National Ramsar Strategy of Uzbekistan 2026–2030







MINISTRY OF ECOLOGY,
ENVIRONMENTAL PROTECTION
AND CLIMATE CHANGE OF THE
REPUBLIC OF UZBEKISTAN

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Written by: Olga Denyshchyk (Lead author) with contributions from Shukhrat Aripdjanov, Dostonjon Bakhriev, Mels Kosnazarov, Stephan Kroel, Sagit Kurbanbaev, Maksim Mitropolskiy, Jens Wunderlich, Ayzada Uzaxbayeva, Grigoriy Samoylov, and Paul Schumacher. (2025)

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Key Terminology of the Ramsar Convention

Term	Definition
Contracting Party	A country that has signed and ratified or acceded to the Ramsar Convention and thereby agreed to uphold its obligations.
Criteria for Identifying Wetlands of International Importance	A set of nine ecological and biological criteria used to assess whether a wetland qualifies as internationally important.
Ecological Character	The combination of the ecosystem components, processes, and services that characterize the wetland at a given point in time.
Ecosystem Services	The benefits people obtain from ecosystems, including provisioning, regulating, supporting, and cultural services.
Endorheic	A water body which loses water only by evaporation, i.e. no stream or river flows from it.
Karst	A landscape created on soluble rock with efficient underground drainage.
Ramsar Convention	An international treaty adopted in 1971 in Ramsar, Iran, for the conservation and wise use of wetlands through local and national actions and international cooperation.
Ramsar Information Sheet (RIS)	The standardized data form used to describe Ramsar Sites, including their ecological features and threats.
Ramsar Site	A wetland that has been designated by a Contracting Party for inclusion in the List of Wetlands of International Importance under the Convention.
Ramsar Strategic Plan	A global framework guiding Contracting Parties in the implementation of the Convention's objectives during a set multi-year period.
Wetland	Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including marine areas with depth at low tide not exceeding 6 meters.
Wetland Inventory	A comprehensive collection of data on wetlands, including their location, size, type, and values. A fundamental tool for wetland planning and management.
Wise Use	The maintenance of wetlands' ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development.

List of the abbreviations used in the text

Abbreviation	Full Term
AA	Administrative Authority
AALS	Aydar-Arnasay Lakes System
CRA	Climate Risk Assessment
CBD	Convention on Biological Diversity
CEPA	Communication, Education, Participation and Awareness
DIAPOL-CE	Policy Dialogue and Knowledge Management on Climate Protection Strategies
GHG	Greenhouse Gases
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IBA	Important Bird and Biodiversity Area
IPCC	Intergovernmental Panel on Climate Change
IOPs	International Organisation Partners
IWRM	Integrated Water Resources Management
JL	Lake Julturbas
KBA	Key Biodiversity Area
LD	Lake Dengizkul
MoEEPCC	Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan
NFP	National Focal Point
NWI	National Wetland Inventory
PA	Protected Area
RIS	Information Sheet on Ramsar Wetlands
RRI-CA	Ramsar Regional Initiative for Central Asia
SDG	Sustainable Development Goal

Abbreviation	Full Term
SLS	Sudochye Lake system
STRP	Scientific and Technical Review Panel
TKWR	Tudakul and Kuymazar Water Reservoirs
WWD	World Wetlands Day

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Introduction

Background on the Ramsar Convention and its significance

Suv bor joyda — hayot bor.
Where there is water, there is life.

Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.

Ramsar Convention in Article 1.1 states: "Wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres" (Ramsar Convention Secretariat, 1994).

It means that a wetland is any place where water covers the ground, either all the time or just part of the year. This includes places like swamps, lakes, rivers, deltas, irrigated channels and irrigated lands, underground aquifers, any human-made water reservoir and more.

The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world" (Ramsar Convention Secretariat, 2016).

The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. Since then, almost 90% of UN member states, from all the world's geographic regions, have acceded to become "Contracting Parties".

At the time of joining the Convention, each Contracting Party must designate at least one wetland site within their territory for inclusion in the List of Wetlands of International Importance (the "Ramsar List"). These "Ramsar Sites" acquire a new national and international status. They are recognized as being of significant value not only for the country or the countries in which they are located, but for humanity as a whole.

As of May 2025, this network comprises 2 566 Ramsar Sites across the territories of 173 Contracting Parties worldwide, covering areas of more than 250 million hectares.

Contracting Parties select suitable wetlands for designation by referring to the nine criteria of two groups (referred as 'A' and 'B') for identifying Wetlands of International Importance.

Group A, includes a single Criterion 1, and refers to wetlands that represent a rare or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

Criteria of Group B are united under the umbrella of the importance for the conservation of biological diversity and consist of four components related to: (a) species and ecological communities (Criteria 2, 3, 4), (b) waterfowl (Criteria 5, 6), (c) fishes (Criteria 7, 8), (d) other taxa (Criterion 9).

Criterion 2 emphasizes the international importance of wetlands for supporting vulnerable, endangered, or critically endangered species, or threatened ecological communities. Criterion 3 applies to wetlands that support populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region. Criterion 4 highlights wetlands that support plant and/or animal species at critical stages in their life cycles or provide refuge during adverse conditions.

The waterfowl-related criteria specify that a wetland should regularly support 20 000 or more waterfowl (Criterion 5) or regularly support at least 1% of the individuals in a population of one species or subspecies of waterbird (Criterion 6).



▲ **Image 1:** Children collecting water from irrigation channel (photo: Ernest Kurtveliev).

The two fish-specific criteria are as follows: Criterion 7 refers to wetlands that support a significant proportion of indigenous fish subspecies, species, or families, as well as life-history stages, species interactions, and/or populations representative of wetland values and biodiversity. Criterion 8 pertains to wetlands that serve as an important source of food for fish, or as spawning grounds, nurseries, or migration paths essential for sustaining fish stocks either within the wetland or elsewhere.

A single criterion based on other taxa states that a wetland of international importance should support 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species (Criterion 9).

The list of Ramsar Sites in Uzbekistan and the criteria for their designation are presented in Table 1.

▼ **Table 1:** List of the Ramsar sites of Uzbekistan with date and criteria for designation.

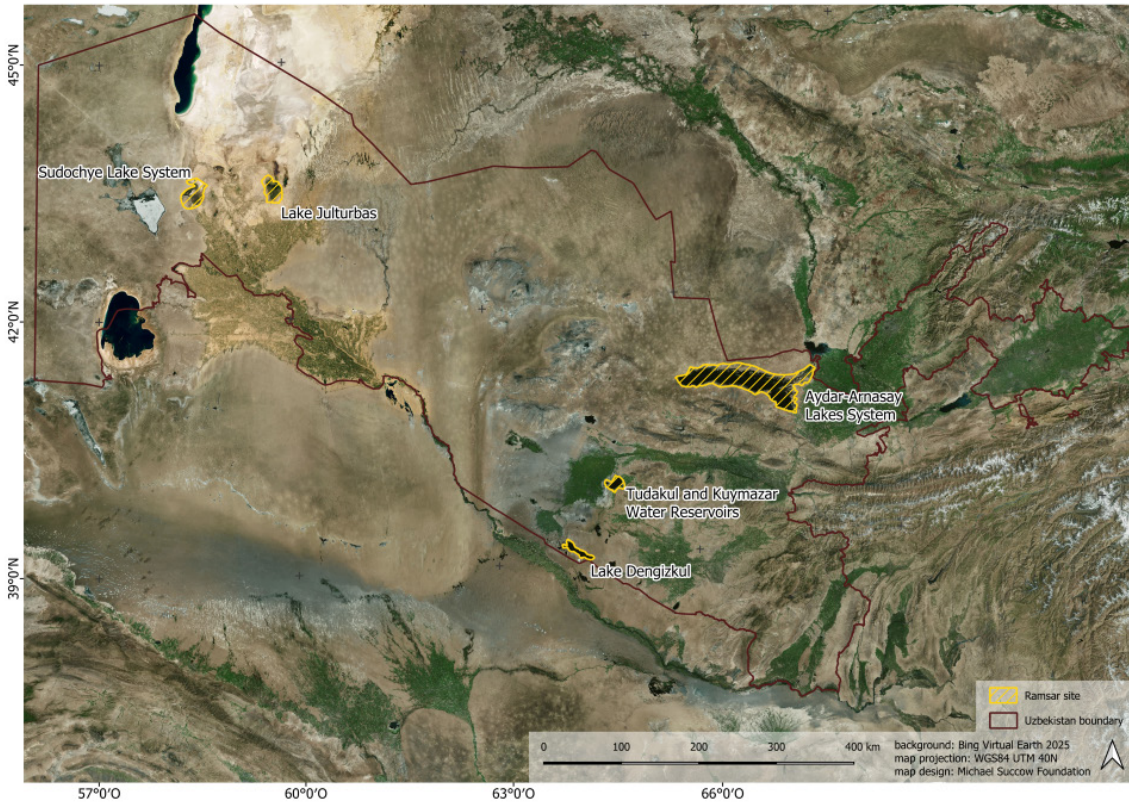
Name of the Ramsar site	Date of designation	Criteria for designation
Lake Dengizkul	8 October 2001	1, 2, 3, 4, 5, 6, 7, 8
Aydar-Arnasay Lakes System	20 October 2008	2, 4, 5, 7, 8
Tudakul and Kuymazar Water Reservoirs	19 August 2020	1, 2, 3, 4, 5, 6
Sudochye Lake System	30 May 2022	1, 2, 3, 4, 5, 6
Lake Juturbas	8 August 2022	1, 2, 3, 4, 5, 6, 7

Under the "three pillars" of the Ramsar Convention, the Contracting Parties commit to:

1. work towards the wise use of all their wetlands;
2. designate suitable wetlands for the list of Wetlands of International Importance and ensure their effective management;
3. cooperate internationally on transboundary wetlands, shared wetland systems and shared species.

The inclusion of a wetland in the Ramsar List embodies the government's commitment to take the steps necessary to ensure that ecological character is maintained.

Ecological character is the combination of the ecosystem components, processes and benefits /services that characterise the wetland at a given point in time.



▲ **Image 2:** Map of Uzbekistan with the Ramsar sites in the county.

The obligation is established in Article 3 of the Ramsar Convention, which states that Contracting Parties must:

— "formulate and implement their planning so as to promote the conservation of the wetlands included in the List" and to

— "arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing, or is likely to change as the result of technological developments, pollution or other human interference".

Through a series of COP decisions, the requirement in Article 3.1 "promote the conservation" of Ramsar sites has been equated to "maintenance of the ecological character" of these sites (Ramsar Convention Secretariat, 2008).

The Convention defines wise use of wetlands as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development" (Ramsar Convention Secretariat. 2010). Wise use can be seen as the conservation and sustainable use of wetlands and all the services they provide, for the benefit of people and nature.

Contracting Parties commit to work towards the wise use of all the wetlands and water resources in their territory, through national plans, policies and legislations, management actions and public education. Ramsar Strategy for Uzbekistan is seen as an effort towards achieving the wise use of Ramsar wetlands in the country.

In 1990 the Contracting Parties adopted Guidelines for the implementation of the wise use concept. The Guidelines emphasized the importance of:

— adopting national wetland policies, either separately or as a component of wider initiatives such as national environmental action plans;
— developing programmes covering wetland inventory, monitoring, research, training, education and public awareness;
— developing integrated management plans at wetland sites.

Furthermore, the Ramsar Convention is recognized as the leading authority for wetland activities under the Convention on Biological Diversity (CBD), with both conventions actively seeking to enhance cooperation and explore synergistic opportunities.

Uzbekistan became a Party to the Ramsar Convention in 2001, with the Convention entering into force for the country on February 8, 2002. This commitment obliges Uzbekistan to uphold the Convention's core objectives: the conservation and wise use of all wetlands to achieve sustainable development. In 2020, Uzbekistan joined the Ramsar Regional Initiative for Central Asia.

Overview of Uzbekistan's wetlands and their importance

Uzbekistan occupies about 11% of the Central Asia, a geographical area that covers approximately 4.2 mln km², equidistant from the Atlantic and Pacific Oceans. Stretching from the Caspian Sea in the west to the borders of western China in the east, Central Asia includes the territories of Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan, and Turkmenistan. This vast region reaches up to 46°N in the north and down to 37°N in the south, incorporating the southernmost latitudes of the temperate zone and touching the subtropics (Encyclopædia Britannica, 2025).

Due to its deeply inland position and exposure from the north, Central Asia experiences a highly continental and arid climate characterized by hot, dry summers and relatively moist winters with occasional severe frosts. These climatic conditions, combined with complex topography, contribute to the region's extremes in both aridity and temperature. The interior is dominated by intracontinental deserts and steppes, while mountainous areas host dense river networks that give rise to the major rivers of the region (Sokolov et al. 1990).

The presence of high mountain ranges enables the formation of mighty rivers within the arid expanses of Central Asia. However, despite their significant volume, the flow of these rivers remains confined within the region. Due to intense evaporation—often occurring close to the rivers' points of origin—the desert environment returns much of the runoff back to the atmosphere. Consequently, Central Asia constitutes a closed hydrological basin, isolated from the world's oceans: it receives no inflow from external sources, and the water generated within the region does not exit its boundaries, instead evaporating into the atmosphere (Shultz, 1965).

The mentioned above factors precondition that the hydrographic network of Central Asia is characterized by an uneven distribution of wetlands across the region and within the river basins. On the vast plains, covering approximately 70% of the total area of Central Asia, wetlands are scarce. Rivers traversing these plains, from their emergence in the mountains to their terminus, typically receive no tributaries. Upon reaching the lowlands, rivers progressively lose water to evaporation, irrigation, and infiltration, often ending in terminal basins without outflow. Only the largest rivers of Central Asia—the Amudarya, Syrdarya, and Ili—have historically been capable of flowing for hundreds of kilometres across desert terrain to reach endorheic water bodies such as the former Aral Sea and Lake Balkhash.

The river systems of Central Asia can be classified into four major basins, with the Aral Sea Basin being the largest in terms of area. It includes the region's two principal rivers—the Amudarya and the Syrdarya, both being the primary source of freshwater resources for 5 countries.

The Amudarya Basin is the largest in Central Asia in terms of both area and water yield. The catchment area covers from 465 000 km² to 612 000 km², depending on the source of data (UNECE, 2011). On average, the basin contributes about 78.46 km³ of water annually to the downstream plains. Zeravshan and Kashkadarya Rivers, although no longer hydrologically connected to the main river systems of the region, are geographically considered part of the Amudarya Basin.

Amudarya River starts in the Pamir Mountains, in the border between of Afghanistan and Tajikistan, and flows through Tajikistan, Turkmenistan, Uzbekistan, and Afghanistan. The river has mixed glacial-snowmelt feeding and two annual floods—spring (in April–May) and summer (in June–July). Amudarya's hydrological regime has been significantly altered due to the construction of dams, numerous reservoirs and intensive water use for irrigation. More than 35 reservoirs has been built in the Amudarya Basin, and their total water storage exceeds 29.8 km^3.

The Syrdarya Basin ranks second in water yield. The river originates in the Tian Shan Mountains in Kyrgyzstan and eastern Uzbekistan and flows through downstream countries Uzbekistan, Tajikistan, and Kazakhstan to the northern remnants of the Aral Sea. River's catchment area spans approximately 150 000 km^2, generating an average annual runoff of 38 km^3. Its length is 3 019 km, and its basin area is 219 000 km^2. The river is fed by glaciers and snowmelt. Its water regime is characterized by spring-summer floods, which begin in April. The highest discharge occurs in June. Hydrological regime is altered by the dams, and reservoirs built to supply water for the intensive irrigation and drinking.

Uzbekistan almost completely is located on the territory of the Aral Sea drainage basin between the Syrdarya River on the north and the Amudarya on the south. All water bodies in Uzbekistan are formed by the flow of the Amudarya, Syrdarya, Zeravshan rivers and their tributaries.

Nearly four-fifths of Uzbekistan's territory is arid zone, classified as deserts or steppes, which pre-condition the inequity of distribution of wetlands (Korovin, 1934) and the absence of natural freshwater wetlands in the plains.

An analysis of long-term changes in the average annual air temperature in Uzbekistan shows a consistent warming trend since the early 1930s. For instance, the average number of days with maximum temperatures has more than doubled. Consequently, the number of days experiencing heatwaves has also increased. Currently, there is an average of 17 heatwave days per year, whereas in the early to mid-20th century, this number did not exceed 8 to 10 days.

The highest rates of warming over the past decade have been observed in the Republic of Karakalpakstan, where two Ramsar Sites, namely, Sudochye Lake System and Lake Juturbas are located, with temperature increases of 0.41–0.43 °C. Similar warming trends are evident in lowland areas, including the Zeravshan Valley, which hosts the Tudakul and Kuymazar Water Reservoirs Ramsar site, with respective increases of 0.36 °C and 0.32 °C.

An analysis of annual precipitation totals reveals mixed trends against a backdrop of high variability.

According to experts from the Agency of Hydrometeorological Service under the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan, the country's climatic characteristics and ongoing changes are having a clear impact on natural ecosystems (Agency of Hydrometeorological Service [Uzhydromet], 2024).

Wetlands of Uzbekistan according to the Ramsar Classification System for Wetland Types (Ramsar Convention Secretariat. 2022):

Inland Wetlands

L — Permanent inland deltas.
Due to the fact, that Amudarya since the late 1980s does not reach the Aral Sea, the area of delta is highly eroded with almost no natural wetlands left. Before the desiccation of the Aral Sea, the delta of Amudarya River was among the most important breeding and migratory stopover areas in the region for many waterfowl species. Today, its ornithological significance has been largely lost, which has likely led to a decline in the populations of several species at both regional and global levels. Some bird species appear to have shifted their breeding to water storage areas, where new suitable habitats have formed changing the geography of migration (Yang et al, 2012).

M — Permanent rivers/streams/creeks.
There are 35 rivers in Uzbekistan, including the Amudarya River Basin and its rivers (Kofarnihon, Surkhandarya, Sherobod, Kashkadarya, Zeravshan and more) and the Syrdarya River Basin and its rivers (Naryn, Karadarya, Chirchik, Ohangaron, Keles and more).

N — Seasonal/intermittent/irregular rivers/streams/creeks.
There are 125 seasonal/intermittent watercourses ("sais") in the mountain area.

O — Permanent freshwater lakes (over 8 ha); includes large oxbow lakes.
Permanent freshwater lakes located in the mountain part of the country, beyond the arid zone. For example, Arashan and Fozilmon Lakes.

Q — Permanent saline/brackish/alkaline lakes.
There are several permanent saline/brackish/alkaline lakes, including Ramsar site Lake Dengizkul. All the saline/brakish lakes are in semi-natural condition, because they also serve as final reservoirs for the drainage irrigation water with high levels of mineralisation.

R — Seasonal/intermittent saline/brackish/alkaline lakes and flats.
More data is needed.

Sp — Permanent saline/brackish/alkaline marshes/pools.
More data is needed.

Ss — Seasonal/intermittent saline/brackish/alkaline marshes/pools.
Seasonal wetlands of Ustyurt Plateau like Takyr.

Tp — Permanent freshwater marshes/pools; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.
There is a lack of information, however such ecosystems are possible in the mountain part of the country.

Ts — Seasonal/intermittent freshwater marshes/pools on inorganic soils; includes sloughs, potholes, seasonally flooded meadows, sedge marshes.
There is a lack of data, such ecosystem should exist along the rivers, known in Uzbekistan as "sazy".

