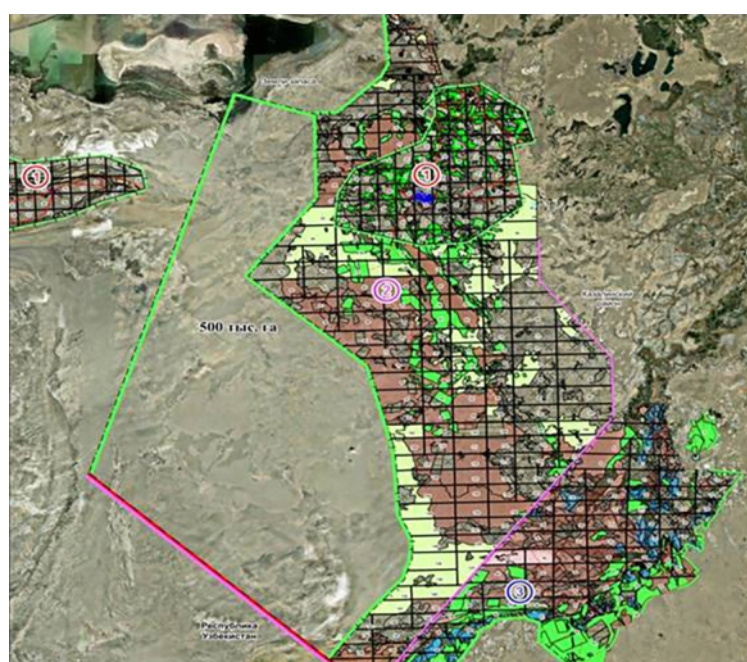
Progress in implementation of the Concept for green transition of Kazakhstan for 2021-2030 was discussed at the roundtable "Green economy – a paradigm of innovative and sustainable development in Kazakhstan" on May 25 and at the meeting of the Council for Green Transition in June.

A draft Doctrine (Strategy) for the achievement of carbon neutrality in Kazakhstan by 2060 was presented

at the international conference "Ways for achievement of Paris Agreement goals and carbon neutrality by Kazakhstan" on October 13 in Nur-Sultan. The Strategy includes the analysis of climate actions, the assessment of co-benefits from the reduction of greenhouse gas emissions and the increase of carbon catchment, incentives for investments and market, etc.

As a follow-up to the President's order on saxaul plantation on the exposed bed of the Aral Sea, 100,000 ha were afforested in 2021. It is planned to afforest additional 250,000 ha in 2022.

PLANTING SAXAUL ON THE DRIED BED OF THE ARAL SEA



AFFORESTATION OF **100 THSD HA:**

35 UNITS OF EQUIPMENT USED

741 MLN KZT SPENT

100 thsd ha
250 thsd ha
337 thsd ha



<https://www.primeminister.kz/ru/news/reviews/ekologicheskie-iniciativy-i-sovershenstvovanie-zakonodatelstva-razvitie-sfery-geologii-i-prirodnih-resurov-kazahstana-po-itogam-2021-goda-2812150>

The President in his message to the people of Kazakhstan in 2020 instructed to plant 2 billion trees. In 2021, 138 million trees were planted. An interactive map for monitoring of afforestation has been launched (<https://orman.gharysh.kz/ru/map>). During the annual "All-Kazakhstan afforestation day" over 60 thousand people planted about half a million of trees in 2021.

Projects. As part of: (1) EcoQolday project dealing with waste processing and utilization, first children ecological theater including the "Eco-workshop" was opened; (2) [Regional approaches for combating sand and dust storms and drought](#) project, a National action plan on mitigation of sand and dust storms in Kazakhstan for 2021-2024 has been developed. The [NAP](#) includes an overview of Kazakhstan's current national efforts and international commitments in combatting desertification, as well as a map of SDS sources and a comprehensive analysis of the

sources and causes; (3) Assistance to media coverage of transboundary environmental issues in Central Asia and the courses⁴⁰ on the media coverage of the Aral Sea problems were held for journalists in Kazakhstan and Uzbekistan. Upon completion, a press tour to the Aral Sea was organized and [#ARALIssues Conference-2021](#) was held to present multimedia stories (December 10, Almaty). See [Major Events in Central Asia](#).

Capacity building. Training courses for journalists on "Environmental journalism for sustainable development" were held within the framework of the Memorandum of Understanding and Cooperation between the Kazakh Ministry of Information and Social Development, KazNU and MEGNR (March 15-19).

International cooperation. A Program of Kazakh-Russian cooperation⁴¹ in the field of especially protected nature territories was signed for 2021-2024 in March.

⁴⁰ By the International Center for Journalism MediaNet and DW Akademie, with the support of the German Federal Foreign Office

⁴¹ As part of the Agreement between the Government of Kazakhstan and the Government of the Russian Federation on environmental cooperation

MAJOR ENVIRONMENTAL PROBLEMS IN THE REGIONS

Air pollution



- Out of **45** industrial cities and megacities, **10** cities have a **high air pollution index** (API)
- **2.4** Mt of pollutant emissions (2021)



Surface water pollution

- Outdated wastewater treatment plants in Aqtobe, Atyrau, Kostanay, Semey cities
- **2.6** Mt of pollutant discharged (2021)

Poor system of waste management



- **2,024** landfills do not meet sanitary and environmental requirements
- **7,328** unauthorized dumpsites identified



Air pollution index

● Low (0-4)
 ● Medium (5-6)
 ● High (7-10)

<https://www.primeminister.kz/ru/news/reviews/ekologicheskie-iniciativy-i-sovershenstvovanie-zakonodatelstva-razvitie-sfery-geologii-i-prirodnyh-resursov-kazahstana-po-itogam-2021-goda-2812150>

First “Kazakhstan-Ukraine” climate dialogue⁴² was held in hybrid format on May 25-26. Development of partnership and international cooperation, exchanges on protection of especially protected natural territories, development of transboundary ecological tourism and environmental awareness were on the agenda.

Developments and events. In 2021, the Eurasian Environmental Fund (EEF)⁴³ was established for implementation of green projects in Kazakhstan, extension of afforestation area and assistance in shifting to low-carbon economy. The State National Nature Park “Ulytau” was formed on an area of 58.9 thousand ha in Karaganda province.

120 thousand volunteers, ecologists and other sectoral representatives took part in the Clean Kazakhstan campaign on the World Environment Day.

Prime-Minister of Kazakhstan, while speaking at COP 26 in Glasgow, has underlined that Kazakhstan would increase 5 times the share of RES (from 3 to 15%) and 2 times the generation by clean energy sources (20 to 38%), reduce energy from coal from 70 to 40%, and increase the potential of carbon sequestration by planting over 2 billion trees by 2025. He also acknowledged the commitment of Kazakhstan to act as a Regional CA climate hub for sustainable development. As part of COP26, Kazakhstan joined the Declaration on forest and land use and the commit-

ment on youth education and representation and signed with Tajikistan the Charter of the Green Bridge Partnership Program⁴⁴.

Emergencies and Disasters

Over 13 thousand natural and anthropogenic emergencies were registered throughout the country in 2021. The damage from natural disasters was estimated at 6,993 million KZT.

Preventive measures. As part of implementation of the Comprehensive Plan for Mudflow, Landslide and Avalanche Safety for 2020-2024, construction of mudflow retaining dams on the Aksai and Ayusai rivers was continued to protect the population of Almaty and Almaty provinces and minimize economic damage from mudflows. Kazakhstan, together with the PRC is also constructing the Chukurbulak mudflow retaining dam, as well as protective structures on the Khorgos River.

The following measures were taken: cleaning of discharge channels, installation of traps on 17 most hazardous moraine-dammed lakes, controlled discharges of more than 6 million m³; strengthening of 51 km of banks and cleaning of 72 km of river bed, construction and current repair of 78 km of protective dams, construction and cleaning of 21 km of drainage channels, installation of 4 local warning systems.

⁴² Organized on initiative of the Embassy of Kazakhstan in Ukraine with the support of environmental ministries

⁴³ Non-profit organization established by the AIFC Green Finance Centre, the Corporative Fund “Biodiversity Conservation Fund of Kazakhstan” and TOO “Green Investment Group

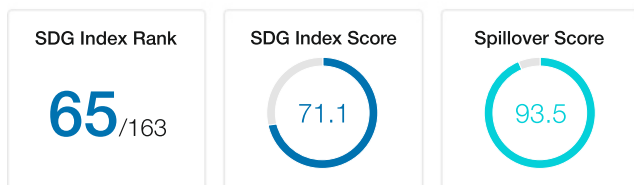
⁴⁴ Initiated at 66 UNGA and approved as an inter-regional, practical and voluntary mechanism for green transition

Kazakhstan

Eastern Europe and central Asia



OVERVIEW INDICATORS



SDG Dashboards and Trends



Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable
Trends: ↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing •• Trend information unavailable

SDG in Kazakhstan

Implementation of SDGs is continuously monitored by both the Government of Kazakhstan and UN representatives. The SDG monitoring system of Kazakhstan includes 280 indicators (205 global and 75 national ones). Kazakhstan ranked 65th among 163 countries in the annual sustainable development rating published by the UN and the Bertelsmann Foundation <https://dashboards.sdgindex.org/rankings>

Foreign Policy and International Cooperation

The key principles of the Kazakhstan's foreign policy as set in the Foreign Policy Concept for 2020-2030 speak as follows: external openness of the state; favorable external conditions for the well-being of Kazakhstanis; multivectorness, pragmatism and proactivity; collective vision and effective approaches of the international community to address a wide range of problems; symbiotic relationship between security and development at the national, regional and global levels.

Working and official visits. In 2021, the Head of State visited South Korea (August), Turkmenistan (August,

October), Turkey (November), Belgium (November), Switzerland (November) and the Russian Federation (December) as part of his state, working or official visits.

Development of alliances and strategic partnerships. Kazakhstan expands ties and strengthens cooperation with CIS countries, the SCO and Central Asia in trade, economic, cultural and humanitarian spheres.

While speaking at the Consultation meeting of the Heads of State, the President of Kazakhstan has underlined: (1) the Concept of low-carbon development until 2050, which would allow the country to achieve carbon neutrality by 2060 and reduce emissions by 15%; (2) the need for systemic adoption of innovations and training for the energy sector and the New Energy Skills Center formed to this end; (3) the important aspect of new country water policies in the region as the digitization of water distribution, accounting and monitoring. Cooperation should be resumed under the 1998 Agreement on the use of water-energy resources in the Syr Darya River Basin. To this end, it is proposed to form a special working group at the level of vice-ministers to find mutually acceptable solutions. The possibility of establishing an Interstate water-energy consortium in CA in order to harmonize the interests of all the countries in hydro-

power, irrigation and environment can be revisited. "It is important to intensify efforts of the Regional working group on institutional and legal improvement of the International Fund for saving the Aral Sea as it plans to discuss the above matter" (August 6).

During the official visit to Turkmenistan, 20 agreements were signed in the areas ranging from trade, transport, agriculture to science (October 24-25). Kazakhstan-Uzbekistan relations received a new impetus during the state visit of the President of Uzbekistan to Nur-Sultan. A Declaration on allied relations between the Republic of Uzbekistan and the Republic of Kazakhstan was adopted. According to this Declaration, the Supreme Interstate Council, the Council of Interparliamentary Cooperation, and the Council of Ministers of Foreign Affairs of Uzbekistan and Kazakhstan are to be established (December 6). See [Bilateral Water Cooperation between the Countries of Central Asia](#).

Kazakhstan and Russia held the **XVII Forum of Inter-regional Cooperation between Russia and Kazakhstan** on the theme "Environmental and Green Growth Cooperation". A package of documents was signed on the margins of the Forum (September 28-30).

Kazakhstan participated in the (1) CIS meetings: the Council of Foreign Ministers (April 2, Moscow; October 14, Minsk), the Council of CIS Heads of State (October 15, online), and informal summit of CIS Heads of State (December 28, St. Petersburg); (2) ECO meetings: 4th Business Forum of the ECO Member States (November 26, Ashgabat), 25th meeting of the ECO Council of Ministers (November 27, Ashgabat), 15th ECO Summit, which resulted in the "Ashgabat consensus of actions" (November 28, Ashgabat) (3) SCO meetings: regular meeting of the Council of National Coordinators of the SCO Member States (April 27-30, Tashkent; November 19-21, Nur-Sultan); 16th Meeting of Secretaries of the Security Council of the SCO Member States (June 23); meeting of the Council of Foreign Ministers of the SCO Member States (July 13-14); the CSTO Collective Security Council session (September 16); the high-level meeting of the SCO Heads of State Council (September 17).

Chairmanship in international organizations. In 2021: (1) the meetings of the Supreme Eurasian Economic Council were held under the chairmanship of Kazakhstan (May 21, online, October 14, online, December 10, Almaty). Kazakhstan also took part in the meetings of the Eurasian Intergovernmental Council (April 29-30, Kazan, August 19-20, Cholpon-Ata, November 18-19, Yerevan); (2) at the 4th General Assembly of the Islamic Food Security Organization (IFSA)⁴⁵ Kazakhstan was delegated chairmanship in IFSA (September 8-9); (3) under the chairmanship of Kazakhstan in CICA⁴⁶, a series of events were held, including the 4th Meeting of the CICA Youth Council (June 18), the Conference "Food

Security in Asia: Prospects for Cooperation in the CICA Area" (September 15), and the 6th Meeting of CICA Foreign Ministers (October 11-12).

Promotion of the national interests and reinforcement of the country's image. Kazakhstan actively cooperates with the OIC, UN, EU, OSCE, ECO and others. At the initiative of the first President Nazarbayev, an **informal summit of the Cooperation Council of Turkic-speaking States** was held. The agenda included the expansion and strengthening of multifaceted interstate partnership. As a result, the Turkestan Declaration was adopted (March 31, online).

K.-J. Tokayev noted, speaking at (1) the opening ceremony of the **second OIC Science and Technology Summit** as chairman of the first Summit: "...we need to increase investment in human capital development, especially in good education. It is also vital to strengthen and develop our scientific cooperation. With these measures we will be able to revive the glory of the Islamic world in science and innovation" (June 16, online); (2) **general debate of the 76th UNGA session**: "...we focus on Central Asia's water related problems, including water scarcity, quality deterioration and inefficient use. Our region's water security is inextricably linked to energy, food and the environment... Kazakhstan continues proposing a regional water and energy consortium as a way to coordinate current strategies for achieving common goals" (September 23).

Sources:

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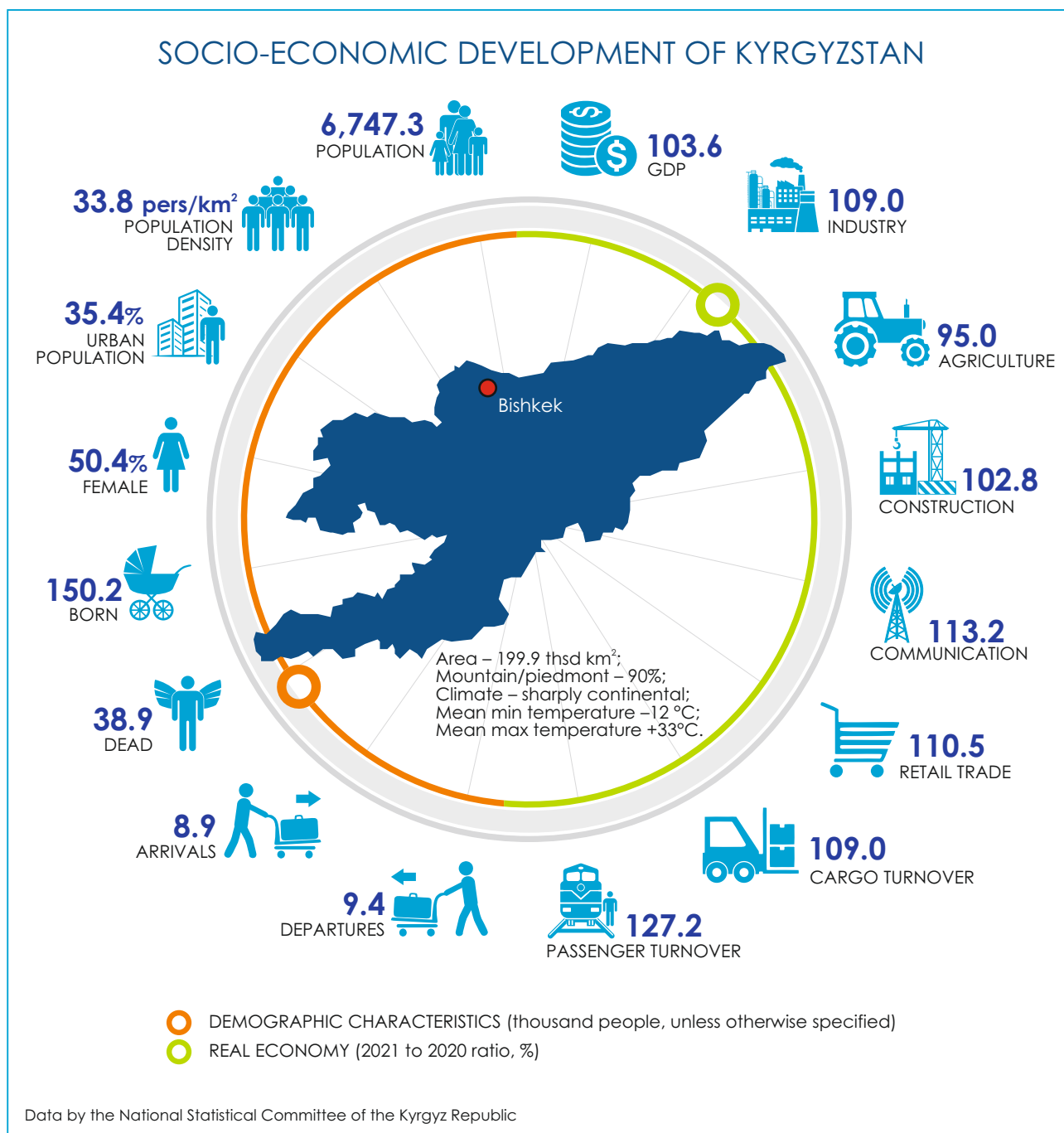
Information agencies and sites:

<https://inbusiness.kz/ru/>;
<https://ainews.kz/>;
www.kazenergy.com/ru/;
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<https://kazakh-zerno.net/>;
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<https://kaztag.kz/ru/>;
<https://centrasia.org>

⁴⁵ IFSA is a specialized organization of OIC, with headquarters in Nur-Sultan

⁴⁶ Kazakhstan serves as the chairman of CICA in 2020-2022

5.2. Kyrgyz Republic



Latest developments in legislation. The following legal documents were approved in 2021: (1) Constitution of the Kyrgyz Republic in new edition (ZKR 59 of May 5); "National Development Program of the Kyrgyz Republic until 2026" (UP 435 of October 12). The Constitutional Law "On the Cabinet of Ministers of the Kyrgyz Republic" has been adopted as well.

Water Sector

The total available water resources in the Kyrgyz Republic are 2,458 km³, including 650 km³ (26.4%) in glaciers, 1,745 km³ (71%) in lakes, 13 km³ (0.5%) as potentially usable groundwater resources, and 44.5 to 51.9 km³ (2%) as average annual river runoff. There

are about 3,000 rivers and streams, the catchment area of which occupies 7% of the territory. The amount of annually renewable groundwater in major artesian basins is within 7.7 km³. The current glaciation accounts for 4% of the country's territory.

The total water consumption in the republic is estimated at 10-12 km³ per year. The water transportation losses in rivers, canals and irrigation structures amount to 1.7-2.3 km³. Owing to natural (mainly relief) conditions, irrigation water is supplied mainly from small rivers serving about 800,000 ha or 76% of the total irrigated area: 80,000 ha (11%) are irrigated from regulated sources, while the rest of 720,000 ha, by natural flow.

Public administration reforms. By the Decree “On institutional measures amid the adoption of a new Government structure and reform of executive authorities in the Kyrgyz Republic” of February 12, 2021, the following restructuring was undertaken: (1) the Ministry of Agriculture, Food Industry and Land Reclamation was transformed into the **Ministry of Agriculture, Water Management and Regional Development**; with the transfer of regional development functions from the Ministry of Economy and Finance; (2) the **State Water Resources Agency** was transferred from the Government of the Kyrgyz Republic to the Ministry of Agriculture, Water Management and Regional Development, except for the Department of Drinking Water Supply and Sanitation, which was transferred to the Ministry of Transport, Architecture, Construction and Communications; (3) the State Agency for Environmental Protection and Forestry under the Government of Kyrgyz Republic was transformed into the State Forestry Agency with the transfer under jurisdiction of the Ministry of Agriculture, Water Management and Regional Development, except for functions in the field of ecology and environmental protection that were passed to the Ministry of Emergency Situations.

