



Ecosystem Profile

Mountains of Central Asia Biodiversity Hotspot

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EXECUTIVE SUMMARY

Biodiversity and the threats to it are not distributed evenly over the face of the globe. Conservation organizations can maximize the effectiveness of their limited funds by focusing on the places that are most important and where action is most urgent. Thirty-six biodiversity hotspots, defined as regions that have at least 1,500 endemic plants species and have lost more than 70 percent of their natural habitat, have been identified globally. They cover only 2.3 percent of the Earth's surface but contain a disproportionately high number of species, many of which are threatened with extinction. Hotspots, therefore, are global priorities for conservation.

The Mountains of Central Asia Biodiversity Hotspot consists of two of Asia's major mountain ranges, the Pamir and the Tien Shan. The hotspot's 860,000 square kilometers include parts of seven countries: southeastern Kazakhstan, most of Kyrgyzstan and Tajikistan, eastern Uzbekistan, western China, northeastern Afghanistan, and a small mountainous part of southeastern Turkmenistan. In addition to 1,500 endemic plant species, the region is home to about 50 endemic species of mammal, reptile, amphibian, and freshwater fish. Further, of the approximately 6,700 species occurring in the hotspot, 126 are classified by the International Union for Conservation of Nature (IUCN) as threatened.

The region is home to about 77 million people and is undergoing dramatic change that places increased stress on the scarce habitat that protects threatened species. Economic growth and increased connections in trade and transport, on the one hand, and economic downturns and local instability, on the other, force people and their representatives into making short-term decisions on the use of land and water, or into allocating limited financial resources for their protection. That being said, the region has a large and historical estate of formally protected areas and a tradition of conservation built around respect for natural resources and cultural identification with iconic species.

To increase the chance of success, it is important that actions supported by CEPF complement existing strategies and programs of national governments, donors and other stakeholders. To this end, before starting a grant-making program, CEPF works with local stakeholders to develop an ecosystem profile for the hotspot. The profile describes the important species and sites, as well as the threats, opportunities and actions that are already being taken for conservation in the region, enabling CEPF to identify priority sites, species, and themes to support.

The ecosystem profile for the Mountains of Central Asia was updated in May-October 2025, through a process that involved the participation of more than 200 people representing government and non-government organizations. The profile lists the 126 species in the Mountains of Central Asia that are classified by IUCN as threatened. For most species, the key to conservation is protection of appropriate habitat. The profile, therefore, identifies 170 sites, known as Key Biodiversity Areas (KBAs), where groups of species and parts of ecosystems of conservation concern are known to occur.

In some cases, the protection of discrete areas of habitat in a KBA may not ensure the survival of a species, especially where the species ranges widely over the landscape or occurs at a very low density. This is especially important for species that may move over large areas during their life cycles. To accommodate this, 27 corridors are also identified. These large areas play a vital role in ensuring connectivity between KBAs. In doing so, they also play an important role in ecosystem functions important for human livelihoods, such as by protecting water supplies.

The scope for engagement of CSOs with CEPF and conservation across the hotspot varies. Kyrgyzstan has a diverse group of CSOs that operate independently. In Afghanistan, before the Taliban, capacity of local groups was low, but they faced few legal limits how they can be involved. Now women participation in Afghanistan is banned, and the work of environment-focused CSOs must be aligned with the authorities. In Kazakhstan biodiversity-focused CSOs are well positioned to participate in formulation and implementation of the national biodiversity strategy, goals and programs and can collaborate with public authorities on areas of mutual interest (e.g., protected areas, species) provided they act appropriately with government mores. Uzbekistan has a strong, though limited in size and number, cadre of CSOs that promote conservation: these organizations either support government initiatives officially, or act as an unofficial arm (GO-NGOs) of the government to build support for national goals. Access to international funding and projects for independent CSOs and reporting requirements in Uzbekistan remain complicated. In Tajikistan, CSOs are diverse and active in local social development, crafts, climate and disaster risk reduction. However, biodiversity-focused CSOs are few and many CSOs require capacity building on organizational and conservation skills. In China and Turkmenistan, the strongest CSOs are related to academia, geographic and nature protection societies or associations of forest users, most of them are GO-NGOs.

CEPF Niche and Investment Priorities

The identification of conservation outcomes in Chapter 5 of the Ecosystem Profile – species, KBAs and corridors – constitutes an overarching framework for conservation of the region’s unique and valuable biodiversity. Only a part of these priorities can be tackled by civil society organizations over the five year programme of CEPF. As can be seen from the conservation investments overview, other donors and governments work on biodiversity in the hotspot. The Ecosystem Profile therefore identifies CEPF’s niche (Chapter 12) to support a diversity of civil society organizations with varying levels of capacity to achieve conservation outcomes and environmental sustainability aligned with national biodiversity goals and socio-economic development. Building from the niche, the profile identifies bio-geographic and thematic priorities for support, summarized here and described in detail in Chapter 13.

The Profile identifies 22 priority species, 42 priority sites, and 10 priority corridors around which CEPF will apply six Strategic Directions, each broken down into Investment Priorities. These Strategic Directions, summarized in the table below and described in detail in Chapter 13, form the heart of CEPF’s plans for grant-making in the Mountains of Central Asia Biodiversity Hotspot.

CEPF Strategic Directions	CEPF Investment Priorities
1. Address threats to priority species	1.1. Improve enforcement and develop incentives and alternatives for nature users 1.2. Promote improved regulations for collecting, grazing, hunting, fishing and local-level conservation 1.3. Support the development and implementation of species-focused micro reserves and species conservation plans 1.4. Prevent and reduce human-wildlife conflict by addressing killing and trapping 1.5. Maintain populations of priority species by improving and applying science and monitoring data to local conservation actions and to national and international biodiversity goals
2. Improve management of priority sites with and without official protection status	2.1. Facilitate effective collaboration among CSOs, local communities, and park management units to enhance KBAs with protected area status 2.2. Develop and implement management approaches to sustainable use in KBAs outside protected areas 2.3. Build support and develop capacity for identification, recognition and application of KBAs
3. Support sustainable management and biodiversity conservation within priority corridors	3.1. Support ecological restoration and efforts to promote connectivity of KBAs at the landscape scale 3.2. Evaluate and integrate threats to and values of biodiversity into land use and development planning at the corridor level 3.3. Support civil society efforts to analyze development plans and programs, evaluate their impact on biodiversity, and propose alternative scenarios and appropriate measures