U — Non-forested peatlands; includes shrub or open bogs, swamps, fens.
So far there has been only one study that confirms presence of the mires near the Lake Arashan and suggests more mired along the Syrdarya River and its tributaries (Hebermehl, 2021). More data is needed.

Va — Alpine wetlands; includes alpine meadows, temporary waters from snowmelt.
So far there has been only one study that shows presence of Alpine wetlands in the Zerafshan mountains located along river terraces under waterlogged conditions, but mostly in the upper catchment areas of alpine streams, at 3 000 m a.s.l. and above (Hebermehl, 2021).

W — Shrub-dominated wetlands; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.
These are represented by riparian forests, called "Tugai" in Uzbekistan. They are extremely eroded due to the changed hydromorphological regime (dams' construction) and overlogging. More data is needed.

Xf — Freshwater, tree-dominated wetlands; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.
They are represented by riparian forests, called 'Tugai' in Uzbekistan. They are extremely eroded due to the changed hydromorphological regime and overlogging.

Yk(b) — Karst and other subterranean hydrological systems, inland.
For example, Boybuloq, one of the deepest caves in Central Asia.

Human-made wetlands

1 — Aquaculture (e.g., fish/shrimp) ponds.
As of 2024, the total area of fishpond farms in Uzbekistan was 63 000 ha (Fisheries scientific research institute, 2024). Number of aquaculture ponds are growing.

2 — Ponds; includes farm ponds, stock ponds, small tanks; (generally below 8 ha).
The total number of ponds in Uzbekistan is unknown, more data is needed. Uzbekistan has an ancient tradition of constructing ponds in urban areas for water supply, known as "hauz" and "sardobas". These are domed underground or semi-underground cisterns to store water for drinking, and irrigation, and are built along the ancient Silk Road.

3 — Irrigated land; includes irrigation channels and rice fields.
As of 2024, Uzbekistan's irrigated agricultural land comprises of more than 4.2 million ha (Asia-Plus, 2024).



▲ **Image 3:** Girls washing their hands at a water well in a rural area (photo: Ernest Kurtveliev).

4 — Salt exploitation sites; salt pans, salines, etc.
Uzbekistan has both natural salt exploration sites as well as artificial salt pans. Local people harvested salt from Tuzkan Lake (now part of Aydar-Arnasay Lakes System) until 1969, before the territory was flooded (Kulmatov et al., 2013).

5 — Water storage areas; reservoirs/barrages/dams/impoundments (generally over 8 ha).
Large reservoirs were created to store water for drinking, irrigation and energy use. Totally, there are 55 water storage areas, including reservoirs created in former delta of Amudarya River and run-of-river reservoirs. Ramsar sites Tudakul and Kuymazar Water Reservoirs and Aydar-Arnasay Lakes system belong to this type.

6 — Canals and drainage channels, ditches.
Uzbekistan has a total length of the inter-farm and on-farm irrigation channel networks amounting to 27 868 km and 154 957 km, respectively. About 60% of inter-farm canals and 77% of on-farm canals are unlined earthen canal prone to infiltration/seepage losses (Ministry of Water Resources of the Republic of Uzbekistan, National Committee on Irrigation and Drainage, 2020).

Natural wetlands provide multiple benefits to humans and ecosystem services, some of which are hard to evaluate. With wetlands degradation, quality and quantity of such services are decreasing. Extremely transformed natural wetlands of Uzbekistan continue to provide to people of the country the following benefits (Salimi et al, 2021):

— Freshwater for agricultural and industrial use, for domestic consumption: currently, 90% of the water in the country is used for irrigation (Ministry of Ecology, Environmental Protection and Climate Change of Republic of Uzbekistan, 2023). Freshwater from the rivers support over 90% of Uzbekistan's agricultural output and consequently provide jobs to 27% of workable population.

— Fish production: At present, there are more than 5 700 operating fishing enterprises, 175 of which engage in fish harvesting in large water reservoirs including Lake Julturbas, Tudakul Water Reservoir, Aydar-Arnasay Lakes Systems etc. (Agronews. 2024).

— Fuel and fibres: wood for fuel, fodder.

— Regulation of climate: Human-altered wetlands emit significantly more GHGs than natural wetlands. GHG fluxes vary by wetland type, climate zone, and condition. Altered wetlands (e.g., drained peatlands, rice paddies) consistently show much higher emissions than natural ones. Rewetting and restoration efforts in natural and altered ecosystems, such as peatlands, floodplains, irrigated lands, and artificial reservoirs, can reduce GHG emissions and restore wetlands as carbon sinks, although timelines vary and depend on site conditions (Ramsar Convention Secretariat, 2025).

  At the same time, numerous studies show water storages are capable of altering the local temperatures and urban water bodies are capable to mitigate heat waves (for example, Ma et al., 2024). Interestingly at the first glance, design of traditional Uzbek urban water storage areas "hauz" is similar to the scientifically determined design (Xu et al., 2022; Ma et al., 2024) of the urban "water cold islands" for the arid areas, namely it is also a compact, centralized water body shapes combined with riparian green space area.

— Regulation of water hydrology: recharge of groundwater. The shrinkage of the Aral Sea has followed by subsequent groundwater decline in the Amudarya River Delta. The groundwater level declined sharply from –189 cm in 1999 to –350 cm in 2002, then partially recovered with seasonal and spatial variability. There is also a strong correlation between groundwater levels and irrigation water cycles, indicating that where wetlands and irrigation were active, groundwater levels remained more stable (Pan et al., 2020).

— Wastewater treatment and water purification: excess nutrient and pollutant removal as well as process of retention and recovery. Unfortunately, drainage water from the irrigation fields with the high mineralisation is used to sustain the water level in many water storage areas including Ramsar sites like Sudochye Lake system, Lake Dengizkul, Lake Julturbas, Aydar-Arnasay Lakes system.



▲ **Image 4:** Grave of an Orthodox Christian at Sudochye Lake System Ramsar site (photo: Jens Wunderlich).

— Water Regulation: Wetlands store and regulate water, helping to mitigate floods, recharge aquifers, and sustain river flows. Unfortunately, disappearing of the natural wetlands in Uzbekistan and major changes in the hydromorphological regime of the rivers, made wetlands incapable in providing water regulation services. Major ecological regulatory roles of the floodplains have been lost due to dams' constructions, turning floodplain into agricultural fields, intensive water use for irrigation etc. Experts claim that connecting or extending wetlands of Amudarya (like Tugai forests) and reconnecting them to the river will help to mitigate floods caused by the projected increase of precipitation in the upper basin of the river (World Bank, 2022).

Areas covered with the riparian Tugai forests distributed in the past along permanent and semipermanent water courses has rapidly declined and degraded due to changes in water regime, agricultural development of riparian zones. Thus, in Amudarya delta, area covered by Tugai forests decreased by 90% and currently combined fragmented area is about 30 000 ha (Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan, 2023a). Another source says that the total amount of Tugai forests is 93 600 ha in Uzbekistan (World Bank, 2022).

— Pollination: wetlands, being cooler create a favourable habitat for the pollinators. Many cash crops in Uzbekistan such as cotton, fruits and vegetables are highly dependent on pollinators. According to the local beekeepers, having beehives on the cotton field can increase the yields by 10–100%. Among other crops heavily depended on pollination are apricots, cherries, melon and watermelons (BES-Net, 2019).

— Biodiversity support: Millions of water-associated and waterfowl birds stop at the water bodies and rivers of Central Asia during seasonal migrations between their breeding areas in Siberia and the Arctic and their wintering grounds in southern Eurasia and Africa. Many of the region's water bodies are also used by birds during breeding and molting periods. Unfrozen waters in the south are essential as wintering grounds.

  Tugai forests are biodiversity hotspots of the arid areas. They have been preserved by poplars *(Populus euphratica, P. diversifolia, P. pruinosa, P. alba, P. nigra)*, willows (*Salix* spp.,), black saxaul *(Haloxylon aphyllum)*, *Tamarix* spp. etc. (World Bank, 2022).

— Cultural and recreational value: Wetlands have cultural, spiritual, educational, and recreational significance. They are often central to local traditions, tourism, and scientific research. In changing climate, ancient water storage practices are important to study and to understand their potential use today. For example, "sardobas" could be one of the options for water supply.

  Wetlands serve as sites for traditional events and rituals, as well as sources of inspiration for folk art. For example, the Karakalpak dance 'Shagala' (translated as 'Seagull') reflects the grace and freedom of the bird that inhabits seas and lakes. The dance is performed during celebrations and rituals, symbolizing the connection between people, nature, and the traditions (Kosnazarov, 2025).

Rationale for developing a Ramsar strategy for Uzbekistan

Development of the Ramsar Strategy for Uzbekistan is seen as the next step of compiling with the Ramsar Convention, particularly with Article 3.1, that states: "The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory."

Need for the National Strategy was highlighted in the National Report on the implementation of the Ramsar Convention submitted in 2018. "Lack of recognized and approved by the Government of the national strategy and action plans for the implementation of the provisions of the Convention" was mentioned as one of the five greatest difficulties in implementing the Convention. According to the authors of the report: "The measures for the conservation and sustainable use of wetlands in the whole country were not coordinated, conducted periodically, did not have medium-term and long-term planning and financing" (Republic of Uzbekistan, 2018).

The Convention also requires that each Party ensures early detection and timely reporting of changes to the ecological character of wetlands due to pollution, technological development, or other anthropogenic pressures (Ramsar Convention Secretariat, 1994). A national strategy dedicated to Ramsar Sites in Uzbekistan will ensure that the country systematically meets its obligations. This includes aligning with the Strategic Plan of the Ramsar Convention (2016–2024), which was used as a stepping stone for the list of the strategic actions.

From other side, implementing Ramsar Strategy will contribute towards achieving the National sustainable development goals (SDGs) and targets of the republic of Uzbekistan, specifically Goal 6: Clean water and sanitation. It will directly contribute towards Goal 6.6: "By 2030, ensure protection and restoration of water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes", also supporting Target 6.5: "By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate" (United Nations in Uzbekistan, 2020).

A need to "adopt and ensure implementation of the national wetland policy and corresponding programme for wetlands conservation" is mentioned in Third Environmental Performance Review of Uzbekistan prepared by United Nations Economic Commission for Europe in 2020 (UNECE , 2020).

National Biodiversity Strategy and Action Plan 2019-2028 for Uzbekistan divides water ecosystems in two groups: (1) river and riparian, (2) wetlands (Cabinet of Ministers of the Republic of Uzbekistan, 2019). Such division is an obstacle for the synergy between implementation of the Convention on Biological Diversity (CBD) and Ramsar Convention on Wetlands on the National Level. However, we believe that implementation of the Ramsar Strategy will contributes towards the following targets of the National Biodiversity Strategy: Expansion of protected natural areas to 12% (Target 1), Creation of a unified system for monitoring the components of biodiversity with the central link being the reference ecosystems of state reserves (Target 5), Creation of a unified information database of state monitoring and state biodiversity cadastre

based on modern geographic information technologies (GIS technologies) (Target 6), Conducting an annual census of the number of game bird species in water bodies of Uzbekistan (Target 9), Creation of a monitoring system for fishing and the state of biological resources of fishery reservoirs (Target 11) (MoEEPCC, 2025).

The Intergovernmental Panel on Climate Change (IPCC) has provided methodological guidance to determine national greenhouse gas (GHG) balances, including those of wetlands. However, as of 2023, Uzbekistan as well as most countries have not included GHG assessments for wetlands in their national inventories. Specifically, in Uzbekistan estimates of anthropogenic greenhouse gas emissions and removals from wetlands are assumed to be negligible (Agency of Hydrometeorological Service [Uzhydromet], 2024).

A major barrier to improved wetland GHG reporting is the mismatch between the Convention on Wetlands classifications and the IPCC land-use categories. However, in this regard, compiling the Ramsar Wetland Inventories according to the Ramsar Convention guidelines could be seen as a first step in the assessment of the wetlands GHG fluxes and carbon stocks. For simple GHG accounting, it is sufficient to determine the precise extent of wetlands and basic conditions, such as climate zone and soil type. Furthermore, Contracting Parties require accurate information on the extent and type of their wetlands to meet their commitments under the Convention on Wetlands. This will require comprehensive wetland mapping and the development of national wetland inventories (Ramsar Convention Secretariat, 2025).

In the Regional Climate Change Adaptation Strategy for Central Asia (GIZ, 2023), Strategic Objective 4 is dedicated to the development of climate monitoring, information exchange, and forecasting systems. This includes "expanding the meteorological and hydrological observation network of Central Asian countries." Therefore, enhancing hydrological monitoring at Ramsar Sites would represent a valuable contribution to the implementation of Objective 4.

A recent study "DIAPOL-CE: Conduction of a climate risk analysis in the Sudochye Lakes System, Uzbekistan" prepared by the experts of Research Institute of Environment and Nature Conservation Technologies also advocated for the enhanced national wetlands management strategies to mitigate the risks of the changing climate (GIZ, 2025). Furthermore, a comprehensive climate risk assessment (CRA) applied on the local level is seen as an essential instrument for development climate risk management, which is especially important for the Republik of Karakalpakstan that experiences the climate-related hazards such as droughts, heatwaves, sand and dust storms (GIZ, 2023a, GIZ, 2025).

Furthermore, development of the Strategy is in line with the Presidential Decree of the Republic of Uzbekistan No. PP-4756 dated June 22, 2020: "On Measures to Improve the Procedures for Fulfilling Obligations Arising from International Treaties and the Republic of Uzbekistan's Membership in International Organizations." This decree is aimed at enhancing the coordination of the implementation of the international agreements, including Ramsar Convention and ties the responsibilities over implementation over the Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan (President of the Republic of Uzbekistan, 2020).

Beyond compiling with the formal responsibilities, we strongly believe that the developed Ramsar Strategy for Uzbekistan contributes towards the following:

— A holistic approach to wetland conservation, maintenance, and wise use, following the guidelines of the Ramsar Convention and drawing on the best available international experience;
— Bringing wetland conservation issues into the national political agenda;
— Synergy with the interventions planned within the frames of the Convention on Biological Diversity, the Convention on Migratory Species and Wild Animals (CMS) as well with the Sustainable Development Goals (SDG);
— Enhancing cooperation and information exchange among different stakeholder groups;
— Increasing the technical knowledge of those involved in wetland management;
— Designation of new Ramsar Sites;
— Slowing the rate of wetland ecosystem degradation;
— Deepening understanding of the impact of climate change on the wetlands ecosystem and possible adaptation measures;
— Mobilizing financial and technical resources;
— Confirming Uzbekistan's leading role in the development of green policy.

The development and implementation of a Ramsar Strategy in Uzbekistan is therefore a timely and strategically vital undertaking. This is driven by pressing both internal environmental challenges and the country's international obligations.

1. Assessment of Ramsar Sites in Uzbekistan

Lake Dengizkul

Wetland type: permanent saline lake
Basin: Amudarya River
Ramsar Site Number: 1108
Location: Bukhara Region
Area: 3 300 ha
Other protection status of the area: "Dengizkul" State Ornithological Sanctuary (~50 000 ha), "Dengizkul Lake" — Important Bird and Biodiversity Area (IBA), Key Biodiversity Area (KBA)

Site Overview

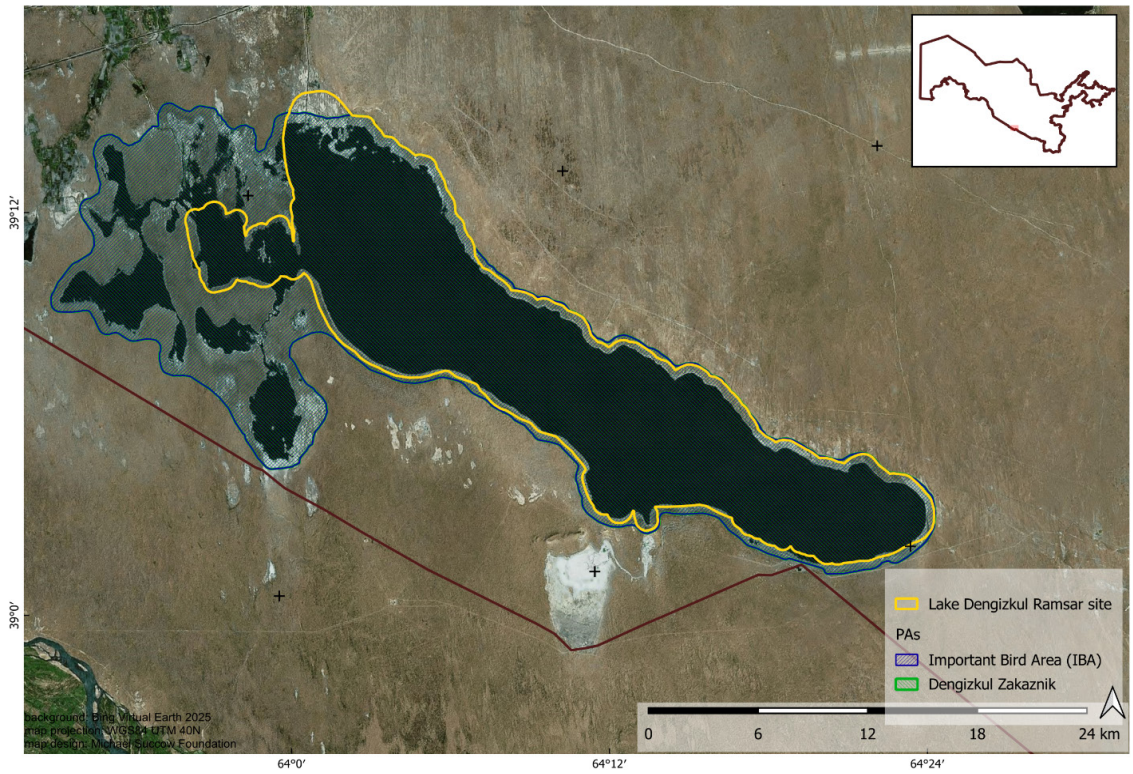
Lake Dengizkul and its surroundings are part of the Turan province's Kyzylkum region, specifically the Low-Zeravshan district (Tojibaev et al., 2016).

In zoogeographic terms, the study area belongs to the faunal complex of the Palearctic province's Iranian-Turanian community (Kostin, 1961), characterised by a set of species typical of sandy deserts.

This large endorheic saline lake has typical ecological characters of the natural lakes situated in the deserts of Central Asia. It is located in SW part of the Kysylkum desert and lies in a natural depression of 70 km of the city Bukhara and 35 km of Alat town on the border of Uzbekistan and Turkmenistan. Dengizkul extends to 40–42 kilometres from southeast to northwest, with a width ranging from 3–4 kilometres and reaching up to 9 kilometres in certain areas.

The lakebed is situated in the northern part of a large, asymmetrical erosional depression. The basin opens to the northwest, where it is connected to the lower reaches of the Zarafshan River through the Taykyr Depression. Prior to 1935, floodwaters from the Zarafshan occasionally flowed into the Dengizkul basin via the Taykyr channel (Rubanov, 1966).

The lake sediments are composed of lower layers of silt, formed during the relatively freshwater phase of the lake's existence, overlain by salt deposits resulting from the subsequent phase of chemical precipitation. The salt deposit has an irregular ellipsoidal shape, extending over 19 kilometres in a west-northwest direction, with a width of up to 3–3.5 kilometres (Rubanov, 1966).



▲ **Image 5:** Map of the Dengizkul Lake Ramsar site.

Its blend of aquatic, saline, and desert habitats make it critical for migratory birds, particularly the endangered white-headed duck *(Oxyura leucocephala)*, with more than 20 000 individuals recorded in winters (Ramsar Convention Secretariat, 2003).