In 2021, by government decrees, the following organizations were renamed: (1) State Water Resources Agency under the Ministry of Agriculture, Water Management and Regional Development into the Water Resources Service under the Ministry of Agriculture; (2) State Land and Water Inspection under the Ministry of Agriculture, Water Management and Regional Development into the Service for Land and Water Supervision under the Ministry of Agriculture of Kyrgyzstan. The Department of Development of Drinking Water Supply and Sanitation under the Ministry of Transport, Architecture, Construction and Communications has become part of the State Agency for Architecture, Construction, Housing and Communal Services under the Cabinet of Ministers of Kyrgyzstan.

Latest developments in legislation. Amendments have been made in the Water Code of the Kyrgyz Republic and the Law on gatherings (associations) of water users and unions of Water User Associations”.

The procedure for calculation and charging of fees for the use of surface water, particularly the tariffs for industrial users, has been approved by the relevant decree of the Cabinet of Ministry of October 18.

Water-saving technology. A new leasing project valuing 426.7 million KGS has been developed to disseminate modern irrigation technologies, sprinkler and drip irrigation systems. Agricultural producers can get agricultural and processing machinery, as well as equipment for drip irrigation on preferential terms for 10 years with the interest rate of 4.5%.

Projects. The following projects continued in 2021: (1) **Additional financing to the National Water Resources**

Management Project (AF NWRMP, SDC, State Water Resources Agency), providing for the establishment of 30 community water councils (in addition to the 73 established under Phase 1)⁴⁷. A number of **trainings** was organized and held for specialists from State Water Resources Agency, Main and Regional Departments for Water Resources and BWAs of Karadarya-Syrdarya-Amudarya basin in GIS mapping, Public Water Councils, WUA management plans for on-farm irrigation and drainage infrastructure, water use improvement, etc.

(2) “Improvement of agricultural productivity and nutrition” (APNIP, US\$ 38 million, GAFSP, WB): 31 WUAs of the southern and northern regions were included into a rehabilitation program as a part of Rehabilitation and modernization of irrigation and drainage infrastructure component (Component 1).

Rehabilitation works were completed in 8 WUAs, including in “Kur-Tash” of Aravan district, Osh province in 2021. The work in WUA “Khodja-Ariq” is underway in Nookatsk district, Osh province.

Projects aimed at increasing and improving water availability were implemented in the following districts: Kadamjaysk (1.5 ha), Batken (1.5 thousand ha), Leylek (2.5 thousand ha), Panfilov (3.6 thousand ha)⁴⁸, Jailyk (0.7 thousand ha), Keminsk (2.6 thousand ha).

Drinking Water Supply

Projects and programs. In 2021-2023, development of irrigation, water supply and social infrastructure were among the most important priorities of state investments. More than 16.4 billion KGS have been allocated for drinking water supply projects.

According to the plan of “National Development Program until 2026”, it is planned to allocate US\$ 470 million for provision of clean water to 95% of settlements in the country within the next 5 years at the expense of external donors and republican budget. It is planned to connect about 100 villages to clean and safe drinking water facilities every year. To ensure sustainable water supply, the financial model of drinking water operators functioning is developed.

Construction and rehabilitation of drinking water infrastructure were planned in 96 villages for 2021 and in 645 villages up to 2024 through donor funds, republican budget and other sources.

Implementation of the following projects have been continued: “Improvement of water supply in Bishkek (Phase II)” (EBRD-SECO), “Water supply and sewerage system rehabilitation in Talas” (EBRD-SECO), “Water supply and sewerage system rehabilitation in Kant” (EBRD-SECO), “Water supply and sewerage system rehabilitation in Batken city” (IFCA, EBRD), “Water supply and sewerage system rehabilitation in Naryn

⁴⁷ The Talas and Karadarya-Syrdarya-Amudarya Basin Water Administrations were established and their provisions were approved by Order No. 211 and No. 212 of 23 December 2020 of the Director State Water Resources Agen

⁴⁸ As part of the “Sustainable Rural Development in the Kyrgyz Republic” (IDB, ISFD, GKR, \$11 million, 2017-2021)

city" (SECO-EBRD), "Water supply and sewerage system rehabilitation in Osh", Phase-2 (EBRD, IFCA, EIB), "Water supply and sewerage system rehabilitation in Kara-Suu, Kyzyl-Kiya, Mailuu-Suu, Cholpon-Ata, Tokmok, Balykchy, Toktogul (EBRD, IFCA, EIB)" and others.

New projects have begun: "Water supply system rehabilitation in Karakol city" (EBRD), "Water supply system rehabilitation in local self-governance entities of Myrza-Ake, Don-Bulak and Kurshab" (EBRD), "Water supply and sewerage system rehabilitation in Zhalal-Abad city", Phase-2 (EBRD), "Water supply system rehabilitation in Isfana town" (EBRD), "Improvement of rural water supply and sanitation in the Kyrgyz Republic" (IDB, WB, SFD).

A number of loan and grant agreements have been ratified between the Kyrgyz Republic and international partners, in particular:

(1) "Water supply and sewerage system rehabilitation in Kerben city" (€6.5 million, including 2.5 million – EBRD loan, €3.0 million – EU grant from IFCA funds, €1.0 million – EBRD grant from technical cooperation funds). (2) "Water supply and wastewater disposal system rehabilitation in Nookat city" (€4.6 million, including €2.2 million – EBRD loan, 2.0 million – EBRD grant, 0.6 million – non-reimbursable technical assistance from the Japanese Government through the Cooperation Fund).

The work on development of the WB project "Climate Resilient Water Supply" has been started (\$100 million, implementation period scheduled for late 2022). The project is aimed at (1) increasing access to climate-resilient water services in selected river basins; (2) strengthening institutional capacity for climate-resilient water management at local and national levels.

Agriculture

Agricultural production. Heat waves in summer and irrigation water shortage during the growing season have caused a decrease in cereal yields. Thus, the bulk yield of wheat and barley decreased by 42% and 46%, respectively, compared to the same date last year. In addition, the bulk yield of oilseed crops decreased by 25.4%, sugar beet, by 19%, melons, by 14%, fruit and berry crops, by 3.9%, corn, by 3.3%, potatoes, by 2.9%, and vegetables, by 1.3%.

Irrigated area. According to the State Statistics Committee of the Kyrgyz Republic, the total crop acreage amounted to 1,226.2 thousand ha, which is 2.6 thousand ha more compared to 2020. Grain crops (without pulses, rice and buckwheat) were cultivated on 580.8 thousand ha (47.4% of all sown area), pulses – on 60.7 thousand ha (5%), oilseeds – on 17.1 thousand ha (1.4%), cotton – on 19.2 thousand ha (1.6%), tobacco – on 0.4 thousand ha (0.03%), sugar beet (factory farming) – on 10.3 thousand ha (0.8%), potatoes – on 74.9 thousand ha (6.1%), vegetable and forage crops – on 54.3 thousand ha (4.4%) and 384.3 thousand ha (31.3%), other crops (rice, cucurbits and others) – on 24.2 thousand ha (2%).

Public administration reforms. The Ministry of Agriculture of the Kyrgyz Republic has been formed according to the Presidential Decree (425 of 12.10.2021) "On the structure and composition of the Cabinet of Ministers of the Kyrgyz Republic and the structure of the Presidential Administration of the Kyrgyz Republic". By the Decree of Cabinet Ministers (259 of 15.11.2021), amendments were made to the Presidential Decree (83 of 09.03.2021) "On the Ministry of Agriculture, Water Resources and Regional Development of the Kyrgyz Republic".

A Coordinating Council of Agriculture Development Partners in the Kyrgyz Republic has been formed. The Council included national partners (key government agencies), development partners (foreign embassies in the Kyrgyz Republic, donors, and international organizations) and financial institutions. The main objective of the Council is to coordinate the current technical and financial assistance and conduct a coordinated policy to strengthen cooperation and ensure effective interaction of plans and actions for agricultural development in the Republic.

Latest developments in legislation. A list of agroindustry development recommendations has been defined for the Government of Kyrgyz Republic to develop agriculture, food and processing industry and agricultural commodities, raw materials and food market, increase export potential of the agroindustry, and boost agricultural sub-sectors as the basis of country food security (Presidential Decree 25 of 8.02.2021). In particular, it is ordered to examine the possibility of transferring a portion of land from the State Agricultural Land Fund to responsibility of an authorized agricultural body for development of cooperatives, seed and breeding farms. In pursuance of Decree 309 of December 17, 2021 "On the development of agricultural cooperatives, seed and breeding farms", the "Concept of Agricultural Development of the Kyrgyz Republic for 2021-2025" planning a number of reforms for sustainable and efficient land and water use has been developed.

The Presidential Decree "On measures to support entities engaged in agricultural activities" adopted on December 6, 2021 aims at drafting a law providing for exemption from land tax of the use of agricultural land for the period of 2022-2024, including with compensation for losses of the local budget.

The Ministry of Agriculture of the Kyrgyz Republic proposed to approve draft veterinary and sanitary standards and requirements for organization and management of aquaculture.

Projects. The project "Financing of agriculture-9", providing for favorable interest rates at 6.8 and 10% per annum with a crediting period up to 60 months, depending on the target sector, was approved by the Presidential Decree 34 of 04.02.2021. More than 9.5 thousand loans for 4.8 billion KGS were issued.

The above-mentioned project "Improvement of agricultural productivity and nutrition" (APNIP, US\$ 38

million GAFSP, WB) also provides extension services for selected WUAs to improve productivity of irrigated land and expand access to markets (Component 2), develops measures to improve food security and nutrition quality of beneficiaries (Component 3).

On implementation of IFAD and FAO projects in the area of agriculture and food in Kyrgyzstan in 2021, see section "United Nations and its specialized agencies".

International cooperation. During the official visit of the Kyrgyz President to Turkey, a number of agreements were concluded on different topics, including on agriculture. In particular, it was proposed (1) to organize a joint venture to attract investment in resource-saving technologies – drip irrigation systems and (2) to implement investment projects of agricultural processing, as well as cooperate and develop the cooperative system in Kyrgyzstan (June).

Also, (1) the Center of the Korean Program for International Agriculture (KOPIA) in the Kyrgyz Republic and the agricultural demonstration field at the Botanical Garden of the J. Balasagyn Kyrgyz National University and the (2) **Fishery Demonstration Center**⁴⁹ at the K.I. Skryabin KNAU were opened.

Energy

Public administration reforms. By the Government Decree 38 of 12.02.2021, the **State Committee for Industry, Energy and Subsoil Use of the KR was reorganized into the Ministry of Energy and Industry.**

According to Presidential Decree 425 of October 12, 2021 "On the structure and composition of the Cabinet of Ministers of the Kyrgyz Republic and the structure of the Presidential Administration of the Kyrgyz Republic", the **Ministry of Energy of the Kyrgyz Republic** was determined as part of the Kyrgyz CM. The Regulation of the Ministry of Energy and the management scheme was approved by the Decree of the Cabinet of Ministers 247 of November 15.

The President outlined the **main priorities of the energy policy** in the Kyrgyz Republic. The state administration bodies were given orders to ensure energy security of the country. In particular, the **Cabinet of Ministers** was ordered to (1) resolve the issue of importing the necessary amount of electricity from neighboring countries for 2021 and 2022 for trouble-free autumn-winter period; (2) increase power generation and capacity at the Bishkek CHP; (3) identify priority measures and sources of funding to accelerate the construction of Kambarata HPP-1; (4) take necessary measures to rehabilitate Toktogul and At-Bashi HPPs, modernize Uch-Kurgan HPP, timely implement investment projects to rehabilitate Oshelektro and Vostokelektro, improve power supply to the Arka massif of Batken province and CASA-1000; (5) deve-

lop and approve long-term measures to strengthen the energy potential of the KR; (6) develop and implement effective mechanisms for energy conservation and energy efficiency in the consumption of energy resources at all facilities, regardless of ownership; (7) consider the possibility of wider application of innovative technologies in the national energy sector through the full-scale implementation of an automated system for remote control of transmitted and consumed electricity; and, the **Ministry of Energy** was ordered to: (1) analyze and develop proposals to update strategic documents for development of alternative (renewable) energy sources and small hydropower plants; (2) develop proposals to increase capacity and update the state strategy for water management; (3) together with the ministries of justice, economy, and the Prosecutor General's Office, conduct an inventory of current energy legislation and possible gaps as well as contradictions in order to amend it in the liquidation part; (4) speed up development and adoption of technical norms and standards applicable to the energy sector.

Hydropower construction and modernization

There are seven functioning hydropower plants in Kyrgyzstan: Toktogul (1,200 MW), Kurpsai (800 MW), Tash-Kumyr (450 MW), Shamaldy-Sai (240 MW), Uch-Kurgan (180 MW), At-Bashi (40 MW) and one unit of Kambarata-2 (120 MW). The plants generate 3,030 MW of electricity in total. The project of launching the second unit of Kambarata-2 is under development, Toktogul and At-Bashi HPPs are under modernization, and projects for construction of Kambarata-1 and Kara-Kul HPP are developed as well.

The first phase of large-scale reconstruction of At-Bashi HPP has been completed with the replacement of 2 out of 4 hydrounits. The modernization will increase power generation by 30%. Further on, it is planned to upgrade distributors, power transformers, and protection and control systems.

The relevant agencies of Kyrgyzstan and Uzbekistan have signed an agreement on joint preparation of an investment project "Construction of Kambarata-1 on the Naryn river" (capacity – 1,860 MW, average annual power generation – 5.6 billion kWh, dam height – 256 m, reservoir volume – 5.4 million m³, project cost – US\$ 2.9 billion).

Small hydropower. According to the Ministry of Energy, the development of small hydropower in Kyrgyzstan is only 1.27% of the total volume, while the potential is about 1 billion kW. The Republic has 19 small hydropower plants, with the total capacity of 54 MW, and there is the potential to build more than 100 small hydropower plants. The appropriate legal framework for construction of small hydropower has been developed, RES entities are exempted from VAT on

⁴⁹ Within the framework of the FishEDU project "Development and strengthening of educational capacity in the field of fisheries and aquaculture in the Kyrgyz Republic", implemented jointly with the University of Eastern Finland with the financial support of the MFA of Finland under the Instrument for Institutional Cooperation of Higher Education Institutions Program

import of equipment, income tax (up to five years), and a guaranteed repayment of generated electricity has been determined, with the increasing factor for a preferential period of 10 years. The construction of small HPPs is ongoing in Batken, Jalal-Abad, Issyk-Kul and Osh provinces. The plans are for Chu and Talas provinces. The total capacity will be over 100 MW.

In Leilek district of Batken province a small hydropower plant is constructed on the bank of the Kozu-Baglan River (cost – US\$ 7 million, capacity – 6 MW). Sokuluk HPP-2 (installed capacity – 2.4 MW; average annual power generation – 11.9 million kWh) was reconstructed and put into operation in Sokuluk district of Chu province. This will help to reduce grid losses and improve reliability and stability of power supply to consumers.

A capsule was laid in the downstream of Kirov reservoir (Talas province) for construction of Bala Saruu small hydropower plant (cost – US\$ 22.9 million, three generators with the total capacity of 25 MW, average annual power generation – 92 million kWh), which would meet 20% of the province's electricity needs. Bala Saruu HPP will become the state engine of small hydropower in the country.

It is planned to build Orto-Tokoi, Sary-Dzhaz, Kara-Kul, and Tort-Kul small hydropower plants.

Regional and international cooperation. In order to preserve water resources of the Toktogul reservoir and ensure uninterrupted power supply to the population and economic sectors and trouble-free autumn-winter period 2021-2022:

Agreements⁵⁰ on exchange of electric power have been reached between the Kyrgyz Republic, Kazakhstan and Uzbekistan. According to the agreements, **Kazakhstan** will supply 900 million kWh of electric power to the Kyrgyz Republic (as of December 8, 616.4 million kWh has been received); **Uzbekistan** will provide 750 million kWh of electric power to Kyrgyzstan from March 2021 to April 2022. In turn, **Kyrgyzstan** will supply up to 300 million kWh of electric power to **Kazakhstan** and up to 250 million kWh to **Uzbekistan** within 3 years from 2021 to 2023 since June till August. It is planned to increase the load of Bishkek CHP in summer to 155 MW and up to 420 MW in winter, with annual generation of 2.5 billion kWh.

A branch of JSC "Hydroproject Institute" has been opened in Bishkek. The priority plans for cooperation include development of a master plan for hydropower development, studying of the current state of hydrostructures, examination of promising sections for hydropower, design of new facilities and

advice to the Kyrgyz government on energy development.

Environment and Climate Change

Public administration reforms. According to the Decree of the Cabinet of Ministers (11 of 19.05.2021), **the State Committee on Ecology and Climate** was established on the basis of the State Agency of Environmental Protection under the Ministry of Emergency Situations. By Presidential Decree 425 of October 12, 2021 "On the structure and composition of the Cabinet of Ministers of the Kyrgyz Republic and the structure of the Presidential Administration of the Kyrgyz Republic", **the Ministry of Natural Resources, Ecology and Technical Supervision** – the legal successor of the State Committee on Ecology and Climate – was established. Regulations of the Ministry and the management structure were determined by Decree of the Cabinet of Ministers 263 of November 15, 2021.

By Decree of the Cabinet of Ministers 338 of 24.12.2021, **Regulations**⁵¹ of several departments of the Ministry were approved: (1) Department of Geology and Subsoil Use, (2) Department of Biodiversity Conservation and Specially Protected Natural Areas, (3) Environmental Monitoring Department, (4) Department of State Regulation for Environmental Protection and Ecological Safety, (5) Environmental and Technical Supervision Service, (6) Climate Finance Center.

Latest developments in legislation. The Decree of the President "On measures for environmental security and climate resilience in the Kyrgyz Republic" (77 of 19.03.2021) sets the most important tasks of state agencies, local governments, business entities, community and other organizations to improve the natural environment, ensure sustainable use of natural resources and minimize the negative effects of climate change.

Projects. The project "Support to development of a green agriculture by local communities" (EU, €1.1 million, December 2020-June 2023, implemented by the Rural Development Foundation of Kyrgyzstan in cooperation with the Greek NGO "KMOP Social Action and Innovation Centre) has started. The aim of the project is to contribute to climate change mitigation through the development of a model of agricultural value chain that respects biodiversity, allows adapting the production to environmental challenges, increasing productivity, and fostering the creation of locally based agro-enterprises.

As a result, the following products were developed: (1) **an online climate platform** for knowledge and information on climate change⁵², the main purpose of

⁵⁰ Protocol on Electricity Exchange between the Ministry of Energy and Industry of Kyrgyzstan, Ministry of Energy of Kazakhstan, Ministry of Ecology, Geology and Natural Resources of Kazakhstan (Protocol №103 of March 11, 2021, Nur-Sultan); Protocol on Mutual Power Supplies between the Ministry of Energy and Industry of Kyrgyzstan, Ministry of Energy of Uzbekistan, Ministry of Water Management of Uzbekistan (Protocol №75 of March 11, 2021, Tashkent)

⁵¹ As amended by Decree of the Cabinet of Ministers "On Amending and Repealing Some Decisions of the Government of the Kyrgyz Republic and the Cabinet of Ministers of the Kyrgyz Republic" (№ 231 of April 26, 2022)

⁵² Within the framework of the UNCC: Learn project on climate change education in the Kyrgyz Republic, with the financial support of the Government of Switzerland, UNIFAR, UNDP and implementation by the Climate Finance Center of Kyrgyzstan

which is to strengthen institutional capacity, provide information and create a dialogue platform on climate change and climate finance for all stakeholders; (2) a map of environmental incidents⁵³ that collects and displays landfills, air, water and soil pollution, deforestation, shooting of red listed animals (poaching), illegal fishing (poaching), radiation and toxic chemicals in 24/7/365 mode.

The environmental organization "MoveGreen" has launched an open environmental database to store and use the data for the purpose of publishing analysis, research and journalistic materials indirectly or directly related to environmental issues in Kyrgyzstan.

An agreement was signed between the Government of the Kyrgyz Republic and the UN World Food Programme on implementation of the project "Empowerment of vulnerable communities with low food security through climate services and diversification of climate-sensitive livelihoods in the Kyrgyz Republic" (US\$ 8.6 million, GCF grant). The project will cover more than 100,000 vulnerable smallholder farmers in Naryn, Osh and Batken provinces and will build the capacities of the Kyrgyz Government, line ministries, local authorities and communities for adaptation in the food, nutrition and agricultural sectors. The technical assistance will be provided to the National Meteorological Service in establishing agrometeorological stations to collect, analyze and disseminate weather data among farmers.