CEPF Strategic Directions	CEPF Investment Priorities
4. Engage communities of interest and economic actors in the improved management of production landscapes and conservation	4.1. Engage hunting associations, tourism operators, mining companies, and the IT sector in conservation management and in improving accessibility of biodiversity information 4.2. Promote mainstreaming of conservation into livestock and farm management practices 4.3. Engage with the government and private sector to integrate biodiversity safeguards into infrastructure development 4.4. Popularize biodiversity science and use the media to raise awareness of threatened species and KBAs, and to inform public debate on conservation issues
5. Facilitate the development of a robust and resilient community of conservation civil society organizations	5.1 Ensure that CEPF grantees have the technical capacity to plan, implement and sustain effective conservation projects 5.2 Provide support to targeted conservation CSOs engaged in a process of organizational development 5.3 Enhance the collective strength and ability of conservation CSOs
6. Provide strategic leadership and effective coordination of conservation investment through a Regional Implementation Team	6.1. Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile

1. INTRODUCTION

About the Critical Ecosystem Partnership Fund

The Critical Ecosystem Partnership Fund (CEPF) is designed to safeguard the world's biologically richest and most threatened regions, known as biodiversity hotspots. Thirty-six biodiversity hotspots have been identified globally, defined as regions that have at least 1,500 endemic plant species and have lost more than 70% of their original natural vegetation. Remaining natural ecosystems within these hotspots cover only 2.3% of the Earth's surface but contain a disproportionately high number of endemic species, many of which are threatened with extinction. Hotspots, therefore, are global priorities for conservation.

CEPF is a joint initiative of l'Agence Française de Développement (AFD), Conservation International (CI), the European Union (EU), Fondation Hans Wilsdorf, the Global Environment Facility (GEF), the Government of Canada, the Government of Japan and the World Bank (WB). A fundamental purpose of CEPF is to engage civil society, such as community groups, non-governmental organizations (NGOs), academic institutions and private enterprises, in biodiversity conservation in the hotspots. To guarantee their success, these efforts must complement existing strategies and programs of national governments and other conservation funders. To this end, CEPF promotes working alliances among diverse groups, combining unique capacities and reducing duplication of effort for a comprehensive, coordinated approach to conservation. One way in which CEPF does this is through preparation of ecosystem profiles: shared strategies, developed in consultation with local stakeholders, that articulate a multi-year investment strategy for CEPF, informed by a detailed situational analysis.

CEPF plays a unique role in wildlife conservation by supporting the efforts of local and international partners from non-governmental, community and scientific and educational organizations working in places with unique biodiversity at risk of extinction. CEPF started its work in the Mountains of Central Asia in 2016-2017 with the preparation of an ecosystem profile led by Zoï Environment Network and launched its grants program for civil society organizations (CSOs) in 2019 with WWF Russia acting as the Regional Implementation Team (RIT). The ecosystem profile update consultations and writing took place from April to October 2025. In addition to online survey, in-person stakeholder consultations linked with international biodiversity and environmental days took place in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Participants discussed updates for species, Key Biodiversity Areas (KBAs), threats, conservation efforts, lessons learnt and recommendations for the next phase of CEPF grants.

CEPF provides grants to nongovernmental and private sector organizations, communities and individuals so they can conserve these critical ecosystems, located in biodiversity hotspots. The investments are even more meaningful because these regions are home to millions of people who are impoverished and highly dependent on natural resources.

Enabling civil society groups to have stronger voices and exert greater influence in the world around them is the hallmark of CEPF's approach. CEPF's grantee partners range from small farming cooperatives and community associations to private sector partners, and national and international nongovernmental organizations.

CEPF grants:

- Address the Global Biodiversity Framework (GBF) goals and targets set by the countries that are parties to the Convention on Biological Diversity through 2030-2050.
- Are guided by regional investment strategies — ecosystem profiles — developed with local stakeholders.
- Go directly to civil society groups to build this vital constituency for conservation alongside governmental partners. Grants are awarded on a competitive basis to implement the conservation strategy developed in each ecosystem profile.
- Create working alliances among diverse groups, combining unique capacities and eliminating duplication of efforts.
- Achieve results through an ever-expanding network of partners working together toward shared goals.
- Contribute to the United Nations Sustainable Development Goals.

To date, CEPF has supported more than 2,800 civil society partners and individuals in 112 countries and territories.

Mountains of Central Asia

The Mountains of Central Asia is one of 36 global biodiversity hotspots. Within this region, “Central Asia” typically covers Kazakhstan, the Kyrgyz Republic (Kyrgyzstan), Tajikistan, Turkmenistan, and Uzbekistan. In the past, from the perspective of Central Asia, China’s Xinjiang Uyghur Autonomous Region – which borders three of the five Central Asia states and Afghanistan were “hinterland,” far from the main economic centers and transport hubs. Today, however, with investments in trade and infrastructure, and with greater movement of people and goods, the five Central Asia states are part of the new Silk Road of modern trade, transport corridors and multi-vector politics.

Central Asia has a long history as a crossroads between East and West. In the past, it was home to the great commercial and cultural centers of the ancient Silk Road. Today, the modern equivalents include China’s Belt and Road Initiative (BRI), the Economic Cooperation Organization (ECO) and the ADB-led Central Asia Regional Economic Cooperation (CAREC) stretching from China to the Indian Ocean, Caspian Sea and beyond.

For centuries, the region was a major contributor to the arts, sciences, medicine, and trade. With the mixing of agrarian, nomadic, and industrial societies, it is a mosaic of cultures, languages, and political systems. Moreover, three decades ago Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan were part of the Soviet Union, which has added a further layer of complexity and interest to the region.

After the break-up of the Soviet Union in 1991-1992, these five countries continued cooperation on environmental and hydrometeorological matters. New cooperation forums in the region – including the Shanghai Cooperation Organization (SCO), the Eurasian Economic Union (EEU), the Custom Union (CU), and the afore-mentioned ECO and Belt and Road – further integrate these countries. The European Union has shown strong interest in Central Asia as demonstrated by the EU-Central Asia high level summit in Samarkand in April 2025,

which launched a multi-billion package for Central Asia under the EU Global Gateway program. It primarily includes the Trans-Caspian International Transport Route (10 billion Euros) and investments to climate, energy, and water (6.5 billion Euros). Other priorities are connectivity (3 billion Euros) and critical raw materials (2.5 billion Euros).