The lake has fluctuating water levels and salinity due to variable inflow. Due to a sharp decline in the water level of Lake Dengizkul, in 2012, LUKOIL Uzbekistan Operating Company LLC constructed a dam in the northwestern part of the lake to maintain water levels and reduce salinity. This technical measure helped preserve the full water capacity of the lake's northern area until 2018, during which water was regularly discharged from the Hamza collector. However, in 2018, no water was supplied through the collector. This led to the shallowing and a significant reduction in the lake's surface area (Mitropolskiy, 2020).

Lake Dengizkul is designated as a state ornithological sanctuary yet lacks clear legal status and targeted protection measures. While the designation of hydrological natural monuments is a positive step, these fragmented measures do not equate to a unified or strategic national approach. Wetlands remain regulated under a patchwork of sectoral laws related to land, water, and the environment, leading to inefficiencies and institutional overlap that hinder integrated and adaptive management.

Ecological Character

— Hydrological features: Irregular, according to data of 2021: inflow to the lake was water from drainage and collector canal systems and Amudarya River water through Amu-Bukhara Machine Canal I and II (Buriev et al., 2021).

— Water mineralisation: Currently, the water in Dengizkul is characterized by high mineralization, which vary in its different parts reaching up to 38 g/l, depending also on the season and water inflow.

— Flora and Fauna:
- The composition of the flora includes about 100 species (Zakirov, 1955; Mitropolskiy, 2021; Mitropolskiy, 2024), of which three species of *Calligonum* are included in the International and National Red Books (IUCN 2024, The Red Data Book of the Republic of Uzbekistan, 2019): *Calligonum matteianum*, *Calligonum molle*, and *Calligonum paletzkianum*.
- Zooplankton (34 species) including *Rotifera* (14 species), *Diplostraca* (13 species), and *Copepoda* (7 species). The benthic communities are represented by *Oligochaeta* (16 species), Chironomidae (12 species), Mollusca (2 species), Odonata (2 species), and 1 species of Ephemeroptera (Mustafaeva, Mirsaev, 2018).
- List of the fishes recorded in 2018 included 15 species with majority belonging to the *Cyprinidae* (carp) family, namely Chinese false gudgeon *(Abbottina rivularis)*, oriental bream *(Abramis brama orientalis)*, asp *(Aspius aspius iblioides)*, Prussian carp *(Carassius gibelio)*, grass carp *(Ctenopharyngodon idella)*, common carp *(Cyprinus carpio)*, sharpbelly *(Hemiculter leucisculus)*, silver carp *(Hypophthalmichthys molitrix)*, stone moroko *(Pseudorasbora parva)*, Aral roach *(Rutilus aralensis)* (Mustafaeva, Mirsaev, 2018). At least 5 fish species are non-native and have been introduced.

— Species composition of amphibians and reptiles includes 30 species, among them several are endangered species viz. the Central Asian tortoise *(Testudo horsfieldii)*, desert sand boa *(Eryx miliaris)*, Indian gamma snake *(Boiga trigonata)*, and Caspian monitor *(Varanus griseus caspius)* (Mitropolskiy et al., 2021; Mitropolskiy et al., 2024).

— The mammalian fauna is represented by 40 species, of which 15 (37.5%) are rodent species typical of semi-deserts. Among the endangered species, the most frequently observed are Brandt's hedgehog *(Hemiechinus hypomelas)* and Corsac fox *(Vulpes corsac)*. In the past, the Goitered gazelle *(Gazella subgutturosa)* was regularly encountered; however, in recent years, it has become extremely rare largely due to poaching. Other endangered species include the Central Asian otter *(Lutra lutra seystanica)* and the Marbled polecat *(Vormela peregusna)* (Mitropolskiy et al., 2021; Mitropolskiy et al., 2024).

— The bird list of Lake Dengizkul includes 299 species (62.1% of the total bird fauna of Uzbekistan). According to their conservation status, 27 species are listed in the IUCN Red List, 40 species are included in the Red Book of Uzbekistan, and 44 species are listed in the CITES Convention (Mitropolskiy, 2025).

— Wetland is of the most significant importance for the wintering of the White-headed duck *(Oxyura leucocephala)*, a globally endangered species. Up to 40% of the biogeographic population winters at the Dengizkul Lake (Mitropolskiy et al., 2021; Mitropolskiy et al., 2024).

— In recent years, there is a decrease in the number of hydrophilic bird species, both on migration and during wintering. This is apparently due to the shift of flyways to the west towards the Caspian, Black, Azov and Mediterranean Seas (Mitropolsky, Mardonova, 2015), as well as to the increase in the number of waterfowl that remain for wintering much further north. The latter can be associated with climate change (Gashev et al., 2016).

Human Use and Socio-Economic Values

— **Aquaculture:** As a result of increased salinity, the number of freshwater species has significantly declined, and the lake has lost its value for commercial fisheries. As of 2021, two fish farms remained in operation in the northwestern part of the lake, where mineralization does not exceed 12 g/l due to inflow from the collector canal. Number of catches has decreased from 255 t in 2023 to 186 t in 2024 (Uzbekbaliqsanoat, 2025).

— **Grazing and Water Use:** Surrounding areas are used for grazing; water sourced from drainage canals.



▲ **Image 6:** Dengizkul Lake Ramsar site (photo: Maksim Mitropolskiy).

Threats and Pressures

— **Inefficient irrigation infrastructure and water loss:** Canals of the irrigation systems have a high level of leakage, leading to inefficient water use. According to estimates, Uzbekistan's irrigation systems with unlined channels lose an average of 14 km^3 of water annually, accounting for 36% of the total volume. The highest water losses are recorded in several regions of Uzbekistan, including the Bukhara region (President of the Republic of Uzbekistan, 2023).

— **Climate change:** The Bukhara region, where Lake Dengizkul is located, shows one of the highest increases in mean long-term monthly air temperatures in the country (Kholmatjanov, 2020). As a result, higher evaporation rates from the lake's surface are expected, along with reduced river inflow due to increasing water demand, and a higher frequency of extreme temperatures.

  Sharp fluctuations in winter temperatures pose a threat to wintering birds. Lake Dengizkul lies at the northern edge of the southern wintering range for waterfowl. While winters are relatively mild in some years, there are seasons when temperatures drop suddenly. During such events, birds are often unable to respond in time by migrating further south. Over the past decade, there have been two instances of severe winter temperature drops to –15° C to –17° C, during which many weakened birds perished in the ice. According to local environmental authorities, at least 4 000 to 6 000 birds died in those events.

— **Increased salinisation of the water in the lake over time:** In arid zone, when evaporation exceeds the inflow of water, salts carried by the inflows begin to accumulate in the lake. The increase in salinity depends on several factors: the intensity of evaporation, the ratio of inflow volume to lake size, the amount of precipitated salts, the composition of the inflow water, infiltration, and other conditions (Alekin, 1952). The annual evaporation loss makes up 14–15% of the overall volume of water in the lake, which has an impact on hydrochemical regime, and specifically, upon distribution of salinity at various depths (LUKOIL Uzbekistan Operating Company LLC & Elegant Engineering LLC, 2011). Inflow of drainage water with salts and other run-offs from the agricultural fields leads to the worsening of the ecological character of the wetland and could be considered as violation of the Ramsar Convention.

— **Overgrazing, illegal wood harvesting:** for example saxaul, which had been planted as part of LUKOIL Uzbekistan Operating Company LLC's initiatives in the early 2010s, and illegal hunting (Mitropolskiy, 2020).

— **Industrial activities:** According to a study conducted in 2020, the area adjacent to the Ramsar site has been significantly transformed by oil and gas operations including well drilling, pipeline construction, and the building of gas compressor stations. In the surrounding area, there are unreclaimed wellhead fire sites, abandoned wells, and a remaining network of unpaved roads (Mitropolskiy, 2020).

— **Lack/unavailability of data on ecological character and biodiversity and absence of the continues monitoring programme:** Only limited information is available. Lake Dengizkul was designated as a Ramsar site based on the following criteria:

→ Criterion 1: representative, rare, or unique example of a natural or near-natural wetland type.

→ Criterion 2: supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

→ Criterion 3: supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

→ Criterion 4: supports plant and/or animal species at a critical stage in their life cycles or provides refuge during adverse conditions.

→ Criterion 5: regularly supports 20 000 or more waterbirds.

→ Criterion 6: supports 1% of the individuals in a population of one species or subspecies of waterbird.

→ Criterion 7: supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

→ Criterion 8: important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend. Specific criteria based on other taxa.

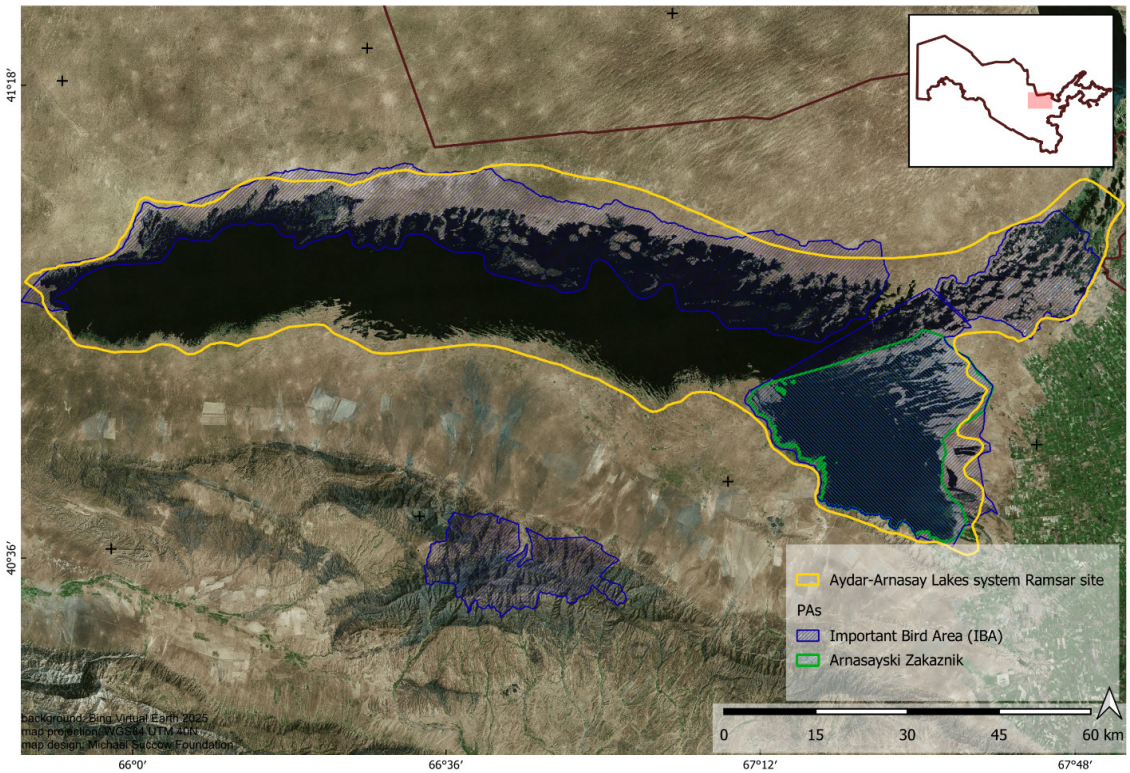
Biodiversity monitoring programme of the site should include these specific indicators or criteria should be reconsidered due to the changes in the ecological character of the wetland. For example, two sturgeon species, namely critically endangered Bastard Sturgeon *(Acipenser nudiventris)* and Large Amudar Shovelnose *(Pseudoscaphirhynchus hermanni)* that are mentioned in the Ramsar Information Sheet are not found any more in the site.

Aydar-Arnasay Lakes system

Wetland type: water storage areas — water reservoirs
Basin: Syrdarya River
Ramsar Site Number: 1 841
Location: Navoi and Jizzakh Regions
Area: 527 100 ha
Other protection status of the area: Northern shore of Aydarkul Lake — IBA, KBA, Arnasay State Zakaznik, Arnasay Lake System — IBA, KBA, Tuzkan Lake — IBA, KBA

Site Overview

The Aydar-Arnasay system consists of three lakes: Arnasay, Tuzkan, and Aydar, with a total area of approximately 370 000 hectares. The largest portion (70%) is occupied by the deepest lake, Aydar which reaches a maximum depth of up to 25 meters (Ginatullina et al., 2024).



▲ **Image 7:** Map showing Aydar-Arnasay Lakes System Ramsar site.

Before the economic development of the Golodnaya Steppe area, only the Tuzkan Lake basin, fed by the Kly River, was filled with water annually. The bottom of the vast Aydar-Arnasay depression was occupied by dried-up salt flats and saline lowlands ('shors').

The construction, in 1957, of the Central Golodnostep Collector, which redirected water from the Sardoba Depression into the Eastern Arnasay, initiated the continuous inflow of water into the lakes. This transformed them into irrigation-drainage lakes. The completion of the Chardara Reservoir in 1965, along with the construction of the Arnasay Hydraulic Complex enabled the regulation of the lake regime within a wide range. An increase in the collector-drainage inflow and the trial discharges from the reservoir led to the Eastern Arnasay lakes becoming through-flow systems by the second half of the 1960s, channelling excess drainage water into the Aydar depression.

In 1969, during the flood peak mitigation on the Syrdarya River, more than 21 km^3 of water was discharged from the Chardara Reservoir into the Arnasay lakes. This caused a restructuring of the hydrographic network of the Eastern Arnasay lakes and the filling of the Aydarkul Depression, which, after a barrier was breached, connected with Lake Tuzkan, forming a unified lake system with a total area of about 240 000 ha (State Committee of the Republic of Uzbekistan for Nature Protection et al., 2011). Subsequent large-volume water discharges were carried out during high-water years, as well as in winter periods, due to the changes in the regulation regime of the Toktogul Reservoir (Kyrgyzstan) (Ruziev et al., 2024).



▲ **Image 8:** Tuzkan Water reservoir, part of the Aydar-Arnasay Lakes System Ramsar Site (photo: Aleksandr Raikov).

To accumulate and further utilize fresh water in order to increase water availability for irrigated areas of the Golodnaya step', the Arnasay Lakes were separated from the overall system by a dam. The new reservoir was brought into operational mode in 2005. The Central Golodnostep collector was extended to the Tuzkan Lake basin to prevent the inflow of brackish drainage water into the newly created Upper Arnasay Reservoir. The Golodnostep collector was replenished by discharges of fresh water from the Shardara Reservoir. The self-regulating spillway from the reservoir is set at an elevation of 249 meters above sea level. Currently water is discharged from the Upper Arnasay Reservoir into the remaining Aydar-Tuzkan lake system irregularly—only when the discharge from the Shardara Reservoir exceeds 0.5 km³ (Grechushnikova, 2023).

In recent years, the situation regarding freshwater inflow into the lake system has changed. From 2005 to 2023, approximately 11.2 km³ of water was discharged from the Chardara Reservoir into the Arnasay Reservoir, averaging a discharge of 0.6 km³ per year. However, during this period, there were eight years in which the lake system received no freshwater inflow, and water levels were maintained primarily through the inflow of mineralized drainage runoff from Uzbekistan's irrigated areas.

As a result, the volume of water in the lake system has been decreasing year by year. Moreover, due to the insufficient supply of freshwater, the mineral content of the water has increased to levels unsuitable for irrigation and fisheries. Over the long-term observation period, the difference between inflow and evaporation from the surface of the Aydar-Arnasay Lake System amounts to approximately 1.00 km³.

Ecological Character

— Hydrological features: Aydar-Arnasay Lakes System is fed primarily by collector-drainage waters from the irrigated areas of the Golodnaya and Jizzakh Steppes (2.2–2.7 km³/year), water of the Kly River and episodic discharge from the Chardara reservoir. The main volume of drainage inflow comes through the Akbulak, Besymyannyi, Pogranichnyi, and Central Golodnostep Collectors. Water reservoirs levels and salinity fluctuate depending on water input and evaporation.

— Mineralisation: The mineralisation of the lake system depends on the volume of incoming drainage water, which has a mineral content of 2–3 g/l. During the summer, intense evaporation causes a sharp drop in water levels within the lake system. This drop is often accompanied by a significant increase in salinity, particularly in the terminal endorheic Lake Aydarkul. In 2023, the highest recorded mineralisation reached 8.5 g/l (Ginatullina et al., 2024).

— Oxygen: In addition to increasing mineralisation levels, another issue is the accumulation of organic matter in the natural depressions of Lake Aydarkul, This is associated with decreasing oxygen levels. In 2023, the oxygen content in the surface water layer (0.5 m) of Aydarkul peaked in March at 7.3 mg/l and dropped to a low of 4.9 mg/l in November. A sharp decline in oxygen levels during the winter period leads to mass mortality of common carp, which overwinter in these depressions (Ginatullina et al., 2024).



▲ **Image 9:** Arnasay water reservoir, part of the Aydar-Arnasay Lakes System Ramsar Site (photo: Relisa Granovskaya).

— Flora and Fauna:

- A total of 1 266 species of wild vascular plants have been recorded. Of these, 43.9% are perennial herbs, 39.7% are annuals, and 16.4% are trees and shrubs. Weed species (325 species), including 108 alien species, play a significant role in the vegetation cover of the study area. This indicates a considerable degree of anthropogenic transformation in the region's ecosystems (Mitropolskiy, 2025).
- The macrophyte list for the wetland includes 66 species including endangered *Aldrovanda vesiculosa*, a carnivorous, perennial aquatic plant listed on the IUCN Red List and considered extremely rare in Uzbekistan's flora, and *Salvinia natans*, a relict fern that currently holds no formal conservation status (Mitropolskiy, 2025).
- According to the study of 2021, the zooplankton (22 species) includes *Rotifera* (13 species), *Cladocera* (2 species), and *Copepoda* (7 species). The benthic communities are represented by *Oligochaeta* (16 species), *Chironomidae* (12 species), *Mollusca* (2 species), *Odonata* (2 species), and 1 species of *Ephemeroptera* (Mustafaeva et al., 2021).
- Supports nine fish species: asp *(Leuciscus aspius)*, crucian carp *(Carassius gibelio)*, common carp *(Cyprinus carpio)*, Korean sharpbelly *(Hemiculter leucisculus)*, silver carp *(Hypophthalmichthys molitrix)*, Aral roach *(Rutilus rutilus aralensis)*, wels catfish *(Silurus glanis)*, zander *(Sander lucioperca)*, and northern snakehead *(Channa argus)* (Gilatullina et al., 2024).

- The herpetofauna includes 2 species of amphibians and 26 species of reptiles, representing more than one-third of the total diversity of the herpetofauna in Uzbekistan. Among them, five species are listed in the Red Data Book of the Republic of Uzbekistan (2019): the Central Asian tortoise *(Testudo horsfieldii)*, the desert monitor *(Varanus griseus)*, the rough-tailed sand boa *(Eryx miliaris)*, the Tartar sand boa *(Eryx tataricus)*, and the banded wolf snake *(Lycodon striatus)*. Central Asian tortoise *(Testudo horsfieldii)* is included in the IUCN Red List.
- The avifauna of the study region comprises of 311 species, representing 64.6% of the total bird species recorded in Uzbekistan. Based on their residency status, the following categories are identified: 40 species are resident; 39 species occur year-round with population turnover; 76 species are migratory breeders; 74 species are migratory winter visitors; 78 species are passage migrants; and 4 species are vagrants.
- Regarding conservation status, 22 species are listed on the IUCN Red List, 47 species are included in the Red Data Book of Uzbekistan, and 52 species are listed under the CITES Convention. The most common species are the following: red-crested pochard *(Netta rufina)*, mallard *(Anas platyrhynchos)*, Eurasian coot *(Fulica atra)*, great crested grebe *(Podiceps cristatus)*, black-headed gull *(Larus ridibundus)*, Caspian gull *(Larus cachinnans)*, Dalmatian pelican *(Pelecanus crispus)*, and mute swan *(Cygnus olor)* (Mitropolskiy, 2025).