As part of the EU's Multi-Annual Indicative Program for the Kyrgyz Republic for the period 2021-2027, grants will be allocated to finance projects in such areas as governance and digitization, human development, green and climate-resilient economy until 2024.

On the implementation of UNDP environmental projects in Kyrgyzstan in 2021, see section "[United Nations and its specialized agencies](#)".

International cooperation. The 41st session of the UNESCO General Conference (November 23, Paris) unanimously adopted a [resolution](#) on "Strengthening mountain glacier monitoring and research" initiated by the KR and voiced by the Kyrgyz President at the 76th session of UNGA. The main objective of the resolution is strengthening international cooperation in mountain glacier and permafrost monitoring and research through joint actions to ensure a safe and stable environment for future generations based on the principles of sustainable development and the 2030 Agenda.

Emergencies and Natural Disasters

In 2021, 40 emergencies were registered. Half of them were mudflows, floods and related waterlogging and coastal erosion. The damage caused by natural disasters in the republic amounted to more than 1.3 billion KGS. In particular, as a result of heavy rains in spring and summer, houses were submerged, roadbeds were destroyed, water pipes and bridges were damaged in Osh, Jalal-Abad, Talas, Issyk-Kul and Batken provinces. In August in Issyk-Kul oblast, villages in Jety-Oguz and Ton districts were damaged; in Karakol city, water streams submerged several houses and household plots, washed out roads, destroyed bridges and flooded the zoo.

Projects. The regional project "Reducing vulnerabilities of populations in the Central Asia region from glacier lake outburst floods in a changing climate" (GLOFCA, US\$ 6.5 million, UNESCO-Adaptation Fund, 2021-2026) was launched. The project aims to strengthen adaptation in Central Asia by reducing social risks and vulnerability. An inception conference of the project was organized by the UNESCO Office in Almaty on April 29, 2021.

Loan and Grant Agreements have been signed between the Kyrgyz Republic and ADB for a total amount of US\$ 39 million for the project "Landslide Risk Management in the Kyrgyz Republic" aimed at building country's capacity to control and reduce landslide risks. Implementation period is 6 years.

Preventive measures. An Action Plan on Cooperation in Emergency Prevention and Response was signed between the Ministry of Emergency Situations of the Kyrgyz Republic and the Ministry of Defense of Turkmenistan for 2021-2025.

FAO transferred server equipment to the Kyrgyz Ministry of Emergency Situations⁵⁴ for Central Database of the Unified System of Integrated Emergency Monitoring and Forecasting at the national level and for tracking current state-of-affairs of hazardous natural processes.

Foreign Policy and International Cooperation

Working and official visits. In 2021, the President of the Kyrgyz Republic made state and working visits to the Russian Federation (February, May, December), Uzbekistan and Kazakhstan (March), Turkey, Turkmenistan, and Tajikistan (June), Turkmenistan (August), Tajikistan (September), Turkey (November), and the

⁵³ As part of the "Ecomap" project by the EcoMiR Public Foundation

⁵⁴ Regulations on the Unified System of Integrated Emergency Monitoring and Forecasting in the Kyrgyz Republic were approved by the Government Resolution 569 of 23.10.2019

United Kingdom of Great Britain and Northern Ireland (November). The President of Tatarstan paid an official visit to the country in November.

In the course of the year, **the president of the Kyrgyz Republic** had multiple meetings with the heads of governments (Armenia, Hungary), ambassadors (Saudi Arabia, Turkey, Qatar, etc.), foreign ministers (Uzbekistan, Turkey, Iran, Hungary, Austria), and heads of international organizations (WHO, OSCE, CSTO, and UN among many others).

Videoconferences were held with the UNESCO Director General (April), President of the EBRD (July), UNESCO Regional Representative (September), the President of the Senate of Uzbekistan (September), Executive Director of the GCF (September), EU Special Representative for Central Asia and EU Special Representative for Human Rights (October), Director for Global Sustainability of Facebook (Meta) (November), the Secretary General of the CCTS (November).

In 2021, **telephone talks were held with Presidents** of Kazakhstan, Turkey, Uzbekistan, Tajikistan, Russian Federation, Afghanistan, Turkmenistan, Azerbaijan, China, etc.

Among the priorities of the Kyrgyz Republic's foreign policy in 2021 were: strengthening of interstate relations with neighboring countries, development of effective political and economic cooperation with EU countries; development of multifaceted relations with Tajikistan (including on delimitation and demarcation of the Kyrgyz-Tajik state border and water and energy cooperation); cooperation with CSTO member states; development and strengthening of bilateral cooperation between the Kyrgyz Republic and China in the fight against crime, terrorism and extremism, ensuring security in the region; continuation of cooperation within the UN, in accordance with the SDGs and major international programs to which the country is a party; further fruitful and long-term cooperation within the framework of the CCTS, TURKPA, Organization of Turkic culture TURKSOY and International Turkic Academy; development and strengthening of Kyrgyz-Turkmen political dialogue in the sphere of trade and economic relations, combating of the COVID-19 pandemic and other challenges of our time, such as terrorism and extremism, illegal migration and human trafficking, illegal arms trade, drug trafficking and cybersecurity, etc.

Development of alliances and strategic partnerships. Joint communiqués on the establishment of diplomatic relations were signed with Antigua and Barbuda (June 3) and the Republic of Palau (October 7).

Turkey. The plans were set to increase the trade between the Kyrgyz Republic and Turkey up to US\$ 1 billion. Eight documents between Kyrgyzstan and Turkey were signed at the international level in the

field of health, agriculture, culture, sports, youth policy and copyright protection as part of the 5th meeting of the Supreme Council of Strategic Cooperation. It was agreed to open the Kyrgyz-Turkish Development Fund to support Kyrgyz businessmen and Turkish investors. Also, the Turkish side expressed its desire to provide military and technical assistance to the Ministry of Defense of Kyrgyzstan on a grant basis. A number of memorandums were signed as part of the joint business forum.

The 10th meeting of the Kyrgyz-Turkish Joint Intergovernmental Commission on Economic Cooperation was held. A Memorandum of Understanding on Environmental Cooperation was signed, as well as the final Protocol and Action Plan on Economic Cooperation (September 10, Bishkek).

Hungary. The national governments have ratified an Agreement on the Hungarian-Kyrgyz Development Fund. It is assumed that the Fund, with an authorized capital of US\$ 16 million (to be increased subsequently to US\$ 50 million), will finance self-sustaining projects in the priority economic sectors of Kyrgyzstan by providing loans, participation in capital and other financial instruments. For further strengthening relations with Hungary, the Embassy of Kyrgyzstan was opened in Budapest. The 1st meeting of the Kyrgyz-Hungarian Strategic Council was held on October 4 in Budapest.

Uzbekistan. An agreement establishing the Uzbek-Kyrgyz Development Fund has been ratified. It is assumed that the Fund, with an authorized capital of US\$ 50 million (to be increased subsequently to US\$ 200 million) will finance self-sustaining projects in the priority economic sectors of Kyrgyzstan by providing loans, equity and other financial instruments in relations with economic entities registered and operating in the territory of Kyrgyzstan.

UN. Kyrgyzstan has offered its candidature for the UN Human Rights Council for 2023-2025 and as a non-permanent member of the UN Security Council for 2027-2028. At the initiative of the Kyrgyz Republic and with the support of more than 93 member states, the UNGA declared 2022 the "International Year of Sustainable Mountain Development" by unanimously adopting a resolution of the same name (December 16).

Initiatives put forward by the President of the Kyrgyz Republic. The Kyrgyz President proposed (1) to host the headquarters of the Turkic Investment Fund in Bishkek at the 8th Summit of the Cooperation Council of Turkic Speaking States (November 12); (2) on behalf of the Friends of Mountain Countries, declare 2022 the "International Year of Mountains", approve a five-year program for sustainable development of mountain areas, and convene a Global Summit "Bishkek+25" in 2027 during the UNGA (September 21).

The President of the Kyrgyz Republic took part in the Fourth Asia-Pacific Water Summit "Water and Sus-

tainable Development – New Generation and Best Practices" (April), the 5th meeting of the Supreme Council for Strategic Cooperation between Kyrgyzstan and Turkey (June), the Consultative Meeting of the Heads of Central Asia (August), the UNGA 76th session (September), the 15th Summit of the Economic Cooperation Organization (November), the Summit of the Cooperation Council of Turkic Speaking States (November), the World Leaders Summit of the 26th Conference of the Parties to the UN Framework Convention on Climate Change (November), First Economic Forum "European Union – Central Asia" (November), and informal meeting of CIS Heads of State (December).

The following events were held in a videoconference format:

14th Summit of Economic Cooperation Organization (March); Turkic Council Meeting (March); informal summit of the leaders of the CIS countries (March); 77th UNESCAP session (April); meeting of the Supreme Eurasian Economic Council (May, October, December); extraordinary session of the CSTO Collective Security Council devoted to the situation in Afghanistan (August); anniversary Council meeting of the CIS Heads of State (October); 15th meeting of the Conference of Parties to the Convention on Biological Diversity (COP-15) (October).

Among the important international events, where the Kyrgyz Republic was represented in 2021, were:

the 16th Meeting of the Secretaries of Security Councils of SCO Member States (June, Dushanbe); the Kyrgyz-Turkmen Economic Forum (June, Ashgabat); a joint meeting of the Council of Foreign Ministers, the

Council of Defense Ministers and the Committee of the Secretaries of Security Councils of the CSTO (September, Dushanbe); the SCO Summit (September, Dushanbe); First International Economic Forum "Central Asia – European Union" (November, Bishkek); Meeting of the Secretaries of Security Councils of CIS Member States (November, Moscow); Meeting of the Third Regional Dialogue on the situation in Afghanistan (November, New Delhi); International Kazakh-Kyrgyz-Alashtan Scientific Conference (December, Almaty).

Sources:

Official sites of:

the President of Kyrgyz Republic, <http://www.prezident.kg/>;

Parliament, <http://www.kenesh.kg/>;

Ministry of Justice, <http://cbd.minjust.gov.kg/>;

Ministry of Foreign Affairs, <https://mfa.gov.kg/en>;

Ministry of Energy, <https://www.minenergo.gov.kg/>;

Water Resources Service,
<https://www.water.gov.kg/index.php?lang=en>;

Ministry of Natural Resources, Ecology and Technical Supervision, <https://mnr.gov.kg/en/>;

Ministry of Emergency Situations, <https://mchs.gov.kg/ru/>

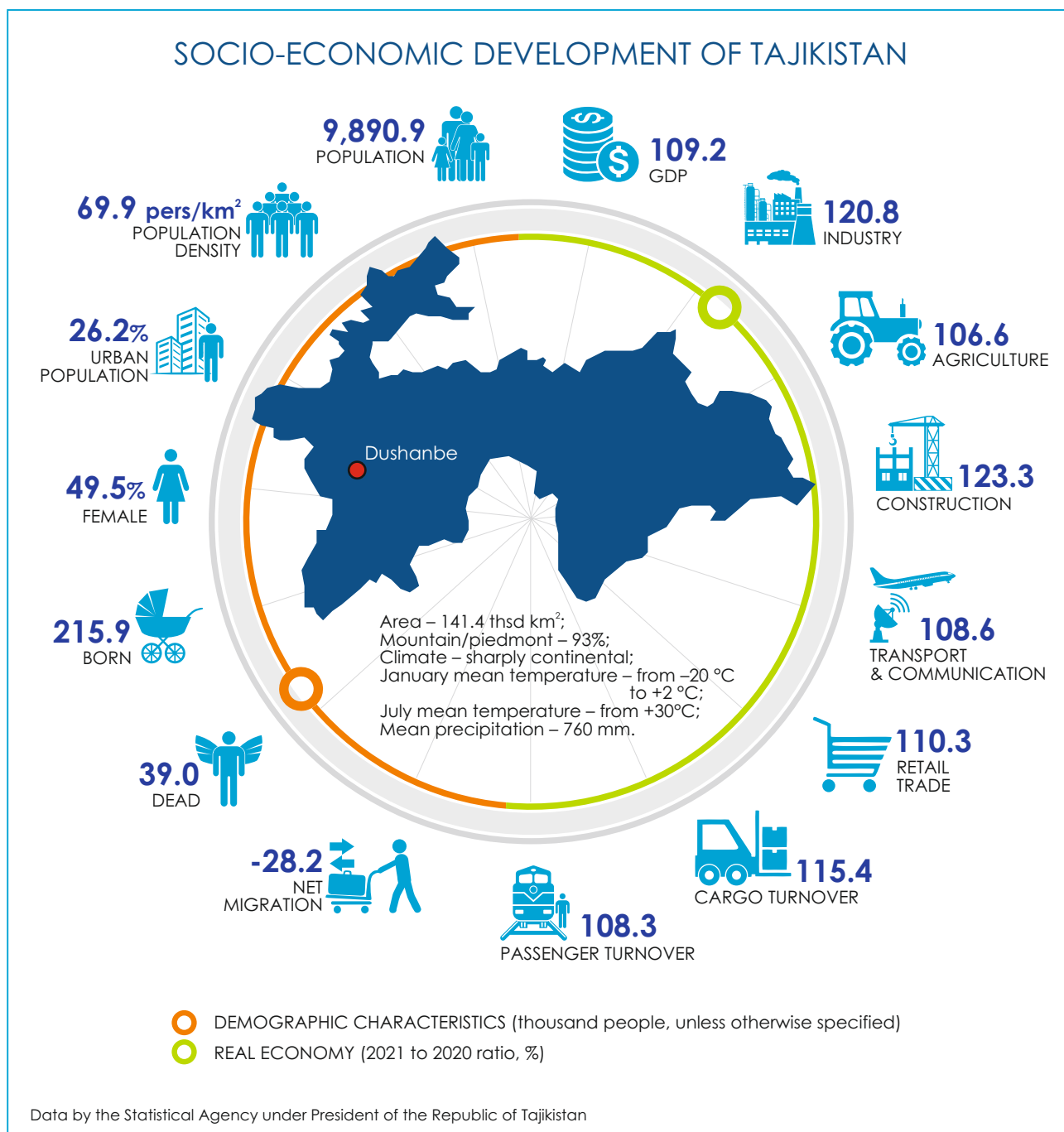
Information agencies and sites:

<http://barometr.kg/>;

<https://24.kg/>;

<https://ru.sputnik.kg>

5.3. Tajikistan



Water Sector

Water resources. Tajikistan has got water resources from glaciers, rivers, lakes, reservoirs and groundwater. There are 14,509 glaciers with the total glaciation area of 11,146 km² (approx. 8% of the country's area) and the total glacial volume of about 845 km³. 947 rivers stretching to more than 28,500 km flow across the country. The main watercourses are the Amu Darya and the Syr Darya and their tributaries. The average annual runoff generated in Tajikistan is 64 km³/year (62.9 km³/year in the Amu Darya basin and 1.1 km³/year in the Syr Darya basin) or 55.4% of the average annual surface runoff in the Aral Sea

Basin. Tajikistan possesses about 1,300 lakes covering 705 km². The lakes contain over 46.3 km³ of water, including 20 km³ of freshwater. The potential groundwater stock is 18.7 m³/year, while usable groundwater resources are estimated at 2.8 km³/year.

Latest developments in legislation. The resolution (PPRT 26 of February 25) was adopted on the procedure of development, coordination and approval of the reservoir use rules, the list of which had been determined in Article 25 of the Water Code of Tajikistan. The Ministry of Energy and Water Resources of Tajikistan is set responsible for the development of these rules.

Projects. ADB approved grants (1) for modernization of the Yavan irrigation and drainage systems in the lower basin of the Vakhsh River (US\$ 30 million). Technical assistance (US\$ 1 million) is also envisaged to improve operation, maintenance, and financial management in the irrigation sector. The project will help to increase agricultural productivity, improve water use, and empower women in land and water management; (2) to improve climate resilience in the Panj River Basin (US\$ 1.3 million). The River Basin Management Plan will be complemented by climate risk considerations, taking into account possible climate mitigation at the local level. This will support future planning, development and sustainable management of water resources.

The Government of Tajikistan and the ADB signed a grant agreement under the "[Water Resources Management in the Panj River Basin Project, Second Additional Financing](#)"⁵⁵ for US\$ 15 million (PMN MO RT 355 of April 7). Provisions have been made for the construction and commissioning of a hydraulic structure for cyclic flushing of sediments (silt) at the Chubek canal's dam in Khamadoni district. As a result, the water management system and irrigation situation in the region will be improved and agricultural production growth will be ensured in the Panj River Basin.

USAID has launched a new water and vulnerable environment project to strengthen regional cooperation in transboundary water management in the Syr Darya and Amu Darya River Basins.

Regional cooperation. Given the complicated water-related situation in the Syr Darya River Basin, the Ministry of Energy and Water Resources of Tajikistan and the Ministry of Ecology, Geology and Natural Resources of Kazakhstan have reached an agreement to supply additional 315 million m³ of water from the Bakhri Tojik reservoir for the needs of Turkestan and Kyzylorda provinces during the period from June to August. In this context, Tajikistan has increased water delivery to the Kazakh part of the transboundary Dostyk canal from 80 to 100 m³/sec.

Drinking Water Supply

Latest developments in legislation. The following Governmental Resolutions have been approved in 2021: (1) "On the procedure for forming and use of financial, material and technical reserves for rehabilitation of water supply and sanitation system adversely affected by emergency situations" (PPRT 502 of November 25); (2) "On the Order of state control in the field of drinking water supply and sanitation system", which determines the procedure, main tasks and the competence of the authorized state agency in this field (PPRT 519 of December 3).

Projects and programs. The project agreement was signed between the GUP "Housing and Communal Services", GP "Water supply and wastewater system

of Kulob" and EBRD on the project "Kulob Water and Wastewater Project" (total cost – €15 million, of which €7.5 million – EBRD credit and €7.5 million – EU grant for 2021-2024). The aim of the project is to construct and rehabilitate existing reservoirs, improve drinking water quality and decontaminate and provide safe drinking water to population in the Kulob city.

As part of the Japanese program "Grant Assistance for Grass-Roots Human Security Projects" (US\$ 86.1 thousand), a project was implemented for the improvement of drinking water quality in five villages of Rudaki district. As a result, 7,000 people have gained access to safe drinking water.

New water mains were commissioned in villages of Tajikistan with the support of the Aga Khan Habitat Agency, EBRD, Caritas Germany, USAID and Aga Khan Foundation. Within the framework of the International Decade for Action "Water for Sustainable Development, 2018-2028", the first stage of new water main has been completed for the rural community in Oksu Dangara district.

Agriculture

Agricultural production reached 39.7 billion somoni in 2021. This is 6.6% higher than in 2020. The production growth rate in crop growing and livestock sectors was 5.9% and 8.4%, respectively.

Gross Domestic Product (GDP) per capita was over 10,052 somoni (US\$ 890) by the end of 2021. GDP amounted to almost 99 billion somoni (over US\$ 8.7 billion).

Agricultural Export In 2021, Tajikistan exported 208.9 thousand tons of agricultural products for US\$ 36.6 million (US\$ 16.6 million more than in 2020). The key export commodities were onion (95.8 thousand t), grapes (51.2 thousand t), dried fruits (42.4 thousand t), peanut (2.4 thousand t), plum (2.6 thousand t), fresh apricot (2.15 thousand t), persimmon (1.6 thousand t), peach (1.4 thousand t), cherry and bird cherry (1.25 thousand t). The agricultural products were exported mainly to Russia, Kazakhstan, China and EU countries.

Latest developments in legislation. The "State Program for development of the Tajik Academy of Agricultural Sciences for 2021-2025" approved by Government Resolution (PP RT 171 of April 30) aims at improving the quality and effectiveness of research, promoting and applying research results in practice, training and strengthening cooperation with domestic and foreign scientific and educational institutions.

New appointments. A. Satorov was appointed Director of the Public Agency "Agricultural Entrepreneurship Development" (PP RT 471 of November 5).

International cooperation and projects. In 2021, the Ministry of Agriculture of Tajikistan signed MoUs with

⁵⁵ Project Report for January-June <https://www.alri.tj/storage/WMD1HUhcRpxBG9BLcoVB.pdf>

the Ministry of Agriculture of Iran and with the Ministry of Agriculture of Palestine on agricultural cooperation.

The WB approved grant financing of US\$ 58 million for the [Strengthening Resilience of the Agriculture Sector Project](#) aimed at strengthening the foundations of sustainable agriculture in order to accelerate its diversification.

JICA and FAO launched a pilot project to provide small farmers with access to critical agricultural inputs and extension services to improve their livelihoods by increasing crop yields and promoting market-oriented agriculture.