Of the seven countries in the hotspot, Afghanistan has suffered most from decades of conflict and insecurity. Since the Taliban took power in August 2021, many internationally supported projects were suspended or cancelled, including those related to the environment and biodiversity. Similarly, the political situation in China's Xinjiang Uygur Autonomous Region makes it difficult to implement international projects. On the other hand, the rapid growth of trade and transport connections between China and Central Asia has had huge effects on the orientations of the countries, with expected impacts on biodiversity. After two decades of negotiations and planning, Kyrgyzstan, Uzbekistan, and China agreed on a new railway that will connect the three countries through the mountains of Central Asia.

Many protected areas and key biodiversity areas sit near and across borders from one another, raising a prospect in bilateral and regional cooperation. Such cooperation exists in the Western Tien Shan UNESCO World Heritage Site (supported by CEPF), snow leopard landscapes and other initiatives.

Several initiatives are taking even a wider global approach to address mountain conservation issues. A Global Mountain Summit is planned in Kyrgyzstan in 2027 as part of the Five Years of Action on Mountain Development. A Global Snow Leopard Summit in 2013 resulted in the establishment of the Global Snow Leopard and Ecosystem Protection Program (GSLEP). GSLEP is active in 12 countries, including all of the hotspot countries other than Turkmenistan.

Several international donors and partners are actively involved in conservation in the region. The Global Environment Facility (GEF), the European Union, and the governments of China, Japan, Germany, Switzerland, Russia, China and South Korea support programs on sustainable natural resource use and environmental projects. Private funds and charities are supporting conservation initiatives as well.

Civil society organizations (CSOs) are in a unique position to influence people's choices, habits and behavior because they are based in or work with communities. They can influence behavior of stakeholders through education, incentives, demonstration of good practice, and direct support. Several international environmental CSO are active in the region, including WCS, Fauna & Flora, BirdLife International and their partners.

Biodiversity and the threats to it are not distributed evenly over the planet, biodiversity hotspot or a country. Conservation organizations can maximize the effectiveness of their limited funds by focusing on the places that are the most important and where action is most urgent.

The Critical Ecosystem Partnership Fund (CEPF) is designed to safeguard the world's biologically richest and most threatened regions, known as biodiversity hotspots. One of the most influential priority setting analyses was the identification of biodiversity hotspots (Myers *et al.* 2000; Mittermeier *et al.* 2004), defined as regions that have at least 1,500 endemic plants species and have lost at least 70 percent of their natural habitat. There are 36 hotspots globally, covering 15.7 percent of the earth's surface. The intact natural habitats within these hotspots cover only 2.3 percent of the world's surface, but contain a disproportionately high number of species, many of which are threatened with extinction. Hotspots, therefore, are global priorities for conservation.

The Mountains of Central Asia hotspot consists of two of Asia's major mountain ranges, the Pamir and the Tien Shan. The hotspot's 860,000 square kilometers include parts of seven countries: southeastern Kazakhstan, most of Kyrgyzstan and Tajikistan, eastern Uzbekistan, western China (Tien Shan), northeast Afghanistan (Wakhan), and a small mountainous part of southeastern Turkmenistan (Koytentag and Talimerjen). Hotspot delineation is based on the Global 200 eco-regions (*Olson, D. M. and Dinerstein, E., 2002*¹), with some adjustments that reflect the administrative and geographic features of the region and recommendations from stakeholder consultations in 2025. With a relatively large amount of natural habitat, high endemism, and increasing threats, the region remains important for investments by CEPF.

Figure 1.1. Global Biodiversity Hotspots and CEPF Investments

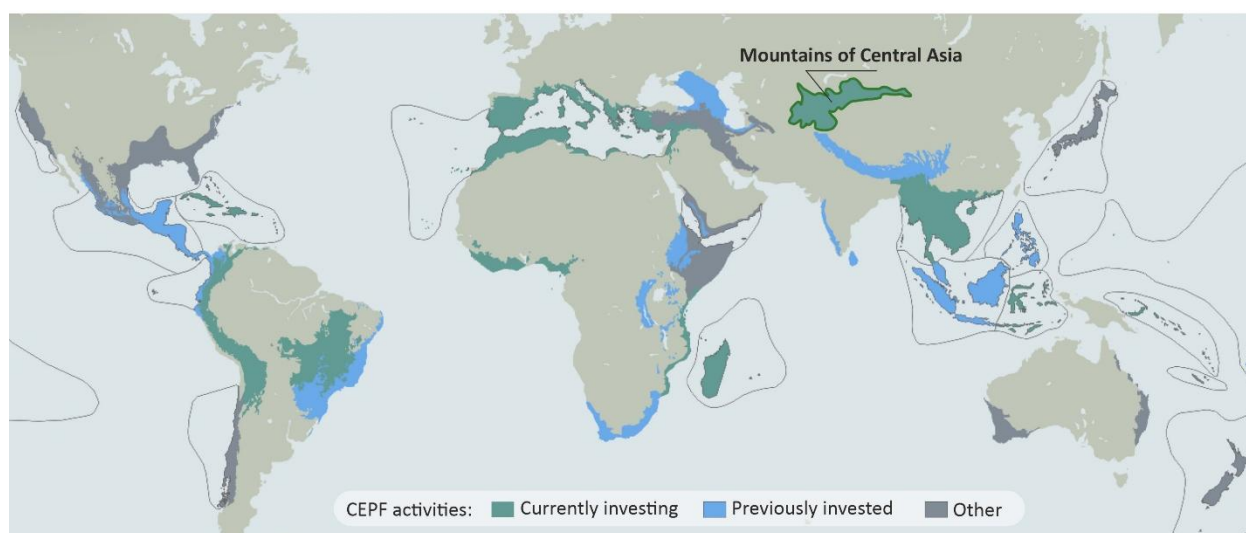


Figure 1.2. Map of Mountains of Central Asia Hotspot



¹ <https://globil.panda.org/maps/wwf-global-200-ecoregions/about>

2. BACKGROUND

CEPF develops Ecosystem Profiles to identify an investment strategy for each hotspot. Ecosystem Profiles are prepared by regional experts in consultation with multiple national stakeholders to ensure that the final product is locally “owned” and then used as a guide for action not just by CEPF and its grantees, but by the larger communities of civil society, government, and donors. Ecosystem Profiles reflect a rapid assessment of the biodiversity situation (including globally threatened species and key biodiversity areas, KBAs) and priorities and the underlying causes of biodiversity loss. The profile couples these elements with an analysis of conservation investments within the hotspot and other key information to identify CEPF’s “niche for investment;” that is a statement of how CEPF funding can provide the greatest value.