Human Use and Socio-Economic Values

— **Fisheries:** Fish catch is based on four species: common carp *(Cyprinus carpio)*, zander (*Stizostedion lucioperca)*, Prussian carp *(Carassius gibelio)*, and roach *(Rutilus rutilus)* (Gilatullina et al., 2024).

Currently, the Aydar-Arnasay Lake System is divided into 164 waterbody sections (contours), of which 116 are in the Jizzakh region and 48 are in the Navoi region, designated for allocation to fisheries enterprises. Since 2017, the control over the use of fishery resources has been transferred to the newly established AALS (Aydar-Arnasay Lake System) Directorate.

— **Grazing and Agriculture:** Adjacent land supports grazing

— **Tourism and Recreation:** As of 2025, there are 25 tourism and recreation places in the wetlands with rapidly growing number of tourists. In 2022, 20 000 people visited AALS. The number rose to 126 500 people in 2024. Aydar-Arnasay Lake system is the largest Ramsar wetland in Uzbekistan and it is the most attractive place for tourists now.

— **Water Regulation:** Mitigates Syrdarya River floods.

Threats and Pressures

— **Inefficient irrigation infrastructure and water loss.** Similar to Bukhara region, Navoiy region experiences the highest water losses in the country.



▲ **Image 10:** Arnasay water reservoir, part of the Aydar-Arnasay Lakes System Ramsar Site (photo: Ernest Kurtveliev).

— **Climate change.** The whole territory of Uzbekistan experiences increases in mean long-term monthly air temperatures in the country (Kholmatjanov et al, 2020). As a result, higher evaporation rates from the lake's surface are expected, along with reduced river inflow due to increasing water demand, and a higher frequency of extreme temperatures.

— **Reduction of inflow due to aquaculture.** During an expedition in 2024, it was recorded that along the Akbulak collector, which has a flow rate of 5.5 m^3/sec, only 0.5 m^3/sec reaches the lake due to water abstraction for fishponds (Scientific Information Center of the Interstate Commission for Water Coordination, 2024).

— **Increasing salinization.** Inflow of drainage water which contain salts and other run-offs from the agricultural fields leads to worsening of the ecological character of the wetland and could be considered as violation of the Ramsar Convention.

— **Unsustainable fishing practices.** The development and management of fisheries in the Aydar-Arnasay Lake System are influenced by its vast area, which is home to numerous small private fishing enterprises. Most of these enterprises operate with outdated fishing equipment and struggle to maintain a well-regulated fishing regime.

To ensure the sustainability of fish stocks, it is essential to conduct annual restocking with juvenile *cyprinid* species such as common carp and silver carp, particularly in the fresher sections of the lake system where collector waters flow in. Establishing a dedicated hatchery and restoring the broader fishery infrastructure are also critical. These measures should be based on scientific principles and comply with established fishing quotas (Ginatullina et al., 2024).

— **Illegal logging.** The local population, lacking access to natural gas and electricity in their homes, is still forced to use firewood for heating, cooking, and lighting during nighttime. This issue is particularly acute in the western and northern parts of the Aydar-Arnasay Lake System (Mitropolskiy, 2025).

— **Illegal harvesting of medicinal and technical plants.** The unauthorized collection of capers, reeds etc has a particularly significant impact on local vegetation. Although harvest quotas are scientifically calculated to allow for natural regeneration, excessive and unregulated harvesting exerts additional pressure, leading to the partial and ultimately complete degradation of plant communities, including overgrazing (Mitropolskiy, 2025).

— **Lack of hydrological monitoring.** Most hydrological stations for measuring water levels and flow rates on canals, collectors, and water bodies now require maintenance, modernization, and restoration (Scientific-Information Centre of the Interstate Commission for Water Coordination of Central Asia, 2024).

— **Lack of data, absence of a continued monitoring programme.** Only limited fragmented information is available. Data of the State ecological monitoring programme, which is regulated by the Clause 2/7 of Presidential Decree No. PP-141 from February 22, 2022, Cabinet of Ministers' Resolutions No. 124 from 2017 and No. 343 from 2021, is not available in open access (Scientific Information Centre of the Interstate Commission for Water Coordination, 2024).

Aydar-Arnasay Lakes systems was designated as a Ramsar site based on the five criteria: 2, 4, 5, 7, and 8.

Biodiversity monitoring programme of the site should include these specific indicators and criteria should be reconsidered due to the changes in the ecological character of the wetlands over the time.

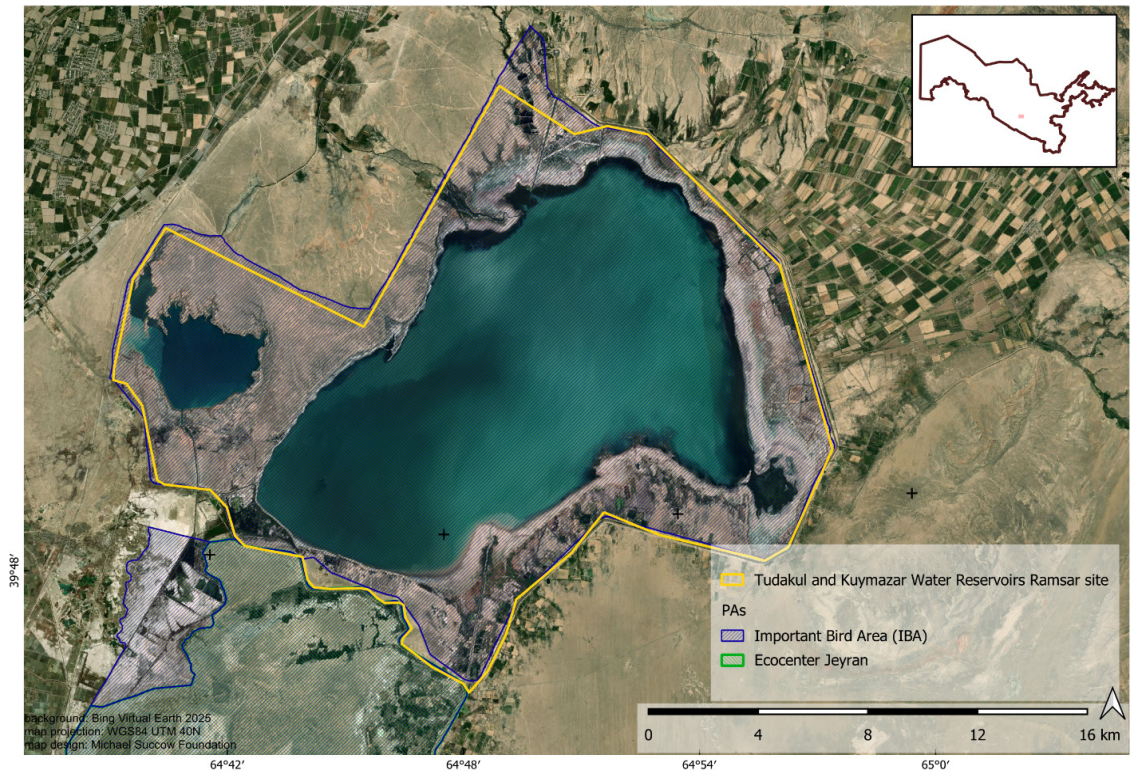
Tudakul and Kuymazar Water Reservoirs

Wetland type: water storage areas — water reservoirs
Basin: Amudarya River
Ramsar Site Number: 2 433
Location: Navoi and Bukhara Regions
Area: 32 000 ha
Other protection status of the area: Tudakul and Kuymazar Reservoirs — IBA, KBA

Site Overview

Located in the southwestern Kyzylkum Desert, these two reservoirs serve as water storage in the arid desert and xeric shrubland biogeographic region of Central Asia.

The data suggests that the Tudakul reservoir was created on the place of Lake Tudakul in the early 1950s. Fauna of early Tudakul was represented by biota of Zarafshan River, namely 11 aboriginal and introduced



▲ **Image 11:** Map of Tudakul and Kuymazar Water Reservoirs Ramsar Site.

fish species. In 1965 Tudakul was connected to Amu-Bukhara canal and composition of ichthyofauna has changed. In 1971 Tudakul was mentioned as important wintering ground for the migratory birds (Mikheev, 2010) hosting more than 60 000 waterfowl during the winter of 1965/1966. The projected area of the water surface is 215 km² with projected volume of 1.15 km³ (Cabinet of Ministries of the Republic of Uzbekistan, 1999), the maximum depth is 17 m, and the average depth is 5–7 m.

Data when Kuymazar water reservoir was built varies. Currently Kuymazar has a strategical importance for drinking water supply for Bukhara, the fifth largest city in Uzbekistan, and for the nearby town of Kogon. The projected area of the water surface is 58 km² with a projected volume of 0.32 km³ (Cabinet of Ministries of the Republic of Uzbekistan, 1999) with the maximum depth being 17 m, and the average depth being 5–7 m.

Its water is lower in salinity than that of the neighbouring Tudakul Reservoir, which is used for aquaculture. This large wetland, which has a total area of almost 32 000 ha, serves as an important stopover point for migratory birds along the Central Asian Flyway.



▲ **Image 12:** Kuymazar Water Reservoir, part of the Tudakul and Kuymazar Water Reservoirs Ramsar Site (photo: Aleksandr Raikov).

Ecological Character

— Hydrological features: The Tudakul reservoir is subject to the seasonal water level fluctuation. It fills up during autumn and winter with water of Zarafshan River and Amudarya River through the Amu-Bukhara channel. During the vegetation period, the water from the rivers and channels are largely taken for irrigation. Due to the high level of evaporation, the water level continues to decrease until the end of October.

— Water mineralisation: Water of the Tudakul reservoir has a slightly alkaline reaction, the pH values are in the range of 8.61-8.78, the salinity of the water vary from 0.48 to 1,6 g/l. Mineralisation of the water in Kuymazar Reservoir is unknown.

— Flora and Fauna:

- The list of vascular plants in the area includes 58 species. No rare plant species have been recorded within the boundaries of the Ramsar site (Mitropolskiy, 2025).
- Ichthyofauna of Tudakul reservoir includes about 29 species. The most widely represented is the cyprinid family —22 species (75%), the remaining 7 families include 1 species each (5%). Analysis of the composition of the ichthyofauna of the Tudakul reservoir showed that 16 (57%) are introduced alien species, of which 10 species are representatives of the Far Eastern fauna (Khakimova et al., 2021).
- Zooplankton of Tudakul reservoir is represented by 15 species of which *Rotifera* — 10 species, *Cladocera* — 3 and *Copepoda* — 2 (Khakimova et al., 2021).
- The fauna of amphibians and reptiles includes 15 species, among which 3 are considered rare and are permanent residents of the area: the Central Asian tortoise *(Testudo horsfieldii)*, the desert monitor *(Varanus griseus)*, and the Tartar sand boa *(Eryx tataricus)*. The remaining species are typical desert dwellers (Mitropolskiy, 2025).
- Avifauna includes 229 species, which is 46% of the bird species found in Uzbekistan. Including 24 species listed in the National Red Book and the IUCN Red List, such as the Dalmatian pelican *(Pelecanus crispus)*, the lesser white-fronted goose *(Anser erythropus)*, the white-tailed Eagle *(Haliaeetus albicilla)*, and Macqueen's Bustard *(Chlamydotis macqueenii)*.
  The majority of the species belong to migratory birds. The total duration of seasonal migrations is about nine months, from the end of February to June and from July to December. Birds started nesting with the appearance of the reed beds that creates favourable conditions for many species. Due to the drying up of the marshes near the Kuymazar dam, the number of birds of marbled duck *(Marmaronetta angustirostris)* species has decreased. The white-headed duck *(Oxyura leucocephala)* disappeared during the cold winters of 2007–2009. Conversely, the number of nesting pairs of ferruginous duck *(Aythya nyroca)* is increasing due to the general increase in the species' population in the region, although the impact of the cold winter has also led to a decrease in their number (Mitropolskiy, 2025).



▲ **Image13:** Fishing from the Tudakul Water Reservoir, part of the Tudakul and Kuymazar Water Reservoirs Ramsar Site (photo: Ernest Kurtveliev).

Human Use and Socio-Economic Values

— **Aquaculture:** Tudakul reservoir is the main fishing body of the Navoiy region. The commercial productivity of the reservoir and the species composition of catches vary significantly from year to year and depends on fish stocking. Thus in 2020, into the water body were released the following fish species: carp, white amur, silver carp, bream and zander and it pre-conditioned the high fish production in 2022 — 7,061 t. In contrast, in 2024 production has decreased to 616 t due to the fact, that there was no stocking after 2020.

— **Grazing and agriculture:** Along the eastern shore of Tudakul reservoir, agricultural fields have been established, and small-scale livestock grazing is carried out. Reed harvesting is currently not taking place.

— **Water Use:** Currently Kuymazar has a strategical importance for drinking water supply for Bukhara, the fifth largest city in Uzbekistan, and for the nearby town of Kogon. During the growing season of agricultural crops, the waterbodies supply irrigation water to farms in the Kyzyltepa and Kogon districts of the Navoiy and Bukhara regions.

— **Tourism and Recreation:** Tudakul reservoir is considered as a territory with high recreational potential (Kholmamatov, 2024) and the number of places where tourists can stay overnight or stay for one day has grown from 2,500 in 2022 to 33,600 in 2024. It is also popular among international birdwatchers, who visit these two reservoirs annually.

Threats and Pressures

— **Inefficient irrigation infrastructure and water loss.** Both Bukhara and Navoiy regions experience the highest water losses in the country.

— **Climate change.** Situation is comparable the other sites.

— **Overgrazing.** Around the perimeter of Tudakul, grazing pressure from livestock of the local communities has led to the degradation of the coastal shrub and herbaceous vegetation. This vegetation is vital both as a food resource for wintering birds and as shelter for local species (Mitropolskiy, 2025).

— **Growing pressure from recreation and tourism.** Rapid development of recreational areas leads to constant disturbance factors for birds during the spring and summer periods. The increase in the number of recreational watercrafts affects broader areas of the lake, beyond just the southern shore.

— **Lack/unavailability of data on ecological character and biodiversity, absence of the continues monitoring programme.** Only limited and fragmented information is available. Tudakul and Kuymazar Water Reservoirs was designated as a Ramsar site based on six criteria: 1, 2, 3, 4, 5, 6. Biodiversity monitoring programme of the site should include these specific indicators, or these criteria should be reconsidered.

Sudochye Lake System

Wetland type: a mosaic of seasonal saline flats (Ss) and seasonal freshwater marshes (Ts), sustained intermittently by drainage inflows, and strongly influenced by human-made wetland types. Collector-drainage canals that supply water to the wetland and one channel the outflow water from the SLS are classified as irrigated land including canals and water storage areas/reservoirs.

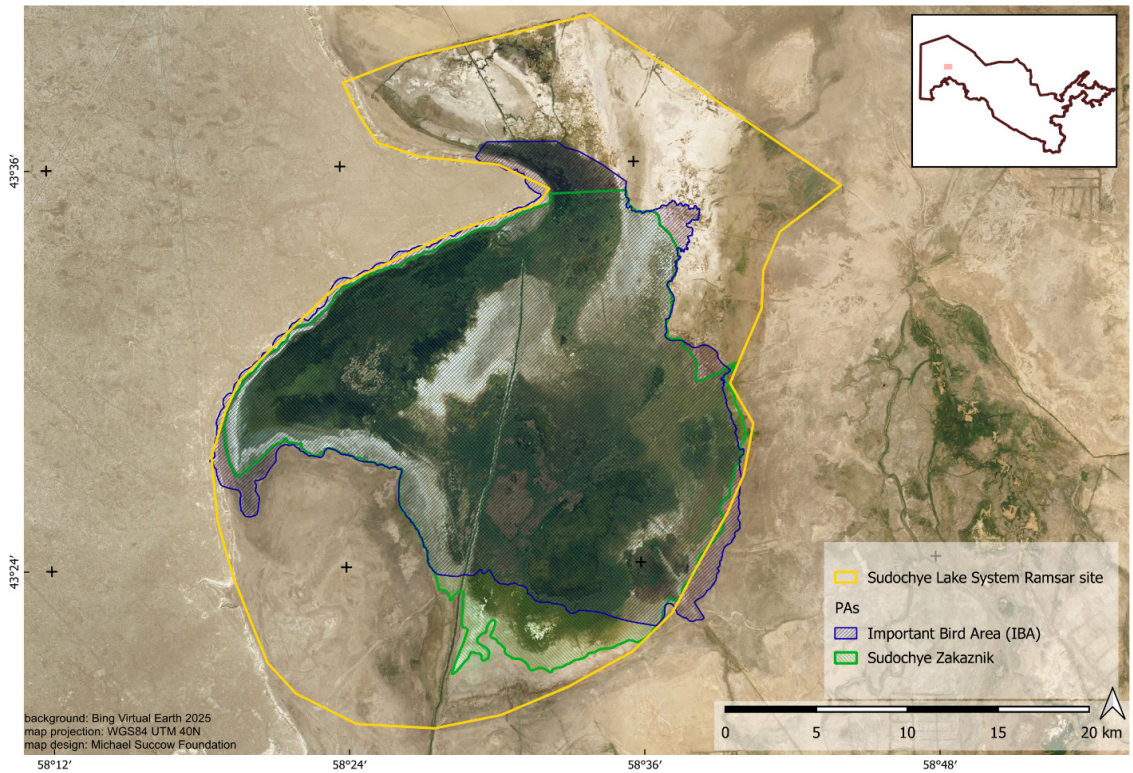
Basin: Amudarya River

Ramsar Site Number: 2 522

Location: Republic of Karakalpakstan

Area: 84 000 ha

Other protection status of the area: Part of the state Nature Reserve "Sudochye-Akpetki", Sudochye Lake — IBA, KBA



▲ **Image 14:** Map showing Sudochye Lakes System Ramsar site.

Site Overview

The Amudarya River, with freshwater before flowing into the Aral Sea, formed a delta with lakes that were connected to the sea. One of the largest lake systems was the Sudochye — Karateren system. To the south of Cape Urga was located the largest lake of this system — the shallow Lake Sudochye, with an area of 330 000 ha and an average depth of 0.5–1.5 m. The water mineralization in Sudochye was uneven and ranged from 0.5 to 7.1 g/l, making it fresher compared to the Aral Sea (Rogov, 1957).

To the north, in close proximity to Cape Urga, there was located a smaller Lake Karateren with an area of 3 600 ha, connected to the Aral Sea. The water mineralization in Lake Karateren was higher than in Sudochye, ranging from 0.6 to 11.2 g/l (Rogov, 1957).

In 1961, the natural connection with the river ceased, salinity increased, and Lake Sudochye almost turned into a lifeless body of water. The connection with the river was restored for some time. It was probably around this time that Lake Sudochye ceased to exist as a single body of water and was divided into 3 lakes: Akushpa, Begdulla-Aydyn, and Bolshoye Sudochye (Rogov et al., 1968).

In 1967, the Kungrad collector of wastewater (KKS) was put into operation. The collector began discharging drainage waters into the lakes Karateren, Akushpa, and Karateren. The water mineralization in the KKS reached 14.1 g/l.