FAO, in close collaboration with the MoA of Tajikistan, handed over seeds of white and golden beans, maize, carrot and cucumber to flood-affected farmers in the southwest of the country. The initiative reached over 787 households and about 312 dehkan farms that cultivate 850 ha of arable area in Kulob, Vakhsh and Jom districts, Khatlon province.

Energy

Energy production and export. In 2021, more than 20.6 billion kWh of electricity were produced. This is 853.8 million kWh (4.3%) more than in 2020. Thermal energy production was 1.2 million Gcal or 46.7 thousand Gcal (4%) more than in previous year. Electricity exports reached almost 2.5 billion kWh or 911.6 million kWh more than in 2020. In just eleven months, the country raised more than US\$ 93.5 million through energy supplies to neighboring countries. This is 1.8 times more compared to the same period in 2020.

Latest developments in legislation. The following legal documents were approved in 2021 among others: (1) "Action plan for the improvement of energy investment climate in Tajikistan for 2021-2023" (PP RT 252 of June 26); (2) "Regulation on the State Energy Supervision Service" (PP RT 441 of October 22).

New appointments. A.A. Kurbonzoda was dismissed from the position of the Head of the State Energy Supervision Service or the MEWR of Tajikistan (PP RT 63 of March 5) and G.H. Ubaidullozoda was appointed the Head of the State Energy Supervision Service (PP RT 70 of March 5).

Projects. Grant agreements between Tajikistan and ADB on the project "Energy Sector Development Program" were ratified by Resolutions 334 and 335 of March 3, 2021.

The WB approved an additional financing of US\$ 10 million to the project aimed at providing access to electricity to remote mountainous areas in southern Tajikistan and supporting efforts to export electricity to Afghanistan. Grant assistance has been provided from IDA to help build 63 km of 110-kV transmission lines connecting the Khorog city with Kozideh village in Ish-Kashim region.

A new five-year USAID Power Central Asia program has been launched (US\$ 39 million) to assist the CA

countries in achieving their national energy priorities. In addition, the Program is aimed at gaining economic benefits from cross-border energy trade and improving energy security through the greater regional integration.

EBRD and ADB have provided a US\$ 110 million financing package (US\$ 25 million – EBRD loan and US\$ 85 million – ADB grant) to improve performance of the state-owned power company "Shabakahoi Taksimoti Bark". The project is expected to reduce the company's energy losses by about 30 GWh and cut CO₂ emissions by almost 2 thousand t per year.

Hydropower modernization

Nurek HPP. The Government of Tajikistan ratified the Agreement on financing the second phase of the Nurek Rehabilitation Project (US\$ 148.6 million, implementation period 2024-2028). It is planned to reconstruct the remaining 6 units and renovate hydro-turbine units, replace high-voltage transformers, switch-gears and loading mechanisms, etc. The WB Board of Directors approved additional financing for the second phase in the form of a US\$ 65-million grant.

Hydropower construction

Rogun HPP. By early June, 2.92 billion kWh were generated at HPP (1.3 billion kWh in 2020). The actual operating capacity of each hydroelectric unit was 94.2 MW. It is planned to bring the installed capacity of each unit up to the design value of 600 MW after their thorough reconstruction.

Construction of upper and lower parts of the dam has been continued. The dam height of the first stage was raised to 1,120 m above sea level.

OJSC "Tajikgidroelektromontazh" has become a subcontractor for the "Construction of the Right Bank Structures of the Rogun HPP" by Lot № 3. The contract is valued at US\$ 1.64 billion with the duration for 13 years.

The Government of Tajikistan plans to allocate the equivalent of US\$ 221 million from the state budget in 2022 to continue construction of the Rogun HPP. In December, a round table was organized by the Government and invited about 30 international organizations and foundations to attract external financing.

HPP on the Zeravshan River. An agreement was signed between the Governments of Uzbekistan and Tajikistan on hydropower construction in the Zarafshan River Basin. The first phase will involve the construction of 140-MW Yavan HPP at a projected cost of US\$ 282 million, and the plant will have an average production of 800 million kWh per year. The second phase would explore the possibility of constructing 135-MW Fandarya HPP at US\$ 270 million to produce 600 kWh per year. New plants are to generate up to 1.4 billion kWh of energy for the needs of Uzbekistan. It is also planned to supply the generated hydropower to other regions in Uzbekistan and Tajikistan on a parity basis.

CASA-1000. Tajikistan plans to sell 75 billion kWh within 15 years under the CASA-1000. The changes made earlier in the project would enable Tajikistan to increase power exports to Pakistan and Afghanistan. Based on the changes in the construction of 500-kV transmission line from Sangtuda (Tajikistan) to Peshawar (Pakistan), Pakistan will receive electricity directly from Tajikistan. 300 MW from the Geran substation will be delivered to Pul-i-Khumri (Afghanistan) through a 220-kV transmission line. Implementation of the Tajik part of the project was scheduled until the end of 2021. In December, it was reported that the deadline for import of equipment and auxiliary tools was extended until July 31, 2023.

The CASA-1000 Community Support Project was launched to improve socio-economic infrastructure in the areas adjacent to the route of the international transmission line. The project is to be implemented in 65 villages, 22 communities, 12 districts and 50 border mahallas. It is expected that more than 200 thousand people will benefit from this project.

Climate Change, Glaciers and Environmental Protection

Latest developments in legislation. By the Government Resolution "On the Committee for Environmental Protection under the Government of the Republic of Tajikistan", the regulations, central bodies and management structure and composition of the Committee were approved (PP RT 357 of September 9).

New appointments. D.S. Dustzoda was dismissed from position of the Director of the Agency for Hydrometeorology at the Committee for Environmental Protection (PP RT 278 of July 5) and A.H. Kurbonzoda was appointed the Director (PP RT 282 of July 5).

Projects. Climate Adaptation and Mitigation Program for Aral Sea Basin: Tajikistan and the World Bank signed an agreement on additional financing from GCF funds (US\$ 9 million); seven automatic weather stations were installed in Varzob district, Roghun and Tursunzade towns, Shamsiddin Shohin, Dangara, and Temurmaliq districts in Khatlon province and Darvaz district of Gorno-Badakhshan Autonomous province.

The project "An integrated landscape approach to enhancing the climate resilience of small-scale farmers and pastoralists in Tajikistan" (UNDP, Committee for Environmental Protection of Tajikistan, with financial support of the Adaptation Fund, Kofarnigan River Basin): an [inception workshop](#) was organized to give an overview of the project, to highlight the economic benefits, while reducing the environmental load (March 17).

New projects were launched: (1) "[Participatory mapping in Tajikistan](#)"⁵⁶ on applying GIS to improve access to public information. The project is implemented by

French cartographic NGO "CartONG" with the support of GIZ and in cooperation with the Tajik ecological NGO "Small Earth"; (2) US\$ 2.7 million project to boost climate change resilience in Tajikistan through National Adaptation Plan. It will be implemented during 3 years by UNDP jointly with the Committee for Environmental Protection under the Government of Tajikistan and with support of GCF.

Memorandum of Understanding was approved between the Committee for Environmental Protection under the Government of Tajikistan and the National Environmental Protection Authority of the Government of the Islamic Republic of Afghanistan on cooperation in the field of environmental protection (PP 87 of March 27). A Memorandum of Cooperation was signed between the Forestry Department of Sughd province, Executive Committee of Logoisk district and Forestry Production Association of Minsk province to strengthen cooperation in the field of forest restoration, forest product processing, development of bee-farming, ecological tourism, exchange of information and experience.

Events. The following events were held: (1) a series of trainings on climate diplomacy for the national delegation from Tajikistan as part of preparation to COP26 (May 25-27, UNDP); (2) Republican scientific conference "Biodiversity of Pamir mountain ecosystems in the context of climate change" (September 22-23, NAST, Pamir Biological Institute named after Kh. H. Yusufbekov, Authority of Gorno-Badakhshan Autonomous province).

Emergencies and natural disasters

New appointments. H.L. Latifzoda, I.N. Ibrohimzoda, and S.U. Isozoda were appointed the Deputy Chairmen of the Committee for Emergency Situations and Civil Defense under the Government of Tajikistan.

Emergencies. In 2021, 358 emergencies of natural origin, including 52 natural disasters, were registered (213 – in 2020). The population and national economy have suffered serious material losses estimated at 142 million somoni (over US\$ 12.566 million); 2.4 times greater than in 2020. The Committee for Emergency Situations and Civil Defense carried out 758 operations (781 in 2020) and rescued 188 citizens.

Preventive measures. The warning and monitoring system of highland Lake Sarez has been updated with the financial support from ADB to track the lake's hydrological and geological activity and transmit the data every hour.

A dam deformation monitoring system based on the Chinese Beidou satellite navigation system has been put into operation at the Usoi Dam to transmit timely warnings to Dushanbe and the National Time Service Center in Xi'an (northwest China).

⁵⁶ Is a part of the regional project "Technology-based Adaptation to Climate Change in Rural Tajikistan and Kyrgyzstan"

The modern DMRL-C-5 radar designed to protect crops, orchards, vineyards and other crops from hail was put into operation in Gissar⁵⁷.

Capacity building. The following trainings were conducted: (1) fourth phase of the training course for 16 Committee's rescuers (January) and 16-day interactive course for rescue divers (June-July)⁵⁸; (2) a stakeholder workshop on disaster risk reduction (DRR), which presented the system approach to DRR, approaches and methods to build national capacity and identified areas for improvement in DRR management (May)⁵⁹.

International cooperation in disaster risk reduction. As a part of cooperation of the Committee for Emergency Situations and Civil Defense under the Government of Tajikistan: (1) with OSCE Program Office in Dushanbe and the "National Disaster Risk Management Project" (ADB), the Committee was provided with two cars and 50 modern portable radio stations (February 5); (2) with UNICEF in Tajikistan, a joint "Plan for Strengthening Emergency Preparedness and Response, Promoting Disaster Risk Reduction, and Child-Friendly Climate Change Adaptation in Tajikistan for 2021-2022" was signed (June 18).

Foreign Policy and International Cooperation

Working and official visits. The President of Tajikistan Emomali Rahmon made official and working visits to the Russian Federation (May and December), Belgium (October), the Islamic Republic of Pakistan (June), France (October), and Turkmenistan (August and November). The Chairman of the Majlisi Milli Majlisi Oli of Tajikistan, Rustami Emomali paid an official visit to Kazakhstan in September 2021.

The Minister of Foreign Affairs of Tajikistan visited the Russian Federation, Uzbekistan, China, the Republic of India, and the United States. The Minister met with his counterparts from other countries, including Russia, Belarus, Azerbaijan, Armenia, Turkey, Saudi Arabia (online), Kuwait, China, Japan (online), Korea, India, Germany, Austria, Hungary, Portugal, Sweden, Finland, Norway and Italy. The priority areas of bilateral cooperation in economy, trade, energy, agriculture, water management and other sectors have been discussed.

Development of alliances and strategic partnerships. Relations and cooperation with the CIS and Central Asia countries in economic, commercial, cultural and humanitarian fields are strengthened. 19 bilateral cooperation documents had been signed and a wide range of issues on regional and international agenda has been addressed during the official visit of the Pre-

sident Emomali Rakhmon to Turkmenistan (August 3-6). See "Bilateral Water Cooperation between the Countries of Central Asia" and "Central Asia Awards in Water-Related Sectors". During the visit, the President participated in the Consultative Meeting of CA Heads of State (August 6). The President Emomali Rahmon noted that trade, economy, investment, agriculture, industries, transport and communication infrastructure, rational and efficient water use are among important areas of cooperation in Central Asia. He drew the attention of the Central Asian Heads of State to the global problems of climate change, melting of glaciers, disaster risk reduction and impact of COVID.

Dushanbe hosted the following conferences in 2021: (1) Ninth Ministerial Conference "Heart of Asia – Istanbul Process"⁶⁰ inaugurated by Presidents of Tajikistan and Afghanistan. Finally, the Dushanbe Declaration defining the areas of joint cooperation was adopted (March 30); (2) the 14th Meeting of the Foreign Ministers of the Central Asia and the Republic of Korea Cooperation Forum. A Joint Statement of Foreign Ministers was adopted at the end of the meeting (November 30).



Tajikistan participated in the (1) CIS meetings: the Council of Foreign Ministers (April 2, Moscow; October 14, Minsk), the Council of CIS Heads of State (October 15, online), and informal summit of CIS Heads of State (December 28, St. Petersburg); (2) ECO meetings: 4th Business Forum of the ECO Member States (26 November, Ashgabat), 25th Meeting of the ECO Council of Ministers (November 27, Ashgabat), 15th ECO Summit (November 28, Ashgabat).

Foreign investments. By January 1, 2022, 78 projects totaling 42 billion somoni (US\$3.7 billion) have been under implementation (39 grants, 7 loans and 32 combined loan-grant).

In 2021, inflow of foreign capital to the republic amounted to US\$ 718.3 million; this is US\$ 289.9 million (1.7

⁵⁷ Within the framework of the National Disaster Risk Management Project supported by ADB

⁵⁸ As part of the EU Project in Tajikistan, with the financial support of the OSCE Program Office in Dushanbe

⁵⁹ As part of the European Union - funded Strengthening Financial Resilience & Accelerating Risk Reduction Program in Central Asia

⁶⁰ The Heart of Asia-Istanbul Process (CA-Istanbul Process) is an initiative of the Republic of Afghanistan and the Republic of Turkey, which was officially launched at a conference hosted by Turkey in Istanbul on 2 November 2011. It aims to enhance regional security, economic and political cooperation centered on Afghanistan through dialogue and a set of confidence-building measures. The initiative includes 15 countries: Afghanistan, Azerbaijan, China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Saudi Arabia, Tajikistan, Turkey, Turkmenistan, Uzbekistan and the United Arab Emirates.

times) more than in 2020. US\$ 342.2 million of the total foreign investments are direct investments allocated to the mining sector (56.9%), manufacturing (9.9%), construction (2.1%) and other sectors (31.1%).

For further improvement of the investment climate in the country, the International Forum “Dushanbe-Invest 2021” was organized on July 12-16. During the Forum, 11 contracts for US\$ 450 million in total were signed for joint ventures in textile and pharmaceutical industries, energy and other spheres.

Chairmanship in international organizations. Tajikistan was the chairman country in SCO over the period of 2020-2021. The resolution on “Cooperation between the United Nations and the Shanghai Cooperation Organization”⁶¹ was adopted by consensus at the 75th UNGA session. The resolution was drafted by Tajikistan in co-authorship with the SCO member states as well as with the Republics of Azerbaijan, Belarus, Kiribati, Costa Rica and the Kingdom of Cambodia (March 25).

The following events were held under the chairmanship of Tajikistan in 2021: (1) regular meeting of the Council of National Coordinators of the SCO member states (April 27-30, Tashkent); (2) 16th meeting of Secretaries of the SCO Security Council (June 23); (3) meeting of the Council of Foreign Ministers of the SCO member states (July 13-14); (4) CSTO session (September 16); (5) high-level meeting of the SCO Heads of State, followed by adoption of the Dushanbe Declaration of the SCO (September 17).

As part of **chairmanship in IFAS (2019-2022)**⁶², the following meetings were held: (1) meeting of the IFAS Board, where the draft Work Plan of EC IFAS, ASBP-4, and issues of the Working Group on institutional and legal improvement of IFAS were considered (June 29, Dushanbe); (2) Central Asian sub-regional preparatory conference for the 9th World Water Forum “Water Security for Peace and Development” (October 19-20, Dushanbe), see “[International Fund for Saving the Aral Sea](#)”.

Promotion of the national interests and reinforcement of the country's image. Currently, the 4th initiative of Tajikistan – the International Decade for Action “Water for Sustainable Development, 2018-2028”⁶³ is implemented at the national, regional and global levels. It raises the issues of global climate change and the need for joint efforts to overcome effects and impacts of climate change. The President Emomali Rahmon participated and spoke at (1) the first meeting of the High-Level Panel on Water and Climate and proposed to declare 2025 as the “International Year of Glacier Protection” and set the date of the “World Glacier Protection Day” (March 3); (2) the high-level meeting on “Implementing the 2030 Agenda for Water” March 18, New York, online); (3) the 77th ESCAP session (April 26-29); (4) the 5th UN Special Session on Water and Natural Disasters (June 25, online); (5) the UN High-Level Thematic Debate “Implementing Action on Climate” (October 27); (6) the UN Framework Convention on Climate Change High-Level Panel Briefing on Water and Climate (November 2).

The Permanent representation of Tajikistan to the UN in cooperation with the Permanent Missions of Hungary, Pakistan, Nepal and Russia to the UN, as well as the UN Office for Economic and Social Affairs, the UN Environment Programme, the World Meteorological Organization, the UN Institute for Water Resources and the UNESCO Intergovernmental Programme on Hydrology organized a side event during the High Level Week of the 76th UN GA session on “How the change in water availability due to melting glaciers and snow will affect our society”. The main topics were climate change impact, glacier protection from rapid melting, and relationship between climate and water availability (September 22).

While speaking at the general debate of the 76th UNGA session, the President Emomali Rahmon stressed that climate change challenges had been causing a serious obstacle on the way to achieve SDGs and noted that more than 1,000 of 13,000 glaciers in the mountains of Tajikistan had completely melted. He also noted that Tajikistan would host a high-level International Conference to review the International Decade for Action “Water for Sustainable Development” in 2022 (September 24).

The Minister of Foreign Affairs of Tajikistan, S. Mukhriddin participated at the special session dedicated to SDG-6 “Clean Water and Sanitation” during the High-Level Political Forum on Sustainable Development 2021/HLPF2021 (July 9, online).

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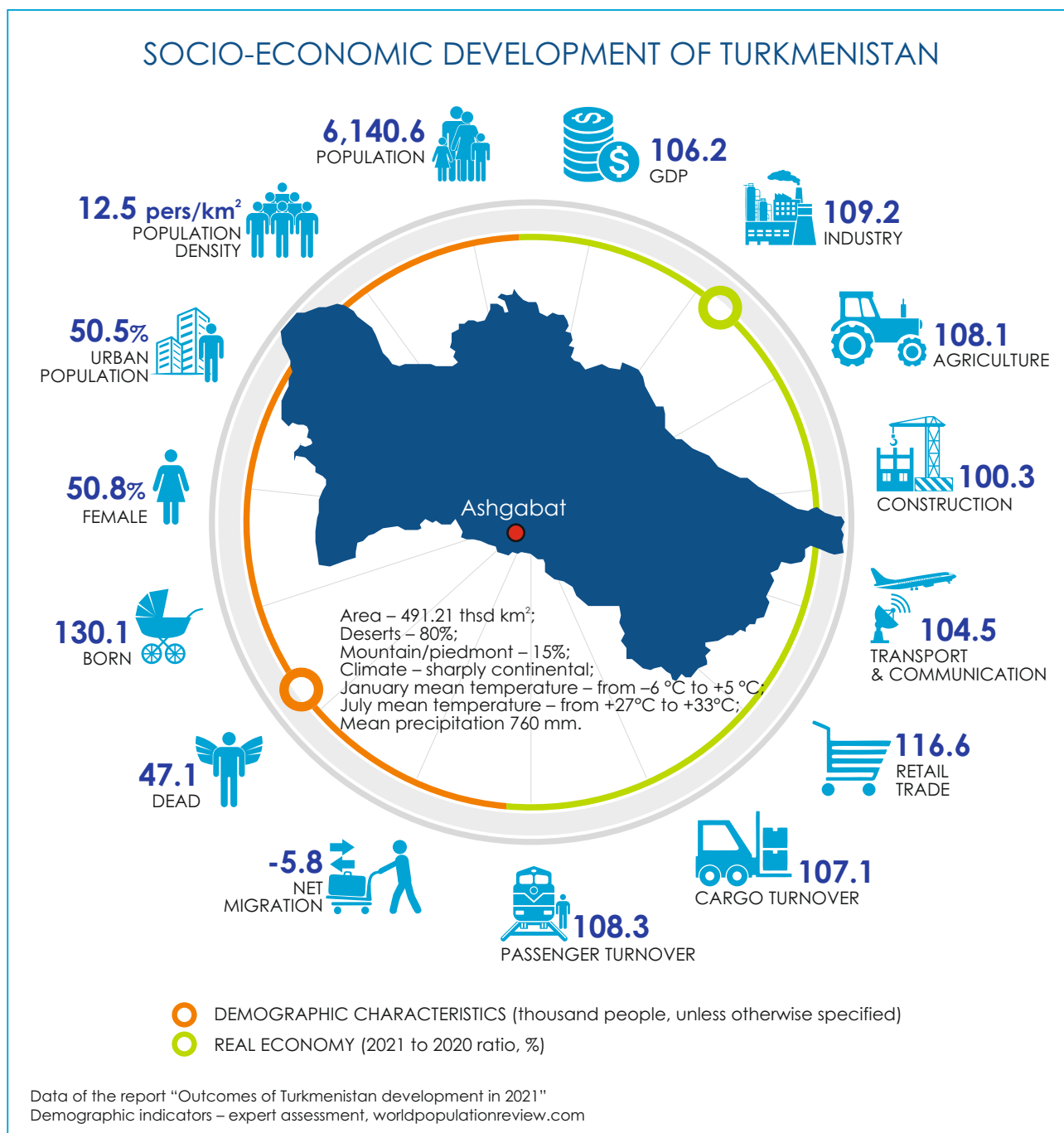
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⁶¹ 58th plenary meeting

⁶² Decision of the 2nd Consultative Meeting of the Heads of Central Asian States (November 29)

⁶³ Resolution 71/222 of 21.12.2016, 71st UNGA session

5.4. Turkmenistan



Water sector

Water resources. The total volume of water resources of Turkmenistan is comprised of the surface runoff of the Amu Darya (88%), Murgab (6.5%), Tedjen (3.5%), and Atrek, Sumbar and Chandyr (1.4%) rivers, as well as the small watercourses of the northeast slopes of Copetdag (0.6%), and the insignificant groundwater resources and collector-drainage waters. All large rivers of Turkmenistan are transboundary, i.e. 95% of surface water in the water balance of Turkmenistan is formed outside the country.