The Ecosystem Profile recommends strategic directions for investment to civil society-led projects that contribute to conservation. The Ecosystem Profile is designed to ensure that those investments complement other work, particularly that of national governments. CEPF promotes working alliances among community groups, nongovernmental organizations, academic institutions, the private sector, and the public sector to facilitate a comprehensive approach to conservation.

CEPF makes grants to civil society organizations, which CEPF defines broadly as organizations outside of government – NGOs, community groups, academic institutions, and business, trade, and social organizations. For CEPF, understanding the interests, capacity and needs of civil society is as important as understanding its biodiversity. Although CEPF makes grants to civil society, government plays a critical role in conservation and is always a partner in its efforts.

In the period of April-September 2025 Zoï Environment Network of Switzerland was mandated by CEPF to update the Ecosystem Profile. It led the process and prepared the initial profile in 2016-2017 with contributions from numerous national partners. The main activities of the updating process were:

- Consulting with a broad range of national and international stakeholders.
- Updating of the conservation outcomes, based on inputs from consultations and new science data.
- Updating socioeconomic, policy, and civil society context of the hotspot.
- Updating an assessment of biodiversity threats and conservation investments in the hotspot.
- Updating a CEPF niche and investment strategy for the hotspot, considering ongoing and planned investments, new NBSAPs and lessons learned from phase 1 of the CEPF work in the region.

This process engaged experts from various disciplines, government agencies, nongovernmental organizations, donor organizations and other stakeholders. The profile team reviewed existing analyses from BirdLife’s Important Bird Areas (IBAs), the IUCN Red list and national red lists, published books and atlases, reports and papers describing species and habitats in the Mountains of Central Asia, as well as other publicly available information. The profile update process was coordinated to the extent feasible with ongoing update of the National Biodiversity Strategies and Action Plans (NBSAPs), revision of the national protected areas plans, and GEF and other projects, using KBAs as a base for their investments. The profiling team analyzed up-to-date information on threats affecting biodiversity conservation in the hotspot, and current levels, geographies, and themes of

conservation investments. The team also seeks to coordinate with several ongoing international processes under conventions: CMS, CBD, CITES, others.

In April 2025, the profiling team of Zoï Environment Network jointly with the CEPF Secretariat began the process by formally notifying the GEF Focal Points in each country of the work ahead and announced about process through social media and emailing, including on-line survey. The team then conducted a rapid analysis of the initial profile information and the results of the CEPF grant program in phase one (2019–2025). In May-June 2025, in-person national stakeholder consultations were held in the five countries, and an online survey was conducted to update the CEPF partners and CSO database and to gather updates on key biodiversity areas, conservation outcomes, and CEPF strategic directions. Government representatives, in their capacity as GEF focal points, Convention on Biological Diversity focal points, and as staff of departments responsible for biodiversity, were all invited to these consultations. Of particular note, the profile team informed the GEF focal point of Switzerland – as the GEF council member responsible Central Asia and Azerbaijan – of its work, and held in-person meetings with the GEF focal points of Kyrgyzstan and Uzbekistan with the CBD coordinators of Tajikistan and Turkmenistan.

In these consultations, lessons learned were briefly discussed, as well as ongoing and planned investments and synergies with updated NBSAPs and national/global biodiversity targets. The profiling team noted that the KBA standard and concept is still poorly understood in Central Asia, except among some scientists (knowing Important Bird Areas IBAs, Important Plan Areas IPAs), making the rapid update challenging.

The profiling team jointly with the CEPF Secretariat presented the updated lists of species, KBAs, corridors and strategic directions, in meetings with CSOs, government agencies, and other donors. Stakeholder proposals helped prioritize KBAs and investment priorities.

The team held formal meetings, linked with the international biodiversity and environment days in five countries. Additionally, in April 2025, the CEPF arranged an exploratory mission to Turkmenistan as part of the prospective GEF Small Grant Program, which will be implemented by Conservation International in 2026-2030. Based on guidance from the CEPF Secretariat, there were no meetings held in Afghanistan or China, where grant-making opportunities are limited in the foreseeable future. Altogether, about 200 participants attended meetings and were consulted directly, and additional 300 were informed. (Tables 2.1 and 2.2).

Table 2.1. Dates and Locations of National Stakeholder Consultations and Profile Presentation Events

Date	Location	Country Covered by Workshop and inputs from online survey	Participants
May 2025	Bishkek	Kyrgyzstan	55
May 2025	Tashkent	Uzbekistan	33
May 2025	Dushanbe	Tajikistan	56
May 2025	Ashgabat	Turkmenistan	26
June 2025	Almaty	Kazakhstan	30
Total			200

Table 2.2. Contribution of Different Stakeholders to the Consultation Process

Country	CSOs	Private sector	Government	Research	Donor and int. org	Total
Kazakhstan	20	2	2	3	3	30
Kyrgyzstan	25	4	8	10	8	55
Tajikistan	32	2	7	7	8	56
Turkmenistan	16	2	3	3	2	26
Uzbekistan	17	2	2	2	10	33
Total	110	12	22	25	31	200

Zoï shared the initial ecosystem profile (2017), designed online survey and received about 100 individual responses, including CSO capacity, needs, suggestions for conservation of particular species and areas.

CEPF notes the engagement of experts from the private sector in the consultations. To be clear, private companies often do not imagine themselves as receiving CEPF grants or of benefiting from CEPF work, thus dimming their interest in up-front engagement. Still, in this case, the ecosystem profile benefited from direct input from, among others, the associations of waste management in Kazakhstan and Kyrgyzstan; tourism associations from each of those countries; associations of pasture users and forest land users from each of those countries; bee product companies in Kyrgyzstan; hydropower and engineering companies from Tajikistan and Uzbekistan; and the Uzbekistan railway company.

The final consultation was held in online format and included representatives of CEPF Secretariat, CSOs, science, and international partners. CEPF donors present in the region, including the EU delegations, AFD, the World Bank, and the GEF Focal Points, were informed about and involved in the consultations.