Through the second collector (the Ustyurt collector), mainly water from irrigation systems and partially river water was entering Bolshoye Sudochye (Kurbanbaev, 2025). In years of average water availability and in low-water years, the inflow of river water ceased completely, and the amount of drainage water decreased. In low-water years, the area of Bolshoye Sudochye decreased by 2–3 times.

The lakes Karateren, Akushpa, Begdulla-Aydyn, Tayly, and Bolshoye Sudochye have been used for over 50 years as recipients of discharge and drainage water from irrigated lands. This led to the annual inflow of 2 000 to 2 600 thousand tons of salt into the lakes. The annual increase in water mineralization by an average of 1 g/l has led to losses in biodiversity of the lakes and their economic significance (2002 data) (Mirabdullaev et al., 2025). The lakes are no longer suitable for fish farming.

In 2000–2002, as a part of the "Restoration of the Sudochye Lake Wetland" UNDP GEF project, the Akkumskaya dam and the water outlet structure were built. According to a publication by the Global Water Partnership, due to the miscalculation, the project's activities led to the shallowing and drying up of the Akushpa and Bolshoye Sudochye lakes and Begdulla-Aydyn and other small water bodies. There was a flow of water from the Sudochye lake system to the lower Akkum waterbody (Mirabdullaev et al., 2025). Unfortunately, the only water level measuring gauge for the Ramsar site is located several meters from Akkumskaya dam. This makes it hard to measure the water level in the Lake Bolshoe Sudochye (Sokolov and Mambetkarimov, 2023).



▲ **Image 15:** Sudochye Lakes System Ramsar site (photo: Islambek Arepbayev).

During periods of drought and low water, the waterbodies of the delta almost completely dry up. Currently, it is impossible to fill all the water reservoirs built in the delta with the water from the Amudarya River. The Mezhdurechenskoye reservoir is a priority for filling with water because it provides drinking water to the population of the Muynak district. The Sudochye lake system, which has no economic and social significance, is not a priority (Sokolov and Mambetkarimov, 2023).

Ecological Character

— Hydrological features: Water levels of the lakes are not stable. Inflow to the lakes are mainly from drainage and collector canal systems. Amount of water from Amudarya River is very limited. From 2011 to June 2024, the surface area of the Sudochye Lake system decreased from 10 979 ha to 9 521 ha (Sokolov, 2024).

— Water mineralisation: In the period from 2000 to 2002, the mineralization in Lake Akushpa ranged from 15–50 g/l, in Lake Karateren to 7–50 g/l, in Lake Begdulla-Aydyn — 3–50 g/l, and in Lake Bolshoye Sudochye — 3–20 g/l (data for 2001 with the highest mineralization are absent due to its drying up) (Sokolov, 2024). According to other data, in the western part of Lake Sudochye in 2000, water mineralization reached 60–80 g/l (Kurbanbaev et al., 2010). Water salinity concentration in the

Agushpa waterbody reached 60–65% in 2010, resulting in the disappearance of all aquatic and semi-aquatic inhabitants (fish, muskrats, plankton, and forage vegetation). Reeds also disappeared from the coastal zones; their thickets previously served both as fodder for livestock and as a local construction material (SIC ICWC, 2020).

— Flora and Fauna:
  - The data are highly fragmented, with no confirmed species list or information on species dynamics available.
  - The list of reptiles includes 28 species, accounting for 43.7% of the total reptile fauna of Uzbekistan. In terms of conservation status, one species—the Central Asian tortoise *(Testudo horsfieldii)*—is listed on the IUCN Red List. Three species are included in the Red Data Book of Uzbekistan: Russian tortoise *(Testudo horsfieldii)*, the desert monitor *(Varanus griseus)*, and the rough-tailed sand boa *(Eryx miliaris)*; these same three species are also listed under the CITES Convention (Mitropolskiy, 2025).
  - The bird list comprises 295 species, representing 61.3% of the total avifauna of Uzbekistan. Based on the residency status, the species are categorized as follows: 14 resident species; 81 year-round species with seasonal population changes; 68 migratory breeders; 70 migratory wintering species; 57 passage migrants; 4 vagrant species; and 1 species with uncertain status. In terms of the conservation status, 27 bird species are listed in the IUCN Red List, 42 are included in the Red Data Book of Uzbekistan, and 41 species are covered by the CITES Convention (Mitropolskiy, 2025). Sudochye Lake System is situated along migratory routes intersecting two major flyways: the Afro-Eurasian and the Central Asian. During seasonal migrations, approximately 40,000–50,000 water-associated birds congregate at the lake, with up to 20,000 birds remaining during the summer. It also hosts the only known breeding colony of flamingos *(Phoenicopterus roseus) i*n Uzbekistan, with up to 4,000 nests. The lake does not serve as a wintering site, as it typically freezes during the winter months (Mitropolskiy, 2025).
  - The mammalian fauna includes 40 species, or 37.4% of Uzbekistan's total mammal species. According to the conservation status, three species are listed on the IUCN Red List, eight in the Red Data Book of Uzbekistan, and ten are recognized as game species in the country. Among the rare species are the steppe polecat *(Mustela eversmanni)*, the Turkmen caracal *(Felis caracal),* goitered gazelle *(Gazella subgutturosa)* and the Turkmen kulan *(Equus hemionus)*, all of which frequently use the lake as a watering site (Mitropolskiy, 2025).

Human Use and Socio-Economic Values

— **Aquaculture:** As a result of the increased salinity, the number of freshwater species has significantly declined, and the lake has lost its value for commercial fisheries. As of 2021, only one fish farm remained in operation in the northwestern part of the lake, where mineralization does not exceed 12 g/l due to inflow from the collector canal. Amount of fish produced was in 2022 – 15 t, in 2023 – 11 t and in 2024 – 7 t (Kosnazarov, 2025).

— **Grazing and Water Use:** Water is not suitable for the consumption by people or cattle. According to information from Khokimiyat (District Administration) of Muynak District, 34 local families benefit from Sudochye Lake system from fishing or using the area as pastures or for fodder production. Wetland supported 661 livestock animals of the local communities in 2024 (Kosnazarov, 2025).
— **Tourism and Recreation:** Potential for eco-tourism; currently limited due to infrastructure. According to the information from Khokimiyat of Muynak District, the number of tourists is steadily growing. Thus, in 2022 there were 7 525 tourists, in 2024 this number has increased to 9 845 people. The colonies of pink flamingos *(Phoenicopterus roseus)* at Lake Sudochye attract ornithologists and photographers from around the world. A survey conducted among local tour operators and guides specializing in tours to Lake Sudochye show that 75% of the tours offered focus specifically on birdwatching (Kosnazarov, 2025).

Threats and Pressures

— **Climate change.** A recent study "DIAPOL-CE: Conduction of a climate risk analysis in the Sudochye Lakes System, Uzbekistan" conducted by experts of Research Institute of Environment and Nature Conservation Technologies has proven that in the area of Sudochye Lake System, climate change is manifested through rising temperatures, altered precipitation patterns, increased wind velocity, and more frequent dust and salt storms. These climate hazards are worsening due to the unsustainable management practices. Experts concluded that the waterbody is rapidly losing their biodiversity, while water resources are becoming increasingly scarce (GIZ, 2025).

— **Inefficient irrigation infrastructure and water loss impacts.** Republic of Karakalpakstan at the highest ranks. The expansion of agricultural lands and industrial development exerts significant pressure on wetlands, leading to their degradation. In case of Karakalpakstan, the sharp increase in rice cultivation in the neighboring Khorezm region in recent years may lead to a reduction in water inflow to the Amudarya delta where Lake Julturbas is located. According to the summary report on the Khorezm region, in 2021 the area of rice cultivation was 30 000 ha.

  Ecological character of the territory continues to worsen, so the main efforts should aim at stabilizing these characteristics. For example, salinity, or mineralization, is one of the main factors limiting life in aquatic habitats. The average mineralization of the Aral Sea before its desiccation was about 10 g/l (Rogov, 1957). As the sea's volume decreased, salinity increased, reaching 18.8 g/l in the mid-1980s, which led to the cessation of commercial fishing (Karimov et al., 2020).

— **Technogenic and household waste.** There is no waste management system in place. There is a large accumulation of industrial debris from old structures, as well as a vast amount of glass waste ranging from 1956 to the present. Glass caused two recent fires by its lens effect.

— **Low level of environmental awareness among the local communities:** one of the main causes of frequent fires in the reed thickets around the lakes located in the Muynak district is the local practice of clearing dry reeds by burning. A major fire that occurred at Lake Sudochye in 2019 affected an area of 278 ha, while the largest fire was recorded in 2021.

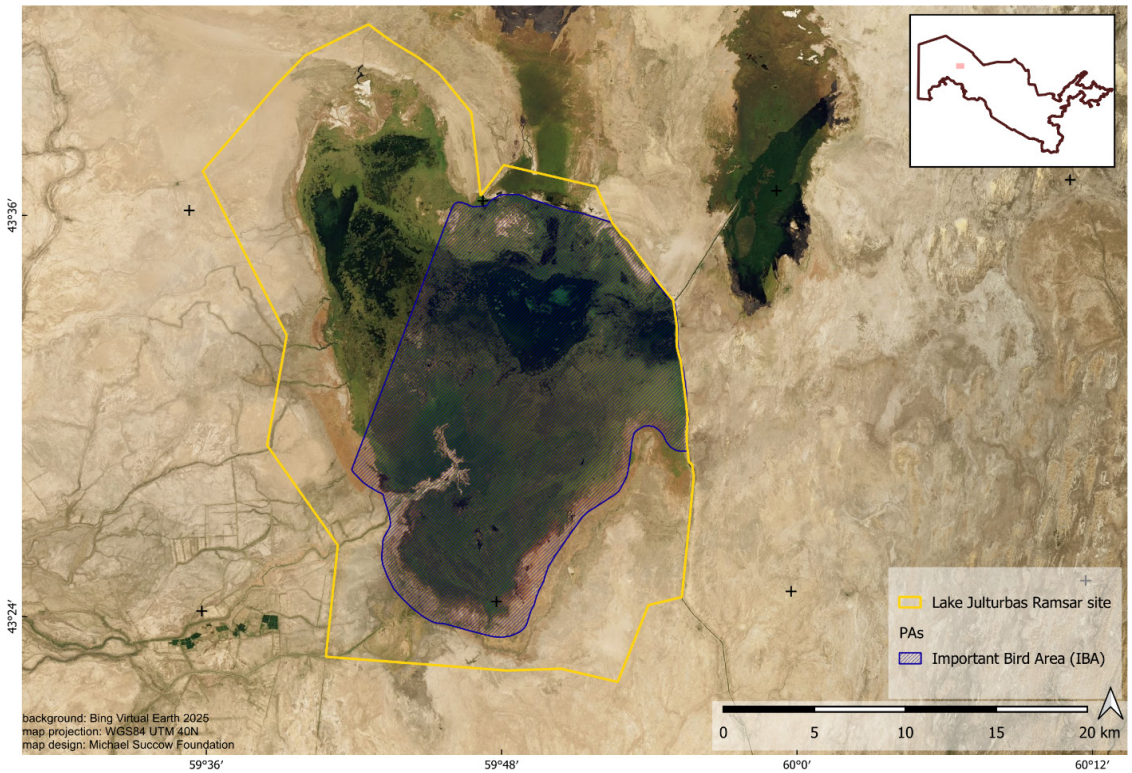
— **Lack/unavailability of the data on ecological character and biodiversity, absence of the continues monitoring programme.** Only limited and fragmented information is available. Sudochye Lake system was designated as a Ramsar site based on 6 criteria: 1, 2, 3, 4, 5, 6. Biodiversity monitoring programme of the site should include these specific indicators.

Lake Julturbas

Wetland type: water storage areas — water reservoirs
Basin: Amudarya River
Ramsar Site Number: 2 541
Location: : Republic of Karakalpakstan
Area: 64 715 ha
Other protection status of the area: Zholdyrbas Lake — IBA, KBA

Site Overview

Lake Julturbas is a water reservoir located in the area of the former Aral Sea Bay. To create it, part of the former sea territory in the northeast was separated by a 13 km long dam. The average depth of the water reservoir is 1.5 meters (Kurbanbaev, 2025).



▲ **Image 16:** Map showing Lake Julturbas Ramsar Site.

Nearly the entire lake is covered with reed thickets. In the driest years, Julturbas almost completely dries up. For most of the year, Julturbas is not a single lake but a patchwork of hundreds of separate water patches. The lake serves as a barrier to contain salt and dust storms from the dried seabed of the Aral Sea in the region. A state forestry and hunting enterprise operates here, and fishing and hunting activities are actively conducted.

Lake Julturbas is generally considered to be of great importance during nesting and migration periods, both for rare internationally significant bird species and for the biodiversity of the Central Asian deserts.

To prevent the deterioration of the ecological characteristics of the territory, it is necessary to provide the Ramsar site with water from the river. It is necessary to improve the water resource management system, including the well-planned development of aquaculture. It also raises a question on how feasible and possible the maintenance of the ecological conditions of the Sudochye lake system is and Juturbas Ramsar sites in equal terms.

Ecological Character

— Hydrological regime: water inflows through (1) drainage and collector canals (KS-1 and KS-3), (2) Kazakhdarya canal and (3) thermal wells. The Kazakhdarya Canal, constructed between 1963 and



▲ **Image 17:** Juturbas Lake Ramsar site (photo: Jens Wunderlich).

1968 was one of the branches of the Amudarya River. In recent years, the water volume in the canal has sharply decreased due to reduced river flow. The canal has a carrying capacity of 66 m^3/s (Adenbaev, Kalabaev, 2023). Water level is not stable and subject to the availability of the water from Amudarya. The surface area of Lake Julturbas decreased from 7 682 ha to 5 522 ha between 2011 to 2024 (Sokolov, 2024).

— Water mineralisation: The salinity of the water reaches 12–15 g/l (Khozhamuratova, 2024). The water in the lake is yellowish, salty, and unsuitable for drinking. Mineralisation continues to increase due the salts and other minerals brought through the drainage and collector channels.

— Flora and Fauna:
  - The data are highly fragmented, with no confirmed species list or information on species dynamics available. Thus, expedition by the Agency of the International Fund for Saving the Aral Sea, Organization for Security and Co-operation in Europe, Karakalpak Research Institute of Natural Sciences of the Karakalpak Branch of the Academy of Sciences of the Republic of Uzbekistan carried in 2023 has recorded the following species:
    — In the shallow parts of the Juturbas Lake: common reed *(Phragmites australis)*, narrowleaf cattail *(Typha angustifolia)*, and lakeshore bulrush *(Schoenoplectus litoralis)*.
    — List of the aquatic vegetation included Eurasian watermilfoil *(Myriophyllum spicatum)*, fennel pondweed *(Potamogeton pectinatus)*, and curly pondweed *(Potamogeton crispus)*.
    — 56 bird species belonging to 11 orders were recorded. Among them are endangered species included in the National Red Data Book of the Republic of Uzbekistan (2019): pygmy cormorant *(Microcarbo pygmaeus)*, mute swan *(Cygnus olor)*, osprey *(Pandion haliaetus)* and golden eagle *(Aquila chrysaetos)*.
    — The following mammal species: jungle cat *(Felis chaus)*, golden jackal *(Canis aureus)*, and tolai hare *(Lepus tolai)*. A large number of rodent burrows, including those of gerbils (*Gerbillinae* spp.) and others these two are not complete sentences (Agency of the International Fund for Saving the Aral Sea, Organization for Security and Co-operation in Europe, Karakalpak Research Institute of Natural Sciences of the Karakalpak Branch of the Academy of Sciences of the Republic of Uzbekistan, 2023).
  - In recent years, nine species of fishes have been caught in the lake. These are-northern snakehead *(Channa argus)*, grass carp *(Ctenopharyngodon idella)*, crucian carp *(Carassius auratus)*, common carp *(Cyprinus carpio)*, silver carp *(Hypophthalmichthys molitrix)*, white bream *(Parabramis pekinensis)*, European catfish *(Silurus glanis)*, pikeperch *(Stizostedion lucioperca)*, and asp *(Aspius aspius)*. All of these are commercially valuable species. Rare species of the Amudarya river basin are no longer observed (Mitropolskiy, 2025).
  - The avifauna includes 213 species. The waterbody plays an important role as a congregation site for birds during seasonal migrations (up to 30 000 individuals of more than 50 species), as well as a breeding site for several rare species, such as the great white pelican *(Pelecanus onocrotalus)*, squacco heron *(Ardeola ralloides)*, glossy ibis *(Plegadis falcinellus)*, little egret *(Egretta garzetta)*, and white-headed duck *(Oxyura leucocephala)*.
    At present, Lake Julturbas remains one of the last locations in the Republic where the black-headed penduline tit *(Remiz macronyx)* continues to nest (Mitropolskiy, 2025).

Human Use and Socio-Economic Values

— **Fishing:** The amount of fish catch has been gradually decreasing: 23 tons were caught in 2022, 11 tons in 2023, and 9.4 tons in 2024. Due to increased salinity, Lake Julturbas is losing its significance as a fishing ground.

— **Grazing and Water Use:** The floristic composition of Lake Julturbas includes forage plants, among which 9 species are considered valuable and readily consumed, 6 species are moderately consumed, and 1 species is poorly consumed (Agency of the International Fund for Saving the Aral Sea, Organization for Security and Co-operation in Europe, Karakalpak Research Institute of Natural Sciences of the Karakalpak Branch of the Academy of Sciences of the Republic of Uzbekistan, 2023).

  Water is not suitable for the consumption of people or cattle. According to the Information from the Khokimiyat (District Administration) of Muynak District, 125 local families benefit from the Julturbas Lake from fishing or using the area as pastures or for fodder production. The wetland supports 10 302 livestock animals belonging to the local communities.

  Near Lake Julturbas, four farming enterprises operate on 2 100 ha of land, supplying food to the village of Kazakhdarya (Muynak district) and nearby settlements in the Bozatov and Chimbay districts of the Republic of Karakalpakstan (Kosnazarov, 2025).

— Tourism and Recreation: According to information from the Khokimiyat of Muynak District, the number of tourists is steadily growing. In 2022 there were 245 tourists, in 2024 this number has increased to 336 people (Kosnazarov, 2025).

Threats and Pressures

— **Water level regulation.** In 2010 and 2014, the lake almost completely dried up due to lack of water inflow from the Amudarya river. In 2017, collectors KS-1 and KS-3 were constructed, through which water began to flow, allowing the lake to partially recover its water area. However, it is now heavily affected by algae, and as a result, open water areas are nearly absent.

— **Fires in woody-shrub and reed vegetation areas.** Over the past five years, fires caused by human activity have occurred three times, leading to the loss of tamarisk thickets in the southeastern part of the lake and reed beds along the northern edge.

— **Overgrazing.** High grazing pressure is observed around the entire perimeter of the wetland.

— **Lack/unavailability of the data on ecological character and biodiversity, absence of the continues monitoring programme.** Only limited and fragmented information is available. Julturbas Lake was designated as a Ramsar site based on seven criteria: 1, 2, 3, 4, 5, 6, 7. Biodiversity monitoring programme of the site should include these specific indicators, or these criteria should be reconsidered.

Ramsar Wetland ecosystem services

Ecosystem Services

We followed the Rapid assessment of wetland ecosystem services (Resolution XIII.17 of the Ramsar Convention) during stakeholders' consultations and meeting to assess four Ramsar sites. For Dengizkul Lake we used earlier assessment that followed the same methodology and conducted by Maksim Mitropolskiy in 2020.