The efforts under the **Socio-Economic Development Program for 2019-2025**, which envisaged measures

for water saving, augmentation of water stock, prevention of salinization and reclamation of agricultural land, were continued.

A 18-million m³ reservoir was put into operation at the 1096-km of the Karakum River in Bereket district, Balkan province. The total extension of the dam and ponds is more than 7.8 km. Commissioning of the new waterworks facility with a capacity of 10 m³/s, together with road and energy infrastructure will improve the reliability of irrigation water supply in the district (August 11).

PO "Karakumdyragurlushyk" has started construction of a new reservoir (design capacity of 4 billion m³)

in Lebap province. Construction of the feeder canal from the Amu Darya River 14 km deep into the territory to the west was started in 2021. Water will be diverted from the river by gravity.

Water meters have been installed at 13 points along the Murgap River in Mary province. The automated water monitoring system allows controlling level and flow rate in real time.

JSC "Miwe" has been constructing a large-scale diversion structure to catch and collect mudflow from the Kopetdag mountains in Kaakhki district, Akhal province for irrigation purposes. The structure is designed to store about 6.5 million m³ of water.

Capacity building. A number of seminars and trainings were organized and held: [seminar](#) "International experience on implementing digital technologies in the water industry" (August 10-11, OSCE Center in Ashgabat, online); training in innovative water saving methods (September 19, UNDP and "Goskomvodkhov", Turkmenistan, online); training in water diplomacy (November 2, Training Center for the Priority Areas of Diplomacy, Institute of International Relations at the MFA of Turkmenistan).

International cooperation. The following events were held: working meeting on water use efficiency in the region among officials and experts of the State Committee for Water Resources of Turkmenistan (Goskomvodkhov), the Ministry of Energy and Water Resources of Tajikistan (MEWR RT) and EC IFAS (February 3, online); 1st meeting of the joint Turkmen-Uzbek Intergovernmental Commission for Water (September 13, Tashkent). See ["Bilateral Water Cooperation between the Countries of Central Asia"](#).

The ICWC member from Turkmenistan participated at the 80th and 81st meetings of ICWC (May 11 and December 7); representatives of the State Committee for Water Resources of Turkmenistan took part in the conference "Strengthening regional water cooperation in Central Asia" (May 25, online) and the IFAS Board meeting (June 29, Dushanbe), see ["International Fund for Saving the Aral Sea"](#).

Projects. As a part of: (1) the ["Central Asia Nexus Dialogue Project: Fostering water, energy and food security nexus and multi-sector investment"](#) (phase II, CAREC), Turkmenistan and Uzbekistan implement the demo-project "Tuyamuyun Hydroelectric Complex". The Technical Working Group gathered together several times in the course of the year (February 23, July 23, November 2); (2) ["Energy Efficiency and Renewable Energy for Sustainable Water Management in Turkmenistan"](#) (UNDP/GEF), a scientific-practical workshop on improving the water use efficiency in irrigation systems was held online on May 26; production of two types of materials for channel lining was arranged; solar power systems were installed for pumping and purifying water in remote villages El, Byashkak and Kelleli in Akhal province.

Drinking water supply. Implementation of the "General Clean Water Program" is continued. According to the Law of Turkmenistan on drinking water (136-IV of

September 25, 2010), the Ministry of Construction and Architecture drafted the Rules of use of water supply and sanitation systems. The document provides for the regulation and accounting of supplied drinking water and discharged sewage, sets obligations, rights and responsibilities of drinking water operator and consumer.

Agriculture

At year-end 2021, Turkmenistan harvested 1.25 million tons of cotton and more than 1.4 million tons of grain, reached the state order for rice production for 82.4 thousand tons.

Latest developments in legislation. The following legal documents were adopted in 2021: (1) amended law "On state land cadaster" (416-VI of November 13), which defines the legal, economic and institutional framework of activities in the field of the state land cadaster; (2) Law "On amendments and additions to certain legislative acts of Turkmenistan" (№ 431-VI of November 13) which amended:

- The Land Code (approved by Law of October 25, 2004);

- The Law on Dayhan/Peasant Associations (113-III of March 30, 2007). The Law was supplemented by the article "Water Use by Dayhan Associations", which defines the procedure of water supply and transfer of on-farm irrigation, collector-drainage networks and associated hydraulic structures to Dayhan associations that are "responsible for the conditions and use of on-farm irrigation and collector-drainage networks, water facilities and devices, as well as for delivering water resources to respective leaseholders and other water users" and "take appropriate measures to ensure efficient and economical use of water resources", etc.;

- The Law on Dayhan Farms (445-IV of November 9, 2013). The new version stipulates that "the minimum amount of the authorized capital of a Dayhan Farm shall be 5 times the size of the base value for calculation of taxes and fees" (Article 6, paragraph 3). The Law was supplemented with the article "Water use by Dayhan Farms" also.

Agroindustry reformation and modernization under the "Program of Socio-Economic Development of Turkmenistan for 2019-2025". Private investments increasingly play the key role in developing modern agricultural production and creating new jobs. According to Resolution of the People's Council of Turkmenistan (Khalk Maslakhaty) "On further reformation of the agricultural sector" (of September 25, 2018), land plots shall be allocated to private producers for growing crops from the 'state order' list in accordance with the established procedure. For instance, over 61 thousand ha of fertile land in Ruhubelent district, Dashoguz province have been allocated for a term of 99 years provided that not less than 70% of the arable area would be covered by crops.

Land and water management efficiency is improved by introducing drip and sprinkling irrigation methods.

At the final meeting of the agroindustry leaders, it was proposed to reduce the area under cotton by 40 thousand ha and plant potatoes and other vegetable and melon crops on the released land.

Turkmen scientists and breeders have developed new varieties of cotton, tomatoes, watermelon and melons. Production capacities are extended: greenhouse farms equipped with the latest technologies and water-saving systems and designed for production of 8.75 thousand ton of vegetables per year were put into operation in Akhal, Dashoguz, Lebap, Mary, and Balkan provinces. As a result, about 400 new jobs were created.

Projects. As a part of the “Supporting climate resilient livelihoods in agricultural communities in drought-prone areas of Turkmenistan” (UNDP/GEF), the following events were organized: a [webinar](#) “The use of multicluster agro-ecological maps in the process of planning adaptation to climate change” (May 11); [field days](#) dedicated to rational use of irrigation water (July 15 and 24); [training](#) on the development of greenhouse facilities (August 20-21); [online national workshop](#) on the development of a system of measurement, reporting and verification (MRV) of adaptation measures, with the participation of an international expert (August 24); a [seminar](#) “The importance of modeling agroecological zones (AEZ) for the optimal placement of crops by regions of the country” (November 12). An online [Roundtable](#) discussion on the concept of a draft Law on agricultural consulting services was also organized. The participants of the Roundtable reviewed recommendations for further actions of agro-information centers, state bodies and institutions involved in agricultural consulting services to facilitate development and further adoption of the proposed legal framework (August 25).

Project “Integrated natural resources management in drought-prone and salt-affected agricultural production landscapes in Central Asia and Turkey” (CACILM-2) (FAO/GEF): field trainings were held in the format of Farmer Field School on the territory of 3 pilot regions – in the desert (on the basis of Central Karakum station, the southern edge of the Central Karakums), in mountains (Nohur, Bakharden district of Akhal province) and under oasis conditions (Gurban-soltan-eje district of Dashoguz province, Anau city, Research Institute at the Turkmen Agricultural Institute). Permanent farmer field schools are planned to be established in the three pilot regions.

International cooperation. Turkmenistan extends cooperation with FAO. Meetings were held between the FAO Sub-regional Coordinator for Central Asia, Viorel Gutu and the Deputy Prime Minister, Minister of Foreign Affairs of Turkmenistan R. Meredov (October 22, December 10), Minister of Finance and Economy of Turkmenistan M. Serdarov (December 10) to discuss partnership in the area of food security, as well as issues related to opening of the FAO office in Turkmenistan.

The following official documents were signed between FAO and Turkmenistan: (1) Country Programming Framework 2021-2025, priorities of which are in

line with the state priorities of Turkmenistan and the [Sustainable Development Cooperation Framework between the Government of Turkmenistan and the United Nations, 2021-2025](#): strengthening institutional capacity on statistical data collection and reporting on agricultural development, production, and trade; digitalization of agricultural sector, support to the country's climate mitigation and adaptation efforts; (2) two agreements aimed at improving the cotton sector in Turkmenistan (corresponding national strategy is to be developed) and increasing the efficiency of small livestock breeding in order to reduce greenhouse gas emissions; (3) Agreement on implementation of development projects funded under the FAO-Turkey Partnership Program on Food and Agriculture.

Turkmenistan establishes cooperation with Russian agrarian universities: (1) Memorandum “On scientific cooperation and training of agrarians was signed between the Turkmen Agricultural University named after S.A. Niyazov and the Scientific and Production Seed Growing Association (Association “Semena”, Moscow); (2) Memorandum of Cooperation is drafted between the Turkmen Agricultural University and the Kazan State Agrarian University in the field of education, science, culture, sports and innovations.

Events. The Conference “International cooperation in the field of food security” was held on June 25 (Ashgabat, online). Delegation of Turkmenistan took part in the 35th session of the FAO Regional Conference for the Near East and North Africa – #NERC35 (September 21-22).

Energy

12 state power plants, with the total installed capacity of 6,511.2 MW, are operated by the Ministry of Energy. In January-October, electricity production in the country grew by 111.6% and exports increased by 134.5%. The plan was completed by 113.3% and 178.1%, respectively.

The generating capacities of the sector are extended. A new 432-MW gas turbine power plant was completed in Lebap province. Negotiations are underway to advance construction of the Turkmenistan-Afghanistan-Pakistan-India gas pipeline and the Turkmenistan-Afghanistan-Pakistan power transmission line (January 8).

Alternative Energy

Latest developments in legislation. The law “On renewable energy sources” (337-VI of March 23, 2021) was adopted. It defines the legal, organizational, economic and social frameworks of activities in the field of renewable energy sources and regulates relations in use of renewable energy.

Implementation of national strategies and programs. The work on implementation of the State Program for Energy Saving for 2018-2024 and the National Strategy on Renewable Energy Development in Turkmenistan until 2030 has continued.

Capacity Building. **Training webinar** “Learning international experience in the development of regulatory technical documents for the development of renewable energy in Turkmenistan” as part of UNDP project “Sustainable cities in Turkmenistan: Integrated green urban development in Ashgabat and Awaza” (March 3); a **training course** to present best practices in developing target indicators for renewable energy sources in Turkmenistan (June 8-11) and a **seminar** on energy diplomacy (October 21-22), organized by the OSCE Center in Ashgabat.

Events. The following conferences were organized: Scientific and practical conference on green diplomacy and alternative energy development (June 12); XXVI International Conference “Oil and Gas of Turkmenistan-2021” (October 27-28).

A meeting was held with the Director General of the International Renewable Energy Agency (IRENA), Francesco La Camera on enhancing cooperation in the field of rational use of renewable and alternative energy sources (March 23).

Environment and Climate Change

Latest developments in legislation. The Law “On accession to the Agreement on the Establishment of the Global Green Growth Institute”⁶⁴ was adopted on November 13.

Amendments and additions were made to: (1) the Law “On atmospheric air protection” (429-VI of November 13, 2021). Article 7 of the Law is supplemented with the following paragraphs: “shall create forest strips to reduce the dispersion of dust and salt aerosols that have a negative impact on atmospheric air; shall study and introduce into production plant species that are more resistant to negative atmospheric conditions (dust and salt aerosols)”; (2) Law “On environmental safety” (430-VI of November 13, 2021). The law is supplemented by Chapter VI1 “Environmental disaster and emergency zones”, which provides for monitoring of the ecological state and research efforts in these zones; (3) Law “On fishing and conservation of aquatic biological resources” (391-VI of June 5, 2021).

National programs. The following national programs were approved: (1) National Forestry Program of Turkmenistan for 2021-2025 and related Action Plan (June 25). The program provides for the development of a plan for planting deciduous trees, conifers, fruit trees, vine seedlings, and desert plants, the identification of key areas of international cooperation and the introduction of best practices in the forestry; (2) National Program of Turkmenistan for the Aral Sea for 2021-2025 and the related Action plan (October 22). The program provides for the modernization of land and water legislation, improvement of the system of management and use of water resources, formation of forest zones, protection of biodiversity, improvement of health service quality and implementation of preventive measures.

Implementation of the National Climate Change Strategy of Turkmenistan has continued.

Projects. (1) “Supporting climate resilient livelihoods in agricultural communities in drought-prone areas of Turkmenistan” (UNDP/GEF): the following events were organized: a workshop on the development of measurement system, reporting and verification (MRV) of adaptation measures (August 24); a **five-day training** “Features of atmospheric circulation and synoptic processes in Turkmenistan and neighboring states” (November); (2) “Sustainable cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza”, (UNDP/GEF): a working meeting to create a platform for strategic discussions and experience exchanges in environmental protection, waste management, and natural resource management was held; local adaptation plans including local gender-sensitive aspects were developed and approved for farmers' associations and livestock farms; a **training** (January 19-20) and a seminar “Practical use of new laboratory equipment and capacity building of the environmental monitoring and control system” (December 7) were organized.

The following projects were launched in 2021: (1) “Capacity-building of Turkmenistan and support to the development of country programs and regional actions to address climate change” (CAREC/CCF), aimed at ensuring the country's readiness for systematic and effective interaction with the GCF in line with the established norms and procedures. A meeting was organized on the development of a project coordination mechanism (June 21-22); (2) “Developing a National Adaptation Planning Process in Turkmenistan” (UNDP/GCF) aimed at increasing the adaptation capacity and resilience of the country to climate change through the development of the National Adaptation Planning (NAP) process by integrating climate risks and building a strong evidence base for adaptation planning, including budgeting process (November 16); (3) “Conservation and Sustainable Management of Land Resources and High Nature Value Ecosystems in the Aral Sea Basin for Multiple Benefits” (UNDP/GEF), aimed at promoting land degradation neutrality, restoration and improvement of the use of land and water resources, as well as conservation of biodiversity in the Aral Sea crisis zone in Lebap and Dashoguz provinces to enhance the sustainability and resilience of livelihoods and globally significant ecosystems. The **validation workshop** (February 19) and a meeting (December 17) were organized in 2021.

Events. A working meeting was held on preparation of the Fourth National Communication on Climate Change and Initial Biennial Update Report of Turkmenistan under the UN Framework Convention on Climate Change (UNFCCC), and on development of Nationally Determined Contributions (NDC) under the Paris Climate Agreement⁶⁵ (March 10, Ashgabat, online).

⁶⁴ The Global Green Growth Institute (GGGI) is an international intergovernmental organization headquartered in Seoul that is “dedicated to supporting and promoting strong, inclusive and sustainable economic growth in developing and emerging economies. The agreement establishing the GGGI was adopted on June 20, 2012 in Rio de Janeiro.

⁶⁵ The documents are developed with the support of UNDP jointly with UNEP and coordinated by the UNDP project “Sustainable Cities in Turkmenistan: Integrated Development of Green Cities in Ashgabat and Awaza”

The OSCE Center in Ashgabat organized seminars on issues of [environmental protection system development](#) (June 17-18), [promotion of the Aarhus Convention's principles](#) (June 24-25), and advanced [environmental management](#) in oil and gas extractive sector (July 8-9).

The following events were organized as well: [International conference](#) "Multilateral Dialogue on the Promotion of Cooperation in the Aral Sea Basin" (April 22); Scientific and practical conference "State policy of the President of Turkmenistan in the field of environmental protection and environmental well-being: achieved milestones and tasks to be solved" (June 4); Conference organized by the UNFCCC Secretariat and the Cabinet of Ministers of Japan, with participation of representatives of environmental agencies from 45 countries in Eurasia, the Americas, and Australia; Scientific and practical conference "Current issues of Turkmenistan's transition to green technologies" (November 23).

Representatives of Turkmenistan took part in the roundtable on resisting the climate change (April 21), IX Nevsky International Environmental Congress (May 27-28, St. Petersburg), the Fourth Central Asia Conference on Climate Change (CACCC-2021) (July 26-27, Dushanbe), the "C5+1" ministerial meeting (September 16), and the 26th session of the Conference of the Parties to the UN Framework Convention on Climate Change (COP26) (October 31-November 12, Glasgow, Scotland).

Emergencies

Latest developments in legislation. The following official documents were approved in 2021: (1) The Law "On the prevention and liquidation of emergency situations" (new edition) (334-VI of March 13), which establishes the legal and organizational frameworks of relevant activities; (2) The state program for implementation of the public policy on civil defense for the period 2019-2030, focusing on disaster risk reduction (DRR), formation of an appropriate legislative framework, creation of modern rapid response emergency services, strengthening of seismic safety, desertification, etc.

Drought. 2021 was the driest year in Ashgabat and a number of other regions in Turkmenistan. Ashgabat got only 61.1 mm of precipitation in the course of the year (as of December 27). Previously, less than 100 mm of annual precipitation was recorded for the capital in 2006 and 2008.

A similar situation was recorded in Serakh district, where 50.5 mm of precipitation fell (earlier, the year 2000 was considered dry – 76 mm of precipitation), and in Bairamal district – 38.7 mm (the year 1917 was drier – 36 mm) and other regions.

Khauz Khan, Zeyd and Saryyazin reservoirs were shallow in 2021.



Khauz Khan reservoir in early May 2021 and 2020



Zeyd reservoir in early May 2021 and 2020

Source: "Meteojournal" online publication (<https://meteojournal.ru/>)

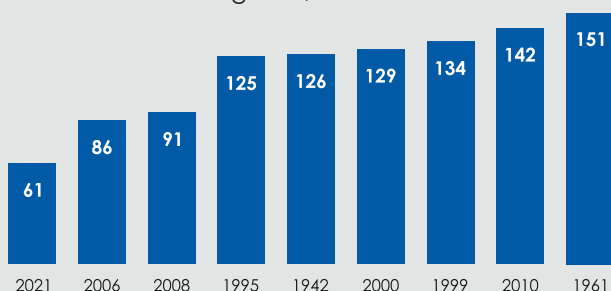
Capacity building. The Nature Conservation Society of Turkmenistan, with the support of the USAID Governance Support Program in Turkmenistan, held a series of thematic workshops on capacity building and institutional development of organizations dealing with disaster risk reduction (July 26, October 13, November 16, December 14).

SDG in Turkmenistan

The process of establishing the National Platform for collection and dissemination of the data on SDGs has been completed as part of the project "[Partnering for SDG acceleration](#)" implemented jointly by the State Statistics Committee, the Ministry of Finance and Economy and UNDP. The National platform for SDG reporting and the developed multifunctional software includes information on the country's achievements, metadata, charts, graphs and disaggregated data within SDG indicators. Also, webinars were held on "[Application of public-private partnership to achieve the Sustainable Development Goals](#)" (February 16) and "[SDG Financing: Introduction to UNDP service offers and tools](#)" (June 4).

The UN and the Government of Turkmenistan held a series of meetings to discuss the interim results of implementation of the [UN Sustainable Development](#)

Years with a minimum amount of precipitation. Ashgabat, 1891-2021



Source: <https://meteojournal.ru/>

Cooperation Framework between the Government of Turkmenistan and United Nations, 2021-2025 (November 24-30). Joint teams of the UN and national ministries reviewed the results of the five key areas: (1) people-centered governance and the rule of law; (2) sustainable economic diversification, competitive private and financial sectors, expanded trade and its promotion; (3) disaster risk reduction, climate change adaptation and resilience (4) quality and accessible health care and social services; (5) quality, inclusive and accessible education and systems for professional development.