Reflecting on the process of updating the Ecosystem Profile, the team learned that the global KBA Standard (IUCN 2016) and KBA concept promoted by the KBA partnership² and used by CEPF and GEF remains poorly understood in Central Asia. However, some stakeholders, especially CEPF grantees, are becoming increasingly familiar with KBAs, and other donors and projects, including the GEF, are using KBAs and the initial ecosystem profile for project design or in safeguards. The condensed timeframe for updating the ecosystem profile (less than 6 months), the varying quality, availability, and completeness of data across and within countries, and the parallel work in several languages, diverse groups of stakeholders define the limits of updating the ecosystem profile. On the other hand, the updated list of references provides readers and users of the profile with more information on conservation outcomes, civil society organizations (CSOs), and government entities and projects related to conservation.

² The KBA standard is described in IUCN (2016) *A Global Standard for the Identification of Key Biodiversity Areas*.

3. LESSONS FROM PREVIOUS INVESTMENT IN THE HOTSPOT

3.1 Investment Strategy for Phase I

The [ecosystem profile](#) for the region was prepared by Zoï Environment Network of Geneva, Switzerland, over the period of May 2016 through March 2017, with contributions from over 250 stakeholders from civil society, government and donor institutions. The process gathered and synthesized data on biodiversity, socioeconomic and institutional context, climate change, ecosystem services, and ongoing and planned conservation investments in the hotspot countries. The profile identified 68 globally threatened species, 144 KBAs and 26 conservation corridors. To match the level of funding available from CEPF with a concomitant geographic scope, CEPF and the consulted stakeholders prioritized 33 species, 28 KBAs and five corridors for CEPF investment. The priority sites represented 3.8 million hectares, or 25 percent of the total hectares of KBA, although this was less than 5 percent of the total hotspot area.

The CEPF Donor Council formally approved the profile in August 2017, but gaps in funding delayed commencement of the five-year investment period until November 2019, with the award of the Regional Implementation Team (RIT) grant to WWF-Russia in collaboration with ARGO Civil Society Development Association. The total allocation to the region was US\$8,000,000 with the RIT fixed at 15 percent of the total (\$1,200,000), allowing for \$6,800,000 in small and large grants. However, in June 2023, the amount for small and large grants was reduced to \$6,250,000. Additionally, due to the COVID-19 pandemic of 2020-2021 and the delays that it caused in the early years of the program, the investment period was extended from October 2024 to April 2025.

CEPF's niche in the hotspot in Phase I was to make grants that ensured biodiversity conservation supported local and national economic development agendas, complemented public sector managers of protected areas, and built the capacity of civil society organizations (CSOs) to engage in conservation in the hotspot. This was expressed via six Strategic Directions as shown in the table below.

Table 3.1. Strategic directions, investment priorities, and allocations for MCA Phase I (2019-2025)

Strategic Directions and Investment Priorities	Original Allocation (USD)	Revised Allocation (USD)
1. Address threats to high priority species 1.1. Improve enforcement and develop incentives and alternatives for nature users and collectors 1.2. Promote improved regulation of collecting, hunting, and fishing 1.3. Support the development of species-specific reserves and conservation programs 1.4. Prevent human-wildlife conflict by addressing killing, poisoning, and trapping 1.5. Maintain populations of priority species beyond those solely affected by collection, hunting, fishing, poisoning, and nature users	\$1,000,000	\$1,835,045
2. Improve management of priority sites with and without official protection status 2.1. Facilitate effective collaboration among CSOs, local communities, and park management units to enhance protected area networks 2.2. Develop and implement management approaches to sustainable use in KBAs outside official protected areas 2.3. Build support and develop capacity for identification and recognition of KBAs	\$2,300,000	\$2,106,313
3. Support sustainable management and biodiversity conservation within priority corridors 3.1. Develop protocols and demonstration projects for ecological restoration that improve the biodiversity performance and connectivity of KBAs 3.2. Evaluate and integrate biodiversity and ecosystem service values into land-use and development planning 3.3. Support civil society efforts to analyze development plans and programs, evaluate their impact on biodiversity, communities and livelihoods, and propose alternative scenarios and appropriate mitigating measures	\$1,500,000	\$600,000
4. Engage communities of interest and economic sectors, including the private sector, in improved management of production landscapes (i.e. priority sites and corridors that are not formally protected) 4.1. Engage hunting associations, tourism operators, and mining companies in conservation management and establish valuation mechanisms for biodiversity and ecosystem services 4.2. Promote mainstreaming of conservation into livestock and farm management practices 4.3. Promote sustainable forest certification and value chains for non-timber forests products 4.4. Engage with the government and private sector to incorporate site safeguards into infrastructure development 4.5. Engage the media as a tool to increase awareness about globally threatened species and KBAs and inform public debate of conservation issues	\$1,000,000	\$640,000

5. Enhance civil society capacity for effective conservation action 5.1. Enable and enhance communication and collaboration between civil society and communities and government agencies responsible for implementing national biodiversity strategies 5.2. Enhance civil society organizations capacity for planning, implementation, outreach, sharing of best practice, fundraising, and communication 5.3. Catalyze networking and collaboration among CSOs and between CSOs and public sector partners 5.4. Promote greater sources of funding for civil society to become engaged in conservation action 5.5 Support action-oriented environmental education	\$1,000,000	\$1,068,642
6. Provide strategic leadership and effective coordination of conservation investment through a Regional Implementation Team 6.1. Build a constituency of civil society groups working across institutional and political boundaries toward achieving the shared conservation goals described in the ecosystem profile 6.2. Act as a liaison unit for relevant networks throughout the hotspot to harmonize investments and direct new funding to priority issues and sites	\$1,200,000	\$1,200,000
Total	\$8,000,000	\$7,450,000

3.2 Overview of Previous Investment

Ultimately, the ecosystem profile for the hotspot was endorsed by the GEF Operational Focal Points in all the countries except for China. Granting commenced in Afghanistan in late 2020, but had to be suspended the following year due to political changes in the country.

As noted above, WWF-Russia of Moscow, with RIT operations based in Almaty, Kazakhstan and individual staff based in the four other Central Asian capitals, managed the program in the field. Ultimately, WWF-Russia was forced to close, such that a new entity in Almaty, consisting of the same individual experts, took over the contractual responsibilities of the RIT and associated small grant mechanism from 2024 through the close of the program.

The RIT was responsible for awarding “small” grants up to US\$50,000 in Phase I. For amounts larger than this, the RIT reviewed the proposals and made joint decisions with the CEPF Secretariat on the award of “large” grants, which were directly contracted by CEPF. The table below shows the calls for letters of inquiry (LOIs) soliciting large and small grants.