LD	Lake Dengizkul
AALS	Aydar-Arnasay Lakes system
TKWR	Tudakul and Kuymazar Water Reservoirs
SLS	Sudochye Lake system
JL	Lake Julturbas

Key	How important?
++	Significant positive benefit
+	Positive benefit
0	Negligible contribution
–	Negative contribution
– –	Significant negative contribution
?	Gaps in evidence

		How important?	Describe benefit	Scale of benefit		
				Local	Regional	Global
Provisioning services						
Fresh water	LD	–				
	AALS	++	Water for livestock. Freshwater is used by various industries.		+	
	TKWR	++	Kuymazar Reservoir is a source of drinking water for Bukhara city and Kogon town.		+	
	SLS	+	Water is important for wildlife.	+		
	LJ	?				
Food	LD	?	Aydar Lake is the largest aquaculture body in Uzbekistan and a hunting ground.		+	
	AALS	++	Tudakul is one of the largest aquaculture reservoirs in Uzbekistan.		+	
	TKWR	++	Fodder plants for livestock.		+	
	SLS	+	Fishing is present at very small scale due to very high mineralisation of the water.	+		
	LJ	+	Fishing is present at small scale due to high mineralisation of the water, hunting ground.	+		
Fuel	LD	+	Illegal logging	+		
	AALS	+	Illegal logging			
	TKWR	?				
	SLS	–				
	LJ	+		+		

	How important?		Describe benefit	Scale of benefit		
				Local	Regional	Global
Fibre	LD	0				
	AALS	++	Reed harvesting	+		
	TKWR	0				
	SLS	0				
	LJ	++	Reed harvesting			
Natural medicines or pharmaceuticals	LD	?				
	AALS	++	*Capparis spinosa*			
	TKWR	?				
	SLS	++	*Capparis spinosa*, *Glycyrrhíza glábra*, *Péganum hármala*		+	
	LJ	?				
Regulatory services						
Air quality regulation		?				
Local climate regulation	LD	++	Standing water generates evaporation and consequently reduces air temperatures		+	
	AALS	++	The same applies		+	
	TKWR	++	The same applies		+	
	SLS	+	The same applies	+		
	LJ	+	The same applies	+		
Flood hazard regulation	LD	–				
	AALS	+	Regulate, store and retain floodwaters			+
	TKWR	–				
	SLS	–				
	LJ	–				

	How important?		Describe benefit	Scale of benefit		
				Local	Regional	Global
Erosion regulation	LD	– –	Soil erosion due to active operations of oil and gas sector — numerous wells, access roads, and pipeline constructions			
	AALS	++	Preventing wind erosion and stabilizing sandy soils		+	
	TKWR	?				
	SLS	– –	Salinization as water recedes		+	
	LJ	–	Salinization as water recedes		+	
Water purification	LD	++	Chemicals from the fields, salts and suspended solids are deposited		+	
	AALS	+	Chemicals from the fields, salts and suspended solids are deposited	+		
	TKWR	–				
	SLS	++	Chemicals from the fields, salts and suspended solids are deposited		+	
	LJ	++	The same applies		+	
Cultural services						
Cultural heritage	LD	–				
	AALS	–				
	TKWR	–				
	SLS	++			+	
	LJ	–				

	How important?		Describe benefit	Scale of benefit		
				Local	Regional	Global
Recreation and tourism	LD	+	Area for picnic	+		
	AALS	++	Growing demand as recreational site, tourist infrastructure available		+	
	TKWR	++	Growing demand as recreational site, tourist infrastructure available		+	
	SLS	++	Tourism destination	+		+
	LJ	–				
Aesthetic value	LD	?				
	AALS	+		+		
	TKWR	+		+		
	SLS	+			+	
	LJ	?				
Educational and research	LD	++	Site of long-term research and monitoring			+
	AALS	++	The same applies			+
	TKWR	++	The same applies			+
	SLS	++	The same applies			+
	LJ	++	The same applies			+
Supporting services						
Primary production	LD	+	Photosynthetic processes on the wetland produce organic matter and store energy in biochemical form	+		
	AALS	+	The same applies	+		
	TKWR	+	The same applies	+		
	SLS	+	The same applies	+		
	LJ	+	The same applies	+		

Nutrient cycling		?				
Water recycling		?				
Provision of habitat	LD	++	Wintering ground of the endangered waterfowl		+	+
	AALS	++	The same applies		+	+
	TKWR	++	The same applies		+	+
	SLS	+			+	+
	LJ	+			+	+



▲ **Image 18:** Sudochye Lake System Ramsar site (photo: Ernest Kurtveliev).

2. Policy and Governance Framework

Existing national policies and legislations relevant to wetlands

The protection of wetlands is regulated by general environmental legislation—the Law on Nature Protection (1992) and the Law on Protected Natural Areas (as amended in 2004), as well as the Law on Water and Water Use (1993).

Although Uzbekistan has several legal instruments that address environmental protection and water resource management, there is a conspicuous absence of a dedicated, coordinated regulatory framework for wetlands. Relevant provisions exist in laws such as:

- Law "On Water and Water Use"—outlining general principles for water body protection;
- Law "On Environmental Protection" and related ecological legislation—covering general natural resource use and conservation;
- Law "On Protected Natural Territories" (No. 710-II, December 3, 2004)—allowing the establishment of reserves, sanctuaries, and hydrological monuments that may include wetlands (Aripdjanov, 2025).

Over the past 5–6 years, the policy framework has undergone significant updates. Specifically, the state has adopted and approved the following important legal acts:

1. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 484 dated June 11, 2019 "On the Approval of the Strategy for the Conservation of Biodiversity in the Republic of Uzbekistan for the Period 2019–2028." This strategy includes measures aimed at fulfilling Uzbekistan's international environmental commitments taken under the Convention on Biological Diversity (CBD).

2. Presidential Decree of the Republic of Uzbekistan No. PP-4756 dated June 22, 2020—"On Measures to Improve the Procedures for Fulfilling Obligations Arising from International Treaties and Uzbekistan's Membership in International Organizations." This act is aimed at enhancing the coordination of the implementation of international agreements. The decree establishes the responsibility of Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan for the implementation of Ramsar Convention obligations at the national level.

3. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 58 dated February 8, 2021—"On the Establishment of the 'Sudoche-Akpetky' State Nature Reserve in the Republic of Karakalpakstan." This document established a new reserve to protect the unique lake system of Sudochye and Akpetky in the Amudarya delta.

4. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 343 dated June 3, 2021—"On Further Improvement of the Environmental Pollution Assessment System." The document approved a new state environmental monitoring program for the period 2021–2025. Annex 1 of the document outlines specific measures for the monitoring of Ramsar and potential Ramsar sites. In particular:
    - #34 establishes biodiversity monitoring at Lake Dengizkul, the Aydar-Arnasay lake system, and the Tudakul and Kuymazar reservoirs.
    - #42 provides for the monitoring of migratory waterbirds at key wetlands in Karakalpakstan, including the Sudochye Lake system. This resolution effectively integrates the study and conservation of Ramsar Sites into the national environmental observation system (Aripdjanov, 2025).

Each of the legal and regulatory instruments reflects the growing commitment of the Government of Uzbekistan in implementing the provisions of the Ramsar Convention.

Collectively, these developments have contributed to the establishment of a more robust legal and strategic framework at the national level in recent years. This framework aligns with Uzbekistan's international environmental commitments while being responsive to the country's specific ecological conditions and governance context, thereby enhancing the effectiveness of wetland conservation and wise use.

Lack of Legal Definition Aligned with the Ramsar Convention

Uzbekistan's national legislation does not provide a clear and comprehensive definition of "wetlands" consistent with the Ramsar Convention. As a result, ecosystems such as swamps, marshes, and river deltas often classified either as waterbodies are governed under water legislation or as land resources, for example as water fund or reserve lands under the Land Code, which does not recognize their ecosystem services (Aripdjanov, 2025).

Fragmented Institutional Responsibilities. Institutional responsibilities for wetland management are fragmented and overlapping. The Ministry of Water Management oversees water distribution and reservoir operations; the Ministry of Ecology, Environmental Protection and Climate Change (MoEEPCC) is responsible for biodiversity and protected areas; while local authorities manage land use planning. In the absence of a dedicated coordination mechanism, no single authority holds comprehensive responsibility for the integrated management of wetlands.

Emphasis on Resource Use Over Ecosystem Conservation. The current legal framework prioritizes the rational use of water and land resources, rather than promoting the "wise use" of wetlands in line with Ramsar principles. The existing Law "On Water and Water Use" (1993), and the draft of the Water Code, focus primarily on water utilization and irrigation regulation. Under the draft code, lands beneath the natural water bodies (e.g., rivers, lakes, and marshes) will be assigned to the jurisdiction of the Ministry of Water Management to streamline resource governance. However, without clear environmental safeguards, such an approach may not ensure the conservation of wetland ecosystems.

Absence of Wetland Management Planning Requirements. Currently, the development of management plans is mandated primarily for state nature reserves and national parks. There are no legal requirements for the preparation and implementation of site-specific management plans for wetlands, including those designated as Ramsar Sites. This omission undermines the ability to sustainably manage and protect the ecological character of these critical ecosystems (Aripdjanov, 2025).

Institutional arrangements and responsibilities

The Ministry of Ecology, Environmental Protection and Climate Change is the designated national authority responsible for the management and oversight of wetlands in Uzbekistan. Formed in 2023 through the reorganization of the former State Committee for Ecology and the Ministry of Natural Resources, the Ministry now functions as the Administrative Authority for the Ramsar Convention. It is responsible for coordinating the implementation of national obligations under the Convention and ensures the rational and wise use of Ramsar and other wetlands across the country.

The Ministry's organizational structure includes a number of specialized departments and affiliated institutions that contribute to wetland policy, management, and monitoring. These include:

— Department for the Development of Ecotourism and Hunting;
— Department of Protected Natural Areas;
— National Center for Climate Change;
— Department for Forest, Biodiversity and Ecotourism Policy;
— Department for Water, Land and Environmental Protection Policy.

These units support policy development and programmatic implementation related to wetlands, including efforts such as the restoration of riparian forests and reed beds, integration of biodiversity considerations into land and water use planning, and the promotion of sustainable ecotourism in wetland areas.

Additionally, the MoEEPCC oversees environmental inspections tasked with ensuring compliance with conservation regulations, including the prevention of illegal hunting, wetland drainage, and habitat degradation.

This institutional framework provides a foundation for the development and implementation of a nationally coordinated Ramsar Strategy, aligning with the principles of the Convention and supporting integrated, multi-sectoral wetland governance.

At the local level, the regional departments of the Ministry of Ecology, Environmental Protection and Climate Change are responsible for the direct management and supervision of environmental activities, including those related to wetlands.

According to Paragraph 14, Annex 10 of the Presidential Decree of the Republic of Uzbekistan No. PP-171 dated 31 May 2023, titled "On Measures for the Effective Organization of the Activities of the Ministry of Ecology, Environmental Protection and Climate Change", the Ministry was officially designated as the authorized national body for the implementation of the Ramsar Convention.

In accordance with this decree, the Ministry's core functions in the field of wetland conservation and management include:

1. Development and Implementation of State Policy: The Ministry is responsible for formulating and executing a unified national policy on environmental protection, the rational use, and the restoration of natural resources—including wetlands.

2. State Environmental Control: The Ministry conducts environmental oversight of natural components such as air, land, subsoil, water, and forests—activities directly linked to the conservation and management of wetlands.

3. Environmental Monitoring: The Ministry operates the national environmental monitoring system, which includes surveillance of the condition of wetlands and the implementation of appropriate conservation measures. Measurement of the water quality indicators (such as pH, salinity etc) is one of the components of the monitoring system, however the gathered data is not being analysed and thus do not lead to the practical actions.

4. Environmental Awareness and Public Information: The Ministry promotes environmental education and raises public awareness about environmental conditions and conservation actions. This function plays a crucial role in fostering public understanding of the importance of wetlands and supporting their wise use and protection (Aripdjanov, 2025).

In addition to its central administrative responsibilities, the Ministry of Ecology, Environmental Protection and Climate Change oversees several structural agencies whose mandates are directly relevant to the conservation and wise use of wetlands:

— Forestry Agency: Responsible for developing and implementing national forestry programs and managing the State Forest Fund. Its activities include the protection and restoration of forest ecosystems that are ecologically linked to wetland areas.

— Uzbekistan Hydrometeorological Service Agency (Uzhydromet): conducts monitoring of hydrological parameters, which is essential for assessing the condition of wetlands.

— Environmental Protection and Control Inspectorate: Enforces compliance with environmental regulations and standards, including those applicable to the conservation and wise use of wetlands.

Together, these entities under the Ministry form the backbone of Uzbekistan's institutional framework for wetland management, helping to ensure the conservation and wise use of wetland ecosystems in line with Ramsar principles.

In addition to environmental institutions, other government agencies also bear responsibility for wetland management. Notably, the Ministry of Water Resources plays a critical role in regulating water use regimes and ensuring ecological flows in river deltas and lakes to sustain associated ecosystems. Presidential decrees issued between 2018 and 2019 introduced measures for the rational use of water and land resources in agriculture, explicitly integrating ecosystem requirements.

According to Presidential Decree No. PP-5055 dated 6 April 2021, the Ministry of Water Resources of the Republic of Uzbekistan is tasked with the following key objectives relevant to wetland conservation:

1. Implementation of Integrated Water Resources Policy: The Ministry is charged with coordinating state authorities and organizations in the rational use and protection of water resources, directly supporting the conservation of wetlands.

2. Ensuring Sustainable and Rational Water Supply: It is responsible for providing adequate water supply to both the population and the economy through efficient water use, thereby supporting the health of wetland ecosystems.

3. Modernization and Development of Water Infrastructure: Oversees the construction and rehabilitation of water management infrastructure aimed at improving water governance and sustaining wetlands.

4. Improving Forecasting and Accounting Systems for Water Resources: Enhances the quality and availability of water data for informed decision-making, crucial for monitoring and managing wetland conditions.

5. Creating Incentives for Rational Water Use: Promotes the adoption of energy- and water-efficient technologies, optimizes water consumption patterns, and supports the use of return flows, all contributing to the conservation of wetlands (Aripdjanov, 2025).

The Ministry of Water Resources of the Republic of Uzbekistan, through the implementation of the above-mentioned tasks, contributes to the sustainable use and conservation of wetlands. Equally important actors in the conservation and management of Ramsar Sites are the local government authorities and administrative bodies. Operating within the framework of national legislation and biodiversity conservation strategies, local authorities in the Republic of Uzbekistan are responsible for the following key tasks and functions:

— Implementation of national policy at the local level: Local government authorities are responsible for executing national strategies and programs aimed at the conservation and sustainable use of wetlands. This includes contributing to the implementation of the National Biodiversity Conservation Strategy, which focuses on mobilizing the efforts of various institutions and the general public to protect natural resources.

— Environmental monitoring: Local self-government bodies participate in the national environmental monitoring system, expanding its scope by including a broader range of biodiversity components. This enables timely detection of changes in the condition of Ramsar Sites and allows for appropriate conservation measures to be taken.

— Environmental education and public engagement: Local authorities organize activities to raise public awareness of the value of biodiversity and ecosystem services. This helps promote active citizen involvement in wetland conservation and supports initiatives for their sustainable use.

— Integration of environmental considerations into local planning: In developing and implementing local socio-economic programs, authorities incorporate environmental factors, contributing to the conservation of wetlands. This includes conducting environmental impact assessments for planned economic activities.

— Cooperation with governmental and non-governmental institutions: Local government authorities collaborate with a variety of organizations to attract resources and support for wetland conservation efforts. This includes engaging with donor organizations and participating in international projects dedicated to the protection of wetlands (Aripdjanov, 2025).

Finance mechanisms for wetland conservation

State funding for wetland conservation is provided through the budget of the MoEEPCC and the system of environmental funds. In 2017, the Republican Fund for Ecology, Environmental Protection, and Waste Management was established. According to Presidential Decree No. PP-171 of 31 May 2023, the fund was transformed into an extrabudgetary Environmental Fund under the MoEEPCC. The fund accumulates revenues from natural resource use payments and environmental fines. Its resources are allocated to environmental projects, including biodiversity conservation.

However, experts have noted that the fund's procedures remain insufficiently transparent, and that greater emphasis is needed on planning expenditures related to ecosystem services.

According to data published on the official website of the MoEEPCC, the total revenues received by the Extrabudgetary Environmental Fund amounted to 165 934 billion UZS in 2022 and 202 834 billion UZS in 2023.

The use of the Fund's resources is governed by paragraphs 5–7 of Annex No. 1 to the Resolution of the Cabinet of Ministers of 15 June 2017, No. 375, which states that The Fund's resources should be used to finance the environmental protection projects and activities among others.

Due to the absence of formally approved programmes or measures for wetland conservation at the level of the Cabinet of Ministers of the Republic of Uzbekistan or higher, it is not possible to determine with certainty what share of the Fund's resources is allocated specifically to the conservation of Ramsar Sites.

International financing plays a significant role in supporting the conservation of Ramsar Sites in Uzbekistan. The country actively mobilizes grants and investments through global initiatives. Since 2018, based on a UN resolution, a Multilateral Trust Fund for the Aral Sea Region has been operating, attracting contributions from donors such as Norway, the European Union, and Japan to support sustainable development projects in the Aral Sea basin. Within the framework of this fund, and with the support of the GEF/UNDP, a major initiative titled "Enhancing the resilience and sustainability of landscapes and livelihoods through restoration and climate-smart solutions with engagement of private sector and local communities" was launched in 2021 to conserve the wetland ecosystems of the Aral Sea region (Global Environment Facility, 2025).

The private sector and business initiatives have also become important sources of funding. A notable example is cooperation with the oil and gas industry: since 2010, the company LUKOIL Uzbekistan Operation Company has operated in the vicinity of Lake Dengizkul. Recognizing the ecological value of the site, the company annually funds biodiversity monitoring, including bird counts, flora surveys, and water and soil analysis.

Moreover, LUKOIL Uzbekistan Operation Company developed and is implementing a lake management plan for Dengizkul Lake. Under this plan, in 2017, a protective dam was constructed to stabilize the lake's water level. As a result of this private investment, the hydrological regime of the lake has stabilized since 2018, wetland areas have recovered, and the site once again attracts large congregations of waterbirds.

Collaborations with international NGOs, including World Wildlife Fund (WWF), Central Asia Regional Economic Cooperation (CAREC) Program, and others, have also facilitated environmental education campaigns and local conservation actions. Overall, wetland financing in Uzbekistan is composed of a combination of state budget allocations, targeted environmental funds, international donor grants, and private sector contributions, enabling both ongoing protection and the launch of new conservation initiatives.

Stakeholder involvement and participation

In the Republic of Uzbekistan, the role of non-governmental and scientific organizations in the conservation of wetlands is steadily increasing. These actors play an essential complementary role to governmental structures, with their contributions falling into several key areas:

1. Monitoring and Research Activities. Scientific institutions, such as the Academy of Sciences of the Republic of Uzbekistan, regularly conduct research that contributes towards assessment of the ecological character of the wetlands.

2. Education and awareness-raising initiatives. Non-governmental organizations (NGOs) are actively engaged in raising public awareness of the value of wetlands. They organize seminars, training sessions, and outreach campaigns aimed at informing communities about the importance of wetland ecosystems and their role in maintaining ecological balance.

3. Participation in Strategy and Programme Development. NGOs and academic institutions contribute to the development of national strategies. Their expert input is considered during the drafting of governmental programmes and action plans focused on wetland protection.