Young SDGs Ambassadors of Turkmenistan participated in (1) a seminar on the International Mother Earth Day, where they presented to students and schoolchildren the history of this day, told about the importance of environmental protection and the ways to maintain the ecological equilibrium (April 22). The online seminar was organized jointly by UNICEF and the Ministry of Education of Turkmenistan; (2) a Youth conference on climate was held with the support of the United Nations and the British Embassy (October 8).



Cooperation on the Caspian Sea

Turkmenistan continues taking active part in developing the international treaty framework of cooperation, strengthening good-neighborly relations and broad cooperation between the riparian countries of the Caspian Sea. The work on preparation to the VI Summit of the Heads of the Caspian Sea States is underway. A package of new regulatory and legal documents is prepared and will be included in the agenda of the Summit. Among them are agreements on research and rescue operations in the Caspian Sea.

Within the framework of the **Coordinating Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea (CASPCOM)** and the **Tehran Convention**⁶⁶, Turkmenistan participated in technical meetings of the Caspian Environmental Monitoring Program (EMP) (March 5, October 12); the 25th session of CASCOM (October 25, online); the scientific conference on Climate Change in the Caspian Sea Region (October 27-28, online); a meeting of executive and operational bodies on implementation of the Protocol on Regional Preparedness, Response and Cooperation in Case of Oil Pollution Incidents (Aktau Protocol⁶⁷) (November 1-3).

In cooperation with partners, Turkmenistan held: Russian-Turkmen web-conference "Ecosystem of the Caspian Sea Region" (May 12); Scientific and practical conference "Cooperation on marine environment protection of the Caspian Sea" timed to the Caspian Sea Day (August 12).

Turkmenistan took part in: a meeting of the Prosecutors General of the Caspian riparian countries, which resulted in signature of the Cooperation Declaration on environmental protection and use of natural resources of the Caspian Sea (July 7, St. Petersburg); a meeting of experts "Green economy for the Caspian Sea-2021: realities and prospects" (August 20, Astrakhan); the 14th Caspian Energy Forum (December 8, Moscow).

Foreign policy and International cooperation

In 2021, the President of Turkmenistan made official and working visits to the UAE (October), Uzbekistan (October), Tajikistan (September), Turkey (November), Russia (December).

The following high level officials visited Turkmenistan: Minister of Foreign Affairs of Uzbekistan (May), President of the Republic of Tatarstan of the Russian Federation (May, September), President of the Kyrgyz Republic (June, November), Minister of Foreign Affairs of China (July), Minister of Foreign Affairs of Pakistan (August), President of Kazakhstan (October), Presidents of Turkey, Azerbaijan, Uzbekistan, Iran, Prime Minister of Kazakhstan, Federal Minister of European and Foreign Affairs of Austria (November).

Key developments in the foreign policy of Turkmenistan

Development of alliances and strategic partnerships. Turkmenistan builds relationships with neighboring countries based on the good-neighborliness and equality principles, both in a bi- and multilateral format. In particular, cooperation is developed in ener-

⁶⁶ The Tehran Convention serves as a comprehensive governance framework that establishes common requirements and institutional mechanism for environmental protection and sustainable development in the Caspian Sea region

⁶⁷ Adopted and signed at the 3rd session of the Conference of the Parties (COP3) in Aktau, Kazakhstan on August 12, 2011. This is the first protocol ratified by all the riparian countries and entered into force on July 25, 2016



gy, transport, trade, ecology, water, etc. The Consultative meeting of the Heads of Central Asian States was held in Turkmenbashi on August 6 and resulted in adoption of a Joint Statement. A number of side events included the Dialogue of Central Asian Women, the Economic Forum of the Central Asian countries, the International exhibition of national commodities of the Central Asian countries, the International festival of national dishes in the region's countries. As a result of the Dialogue of Central Asian Women, a Declaration acknowledging the position of the Dialogue to find effective ways for unlocking the scientific, technical, creative, intellectual and entrepreneurial potential of women in the region was adopted. The Joint Statement of the Heads of Central Asian States and the Declaration of the Dialogue of Central Asian Women are recognized as documents of the 75th UNGA session, published in the UN official languages and distributed among member states.

Turkmenistan, as an honorary guest, took part in: meeting of the Council of the SCO Member States (September 17, Dushanbe), XX meeting of the Council of the Heads of Government of the SCO Member States (November 25, online), meeting of Deputy foreign ministers of Central Asian countries (December 8, Dushanbe). As a member of CIS, Turkmenistan participated in the meetings of the Council of Foreign Ministers (April 2, Moscow; October 14, Minsk); meetings of the Council of Heads of Government (May 28, November 12); meeting of the Council of the Heads of State (October 15, online); informal summit of the Heads of State (December 28, St. Petersburg).

Promotion of the national interests and reinforcement of the country's image. Turkmenistan actively cooperates with the United Nations, EU, OSCE, OIC and ECO.

UN. Upon the initiative of Turkmenistan, 2021 was declared the "International Year of Peace and Trust"⁶⁸.

The International conference "Turkmenistan and the United Nations: Cooperation for Peace and Trust" was held on occasion of the 29th anniversary of Turkmenistan's membership in the UN (March 2). The following bilateral documents were signed: Agreement between the Government of Turkmenistan and UNFPA on co-financing, as well as the Work Plan 2021 between the Ministry of Sport and Youth Policy of Turkmenistan and UNFPA within the framework of the project "Strengthening mechanisms of youth participation in implementation of the national youth policy and advancement of gender equality".

The following resolutions were adopted unanimously by the initiative of Turkmenistan at the 75th UNGA: (1) Resolution⁶⁹ "The Role of the UN Regional Center for Preventive Diplomacy for Central Asia"; (2) Resolution⁷⁰ "Strengthening the links between all modes of transport to ensure stable and reliable international transport for sustainable development during and after the coronavirus disease (COVID 19) pandemic".

Speaking at the 76th UNGA session, the President of Turkmenistan: (1) stressed the need to intensify multi-lateral cooperation through scientific diplomacy and strengthen the activities of the UN; (2) proposed to develop a draft UNGA resolution on "Strengthening regional and international cooperation to ensure peace, stability and sustainable development in the Central Asian region and create a zone of peace, trust and cooperation "Central Asia – Caspian Region"; (3) stated his intention to create a UN Special Program for the Aral Sea Basin" together with partners in the region" (September 22).

The United Nations Office for Project Services (UNOPS) was officially opened in Turkmenistan on June 10. This is a UN office that assists countries in restoring peace and post-conflict stability, provides early recovery services after natural disasters, promotes economic development based on local capacities and supports environmental sustainability as well as adaptation to climate change.

Turkmenistan has been elected (1) to the Executive Board of the UN Entity for Gender Equality and the Empowerment of Women (UN-Women) for the period 2022-2024, at the United Nations Economic and Social Council regular meeting (ECOSOC) (April 20); (2) to the post of Vice-Chairman of the United Nations Economic Commission for Europe (UNECE) for the period 2021-2023, during the 69th UNECE session (April 20-21, online); (3) to the Executive Council of the UNESCO Intergovernmental Oceanographic Com-

⁶⁸ 106th plenary meeting of the 73rd UNGA session, 12.09.2019

⁶⁹ 59th plenary meeting co-sponsored by 72 Member States of the Organization (April 16)

⁷⁰ 96th plenary meeting, co-sponsored by 48 states (July 29)

mission (IOC⁷¹), during the 31st session of the Assembly of the Commission (June 21, Paris); (4) as a member of the Intergovernmental Council of the International Hydrological Programme⁷² for the period 2021-2025, during the 41st session of the UNESCO General Conference (November 18).

Ashgabat hosted an International Conference “The Peace and Trust Policy is the Basis for International Security, Stability and Development” on December 11. Finally, 26 multilateral documents have been signed. Among those were: the Memorandum of Understanding between the Government of Turkmenistan and the UN on climate change mitigation and adaptation; the Action Plan for 2022 on implementation of the UNDP program to ensure socio-economic outcomes related to climate impacts on population engaged in agricultural sector in arid regions of Turkmenistan; the Programme on developing the national adaptation planning process in Turkmenistan by the Ministry of Agriculture and Environmental Protection of Turkmenistan and UNDP Office in Turkmenistan for 2022-2024.

Turkmenistan took over the chairmanship in ECO in 2021 at the 14th ECO Summit (March 4, online). At the proposal of Turkmenistan, a resolution on cooperation between the UN and ECO was unanimously adopted at the 102nd plenary meeting of the 75th UNGA session (September 9). Turkmenistan hosted the following meetings as the chair: (1) a senior officials meeting of the ECO countries-members (November 26); (2) Business forum of the ECO member-states (November 26); (3) 25th meeting of the Council of Ministers (COM) of the Economic Cooperation Organization (November 27); (4) 15th Summit of the Leaders of the ECO member states, as a result of which the

Ashgabat Consensus for Actions was adopted offering a path to regional stability and to achievement of the main goal of sustainable socio-economic development and prosperity in the ECO region (November 28).

Other organizations. The CICA Committee of Senior Officials decided to grant Turkmenistan the status of observer in CICA (June 23, Nur-Sultan, online). At the 8th Summit of the Cooperation Council of Turkic speaking states, a decision was made that Turkmenistan would join the association as an observer (November 12, Istanbul).

Sources:

Official sites of:

MFA, <https://www.mfa.gov.tm/en/>;

State Committee of Water Management of Turkmenistan, <http://turkmenwater.gov.tm/en/>;

Ministry of Agriculture and Environmental Protection of Turkmenistan, <https://minagri.gov.tm/en/>;

Ministry of Justice of Turkmenistan, <http://minjust.gov.tm/en/>;

Ministry of Energy of Turkmenistan, <https://www.minenergo.gov.tm/>

Information agencies and sites:

<https://turkmenistan.gov.tm/en/>;

<http://tdh.gov.tm/en/>;

<https://turkmenportal.com/>;

<https://www.oilgas.gov.tm/en/>;

<https://orient.tm/en/home/>;

<https://arzuw.news/>;

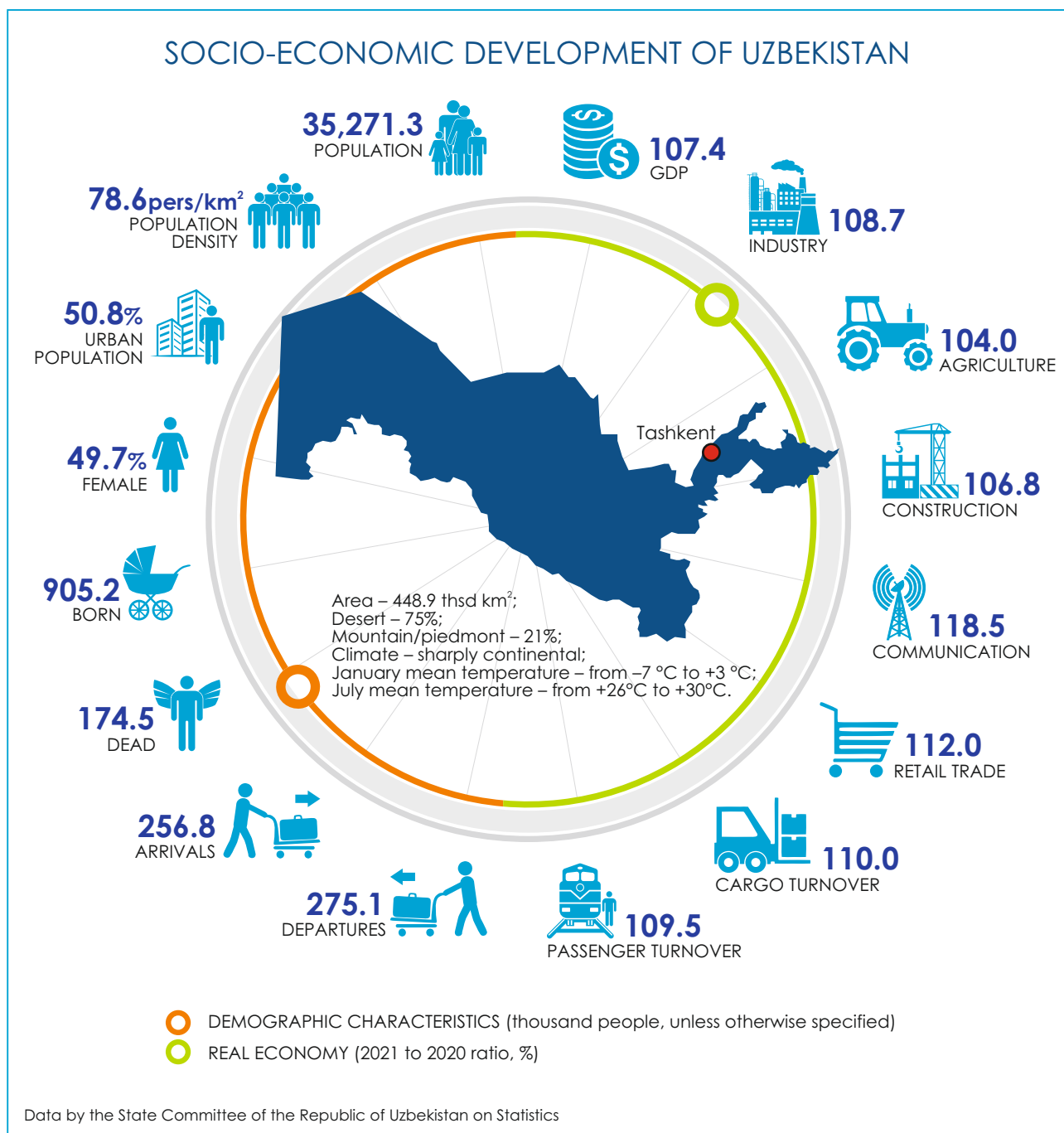
<https://www.parahat.info/>;

<https://ashgabat.in/?lang=ru>

⁷¹ IOC – UNESCO promotes international cooperation in marine sciences to improve ocean, coastal, and marine resource management

⁷² <https://en.unesco.org/themes/water-security/hydrology>

5.5. Uzbekistan



Water Sector

Water resources. Uzbekistan's average water use is 51-53 billion m³, of which 80% (approx. 41 km³/year) is provided from transboundary rivers. The estimated natural fresh and brackish groundwater deposits potentially yield 27.6 km³/year; however, they are unevenly distributed throughout the country. The water demand is met through a combination of surface water (50.9 km³/year), usable groundwater (0.5 km³/year), and the reused collector and drainage water (1.6 km³/year). The average water use by sector is as follows: 90-91% – agriculture; 4.5% – municipal sector; 1.4% – industry; 1.2% – fisheries; 0.5% – thermal power; 1% – other sectors.

Latest developments in legislation. Law on amending and supplementing the Law on water and water use, among other things: strengthened the powers of public departments and authorities dealing with water and their financing; set that financing of water user associations was formed from annual membership fees, water service fees and other legitimate sources; prohibited from breach of sanitary-protection and water buffer zone regime; and, specified that water sites or their parts can be used or operated by PPPs (ZRU-733 of 30.11.2021).

For implementation of the national **Concept on Water Sector Development 2020-2030:**

■ The **Strategy for water resources management and the development of the irrigation sector in Uzbekistan for 2021-2023** was approved (PP-5005 of 24.02.2021). The Strategy includes a number of measures covering sustainable water resources management and modernization of the country's irrigation sector. In particular, it is planned to increase performance of irrigation system and networks from 0.63 to 0.66; reduce irrigated area with poor water supply from 526 to 424 thousand ha; extend coverage by water-saving technologies from 0.308 to 1.1 million ha, including that of drip irrigation technologies from 121 to 822 thousand ha; reduce salinized soil area from 1,926 to 1,888 thousand ha; convert 232 thousand ha of withdrawn irrigated land into agricultural use; automate 60 large waterworks facilities, etc.

■ a Decree on measures for further improvement of public administration and control system in water and for ensuring safety of water infrastructure was adopted (UP-6200 of 06.04.2021). The Decree sets key tasks and areas of the **Ministry for Water Management**, which is also assigned the **functions of authorized public agency for accounting of all types of water**, coordination of actions for better water use, and consolidation of water balance. The State Inspectorate for control over safety of water infrastructure was set to report to the Cabinet of Ministers of Uzbekistan and a Roadmap was approved for development of a draft law on safety of hydrotechnical constructions, etc. A number of resolutions were also adopted in 2021 in support of the Decree.

■ a Resolution on measures for improvement of the Research Center for Water Problems at the Cabinet of Ministers of Uzbekistan⁷³ was adopted (PKM 453 of 23.07.2021) and set the mandate and financing sources of the Center;

■ the Water Code of the Republic of Uzbekistan is under development.

Water management system. The 28.4-km long irrigation system, more than 54 thousand hydraulic structures and 70 reservoirs and mudflow storage at the total capacity of 19.4 billion m³ are operated in the Republic. About 60% of land is irrigated through 1,687 pumps consuming 8 billion kWh annually. WUAs, farms and clusters operate 155.2 thousand ha of irrigation network and more than 10 thousand pumping units. For land reclamation, 142.9 thousand-km drainage, which includes 106.2 thousand km of surface drainage and 36.7 thousand km of subsurface horizontal drainage, 172 pumping stations and 3.8 thousand of vertical drainage wells are operated.

As part of implementation of the **Strategy**, funds were allocated for reconstruction of 865 structures; 552 structures were commissioned; irrigation of 906 thousand ha was improved; and 17.5 thousand hydraulic structures and almost 17 thousand gauging stations were repaired.

Experts from Uzbekistan together with experts from the Moscow State Building University has worked on rehabilitation and reconstruction of the Sardoba reservoir⁷⁴.

AO Uzbekgidroenergo was instructed to equip the Tupalang reservoir in Sariosiyo district, Surkhandarya province with metering facilities for regular measurements and protection devices for safe and reliable operation of the reservoir in line with relevant resolution adopted in 2021.

Online control and monitoring of water delivery along Mirishkor and Kamashi canals in Kashkadarya province was achieved through the automation system installed by the Australian Rubicon Water Pty. Ltd. The Kuvanish-zharma canal on the Amu Darya River was equipped with the Smart Water system to control water in the real-time mode that helped to lessen a human factor in water management and prevent transportation losses.

As part of implementation of the resolution (PP-5201 of 29.07.2021) on measures for modernization of 95 pumping stations in Bukhara, Navoiy, Kashkadarya, Samarkand, and Surkhandarya provinces, an agreement was signed between Uzbekistan and the Russian state corporation WEB.RF on the sidelines of the Uzbekistan Economic Forum 2021 (September 29-30, Tashkent).



Projects. The following projects were continued: (1) “Fergana Valley Water Resources Management Project”, Phase II (WB) – 18 km of canals in four districts of Andizhan province are in process of renovation. It is planned to put into operation 46.4 km of canals by November 2022; (2) **National Water Resources Management Project in Uzbekistan** (SDC) – a training workshop in water-saving technologies was held for the staff of the Ministry of Water Management and its organizations (April 26-June 11); the Meliorative Information System has been developed and followed by training for land reclamation field offices; (3) “Improvement of Water Resources Management in Sur-

⁷³ Formed in 2020

⁷⁴ The Sardoba Dam burst was on May 1, 2020

khandarya Province (reconstruction of Khazarbag-Akkapchigai canal system" (ISDB) – training for farmers, WUAs' staff and irrigation system heads (March 29-May 1) and workshops for the staff of Surkhandarya Province Water Authority and district irrigation divisions (June) were held; etc.

As part of the [USAID Regional Water and Vulnerable Environment Activity](#) aimed at strengthening water cooperation across Central Asia, an introductory on-line workshop was held on March 31 to present goals, tasks and planned actions.

Capacity building. In the course of the year, a number of trainings and practical workshops were organized for water sector staff on water-saving technologies, geo-information technologies in the water sector, water management reforms, etc.

Regional cooperation. The ICWC member from Uzbekistan took part in the 80th meeting of ICWC (May 11) and chaired the 81st meeting (December 7). See "[ICWC Meetings](#)".

In 2021, officials of the Government of Uzbekistan signed: (1) an Agreement with Kyrgyzstan on territorial division and sharing of water between the countries (March 25); (2) an Agreement with Turkmenistan on Joint Inter-governmental Commission for Water and an additional agreement to the Inter-governmental Agreement on charged land use (May 26); (3) a trilateral protocol with Kazakhstan and Tajikistan on operation of the Bakhri Tojik reservoir over June-August 2021 (June 14).