Table 3.2. Calls for Letters of Inquiry in the Mountains of Central Asia

No.	Focus	Release Date	Due Date	LOIs Received	
				Large	Small
1	Kyrgyzstan	16 March 2020	20 April 2020	n/a	22
2	Kazakhstan	20 April 2020	20 May 2020	n/a	27
3	Uzbekistan	20 April 2020	20 May 2020	n/a	6
4	Turkmenistan	22 April 2020	22 May 2020	n/a	3
5	Tajikistan	24 April 2020	25 May 2020	n/a	21
6	Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	6 May 2020	18 June 2020	46	n/a
7	Uzbekistan	5 October 2020	6 November 2020	n/a	5
8	Turkmenistan	15 December 2020	15 January 2021	n/a	4
9	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	15 December 2020	16 January 2021	23	n/a
10	Kazakhstan	1 May 2021	1 June 2021	n/a	10
11	Kyrgyzstan	1 May 2021	1 June 2021	n/a	16
12	Tajikistan	1 May 2021	1 June 2021	n/a	12
13	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	9 June 2021	1 August 2021	8	n/a
14	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	4 October 2021	21 November 2021	15	n/a
15	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	1 December 2021	15 January 2022	n/a	25
16	All countries	15 November 2022	10 January 2023	26	54
Sub-totals				118	205
Total				323	

As shown in the Table below 36 of 118 large grant LOIs moved to become full proposals and awards (27 percent), as did 59 of the 205 small grant LOIs (29 percent), a “success rate” that is comparable with other CEPF portfolios. Grants were awarded as shown below.

Table 3.3. Large and Small Grants by Strategic Direction

Strategic Direction	Allocation	Large Grants		Small Grants		Total		Balance
		No.	Amount	No.	Amount	No.	Amount	
1. Species	\$1,835,045	8	\$1,248,362	25	\$607,481	33	\$1,855,843	-\$20,798
2. KBAs	\$2,106,313	11	\$1,432,507	27	\$623,493	38	\$2,056,000	\$50,313
3. Corridors	\$600,000	4	\$529,833	2	\$38,896	6	\$568,729	\$31,271
4. Production landscapes	\$640,000	6	\$595,625	2	\$39,972	8	\$635,597	\$4,403
5. Capacity building	\$1,068,642	7	\$1,053,526	3	\$57,627	10	\$1,111,153	-\$42,511
6. RIT	\$1,200,000	1	\$1,180,275	0	\$0	1	\$1,180,275	\$19,725
Total	\$7,450,000	37	\$6,040,127	59	\$1,367,469	96	\$7,407,597	\$42,403

The above table shows grants per their *primary* strategic direction, which is misleading, as most grants would have been related to multiple strategic directions. However, if nothing else, this does reflect how many grantees more easily embraced the concept of species conservation as compared to KBAs or corridors.

Another point of note is that total spending was less than the total commitment. This reflects de-obligations by partners that did not use the full amount of their grants, with the largest unused amount from the RIT, itself.

Although CEPF funding was not allocated by country, where work took place was of critical importance for many reasons. Awards by country are shown below.

Table 3.4. Large and Small Grants by Country

Country	Large Grants		Small Grants		Total	
	Count	Obligation	Count	Obligation	Count	Obligation
Afghanistan	1	\$2,276	-	-	1	\$2,276
Kazakhstan	5.5	\$872,087	20	\$477,421	25.5	\$1,349,508
Kyrgyz Republic	10	\$1,407,885	14	\$277,855	24	\$1,685,740
Tajikistan	10	\$1,155,864	11	\$212,279	21	\$1,368,143
Turkmenistan	1.5	\$224,066	8	\$228,846	9.5	\$452,913
Uzbekistan	3	\$442,642	6	\$171,068	9	\$613,710
Multi-country	5	\$755,032	-	-	5	\$755,032
RIT	1	\$1,180,275	-	-	1	\$1,180,275
Total	37	\$6,040,127	59	\$1,367,469	96	\$7,407,597

The following points are of note from the table above.

- There were two large grants that worked equally in Turkmenistan and Uzbekistan and in Kazakhstan and Uzbekistan. For tabulation purposes, the dollar amounts (obligations) of the grants are split equally between the relevant countries, and the "count" shows half-grant amounts.
- CEPF awarded a \$250,000 grant to Wildlife Conservation Society (WCS) to work in Afghanistan for the period of December 2020 through November 2022. However, the political situation in the country required the suspension of the grant in August 2021 with only nominal funds expended. Subsequently, absent required approvals, CEPF formally closed the grant showing the small amount spent in the table above.

The table below shows that, not counting the RIT, 95 grants were made to 69 unique organizations. Of these, only 13 were international and over half the available funds went to local groups.

Table 3.5. Large and Small Grants by International vs Local Recipient

Type	Large Grants		Small Grants		Total		Percent of Grant Funds	Unique Recipients
	No.	Amount	No.	Amount	No.	Amount		
International	19	\$2,579,453	1	\$18,757	20	\$2,598,210	42	13
Local	17	\$2,280,400	58	\$1,348,712	75	\$3,629,112	58	56
Total*	36	\$4,859,853	59	\$1,367,469	95	\$6,227,322	100	69
RIT		\$1,180,275		-		\$1,180,275		

3.3 Impact Summary from Phase I

Any review of the investment must consider the events that took place in the region over the period, not as an excuse for small impacts, but to understand the context and to inform future work. Over the life of the program, the following notable events occurred.

- The COVID-19 pandemic began in March 2020, with significant impacts on travel and gatherings for at least 18 months, including during the critical start-up phase of the program.
- Political instability in Kyrgyzstan in late 2020.
- Conflict between Kyrgyzstan and Tajikistan in late 2021 and early 2022.
- Political change in Afghanistan in mid-2021.
- Political instability in Kazakhstan in early 2022.
- Conflict between Russia and Ukraine beginning in February 2022, with repercussions across the region for access to goods, access to finance, sudden immigration, and prices.
- Ban on Russian banks preventing access to the SWIFT transfer system, with repercussions for multiple CEPF grantees.
- Dissolution of the RIT, WWF-Russia, in late 2023.
- Fluctuating status and freedom of civil society to operate in Kyrgyzstan, Tajikistan, and Uzbekistan over different stages of the program.