4. International Cooperation and Resource Mobilization. NGOs and scientific organizations act as intermediaries in building international partnerships and raising awareness among the global community. They play a key role in securing international grants and technical assistance for wetland conservation projects.

5. On-the-Ground Restoration and Conservation Activities. NGOs implement practical projects for restoring degraded wetlands, introducing sustainable resource-use practices, and mitigating anthropogenic pressures on these ecosystems.

Examples of NGO and Academic Engagement:

— Ornithological Research at Sudochye Lake System. In 2014, a joint expedition by the Uzbekistan Society for the Protection of Birds, the International Fund for Saving the Aral Sea (IFAS), and the German Development Agency (GIZ) recorded a large breeding population of about 7 000 greater flamingos. This research supported the lake's recognition as an Important Bird Area (IBA) and its inclusion in the Ramsar List in 2023.

— The Uzbekistan Society for the Protection of Birds (UzSPB) deserves a special mention. Over the past decade, it has identified 26 Important Bird and Biodiversity Areas (IBAs), many of which have been proposed as Ramsar Sites. The NGO also conducts the annual International Waterbird Census (IWC) to monitor the population and shares this data with government authorities as well as international biodiversity databases (Aripdjanov, 2025).



▲ **Image 19:** A boy collecting water from a spring (photo: Ernest Kurtveliev).

3. Assessment of the progress of national reports

We have analysed three National reports on the implementation of the Ramsar convention on wetlands from 2018, 2021 and 2025. The reports (Republic of Uzbekistan, 2018, Republic of Uzbekistan, 2021, Republic of Uzbekistan, 2025) cover the activities between 2016 and 2025 towards the implementation of the fourth Ramsar Strategic plan 2016-2024.

Under the implementation of the Strategic Goal 1: Addressing the Drivers of Wetland Loss and Degradation, the following legislative acts have been approved:

— Decree of the President of the Republic of Uzbekistan No. 5418 dated April 17, 2018, "On Measures for the Remote Improvement of the Public Governance System in the Agriculture and Water Sector."

— Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 841 dated October 20, 2018, "On Measures to Implement National Goals and Objectives in the Field of Sustainable Development for the Period Until 2030."

— Decree of the President of the Republic of Uzbekistan No. 5742 dated June 17, 2019, "On Measures for the Efficient Use of Land and Water Resources in Agriculture."

— Resolution of the President of the Republic of Uzbekistan No. 4850 dated October 6, 2020, "On Approval of the Concept for the Development of the Forestry System of the Republic of Uzbekistan Until 2030."

— Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 484 dated June 11, 2019, "On Approval of the Strategy for the Conservation of Biological Diversity in the Republic of Uzbekistan for the Period 2019–2028."

— Decree of the President of the Republic of Uzbekistan No. 5863 dated October 30, 2019, "On Approval of the Concept of Environmental Protection of the Republic of Uzbekistan Until 2030."

— Decree of the President of the Republic of Uzbekistan No. 5611 dated January 5, 2019, "On Additional Measures for the Accelerated Development of Tourism in the Republic of Uzbekistan."

— Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 541 dated July 9, 2020, "On the Further Improvement of the Mechanism for Assessing Environmental Impact."

— Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 981 dated December 11, 2019, "On Approval of the Regulation on the Procedure for Establishing Water Protection Zones and Sanitary Protection Zones of Water Bodies in the Territory of the Republic of Uzbekistan."

In line with Target 3, which calls for enhanced efforts by public and private sectors to apply guidelines and good practices for the wise use of water and wetlands, Uzbekistan demonstrates specific examples of sectoral involvement in Ramsar Site management.

At Lake Dengizkul (Ramsar Site No. 1,108), the implementation of conservation policies is overseen by the private oil and gas LLC "LUKOIL Uzbekistan Operating Company". In the case of the Aydar-Arnasay Lake System (Ramsar Site No. 1,841), conservation activities are managed by a Specialized Directorate, functioning under the authority of the Cabinet of Ministers of the Republic of Uzbekistan.

Under the Strategic Goal 2: Effectively conserving and managing the Ramsar Site network, the following activities have been implemented:

— Designation of Tudakul and Kuymazar Water Reservoirs, Sudochye Lake System and Julturbas Lake as the Ramsar sites.

— Adopted the resolution of the Cabinet of Ministers of the Republic of Uzbekistan of August 23, 2016, No. s273 "On approval of the program for monitoring the environment in the Republic of Uzbekistan for 2016–2020", which covers monitoring on the reservoirs of the republic, including Ramsar sites.

— Adopted the Resolution of Cabinet of Ministers of the Republic of Uzbekistan No. 347 "On measures to further increase the efficiency of the use of biological resources of the Aydar-Arnasay lake system" dated April 22, 2019.

— Within the framework of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) Uzbekistan has participated in the development of several action plans for example, action plan for the conservation of the Dalmatian pelican *(Pelecanus crispus)*.

— Since 2012, LUKOIL Uzbekistan Operating Company LLC has been developing and regularly updating the Biodiversity Conservation Action Plan at its licensed sites. One of these sites is Lake Dengizkul, for which the Action Plan was updated in March 2025.

It is also indicated that not all cases of negative human-induced change or likely change in the ecological character of Ramsar Sites been reported to the Ramsar Secretariat, pursuant to Article 3.2.

Under the Strategic Goal 3: Wisely Using All Wetlands, it is indicated that since COP14 ecological character of the Ramsar Sites in the country did not change, while on general, status of the wetlands in the country have been deteriorated.

Operational Goal 4: Enhancing Implementation
— Uzbekistan joined the Ramsar Regional Initiative for Central Asia (RRI-CA).
— Training seminars were organized for the territorial subdivisions of the Committee on Ecology, those regions where the Ramsar Sites are located.

Among the main obstacles in implementing the Convention, the authors of the reports have mentioned the followings:

— absence of the Ramsar National strategy and action plan as well national legal acts regulating the procedure for wise us of the Ramsar sites,
— lack of funding,
— non-stable hydrological regime of the Ramsar sites that are subjects to the decisions beyond the duties and responsibilities of the Administrative Authority (AA),
— insufficient state control over the compliance with the environmental legislation,
— lack of interaction with the secretariat of the Convention and the weakening of interaction,
— shortage of water resources and the increase in population in the countries of Central Asia,
— ineffective water resources management in the Syrdarya and Amudarya river basins.

For the implementation of the strategical plan, the following technical and financial support was requested from the International Organization Partners (IOPs):

— pilot assessment of ecosystem services in the Ramsar territories,
— monitoring and assessment of the effectiveness of Ramsar site management,
— research and preparation of the nomination for giving the international status of wetlands,
— preparation of Management Plans for the existing and newly created Ramsar sites.

In addition, in the National Biodiversity Strategy and Action Plan (NBSAP) for the Conservation of Biological Diversity (CBD) in the Republic of Uzbekistan for the Period 2019–2028, wetlands were identified as an important ecosystem. However, definition of the wetlands is different from the understanding of the Ramsar Convention, because "rivers and riparian ecosystems" are separated from "wetlands ecosystems". In the Action plan to the Strategy, there are no activities connected to the wetlands or rivers. One of the possible explanations is the lack of the National expertise in wetlands issues.

4. Vision, goals and list of actions

With the stakeholder's support, the vision for Ramsar Strategy for Uzbekistan for 2026–2030 was formulated as the following:

In 2030, a nationally coordinated mechanism, aligned with the Ramsar Convention, is being progressively implemented to support the wise use of Ramsar Sites and to contribute to the wise use of other wetlands in Uzbekistan, thereby ensuring the long-term conservation of biodiversity and the continued provision of ecosystem services to the people of Uzbekistan in the face of a changing climate.

4th Ramsar Strategic plan 2016–2024 has defined four goals:

Goal 1: Addressing the drivers of wetland loss and degradation

- **T1** Recognizing wetland benefits in sectoral strategies
- **T2** Ensuring water for wetland ecosystem needs
- **T3** Applying wise use guidelines in private and public sectors
- **T4** Controlling or eradicating invasive alien species

Goal 2: Effectively conserving and managing the Ramsar Site network

- **T5** Maintaining ecological character through integrated management
- **T6** Increasing wetland area under Ramsar designation
- **T7** Addressing threats to ecological character

Goal 3: Enhancing implementation

- **T8** Completing national wetland inventories
- **T9** Strengthening wise use through integrated river basin management or coastal zone management
- **T10** Respecting and using traditional knowledge and practices
- **T11** Documenting wetland services and benefits
- **T12** Restoring degraded wetlands
- **T13** Enhancing sustainability of projects in key sectors

Goal 4: Enhancing implementation

- **T14** Developing scientific and policy guidance
- **T15** Reinforcing Ramsar Regional Initiatives for implementation of the Convention
- **T16** Mainstreaming wetland conservation and wise use through CEPA
- **T17** Mobilizing resources for implementation
- **T18** Strengthening international cooperation
- **T19** Building capacity to implement the Convention and Strategic Plan

Based on the formulated vision and analyses of the Ramsar sites in Uzbekistan, the following priorities for the next five years are suggested within three out of four goals:

Goal 1: Addressing the Drivers of Wetland Loss and Degradation
— **T2 Ensuring water for wetland ecosystem needs**

Goal 2: Effectively conserving and managing the Ramsar Site network
— **T5 Maintaining ecological character through integrated management**
— **T6 Increasing wetland area under Ramsar designation**
— **T7 Addressing threats to ecological character**

Goal 3: Enhancing Implementation
— No priorities were selected by the stakeholders under Goal 3.

Goal 4: Enhancing Implementation
— **T14 Developing scientific and policy guidance**
— **T15 Reinforcing Ramsar Regional Initiatives for implementation of the Convention**
— **T16 Mainstreaming wetland conservation and wise use through CEPA**
— **T17 Mobilizing resources for implementation**
— **T18 Strengthening international cooperation**
— **T19 Building capacity to implement the Convention and Strategic Plan**

Additional country-specific goals we would formulate as following:
— **Establish a mechanism to advance the implementation of the Ramsar Convention in Uzbekistan.**
— **Create strong political and legal support for Ramsar Convention implementation at all levels.**

Respectively, the country specific objectives are presented below:

— Make steps unifying term "wetlands" according to the definition of the Ramsar Convention in the legal documents and awareness raising materials (for example in description of the National Sustainable Development Goals and targets of the Republic of Uzbekistan);

— Complete the preparation of all required and recommended procedures and documents and in accordance with the Ramsar Convention, including consider establishing a National Ramsar Committee, preparing inventories and description of the ecological character for the Ramsar wetlands;

— Develop a mechanism that will ensure that Administrative Authority (AA) will be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Information will be pass without delay to the Ramsar Secretariat.

Ramsar Secretariat encourages the Contracting parties to include into the Ramsar List the sites which represents (1) the most threatened or (2) underrepresented wetlands ecosystems. Among the threatened ecosystems found in Uzbekistan, only peatlands are present. Second group includes temporary pools and karst and other subterranean wetlands. Ramsar Secretariat has prepared Supplementary guidelines for identifying and designating particular wetland types to support nomination (Ramsar Convention Secretariat, 2022). Considering that currently all five Ramsar sites of Uzbekistan are either semi-natural lakes or water storage areas, we recommend considering one of the three types of the mentioned above wetlands for the nomination.

Please find below a suggested tentative list of actions made based on the consultations with the stakeholders. It is expected that the colleagues of the Ministry of Ecology, Environmental Protection and Climate Change will finalise it adjusting the list of actions, defining the responsible organization, setting dates, etc.

Goal 1: Addressing the drivers of wetland loss and degradation

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
1 ↓	Wetland benefits are featured in national / local policy strategies and plans relating to key sectors such as water, energy, mining, agriculture, tourism, urban development, infrastructure, industry, forestry, aquaculture, fisheries at the national and local level.	Engage with natural resource users at river, lake, groundwater basin and national level to integrate there the wetland contributions to water, biodiversity, and sustainable development targets of the international community.	Action 1.1: Consider establishing the National Ramsar Committee/ Working group with clear mandates, roles, and interagency representation to facilitate the implementation of the National Strategy for the Ramsar sites in Uzbekistan. Action 1.2: Prepare a 5-year working plan based on the text of the National Ramsar Strategy of Uzbekistan and operational procedures. Action 1.3: Ensure regular coordination meetings, facilitate regular dialogue between ministries responsible for water resources, agriculture, environment, and other agencies to jointly plan.	Administrative Authority (AA)—Ministry of Ecology, Environmental Protection and Climate Change (MoEEPCC), Ramsar Focal points, Ministry of Agriculture, Ministry of Water Resources, International Organisation Partners (IOPs), development assistance agencies	Baseline 2025: Wetlands conservation issues are not included into national strategies and planning processes on water resource management. Ramsar wetlands conservation issues are not included into the National Policies or measures on agriculture and aquaculture. Ramsar wetlands are not addressed in eco-tourism development plans and strategies. There is only one biodiversity conservation plan on Dengizkul lake Ramsar Site.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
1 ↑	Wetland benefits are featured in national / local policy strategies and plans relating to key sectors such as water, energy, mining, agriculture, tourism, urban development, infrastructure, industry, forestry, aquaculture, fisheries at the national and local level.	Engage with natural resource users at river, lake, groundwater basin and national level to integrate there the wetland contributions to water, biodiversity, and sustainable development targets of the international community.	Action 1.4: Conduct a policy and legal review to align national environmental legislation with Ramsar commitments.	Administrative Authority (AA)—Ministry of Ecology, Environmental Protection and Climate Change (MoEEPCC), Ramsar Focal points, Ministry of Agriculture, Ministry of Water Resources, International Organisation Partners (IOPs), development assistance agencies	Indicators: Interministerial meetings are being held to follow the progress of implementation of National Ramsar Strategy. # National strategies and planning processes to which issues on Ramsar wetlands was included. # National Policies or measures on agriculture and aquaculture to which Ramsar wetland issues were included. Inclusion of Ramsar sites into biodiversity strategies (NBSAP). Ramsar terminology is used for wetlands description in 7th National report on the conservation of the biological diversity.
			Action 1.5: Integrate wetlands into agricultural, water and land-use policies. Align Uzbekistan's agriculture, irrigation, and rural development policies with wetland conservation objectives.		
			Action 1.6: Include Ramsar wetlands conservation into national, regional, sectoral biodiversity strategies (NBSAP). Use Ramsar terminology for wetlands description into the 7th National report on the conservation of the biological diversity.		
			Action 1.7: Include wetlands and Ramsar sites in eco-tourism development plans and strategies.		
			Action 1.8: Consider specifics of the Ramsar sites while developing programmes and plans for aquaculture.		

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
2	Water use respects wetland ecosystem needs for them to fulfil their functions and provide services at the appropriate scale inter alia at the basin level or along a coastal zone.	Understand the water requirements, river, lake, wetland ecosystem services, and engage with water users at site and river basin and national level to evaluate and maintain / restore necessary water allocations.	Action 2.1: Define the required inflow of the water from the river and collector-drainage waters to the Ramsar Wetlands to maintain/restore their ecological character (in line with National Biodiversity Conservation Target 2). Action 2.2: Negotiate with the Ministry of Water Resources, and other responsible bodies the amount of the water inflow to the Ramsar Wetlands. Action 2.3: Develop mechanism to maintain the define inflow to the Ramsar wetlands.	AA—MoEEPCC, Ramsar Focal points, Ministry of Water Resources, Ministry of Water Resources of the Republic of Karakalpakstan, IOPs, development assistance agencies	Baseline 2025: There is no Ramsar site that have sustainable water inflow in the context of ecosystem requirements. Indicators % of Ramsar sites to which have improved the sustainability of water inflow in the context of ecosystem requirements.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
3	The public and private sectors have increased their efforts to apply guidelines and good practices for the wise use of water and wetlands.	Engage with business sector/ private sector.	Action 3.1: Develop guidelines for those who lease wetlands for recreation regarding specifics and requirements of the maintenance of the recreation zones located withing Ramsar sites, including requirements for Ramsar logos. Action 3.2: Provide information to the Mayor's Offices of Jizzakh, Navoiy and Bukhara regions regarding specifics and requirements of the maintenance of the recreation zones located within the following Ramsar sites: Tudakul and Kuymazar Water Reservoirs, Aydar-Arnasay Lakes System.	AA—MoEEPCC	Baseline 2025: There is not Ramsar sites specific requirements for tourism development. Indicators: Guidelines for tourism development at the Ramsar sites have been developed.
4	Invasive alien species and pathways of introduction and expansion are identified and prioritized, priority invasive alien species are controlled or eradicated, and management responses are prepared and implemented to prevent their introduction and establishment.	Complete inventory for all sites. Prepare management response as appropriate (national policies or guidelines). Trends in invasive alien species. Red List Indicator.	Action 4.1: Identify invasive alien species in the Ramsar site as well as pathways of their introduction (in line with National Biodiversity Conservation Target 6)	AA – MoEEPCC	Baseline 2025: There are no inventories of invasive alien species for any of the Ramsar sites. Indicators: # of the sites for which inventories of the invasive alien species are prepared.

Goal 2: Effectively conserving and managing the Ramsar Site network

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
5 ↓	The ecological character of Ramsar Sites is maintained or restored, through effective planning and integrated management	Improved management of Ramsar sites and wetlands through managements plans and enhanced resources.	Action 5.1: Develop a mechanism that will ensure that AA will be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Pass information without delay to the Ramsar Secretariat. Action 5.2: Create PAs (legal entities) for the Ramsar sites: Lake Julturbas, Lake Dengizkul, Tudakul and Kuymazar Water Reservoirs and Aydar-Arnasay Lakes system. Action 5.3: Enhance existing state ecological monitoring system: • Collect and analyze monitoring data from the past five years to identify gaps, inconsistencies, and potential issues related to sampling methods and reporting accuracy.	AA—MoEEPCC, MoEEPCC of the Republic of Karakalpakstan, Ramsar Focal points, Ministry of Water Resources, Ministry of Water Resources of the Republic of Karakalpakstan, IOPs, development assistance agencies	Baseline 2025: Only Ramsar site Sudochye Lake System (SLS) is a part of the legal entity and respectively management body. Management Plan for SLS is under development. Ramsar Information sheets for 3 Ramsar sites in Uzbekistan is up to date. There are no descriptions of the ecological characters for any of the Ramsar sites in Uzbekistan. State monitoring system in place (chemical parameters of the water quality, biological biodiversity of three Ramsar sites) however collected data is often fragmented and not reliable.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
5 ↑	The ecological character of Ramsar Sites is maintained or restored, through effective planning and integrated management	Improved management of Ramsar sites and wetlands through managements plans and enhanced resources.	• Revise the existing monitoring programme as needed, with particular attention to hydrological parameters and biodiversity indicators. For each Ramsar Site, ensure that monitoring parameters include the specific Ramsar designation criteria relevant to that site. • Organize and implement targeted training for the responsible personnel to strengthen capacity in monitoring, data collection, and reporting.		
			Action 5.4: Prepare management plans for the Ramsar sites: Lake Julturbas, Lake Dengizkul, Tudakul and Kuymazar Water Reservoirs and Aydar-Arnasay Lakes system. Integrate climate risk assessment into the planning.	AA—MoEEPCC, MoEEPCC of the Republic of Karakalpakstan, Ramsar Focal points, Ministry of Water Resources, Ministry of Water Resources of the Republic of Karakalpakstan, IOPs, development assistance agencies	Indicators: # of Ramsar Sites that have legal entities and management bodies. Number of Ramsar Sites that have management plans. # of Ramsar Sites that have updated Ramsar Information Sheets. # of Ramsar Sites have a description of the ecological characters. State monitoring system of the Ramsar sites is updated and in place.
			Action 5.5: Update Ramsar Information Sheets for the Ramsar sites.		
			Action 5.6: Prepare descriptions of the ecological character for the Ramsar sites.		