Officials of the water sectors of Uzbekistan and Kazakhstan met to discuss the water cooperation issues and favorable conditions for the trouble-free growing season (June 29), the joint measures for the improvement of water-related situation in the middle and lower reaches of the Syr Darya and the draft intergovernmental agreement on joint management and use of transboundary water bodies (July 19).

The Joint Turkmen-Uzbek Inter-governmental Commission for Water held its 1st meeting on September 13 and addressed such issues as cooperation on water use along the Amu Darya River, operation of water

infrastructure in the two countries, and research and technical cooperation on water. The Uzbek-Kazakh Joint working group on environment and water quality in the Syr Darya basin adopted the work plan for 2022 during its 4th meeting on December 13. See also "[Bilateral Water Cooperation between the Countries of Central Asia](#)".

IFAS. The permanent representative of Uzbekistan was assigned to EC IFAS. Uzbekistan took part in the meetings of (1) IFAS Board (June 29); (2) Working group on institutional and legal improvement of IFAS (May 27, October 18, August 16). See also "[International Fund for Saving the Aral Sea](#)".

Events. Tashkent hosted the: (1) International conference "Strengthening regional water cooperation in Central Asia" organized by IICA and the UNESCO Office in Uzbekistan (May 25); (2) Regional conference "High-level dialogue on effective energy, water and land development in Central Asia" (October 15); (3) International Conference "The Aral Sea Region – a zone of environmental innovations and technologies" (November 22).

Representatives of Uzbekistan took part in the 3rd session of the Asian Interparliamentary Consultative Council for Water (May 12, online); Singapore International Water Week /SIWW 2021 (June 21-July 2); International workshop "Irrigated land reclamation as the main factor of sustainable irrigated agriculture" (September 24, online, Kazakhstan); Central-Asian sub-regional preparatory conference for the 9th World Water Forum "Water Security for Peace and Development" (October 19-20, Dushanbe); #ARALIssues Conference-2021 (December 10, Almaty).

Drinking Water Supply

According to the Central Public Utility Organization (*AO Uzsvu'ta'minot*), "the Republic has 10,269 settlements, of which 3,350 are fully covered by centralized water supply and 4,654 are partially covered. 2,265 settlements do not have access to centralized water supply. There are 72 thousand km of water mains, 9.4 thousand water structures, 11.6 thousand pumps, 58 sewage treatment structures, and 8.6 thousand sewerage networks."

As part of the State Program for the improvement of villages ("*Obod kishloq*"), large-scale efforts are made for building new water supply networks to improve access to drinking water.

Projects. The following projects were continued: (1) Improvement of drinking water supply in Dzhizak province through water resources of the Zarafshan River: completed construction, in Bulungur district, of "Uzunbuloq" water-treatment station (capacity 100 thousand m³/day), laboratory, 100-thousand m³/day pumping station, filtration station, etc.; built Dzhizak water divide and two 5-thousand m³ water ponds; (2) [Alat and Karakul Water Supply Project](#) (WB): reconstructed 50-thousand m³/day water treatment structure and 4 water distribution structures, laid 52 km of main and 160 km of additional water pipes, 280 km of



urban and 1,936 km of rural distribution networks; (3) Tashkent Province Water Supply Development Project (ADB): completed construction of 100-thousand m³ water treatment structure and 21 km of main water pipes. Improved drinking water supply of 66,000 residents in Kibrai district.

Signed: (1) a loan agreement for US \$70 million with EBRD under improvement of water supply in Namanagan province (June 7); (2) grant agreements for US\$ 239 million under the Water Supply Services Development and Institutional Support in Uzbekistan Project to modernize sewage and treatment structures (May 17).

Capacity building. It is planned to open a Water Academy in Uzbekistan to perform special trainings on water supply system, make competence assessment of drinking water supply and sanitation operators, and build effective cooperation among national and international higher educational institutions.

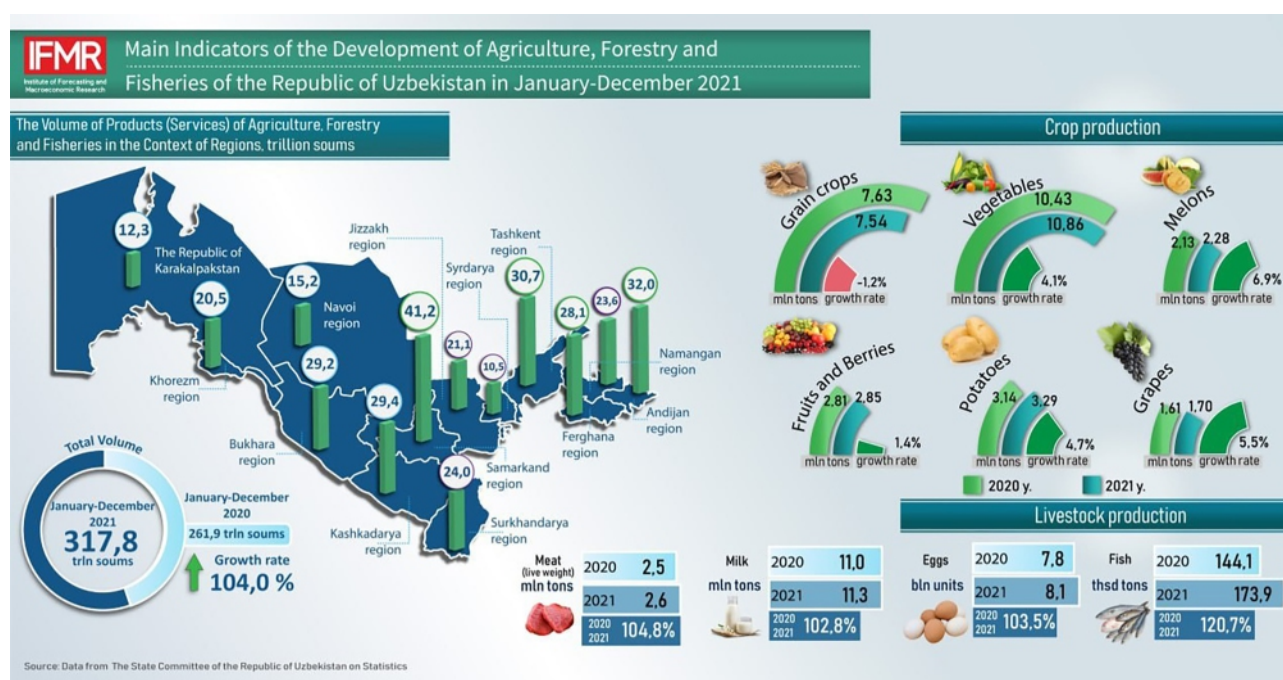
Conducted: training course for the AO *Uzsvvta'minot* (September 21-24); workshops for laboratory staff of regional water supply enterprises (November 9) and for the heads of provincial public utilities and engineering companies (November 19).

International cooperation. AO *Uzsvvta'minot* has signed: (1) Cooperation Agreement on wastewater and sewage treatment with "Ekolos-Projectstroy" LLC (Russia) and "UzEkolos" LLC (April 5); Memorandum on establishment of joint venture to build water facilities for drinking water supply and sewage and modernization of existing facilities using modern technologies with "SAYIN INSAAT TICARET VE SANAYI LTD" Turkish company (February 11); (3) Minutes of discussions on a pilot project to launch "smart" meters in the Mirabad district of Tashkent with Korea Water Resources Corporation ("K-water"), Shin Dong-A Electronics Co., LTD (December 13).

A Memorandum of joint actions for introduction of smart water accounting system in Tashkent was signed with Suez International in June.

Agriculture

By the end of 2021, crop acreage was 3,260.7 thousand ha. Agricultural production amounted to 302,524.9 billion soums, including crop production – 151,083.4 billion soums, livestock – 151,441.5 billion soums. The growth rate of production amounted to 103.1% in plant growing and 104.1% in livestock production.



Source: Institute of Forecasting and Macroeconomic Research, <https://ifmr.uz/infographics> (<https://ifmr.uz/infographics/136>)

Latest developments in legislation. In 2021, for implementation of the Agricultural Development Strategy of the Republic of Uzbekistan for 2020-2030, a number of laws and resolutions were adopted: on dekhkan farms, on subsistence farming, on the improvement of land leasing and use, on additional measures for financial support of individual farms, peasant farms and subsistence farmers, on additional measures for the improvement of agricultural land use and protection, and on equality and transparency of land relations and protection of land rights, etc.

Implementation of strategies and programs. In follow-up to resolution 794 of the Cabinet of Ministers on measures for digitization of agroindustry in Uzbekistan, a **special land map** on plots allocated to youth in Yangikurgan district, Namangan province (<http://yerajratish.uz/>) and the information system (*E-Ijara*) so that the farmers could have full information on free agricultural land and submit their applications for agricultural land leasing (<https://ijara.soliq.uz/>) have been developed. As part of the Agricultural Development Strategy, the Agricultural

Knowledge and Innovation System (**AKIS**, <http://akis.agro.uz/uz>) has been developed. First pilot AKIS agro-service center in Tashkent province (80 ha) includes fields for crop, fertilizer and technology experiments, the Agricultural state service center and the Agro-business service center, research laboratories, mobile laboratories and agricultural machinery polygon, agromarket, etc. AKIS centers will be formed in all provinces.

Agroclusters. Clusters are provided with wide development opportunities, in particular: (1) cotton textile clusters will be able to get 24-month credits on raw cotton and yarn; (2) grain clusters and farmers will have a right to sell wheat at market prices. During 3 years, 2.5 t of grain per hectare should be sold via exchange, while the rest harvest can be sold on farmer's own.

The Republican commission for coordination of cotton textile cluster activities was formed by Presidential Decree UP-14 of 16.11.2021 "On measures for regulation of cotton textile cluster activities".

Projects. The following projects continued: (1) [Integrated natural resources management in drought-prone and salt-affected agricultural production landscapes in Central Asia and Turkey](#) (CACILM-2, FAO/GEF): rural people in Bukhara and Kashkadarya provinces has got greenhouses, motocultivators, water pipes, and other equipment; the Bukhara fodder seed research-production center was equipped with up-to-date laboratory and agricultural facilities; UzHydromet received 12 automatic weather stations; new geoinformation system laboratory was opened at the Tashkent State Agrarian University; (2) [CADI](#) (Central Asian Desert Initiative): training was held for rural women in settlements of Navoiy and Bukhara provinces (October) and the International conference on temperate deserts was organized on December 2-3 in Tashkent; the CADI Regional Secretariat Office opened in December; (3) [Smart farming for the next generation](#) (FAO, with support of the Republic of Korea): at the AKIS Center, a series of training in greenhouse production and crop growing in covered soil (November) and in modernization and optimization of greenhouses was held.

The following projects were launched: (1) Strengthening sustainable food systems through geographical indications (FAO/Ministry of Agriculture of Uzbekistan); (2) [Supporting an inclusive transition to a green economy in the Agri-food sector and development of a "climate-smart" Uzbek Agriculture Knowledge and Innovation System](#) (EU, €4.15 million, 2021-2025, pilot regions – Tashkent, Kashkadarya and Fergana provinces).

Capacity building. Training was held for managers of the Karakalpakstan Ministry of Water Management and the provincial authorities for irrigation systems, electric and pumping stations in April as part of AKIS.

Also, training workshops were conducted on effective application of drip irrigation technology on cotton fields (May, Bukhara province) and on new procedure of agricultural land leasing (November, Samarkand province).

Farmer schools were formed in Tashkent, Andizhan, Samarkand, Termez and Nukus to transfer new knowledge on agriculture and doing business, improve business skills and prepare skilled young farmers.

The trilateral MoU signed between the Uzbek Ministry of Agriculture, the Royal Agricultural University (RAU) and the Lithuanian Vytautas Magnus University (VDU) provided for the establishment of a new International agricultural university.

International cooperation. Uzbekistan and FAO signed the US\$ 17-million [Country Programming Framework for 2021-2025](#) aimed to support the Government transforming Uzbek food systems.

During the sixth meeting of Ministers of SCO member states on agriculture, a draft Joint Statement on food security was accommodated among the participants and the Concept of SCO Demonstration polygon for agrarian technology exchange and training was approved (August 12).

Events. The following events were held in Uzbekistan in 2021: Republican scientific-practical conference "The role of institutional reforms and development of agroclusters in increasing the economic power of agriculture: problems and solutions" (May 18); Agro-marathon to encourage, make aware and guide new-coming and potential agricultural entrepreneurs (October-December); [Global Symposium on salt-affected soil](#) (GSAS21) (October 20-22); National symposium "Integrated salt-affected soil management and re-cultivation for food security: new approaches and innovative solutions" (October 20).

Uzbekistan took part in the regional dialogue on "Policy and governance issues to transform food systems in Europe and Central Asia" ([May 25](#)) and the FAO-SCO Independent Dialogue in preparation for the 2021 UN Food Systems Summit (August 9).

Energy

The available generating capacities in Uzbekistan amount to 12,900 MW, of which 11,000 MW (84.7%) – TPP; 1,850 MW – HPP (14.3%); and, more than 133 MW (1%) – isolated stations.⁷⁵ As expected, the energy system capacity will reach 29.2 thousand MW (share of RES, including hydro, solar, and wind – 40.4%) by 2030. By the end of 2021, the installed capacity of electric stations increased by 1.2% to 16,527 MW.

In 2021⁷⁶, 71.3 billion kWh of electric power (66.4 billion kWh in 2020) were generated in Uzbekistan. The electricity export was 2.15 billion kWh (2.7 in 2020), while

⁷⁵ Concept on provision of Uzbekistan with electric power for 2020-2030

⁷⁶ By 2030, generation is to reach 120.1 billion kWh

the import was 6.2 billion kWh (5.3 in 2020). Around 60.5 billion kWh of electricity was delivered to consumers (by 8.5% more than in 2020). As forecasted, by 2030, the republican consumption will reach 120.8 billion kWh.

Latest developments in legislation. The Resolution of the Cabinet of Ministers (PKM RUz 382 of 18.06.2021) on organization of effective utilization of electrical grid facilities sets the list of 16 facilities of the national grid to be transferred to economic entities AO REC and AO TEC. The Institute of Energy Problems (PKM RUz 273 of 04.05.2021) will be established on the base of AO UzbeEnergy's Research and Technological Center. The Institute will formulate Uzbekistan's energy development strategies and fuel-energy system modernization and development programs.

A new version of the law on electric energy has been drafted. This new law is significantly expanded and integrates all recently adopted legal documents.

Hydropower

Due to low-water, hydropower generation dropped to 5 billion kWh in 2021 against 6.5 billion kWh in 2019 (by almost 23%).

Latest developments in legislation. The approved **Program of additional measures** for hydropower development and efficiency for 2021-2030 (PP-44 of 10.12.2021) envisages an increase in country's hydropower capacity from 2,051.9 to 3,416 MW (+66.5%) by 2030 through construction of new and gradual modernization of existing stations and wider utilization of green energy sources. It is planned to amend current laws to include hydropower below 0.5 MW as micro, 5 MW as small, 30 MW as medium, and over 30 MW as large in classification of hydropower. These will be treated as renewables.

Hydropower construction and modernization. Reconstruction of **Farkhad HPP** in Syrdarya province has been completed. The total capacity of HPP increased from 114 to 127 MW through modernization of 4 units. 76-MW **Lower Chatkal HPP** on the Chatkal River in Tashkent province is under construction. It is to be commissioned in December 2022. Modernization of **Tupalang HPP** has started in Surkhandarya province. After installation of 2 units the HPP's capacity will be increased to 175 MW.

Construction of 400-MW Pskem HPP (annual generation – 950 million kWh, dam height – 195 m, full reservoir capacity – 511.2 million m³, useful volume – 468.9 million m³) has been started. This will be the second large HPP after Charvak HPP.

Small hydropower. The feasibility reports of joint investment projects for 10.7-MW HPP at the Sardoba reservoir and two HPPs on the Dargom canal (6.4MW and 6.45 MW) have been approved by the Uzbekistan's Cabinet of Ministers.

37.4-MW Zarchob-1 and 38.2-MW Zarchob 2 were commissioned in Saryasi district, Surkhandarya province. The project cost is US\$80 million, including US\$29 million – Chinese investments, and the rest – funds of AO UzbeEnergy. These HPP will provide about 300,000 people with electricity.

The unique in Central Asia Kamolot HPP equipped with four submerged units, each 2.15 MW, (US\$22.6 million) and a new 120-kW micro HPP are to be commissioned soon.

Regional and international cooperation. On March 14, Kyrgyzstan and Uzbekistan signed a Roadmap on **Kambarata-1** project (capacity – 1,900 MW, annual generation – 5.6 billion kWh, reservoir volume – 4.65 billion m³) – the largest plant in the cascade of Kambarata HPPs.

AO UzbeEnergy and AO Eximbank of Russia have signed an agreement on financing the construction of new hydropower plants for US\$340 thousand, including 140-MW Mulallak HPP on the Pskem River and 51-MW small HPP cascade on the Big Andizhan Canal.

Since 2021, investment projects for the construction of Rabat, Chappasu and Tamshush HPPs on the Aksu River (US\$75.3 million, installed capacity – 24 MW) has started in cooperation with ADB.

Thermal power

Thermal power is still the main source of electricity in the Republic. By 2030, it is planned to increase the total capacity of TPPs to 14.7 thousand MW (10.6 thousand MW in 2019)⁷⁷.

In 2021, modernization of Syrdarya TPP, the largest one in Uzbekistan, was completed. Two TPPs were commissioned in partnership with the Turkish Akxa Enerji Üretim A.Ş.: 270 and 240 MW in Bukhara and Tashkent provinces, respectively.

Over the next 4 years, Navoi, Talimarjan and Tashkent TPP will additionally have 2,264 MW of new capacity. By 2026, 20 projects worth US\$12 billion will be launched and will generate additional 71 billion kWh.

Alternative energy sources

Latest developments in legislation. To support adoption of energy efficient technologies and development of renewables, (1) the Regulation on the procedure of compensation for buying energy efficient devices and coverage of a portion of credit payments in this respect was adopted (PKM 217 of 14.04.2021); (2) measures were set for supporting development of alternative energy, electrical engineering and microelectronics and enhancing activity of the Research Institute of semiconductor physics and microelectronics (PKM 639 of 12.10.2021).

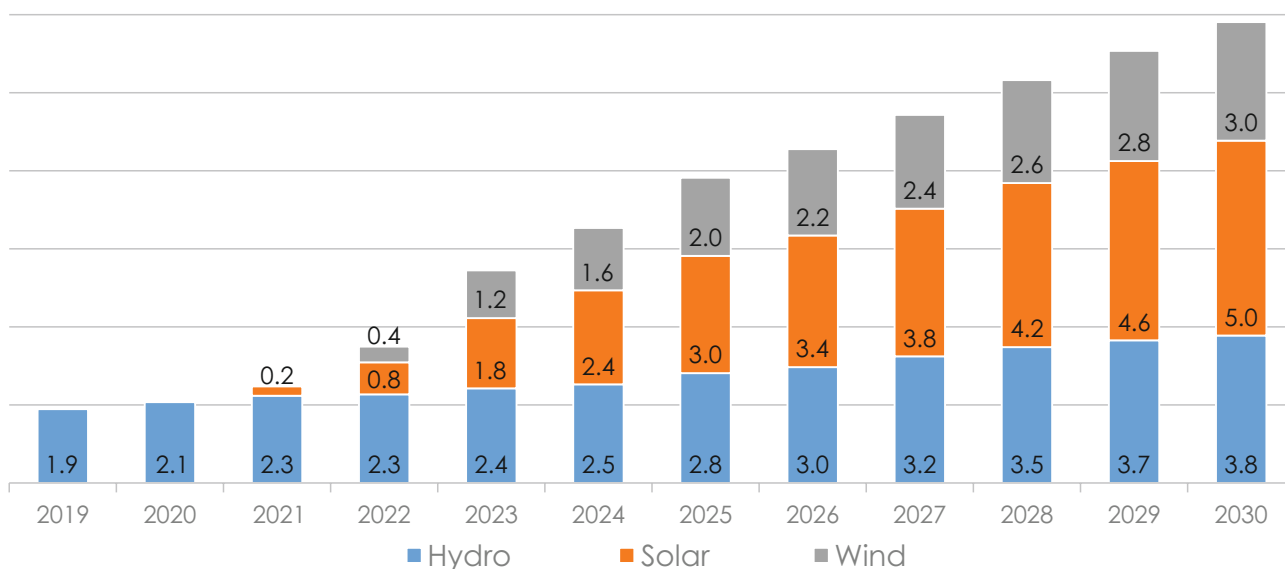
⁷⁷ Concept on provision of Uzbekistan with electric power for 2020-2030

The National Renewables Research Institute and the Interdepartmental commission for renewable and hydrogen energy are established in line with Government Resolution 5063 of 09.04.2021.