3.3.1 Impacts on biodiversity

Grants had direct impacts on species and the physical geographies – the sites and corridors – where they are found. This includes:

- Benefits to as many as 42 globally threatened species, including, for example, direct conservation and protection of native trees (wild apple, wild almond, wild pear), monitoring for conservation action of threatened birds (Slavonian grebe, Marbled duck, Saker, Asian imperial eagle, Steppe eagle, Egyptian eagle, Houbara bustard), better protected area management for a species itself (Menzbier's marmot, Semirechensk salamander, Goitered gazelle, Snow leopard, Urial), and strengthened protection from extractive use (the aforementioned fruit trees and *Crataegus knorringiana*, a species of hawthorn tree).
- Multiple grants worked to protect iconic species and species of local concern, such as snow leopard and Bukhara deer, even as these benefited from the efforts of national

governments and other donors. CEPF deployed its resources to leverage the work of the Global Snow Leopard Environment Programme, the Central Asian Mammals and Climate Adaption project, and other efforts working at corridor levels, thus not “ignoring” species of utmost national importance.

- Grants improved the management of 2.6 million hectares of land in 55 KBAs. This included large protected areas with improved park operations, such as Khan Tengry in Kyrgyzstan (part of the Sary-Djaz KBA), down to areas as small as one hectare, such as protection of wildlife watering places in Kazakhstan’s Altyn-Emel state nature park.
- Creating new protected areas is a difficult process that requires support from the government and multiple stakeholders. Nevertheless, grantees helped promote the creation of two public reserves in Uzbekistan (Fergana Valley Nature Park, Talmarjan Wildlife Refuge) with a combined 104,000 hectares, and in Kyrgyzstan, promoted the concept of “micro-reserves” managed by communities, including nine such sites between 1 and 841 hectares.
- In the first phase of investment, “production landscapes” were understood to be non-protected KBAs – land important for biodiversity conservation that is otherwise used for farming, grazing, forestry, fishing, or the activities of daily life. In total, 804,000 hectares of production landscape were brought under improved management, including rationalization of the management of the Kayrakum Reservoir delta in Tajikistan, better management of the Kelif Hunting and Fishing Farm in Turkmenistan, and better pasture management in the buffer zone of Karatau State Nature Reserve in Kazakhstan.

3.3.2 Impacts on enabling conditions

Many grants took actions to promote policies in a broad sense, including advising on local land use plans and sub-national and national development plans, providing input to major development projects, and engaging with the private sector. Notable impacts were:

- 41 local-level plans on grazing, pasture, forest management, village economic development, and buffer zones.
- In Kazakhstan, grants promoted national policies to incorporate biodiversity into pasture management, allow civil society to engage in protected area management, and to limit exploitation of natural resources inside national parks. In Kyrgyzstan, grantees promoted adoption of a policy on reducing pollution into the Issyk-Kul biosphere zone; in Tajikistan, the government recognized an updated national Red Book of threatened species; and in Uzbekistan, a new policy was adopted to reduce illegal tree felling.
- Engagement with a mining company in Kyrgyzstan’s Chatkal region, tourism operators in Kyrgyzstan’s Chyckan Gorge, and hunting estate operators in Kazakhstan’s Zhongar-Alatau region and Tajikistan’s Baljuvan region.

3.3.3 Impacts on human well-being

To be successful, funded projects could not just focus on threatened species and important sites, but also had to improve the well-being of the people living in those areas. Impacts included:

- Engagement with 150 distinct communities ranging in size from as small as 100 residents to as large as 4,000, helping them to become better stewards of their environment for their own benefit, particularly in relation to better pasture and less predation on livestock. Most critically, communities gained greater autonomy in control of natural resources.
- Approximately 4,800 men and 3,800 women received structured training in topics ranging from sustainable farming, agroforestry, livestock management, wildlife control, protected area management, small business, and tourism.
- At least 600 men and 500 women had increased income due to agriculture and livestock sales, tourism, guest services, and honey production.

3.3.4 Impacts on civil society

Understanding that a strong and engaged civil society is core to CEPF's approach, grants achieved the following:

- Promotion of media coverage and public discussion on 42 different issues or in different locations, frequently in the context of better KBA management, but typically on items of particular local concern, such as fuelwood collection, poaching, and human-wildlife conflict, but also on "bigger" issues like mining-related pollution, road construction through wild lands, and infrastructure for hydropower.
- 12 local organizations used knowledge of international and regional conservation agreements to guide action at a local level.
- Projects supported the creation of 19 new partnerships and networks, such as of female political leaders in Kyrgyzstan, a three-country CSO committee for the better management of the Western Tien-Shan World Heritage Site, and an environmental CSO network in Tajikistan. Projects further strengthened 18 existing partnerships and networks, including the Central Asian Alliance for Climate Education and Global Forest Coalition's network of community-based forestry groups.
- 60 local organizations – recipients of small grants from the RIT, large grants directly from CEPF, and sub-grants from large grantees – completed a baseline and endline civil society tracking tool. Of these, 23 showed an increase in score of 5 points or more, and 16 showed an increase in score of between 1 and 4 points.
- 65 local organizations – small grantees, large grantee, sub-grantees – completed a baseline and endline gender tracking tool. Of these, 42 showed a positive change, and 19 had an increase of 5 points or more.

3.4 Lessons from Phase I

Lessons were gathered during the Phase I large grant to Zoï to consider ways forward for civil society in the region, during the final assessment workshop in Uzbekistan in February 2025, from large and small grant final completion reports, and by Zoï during this ecosystem profile update.

1. **Limited local CSO capacity mediated the engagement of many groups with CEPF.** This was most evident in large grant proposals, in results and impact reporting by

both large and small grantees. Organizations that had limited experience with international donors had difficulty in articulating in their proposals what they wanted to achieve and in accurately expressing impacts in final reports. Impact reporting was particularly difficult where conservation results were uncertain, difficult to sustain, or difficult to quantify.