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
5 ↑	The ecological character of Ramsar Sites is maintained or restored, through effective planning and integrated management	Improved management of Ramsar sites and wetlands through managements plans and enhanced resources.	Action 5.7: Prepare inventories for the Ramsar sites. Action 5.8: Provide updated Ramsar information sheets, description of the ecological characters and inventories to the Ramsar secretariat.		
6	There is a significant increase in area, numbers and ecological connectivity in the Ramsar Site network in particular under-represented types of wetlands including in under-represented ecoregions and transboundary sites.	Update the list of Ramsar Sites with under-represented wetland types or transboundary sites. Wetlands inventories and other relevant national and international data sources for example the International Waterbirds Census.	Action 6.1: Consider designating 1 or 2 new Ramsar sites in line with National Biodiversity Conservation Target 3).	National Ramsar Committee, AA—MoEEPCC, Ramsar Focal points, IOPs, development assistance agencies	Baseline 2025: 5 Ramsar Sites have been designated. Indicators # of Ramsar sites that have been designated.
7	Sites that are at risk of change of ecological character have threats addressed.	Identification and implementation of measures to remove sites from Article 3.2 or Montreux Record. Ramsar Advisory missions.	Action 7.1: Identify sites that are at risk of change of ecological character. Action 7.2: Address sites that are at risk of change of ecological character (in line with National Biodiversity Conservation Target 2).	AA—MoEEPCC, MoEEPCC of the Republic of Karakalpakstan, Ramsar Focal points	Baseline 2025: None of the designated Ramsar Sites have been identified as at risk. Indicators: # of Ramsar sites that identified as those at risk. Are the sites addressed to improve the ecological character.

Goal 3: Wisely using all wetlands

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
8	National wetland inventories have been either initiated, completed or updated and disseminated and used for promoting the conservation and effective management of all wetlands.	Remote sensing data on wetlands.	Action 8.1: Identify organization(s) responsible for development and maintaining inventories for the Ramsar sites including using GIS and remote sensing.	AA—MoEEPCC, MoEEPCC of the Republic of Karakalpakstan, Ramsar Focal points, IOPs, development assistance agencies	Baseline 2025: There is no inventory for any of the Ramsar sites. There is track of mineralisation in the Ramsar sites, however data is collected with the errors. At least for one site there is an automatic measurement of the water level. Baseline 2025: There is no inventory for any of the Ramsar sites. There is track of mineralisation in the Ramsar sites, however data is collected with the errors. At least for one site there is an automatic measurement of the water level.
			Action 8.2: Identify indicators to track the ecological character each of the Ramsar sites.		
			Action 8.3: Conduct a training for people who gather data on identified indicators of the wetlands, including training on how to collect water samples for different studies.		
			Action 8.4: Prepare inventories for the Ramsar site using GIS and remote sensing where possible.		
			Action 8.5: Submit inventories to the Ramsar Secretariat.		

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
9	The wise use of wetlands is strengthened through integrated resource management at the appropriate scale, inter alia, within a river basin or along a coastal zone.	Promoting wise use, integrated water resources management, and integration of wetlands in other sectoral policies, plans or strategies. Participatory platforms at wetland, river, lake, groundwater basin, national and other appropriate levels are joined or created to engage with concerned stakeholders. Wetland/ wetland related governance platforms at basin level are in place.	Action 9.1: Inclusion of Ramsar sites in integrated water resources management at all levels, including through transboundary cooperation where necessary (in line with indicator 6.5.1. of SDG approved by Uzbekistan and with National Biodiversity Conservation Target 1a).	AA—MoEEPCC, Coordinating Council for the Implementation of National Goals and Objectives in the Field of Sustainable Development for the Period up to 2030	Baseline 2025: Ramsar sites are not part of the integrated water resources management. Indicators: # of Ramsar sites that are part of the integrated water resources management.
10	The traditional knowledge, innovations and practices of indigenous peoples and local communities relevant for the wise use of wetlands and their customary use of wetland resources, are documented, respected, subject to national legislation and relevant international obligations and fully integrated and reflected in the implementation of the Convention with a full and effective participation of indigenous and local communities at all relevant levels.		Action 10.1: Information on usage of reed by the local communities is collected, analysed, info on best practices prepared. Action 10.2: Disseminated a document of best practices, conducted trainings if needed.	AA—MoEEPCC, MoEEPCC of the Republic of Karakalpakstan, Ramsar Focal points, IOPs, development assistance agencies	Baseline 2025: Reed is one of the mostly wetlands resources used by the local communities. However, this practice is not studies. Indicators: Conducted a study to understand the usage of the reed by local communities, identifies and disseminated the best practices.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
11	Wetland functions, services and benefits are widely demonstrated, documented and disseminated.	Promoting wise use, integrated water resources management, and integration of wetlands in other sectoral policies, plans or strategies. TEEB report, assessment of ecosystems services. Implementation of programmes or projects that contribute to poverty alleviation.	Action 11.1: Conduct assessment of ecosystem services of the Ramsar sites and communicate the results. Action 11.2: Include wetlands issues into the Poverty Reduction Strategy of Uzbekistan. Action 11.3: Provide information to the visitors/ecotourists to the Ramsar site regarding Ramsar Convention, Ramsar mission. Install Informational boards with Ramsar logo, Ramsar mission and information about the Ramsar site in every site (in every recreation zone).	AA—MoEEPCC, Ramsar Focal points, Centre for Economic Research and Reforms under the Administration of the President of the Republic of Uzbekistan, IOPs, development assistance agencies	Baseline 2025: Rapid assessment of wetland ecosystem services was conducted for 5 Ramsar Sites. Wetlands issues are not incorporated into Poverty Reduction Strategy of Uzbekistan. There is no programmes or projects that contribute to poverty alleviation objectives or food and water security plans. There is information on Ramsar and its mission available in the Ramsar sites. Indicators: # of assessments of ecosystem services for the Ramsar sites. Incorporation of the wetland's issues into Poverty Reduction Strategy of Uzbekistan. # of programmes or projects that contribute to poverty alleviation objectives or food and water security plans. # of the Ramsar site where Ramsar logo, Ramsar mission is visible to the visitors.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
12	Restoration is in progress in degraded wetlands, with priority to wetlands that are relevant for biodiversity conservation, disaster risk reduction, livelihoods and/or climate change.	Restoration initiatives taken, projects, programmes implemented.	Action 12.1: Identify and prioritise the Ramsar sites for restoration based on ecological and hydrological criteria (in line with National Biodiversity Conservation Target 2) Action 12.2: Conduct rehabilitation and restoration programmes/projects/initiatives for the Ramsar sites. Action 12.3: Monitor recovery and adapt management approaches based on outcomes.	AA—MoEEPCC, MoEEPCC of the Republic of Karakalpakstan, Ramsar Focal points, IOPs, development assistance agencies	Baseline 2025: There are no sites prioritised for restoration. There are no sites for which the restoration or rehabilitation programmes have been implemented. Indicators: # of sites prioritised for restoration. # of sites for which the restoration or rehabilitation programmes have been implemented. # of the hectares restored.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
13	Enhanced sustainability of key sectors such as water, energy, mining, agriculture, tourism, urban development, infrastructure, industry, forestry, aquaculture and fisheries when they affect wetlands, contributing to biodiversity conservation and human livelihoods.		Action 13.1: Scale up conservation agriculture (CA) practices. Promote minimum tillage, crop rotation, and cover cropping in irrigated zones (in line with National Biodiversity Conservation Target 10). Action 13.2: Support farmer training to teach climate-resilient farming practices to decrease water use. Action 13.3: Promote Low-Impact Aquaculture Systems. Encourage Integrated multitrophic aquaculture (IMTA). Conduct training on best management practices, record-keeping, and risk management (in line with National Biodiversity Conservation Target 10). Action 13.4: Consider prohibiting extension of the agricultural lands next to the Ramsar Wetlands (in line with National Biodiversity Conservation Target 10).	AA—MoEEPCC, Ramsar Focal points, Ministry of Agriculture, IOPs, development assistance agencies	Baseline 2025: X ha covered with conservation agriculture. There is no examples of integrated multitrophic aquaculture. There is no ban on increasing agricultural areas in a close proximity to Ramsar wetlands. Indicators: Increase in the areas covered with conservation agriculture (ha). # of participants and number of trainings on climate-resilient farming practices. # of farmers who are implementing integrated multitrophic aquaculture. # of participants and number of trainings on multitrophic aquaculture (IMTA) and best practices of aquaculture. Ban on increasing agricultural areas in a close proximity to Ramsar wetlands.

Goal 4: Enhancing implementation

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
14	Scientific guidance and technical methodologies at global and regional levels is developed on relevant topics and is available to policy makers and practitioners in an appropriate format and language.	The Scientific and Technical Review Panel (STRP) leads with support from Secretariat in producing guidance.	Action 14.1: Regularly review the scientific guidelines and technical methodologies from the Ramsar Secretariat to identify those relevant for Uzbekistan. Action 14.2: Translate all the relevant scientific guidelines and technical methodologies to the National Language. Action 14.3: Provide Ramsar Secretariat with the translated guidelines and technical methodologies for uploading to the Ramsar secretariat web-site Action 14.4: Create a page on existing relevant web-site on Ramsar Convention and wetlands and upload the translated guidelines and technical methodologies.	AA—MoEEPCC, Ramsar Focal points (particularly Scientific and Technical Review Panel (STRP) National Ramsar Focal Point), IOPs (particularly IUCN Central Asia)	Baseline: There is no practical tools and guidance documents for wetland conservation and wise use, and other key scientific documentation, which has been developed by either STRP, Parties and others, and is available in Uzbek language. Indicator: # of practical tools and guidance documents for wetland conservation and wise use, and other key scientific documentation, which has been developed by STRP, Parties and others, and is available in Uzbek language.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
15	Ramsar Regional Initiatives with the active involvement and support of the Parties in each region are reinforced and developed into effective tools to assist in the full implementation of the Convention.		Action 15.1: Prepare a 5-year working plan for the Central Asia Ramsar Initiative and operational procedures. Action 15.2: Ensure regular coordination meetings with minutes and action follow-up.	Head of Central Asia Ramsar Initiative, Ramsar Focal points	Baseline: No data. Indicator: # of implemented joint initiatives.
16	Wetlands conservation and wise use are mainstreamed through communication, capacity development, education, participation and awareness.	The Secretariat's Communication, Capacity Building, Education, Participation, Awareness (CEPA) programme will deliver high profile media and public awareness placements and programs to raise the convention's image.	Action 16.1: Develop national CEPA strategy for wetlands. Action 16.2: Prepare and run educational campaigns on wetland for schools. Action 16.3: Host annual Wetlands Day events across country using the guidelines from Ramsar convention on https://www.worldwetlandsday.org Action 16.4: Establish a visitor or wetlands centre. Action 16.5: Include wetlands conservation and wise use into the formal educational programmes.	AA—MoEEPCC, Ramsar Focal Points (particularly Communication, Capacity Building, Education, Participation, Awareness (CEPA) Government Ramsar Focal Point and CEPA NGO Ramsar Focal Point), IOPs	Baseline in 2025: There were at least 5 activities for World Wetlands Day conducted in 2025 by Uzbekistan Society for the protection of birds (http://uzspb.uz/event477.html). There is no national CEPA strategy for wetlands. There is no Visitor or wetlands centre in Ramsar sites. Wetlands conservation and wise use is not included into the formal educational programmes. Indicators: # of World Wetland Day activities or events in Uzbekistan reported to the Secretariat (Data source: https://www.worldwetlandsday.org/events). Adoption of the national CEPA strategy for wetlands. # of Visitor or wetlands centre. Number of formal educational programmes in which wetlands conservation and wise use is included.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
17	Financial and other resources for effectively implementing the 5th Ramsar Strategic Plan from all sources are made available.	The Secretariat's Partnership team will raise non-core funds to fund priority convention activities.	Action 17.1: Revision of the Ramsar Strategy according to the Fifth Ramsar Strategic Plan to be approved in 2025. Action 17.2: Providing the updated Strategy for review and possible synergy to IOPs, development agencies. Action 17.3: Preparing and adopt budget for 2026-2030 from governmental sources. Action 17.4: Providing the updated Strategy for funding to the Administrative Authority, IOPs, development agencies. Action 17.5: Explore wetlands financing schemes where part of the payments of wetlands resources users (water users and those who lease a water body for aquaculture etc) directed for wetlands conservation.	AA—MoEEPCC, Ramsar Focal Points	Baseline 2025: Currently there is no financial support from Administrative Authority for the Convention activities in Uzbekistan. Currently no part of the payment for using the wetlands resources is directed towards the wetlands conservation. Indicators: Amount of financial support from MoEEPCC for the Convention activities in Uzbekistan. Amount of funding support from development assistance agencies for national wetlands conservation and management and other donors. % of the payment for using the wetlands resources that directed towards the wetland conservation.

No	Targets	Tools, actions and resources	Actions in Uzbekistan	Key Actors	Indicators and Baselines
18	International cooperation is strengthened at all levels	Regional Initiatives, multilateral and bilateral agreements, Memorandums of Understanding.	Action 18.1: Participate in the meeting of the Conference of the Contracting Parties (Ramsar COP)..	AA—MoEEPCC, Ramsar Focal Points	Baseline 2025: Uzbekistan is part of Central Asia Regional Initiative. Indicators: Uzbekistan is part of Central Asia Regional Initiative. Uzbekistan have established or included into the networks including twinning arrangements nationally or internationally for knowledge sharing and training for wetlands that share common features.
			Action 18.2: Become part of the networks including twinning arrangements nationally or internationally for knowledge sharing and training for wetlands that share common features.		
19	Capacity building for implementation of the Convention and the 5th Ramsar Strategic Plan is enhanced.	Projects, programmes and events that promote wise use of wetlands with the active involvement of wetland managers and users. CEPA plans, World Wetlands Day, training courses.	Action 19.1: Conduct assessment of national and local training needs for the implementation of the Convention.	AA—MoEEPCC, Ramsar Focal Points	Baseline 2025: There was no assessment of national and local training needs for the implementation of the Convention. Indicators: Assessment of national and local training needs for the implementation of the Convention is conducted. Respective activities are included into the national action plans for wetland CEPA.
			Action 19.2: Develop list of the respective activities and include into the national action plans for wetland CEPA.		
			Action 19.3: Implement the activities included in the national action plans for wetland CEPA.		

During our missions to Uzbekistan, we have organized two stakeholders meeting to discuss the Ramsar Strategy. We are grateful to the representatives of the following organizations who participated in discussions between February and July 2025, namely:

1. Department of International Cooperation, Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan,
2. Department for the Development of Forests and Protected Natural Areas and Combating Desertification, Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan,
3. Department for Development of Ecotourism and Hunting, Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan,
4. Department of Maintaining the State Cadaster and Implementing Geoinformation Systems, Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan,
5. Tourism Committee, Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan,
6. Agency of the International Fund for saving the Aral Sea for implementation of the Aral Sea Basin and GEF Projects,
7. Basin Water Organisation "Amudarya",
8. Basin Water Organization "Syrdarya",
9. Institute of Zoology Academy of Sciences of the Republic of Uzbekistan
10. IUCN Central Asia
11. Joint Project MoEEPCC, UNDP/GEF «Conservation and sustainable management of lakes, wetlands, and riparian corridors as pillars of a resilient and land degradation neutral Aral basin landscape supporting sustainable livelihoods»
12. Lukoil Uzbekistan Operating Company,
13. Ministry of the Water Resources of the Republic of Uzbekistan,
14. National holding company Uzbekneftegaz,
15. Regional centre of the Research Institute of Irrigation and Water Problems, Karakalpakstan,
16. Research Institute of Environment and Nature Conservation Technologies (Green University), Department of Ecosystem Services,
17. Research Institute of Environment and Nature Conservation Technologies (Green University), Laboratory for biodiversity,
18. Scientific Information Centre Interstate Commission for Water Coordination,
19. Scientific Institute of Irrigation and Water Problems of the Republic of Uzbekistan
20. UNDP/GEF project "GEF-8 Program in Uzbekistan to support the updating of National Biodiversity Strategies and Action Plans (NBSAPs) and the 7th National Report".
21. Uzbekistan Society for the Protection of Birds.

General recommendations

1. Over recent years, the Republic of Uzbekistan has made significant progress in implementing the Ramsar Convention. However, further advancement will require additional resources, enhanced communication, data exchange and cooperation between the Ministries and Basin Water Organizations. Therefore, we are suggesting preparing a legal document based on the prepared Ramsar Strategy of Uzbekistan 2026-2030 and develop a funding mechanism.

2. Water management of UZBs five Ramsar sites requires also a stronger collaboration between the upper and lower River Basins, their Organizations and a superior management body.

3. The Ramsar Convention's definition of wetlands differs from that used in national and public documents. These definitions should be aligned for consistency and effective implementation. There is also some confusion regarding the classification of water bodies in the country. For example, in some cases, human-made and human-controlled reservoirs are referred to as "lakes," although they function as drainage water retention bodies. Therefore, it is necessary to adopt clear and standardized definitions distinguishing different types of natural and artificial water bodies.

4. The State Environmental Monitoring Programme plays a vital role in the management of wetlands; however, it faces challenges such as limited data accessibility, inconsistent data quality, and occasional non-compliance with established sampling protocols, leading to potential inaccuracies. It is recommended to collect and assess monitoring data from the past five years to identify gaps and methodological issues, and to revise the monitoring framework accordingly, with a particular focus on enhancing hydrological monitoring and biodiversity assessments. For each Ramsar Site, biodiversity monitoring should explicitly incorporate the site's designation criteria to ensure effective evaluation of its ecological character. Additionally, targeted training should be provided to personnel responsible for data collection and analysis to ensure adherence to standardized procedures.

5. Maintaining water levels and salinity within ranges that support viable habitats for flora and fauna is both essential and challenging. This can only be achieved through a stable inflow of freshwater from rivers into the wetlands. This responsibility lies beyond the scope of the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan and will require further coordination and negotiation with the Ministry of Water Resources.

6. Water levels in most Ramsar sites are also sustained by inflows of drainage water from irrigated fields. However, this contributes to the degradation of the ecological character of the wetlands. For example, in the Sudochye Lake System, salt concentrations have increased to such an extent that fishing has ceased, and the site has lost its importance as a nesting area for fish-eating birds such as pelicans. The inflow of drainage water into wetlands should be carefully assessed on a site-by-site basis.

7. We also recommend involving international expert(s) to prepare an inventory and description of the ecological character for one Ramsar site, to serve as a model for future work at other sites.

8. At present, not all water reservoirs within the Amudarya Delta are capable of being replenished by inflows from the river. It is therefore recommended to conduct a comprehensive Climate Risk Assessment for each reservoir, following the methodology developed by GIZ (GIZ, 2023a). Such assessments would provide a sound basis for informed decision-making regarding the effectiveness and viability of the continued use of these water bodies.

9. Reports submitted to the Ramsar Secretariat contain valuable insights into progress on strategic planning and implementation of activities. While it is evident that Ramsar focal points devote considerable effort to the preparation of these reports, it is recommended that supplementary specific explanations be provided for sections that request brief or single-word responses. This would enhance the clarity, depth, and analytical value of the reporting process.

5. References and further sources of information

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