Plan of actions for carbon neutrality in the energy sector of Uzbekistan. A roadmap was developed with the support of EBRD and Japanese financing to assist the Uzbek Government in setting priorities for development of renewables and low-carbon technologies and bringing energy sector in conformity with commitments under the Paris Agreement. A five-component approach

is planned: (1) Transformation of electricity generation infrastructure; (2) Development of legal framework for wider adoption of RES; (3) Reform of subsidies and mechanism of carbon pricing; (4) Awareness raising campaign to mobilize public support; (5) Environmental conservation. The key conclusion is that energy transition in Uzbekistan by 2050 is technically and economically feasible and will be mainly through the development of solar and wind energy, the technical potential of which is estimated at 520-1000 and 3,000 GW, respectively.

RES-based generation by 2030



Source: Concept on provision of Uzbekistan with electric power for 2020-2030. https://minenergy.uz/uploads/1a28427c-cf47-415e-da5c-47d2c7564095_media_.pdf

Solar power. Small 40-kW solar photovoltaic station was commissioned in Yukori Chirchik district, Tashkent province in March; first industrial 100-MW solar station "Nur Navoi Solar" was launched in Navoiy province in August.

Project Agreements have been signed with Masdar for the construction of two 220-MW solar stations in Samarkand province and Djizak province (July).

For the first time in Uzbekistan, the solar power generated by households started to be purchased.

Wind power. Masdar (UAE) has decided to increase the installed capacity of wind station under construction in Navoiy province to 1.5 GW. The station is to be commissioned at the end of 2024.

The investment agreements between the Uzbek Government and the Saudi company ACWA Power (investor) on the construction of 2 wind stations, 500 MW each, in Bukhara province were approved. The projects to be commissioned in 2024 are expected to reduce carbon emissions by 1.6 million t and thus contribute to transfer 40% of energy capacities to RES by 2031.

ACWA Power won the tender for construction of a 100-MW wind farm in Beruni district of the Republic of Karakalpakstan. An agreement was signed with the company also for design, construction and operation of a 1500-MW wind power project in Karakalpakstan (May 3).

Environment and Climate Change

Latest developments in legislation. The law on environmental audit (ZRUz 678 of 15.03.2021) sets the key principles, standards, tasks and forms of audit and the rights, obligations and responsibilities of an environmental audit organization.

Resolution 343 of the Cabinet of Ministers approved the **Program of environmental monitoring in the Republic of Uzbekistan for 2021-2025.** The Program provides for monitoring of natural environment, forecast of pollution level, monitoring of pollution sources and environmental impact.

The Resolution on measures for environmental protection and organization of activity of public environmental control agencies (PP-76 of 30.12.2021) sets out the updated tasks for environmental control agencies at the national, provincial and district (city)

levels. The roadmap was adopted for further improvement of sectors of ecology, environmental protection, nature use and restoration, and environmental control system.

Implementation of strategies, programs and resolutions. In the follow up to the Concept on the Environmental Protection until 2030, the following legal documents were adopted: (1) Resolution of the Cabinet of Ministers (202 of 12.04.2021) on further improvement of economic mechanisms for environmental protection in the Republic of Uzbekistan, by which the Regulation on compensatory payments for environmental pollution and waste disposal has been endorsed; (2) Resolution of the Cabinet of Ministers (501 of 06.08.2021) on approval of the Order of provision of specialized services in hydrometeorology and environmental monitoring; (3) Presidential Decree (UP-46 of 30.12.2021) on measures to accelerate afforestation and effectively organize tree protection in the Republic, which provided for launching a nationwide project "Green territory" and extending moratorium for cutting of valuable trees and bushes.

The Aral Sea Region. In 2017, the State Program for the Aral Sea Region Development over 2017-2021 was approved. In 2020, a Committee on the development of the Aral Sea Region and ecology was formed. In the course of 2021, the Committee had several meetings to address environmental and social matters in the region. Intensive activity is maintained to transform this zone of environmental crisis into that of socio-economic development. In particular, a US\$ 1.1-million water treatment and desalination equipment was installed in Takhtakupyr district in Karakalpakstan. The Committee negotiates with UNESCO to include Karakalpak yurta into the UNESCO list of intangible cultural heritage.

In 2021, UNGA adopted a Special resolution⁷⁸ on declaring the Aral Sea region a zone of environmental innovations and technologies that was put forward by the President of Uzbekistan. In this context, a Roadmap, a list of priority innovation projects, the composition of Interdepartmental commission for implementation of the Special resolution and of working groups to ensure timely and good implementation, monitoring and control were adopted (PP-5202 of 29.07.2021) and the parliamentary supervision over implementation of the resolution has been set (PC-370-IV of 27.08.2021).

MPHSTF for the Aral Sea Region. Two meetings of the Consultative Committee⁷⁹ for sustainable development of the Aral Sea Region were held in 2021 (March 30, July 8). The Uzbek Government presented the draft **Multilateral Roadmap**, which was aimed at implementation of a **Special resolution** for steady improvement of living conditions in the Aral Sea region, restoration of ecosystems and increase of biodiversity

in adjacent territories. Within the framework of MPHSTF, projects were implemented to ensure access to drinking water, improve the perinatal care service, support youth initiatives in agriculture, improve sanitation in schools and strengthen the healthcare system. MPHSTF **announced** the third call for proposals on **Youth Employment and Innovations, Health, and Green Growth**.

For wider coverage on the Aral Sea catastrophe: (1) a website SAVEARAL (<http://savearal.uz/>) was developed. The website contains articles, documentary films and other stuff highlighting developments in the Aral Sea basin; (2) the courses on the media coverage of the Aral Sea problems were held for journalists in Kazakhstan and Uzbekistan. Upon completion, a press tour to the Aral Sea was organized and **#ARALIssues Conference-2021** was held to present multimedia stories (December 10, Almaty)⁸⁰. See "Major Events in Central Asia".

Projects. The Project "Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity" (UNDP/ State Committee for Ecology of Uzbekistan, US\$ 6.5 million, 2017-2022) was continued. The economic ecosystem assessment was made in 2021. The Center for visitors of the Chatkal state biosphere reserve was opened on December 7. In addition, SMART patrolling systems were developed for monitoring biodiversity and snow leopard, followed by organization of a training workshop. A memorandum of understanding was signed between Uzbekistan, Kyrgyzstan and Tajikistan on transboundary cooperation in protecting snow leopard in the western Tien Shan and Pamir-Alai landscapes in CA.

See "United Nations and its Specialized Agencies" for other UNDP projects on environmental conservation in Uzbekistan in 2021.

Grant Agreements were signed between (1) KOICA and GGGI on implementation of the "Green Rehabilitation Investment Project for Karakalpakstan Republic to address impacts of the Aral Sea Crisis" (US\$ 5.6 million, 2021-2024). The Project aims to assist the Republic of Karakalpakstan's green rehabilitation to address the adverse impacts of the Aral Sea ecological crisis and establish viable measures to pursue disaster resilient sustainable livelihood for communities of the most affected districts (July 2); (2) EBRD and the State Committee for Ecology of Uzbekistan to implement the project aimed to support the republic in recultivation of uranium legacy sites – Charkesar and Yangiabad (€2 million, 2022-2023) (October 22).

As part of (1) the **Darwin Initiative**⁸¹, the UK Government will allocate more than US\$ 500 thousand for the project "Resurrection Island: enterprise, conservation and development around the Aral Sea". The Project

⁷⁸ Resolution (A/75/L.83) adopted on 66th plenary meeting, 75 UNGA session, May 18, 2021, New York

⁷⁹ First meeting of the Consultative Committee was held on 01.12.2020

⁸⁰ Organized by the International Center for Journalism MediaNet and DW Akademie, with the support of the German Federal Foreign Office

⁸¹ The Darwin Initiative was announced at the Rio Earth Summit in 1992. The Darwin Initiative supports developing countries to conserve biodiversity and reduce poverty

will lay the foundation for designating Resurrection Island as a Protected Area, while developing sustainable income streams (including tourism) enabling residents to benefit; (2) the UNESCO Man and the Biosphere Program, the Lower Amu Darya State Nature Park in Uzbekistan was included in the World Network of Biosphere Reserves.

Uzbekistan has become a member of the **International Union for Conservation of Nature (IUCN)**.

Events. The 3rd Environmental Performance Review of Uzbekistan was launched on July 15 in Tashkent. The report covers legal and policy frameworks and environmental compliance assurance mechanisms and addresses the topics of greening the economy, environmental monitoring, public participation and education.

Uzbekistan hosted the following events: (1) International Forum "Towards new opportunities: green recovery of Uzbekistan after the COVID-19 pandemic" (March 3-4); (2) roundtable on occasion of the International Day for Biological Diversity (May 26); (3) policy dialogue series "Green growth and climate chan-

ge in Uzbekistan" (20.08.21-17.02.22, 11 roundtables); (4) Regional Conference on strategic environmental assessment in Central Asia (November 10); International Conference "The Aral Sea Region – a zone of environmental innovations and technologies" (November 22, <https://innoweek.uz/>).

Representatives of Uzbekistan took part in: (1) 4th Central Asian conference on climate change (July 26-27); (2) 2nd meeting of the Heads of Environmental Ministries and Departments of SCO member-states (July 29); (3) 10th meeting of the EU-CA Working Group on environment and climate change (October 4-5); (4) meeting of the Parties to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (October 18-22); (5) Steering Committee meeting of the Global Snow Leopard and Ecosystem Protection Program (GSLEP) (October 22); (6) UN Climate Change Conference in Glasgow (COP26) (November 9-10); etc.

SDG in Uzbekistan

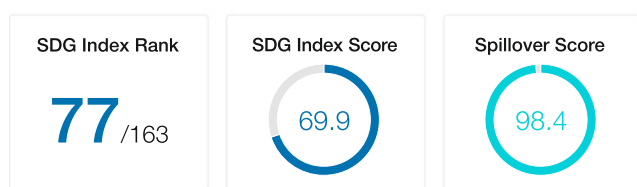
The country implements the **UN Sustainable Development Cooperation Framework 2021-2025⁸²**, which sets

Uzbekistan

Eastern Europe and central Asia



OVERVIEW INDICATORS



SDG Dashboards and Trends



Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable
Trends: ↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing ●● Trend information unavailable

⁸² Approved by the Government of Uzbekistan and the UN agencies in Uzbekistan on 24.10.2020

three priorities: effective governance and justice for all; inclusive human capital development leading to health, well-being and resilient prosperity; sustainable, climate responsible and resilient development.

In October 2018, the Uzbek Government passed a resolution adopting 16 national SDGs. The State Statistics Committee collects and publishes the data on national SDGs on <http://nsdg.stat.uz>. Uzbekistan ranked 77 of 163 countries in the annual ranking of sustainable development (<https://dashboards.sdgindex.org/rankings>).

A series of roundtables was organized as part of the Sustainable Development Goals week, including the round table "Protection and restoration of terrestrial ecosystems, sustainable use of forests, combating desertification, and halting the loss of biodiversity" (June 15).

Uzbekistan hosted: (1) the International Forum of Global Interparliamentary Cooperation in the Implementation of the Sustainable Development Goals, which adopted the Bukhara Declaration (June 23-24, Bukhara); (2) international conference on New Uzbekistan's National SDGs: Milestones and Perspectives (September 24, Tashkent).

Emergencies

According to long-term observations, the key hydro-meteorological hazard areas are Fergana, Naman-

gan, Andizhan, Kashkadarya, Surkhandarya, Tashkent, Samarkand and Navoiy provinces. In 2021, 27 mudflow cases were registered in mountain and foothill areas of the republic. Consequently, 64 houses were flooded.

Preventive measures. In 2021, 25 households (125 citizens) were resettled from the risk-prone areas to safe places permanently and 46 households (248 citizens), temporarily. Aerial observations are maintained to assess snow stock in mountains and the status of lakes in highlands and to identify avalanche- and flood-prone places. About 75.7 billion sum of budgetary funds were allocated for stabilization of river banks and cleaning of river channels. Special tactical exercises were conducted in high-risk zones.

Uzbekistan and Kazakhstan have signed an intergovernmental cooperation agreement on emergency prevention and elimination. The Agreement provides for (1) regular exchange of information on monitoring and forecasting of natural and man-made emergencies; (2) organization of interaction between relevant government agencies in emergency situations; (3) joint planning, development and implementation of research projects, exchange of research results, etc.

Implementation of strategies and programs. As part of the State Program for Development of the Aral Sea Region 2017-2021, the Ministry of Emergencies and the State Forestry Committee conduct afforestation on the exposed Aral Sea bed to prevent transportation of harmful salts from the bed into the atmosphere.

Afforestation on the exposed bed of the Aral Sea in 2018-2021 (thsd ha), under a state program by the Ministry of Emergency and State Forestry Committee

	2018-2019	2019-2020	2020-2021
Afforested area, thsd ha	461	706	354
– by seeding, including:	400	663	341
– aéroseeding	300	497	300
– mechanized seeding	100	166	41
Planting seedlings	61	40	13
Seeded pastures	–	3	3

The "Strategy for implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Republic of Uzbekistan" (PCM RUz 299 of 12.04.2019) is further carried out. Uzbekistan chaired the Working Group meeting⁸³, which considered and agreed upon a number of draft documents (July 28-29, Tashkent) proposed for discussion at the upcoming Regional Forum-Meeting of the heads of emergency authorities in CA countries. The Forum approved the Strategy for development of cooperation between the CA countries in DRR for 2022-2030, the Regulation on the Regional mechanism for coordination of

emergency response, the Action plan for implementation of the above Strategy, and other documents (November 4-5, Tashkent). The next Regional Forum is to be held in Dushanbe in 2022.

Events. Representatives of Uzbekistan took part in (1) the 1st Steering Committee meeting under the Strengthening Financial Resilience & Accelerating Risk Reduction in Central Asia Program (June 3, online); (2) XXXIII meeting of the Interstate Council for Natural and Anthropogenic Emergencies (July 2, Cholpon-Ata, Kyrgyzstan); (3) IX International Scientific-

⁸³ Within the framework of the UNDRR Initiative "Strengthening disaster resilience and accelerating implementation of Sendai Framework for Disaster Risk Reduction in Central Asia" financed by EU

Practical Conference (September 29-30, Minsk, Belarus).

Foreign Policy and International Cooperation

In 2021, the President of Uzbekistan paid official and working visits to Turkmenistan (April, August, November), Tajikistan (June, September), Turkey (November), the Russian Federation (November, December), Kazakhstan (December), and South Korea (December).

The country was visited by: the Presidents of Kyrgyzstan (March), Republic of Tatarstan (June), Afghanistan (July), Turkmenistan (October); the delegations from Saudi Arabia (January, July), Russian Federation (April, June), Parliament of South Korea (April), Qatar (June), Turkey (March, July); the Prime Ministers from Hungary (March), Tajikistan (May), Pakistan (July), Azerbaijan (July); the Foreign Ministers from Iran (April), PRC (July), Russian Federation (July), Tajikistan (July), Turkmenistan (July), Kazakhstan (July), India (July), Kuwait (July), Bangladesh (July); the Chairman of the 75th UNGA session (July), the UNECE Executive Secretary (July), WB delegation (September).

Key developments in the foreign policy of Uzbekistan in 2021

The aim of the republican foreign policy is to ensure dynamic and sustainable political, socio-economic, secular and democratic development of Uzbekistan. The most important objective is enhancing good-neighborly relations and strategic partnerships, first, with the CA countries.

Development of alliances and strategic partnerships.

The country continues building cooperation with the CIS and CA countries in political, trade and economic, transport and logistics, cultural, humanitarian and other spheres. The President of Uzbekistan speaking at the **Consultative Meetings of the Heads of CA States** underlined that: (1) regional energy security becomes especially important and particular attention should be paid to green energy and energy efficient technologies. He proposed to enhance the work of the Coordination Energy Council of the CA countries by extending its mandate and powers and increasing the representation of the countries; (2) regional environmental challenges should be in the focus and all measures should be taken to mitigate the Aral Sea catastrophe. Sh. Mirziyoyev also proposed to elaborate a Green Agenda program for the region to promote adaptation and adoption of resource-saving technologies.

As a member of **CIS**, Uzbekistan took part in the meetings of the Council of Heads of CIS States (October 15, online), Council of the Heads of Government (May 28 and November 12, Minsk), Council of Foreign Ministers (April 2, Moscow; October 14, Minsk), Eco-

nomical Council (March 12, June 18, September 24, December 2), and in informal summit of CIS Heads of State (December 28, St. Petersburg).

The President of Uzbekistan took part as an invited guest in the **CSTO extraordinary session** devoted to the situation in Afghanistan. Finally, an agreement was reached to continue joint consultations and regular exchange of information on the situation in the region (August 23, videoconference).

Uzbekistan was represented as an **observer country** in a meeting of **EAEU**. Sh. Mirziyoyev expressed readiness of Uzbekistan to take part in the High-level Working Group and proposed to approve an Action Plan for green development (December 10).

Chairmanship in international organizations. SCO. At the high-level anniversary meeting of the SCO Council of Heads of State, **the presidency of the organization for 2021-2022 was passed to Uzbekistan**. In his report, Mirziyoyev drew attention to urgent tasks on the SCO agenda, expressed concern over the current situation in Afghanistan, proposed to hold regular high-level meetings in the "SCO-Afghanistan" format and announced readiness to organize the first such meeting in Tashkent. He also put forward an initiative to "...jointly prepare a long-term infrastructure development program in the SCO region, which could include cross-border projects in the field of energy, communications and green development"... (September 17).

Uzbekistan participated in (1) the regular meeting of the Council of National Coordinators of SCO Member States (April 27-30, Tashkent); (2) the 16th Meeting of Secretaries of SCO Security Council (June 23); (3) the meeting of the Council of Foreign Ministers of SCO Member States (July 13-14).

Promotion of the national interests and reinforcement of the country's image. Uzbekistan enhances cooperation efforts and strengthens its positions in regional and international organizations.

ECO. Uzbekistan took part in (1) 14th ECO Summit (March 4, online); (2) 4th Business forum of the ECO member-states (November 26, Ashkhabad); (3) 25th meeting of the Council of Ministers (COM) of ECO (November 27, Ashkhabad); (4) 15th Summit of the Leaders of the ECO member states. The President of Uzbekistan in his speech proposed to establish a permanent Council for high-level dialogue, with the involvement of international scholars and experts in the field of natural environment. The chairmanship in ECO will be passed to Uzbekistan in 2022.

Turkic Council. The President of Uzbekistan at the informal summit proposed to develop a strategy of economic cooperation for the short- and medium-term, improve the transport and transit potential of the region, etc. (March 31, online). At the 8th Summit of the Cooperation Council of Turkic Speaking States

Sh. Mirziyoyev proposed to create a permanent Platform of experts and IT-specialists and hold a conference of experts in 2022. He also proposed to found an organization in cooperation with the UN to protect the natural environment of Turkic countries. Heads of State adopted Istanbul Declaration and agreed to convene 9th Summit in Uzbekistan in 2022 (November 12, Istanbul).

UN. Uzbekistan initiated a [special resolution](#) on declaring the Aral Sea region a zone of ecological innovations and technologies, which was adopted by the UN General Assembly on 18 May 2021.

Uzbekistan was [elected](#) to the Human Rights Council for 2021-2023. As a Council's member; Uzbekistan ratified the Convention on the Rights of Persons with Disabilities⁸⁴ (on 07.06.2021), initiated the resolution on "Human rights implications of the COVID-19 pandemic on young people" (A/HRC/48/L.26/Rev.1 of 06.10.2021), and hosted the World Conference on Youth Rights (August 12-13) and the Regional Forum with the participation of civil society women's organizations under the auspices of Central Asia Women Leaders Caucus (December 20).

Uzbekistan is represented in the HRC Bureau⁸⁵ for the first time. The country's permanent representative in Geneva became deputy chair of the HRC for 2022.

Uzbekistan hosted: International Conference "New trends in foreign policy of Uzbekistan: status and prospects in relationships with the Central Asia countries and Afghanistan" (January 21); International Confe-

rence "Central and South Asia: regional interconnectedness. Challenges and opportunities" (July 15-16); Forum "Central Asia: at the crossroads of civilizations" (September 15-16); International week of innovation ideas "InnoWeek.Uz-2021" (November 22-27).

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⁸⁴ Convention on the Rights of Persons with Disabilities was adopted by resolution 61/106 GA of 13.12.2006

⁸⁵ The Bureau of the Council consists of five people – one President and four Vice-presidents – representing the five regional groups. Uzbekistan will represent the Asia-Pacific region