2. **Local CSOs sometimes purposefully limited themselves to small grants or to being sub-grantees under international CSOs.** This was due, in part, to government controls on foreign funding (particularly in Turkmenistan and Uzbekistan) and local accounting rules that made reporting on foreign funds difficult in Tajikistan. It was also due to national governments looking more closely at groups receiving foreign funds. Last, it was due to the perception of some groups that CEPF/international reporting procedures were too difficult, making it easier to work as a sub-grantee.
3. **The challenges presented in the two points above encouraged successive grants to the same organizations.** 17 local organizations received more than one grant, and of those, 5 “graduated” from a small to a large grant. Allowing grantees to learn and grow with successive grants is a viable plan for future investments.
4. **CEPF-determined “priorities” in the ecosystem profile created limitations.** Like most CEPF profiles, the MCA profile of 2017 identified priority species, KBAs, and corridors. This was particularly noticeable for sites, most obviously in China, where CEPF could not work, but also in the five Central Asian countries. Areas that were prioritized because of under-investment, for example, were often too difficult to reach, or in sensitive border regions, thus limiting applicant interest. Ultimately, the investment strategy evolved and broadened the areas of eligibility, but the lesson suggests greater flexibility in the next phase.
5. **The KBA concept requires further socialization.** Grant applicants, civil society, communities, and the public at large often had a difficult time understanding the difference between a protected area versus a production landscape, and how a KBA could straddle both. They then had a difficult time understanding how a popular conception of a production landscape – that is, anything that is not protected – might be a KBA in some cases (e.g., farmland with nesting sites for globally threatened bustards) but not in others (e.g., farmland with no such species). Further work is needed to popularize the concept and to better use it to target conservation efforts.
6. **Drafting land-use management plans was only the first step.** As noted, there were multiple land-use management plans, particularly for grazing, often to mitigate human-wildlife conflict or to avoid the negative impacts of livestock on fragile riparian zones or high-altitude plants. The challenge for the future is implementing these plans and otherwise sharing experience between the many groups addressing these same problems.
7. **Collaboration between local CSOs was limited.** Several organizations purposefully approached their work from the perspective of creating alliances (e.g., the Biodiversity Fund of Kazakhstan, which connected CSO partners between Kazakhstan, Kyrgyzstan, and Uzbekistan). At the same time, there were local groups, that maybe for political and historical reasons, were reluctant to engage in partnerships – or otherwise publicize their work – for fear of possible repercussions. Going forward, CEPF can attempt to mitigate this via engagement with government partners.
8. **Grantee achievements, often on the cutting edge, can be replicated.** Even as organizational capacity might be relatively low in civil society, within the region, there is high capacity in science and technology within national academies and leading universities. By example, the University of Central Asia pioneered use of drones and bespoke algorithms to determine the presence of wild apple trees on mountain slopes. Going forward, such methods can be replicated.
9. **Overcoming limited staff capacity.** Many smaller and community-based organizations had expertise in conservation science but lacked expertise in small enterprise support

needed to a component of their project. Conversely, there were groups with expertise in local economic development, but they lacked staff that understood project planning for biodiversity conservation, biodiversity monitoring, or impact reporting. While hiring an external consultant to make up for shortfalls in expertise seemed easy in theory, it was difficult in practice. Options may exist to fund third-party grantees that can otherwise complement the work of local groups, particularly for rigorous monitoring of conservation outcomes.

10. **Engagement with the private sector was limited.** Like many hotspots, there was a hope of engaging the private sector (particularly mining, forestry, large scale agriculture and livestock, road and power developers) to change the way they operated, to mitigate negative impacts on biodiversity. This happened in a notable way (e.g., Fauna & Flora International with mining operators in Besh-Aral, Kyrgyzstan and Earth Island Institute with electric utilities whose lines and windmills affected soaring birds). However, for many local organizations, with limited time and resources (a typical CEPF grant was for two years and \$140,000), they were not operating at a scale needed to engage large companies. Future investment may consider other ways of engaging the private sector, perhaps via networks, sectoral associations, financing institutions or leveraging ongoing efforts of large NGOs and monitoring/watch groups. The challenge will be in representing to the private sector that “benefits” from engagement are not in the form of grant-funded activities or immediate profits. This, itself, may require the support of coalitions, the government, and other donors.
11. **The region requires active information-sharing with local and national authorities.** CEPF does not have a long history of working in the area. There is not the strongest tradition of smaller CSOs being engaged in conservation in the region, particularly in public protected areas. There is not the strongest knowledge of the KBA concept. Last, as anywhere, there can be frequent changes of senior staff at national environmental agencies. For these reasons, a future RIT and leading NGOs need to proactively and continuously inform local authorities (*akimats* in Kazakhstan and Kyrgyzstan, *jamoats* in Tajikistan, *hoikimiyats* in Uzbekistan) and relevant authorities in national capitals, including Astana, even as it is outside the hotspot).
12. **Meetings and robust science are still welcome.** There are some places with “meeting fatigue,” where the staff of CSOs will report they spend too much time in conferences with others and not enough time in the field. There are also places where it seems research and publishing are becoming an end unto themselves. Neither of these apply in the Mountains of Central Asia. There is a demand among civil society, scientists, and even journalists for the updating of sharing of information on biodiversity and land use.
13. **Reviews and updates of KBAs and the hotspot boundary are still required.** In Phase I, stakeholders identified geographies that perhaps should have been classified as KBAs, but were not – particularly in Kyrgyzstan – because of the lack of current research. Similarly, in Turkmenistan, the hotspot boundary itself may have excluded ecologically connected areas. Future investments should allow for continued science and discussion to define boundaries and priorities.
14. **Awareness and outreach are still welcome.** There are many places in the hotspot where the concepts promoted by CEPF are new: that people benefit from nature; that communities and civil society have a role in the better management of public/state protected areas; that biodiversity conservation can happen outside of formal protected areas. Multiple methods of awareness and outreach are relevant for future investment, including innovative printed and video materials, social media and user-oriented websites, and public events.
15. **Nesting CSO activities within international conventions engenders political support.** During Phase I, grants allowed for the participation of partners at the Convention on Migratory Species meeting in Samarkand, Uzbekistan in 2024, in

preparation of national biodiversity strategic action plans, in nomination of UNESCO world heritage sites, and in support of existing sites (e.g., the grant to the Biodiversity Fund of Kazakhstan to support transboundary cooperation around the Western Tian Shan). This aligned CSOs with national efforts and facilitated partnerships and trust.

16. **Transboundary options are modest, but meaningful.** During Phase I, CEPF supported the Biodiversity Conservation Fund of Kazakhstan as it worked to facilitate connections between state agencies and CSOs from the tri-country (Kazakhstan, Kyrgyzstan, Uzbekistan) Western Tian Shan UNESCO World Heritage Site. Separately, a grant to the Center for Large Landscape Conservation facilitated better management of adjacent KBAs (protected areas) in Turkmenistan and Uzbekistan. By counterexample, efforts by Panthera and FFI to work on the border of Kyrgyzstan and Tajikistan stalled because of broader disagreements between the two countries. In Phase II, CEPF should look for opportunities to support transboundary cooperation, but not push these ahead of the interests of critical stakeholders.

Lessons from the independent evaluation of the RIT

In late 2024, CEPF commissioned a consultant to undertake an [independent evaluation](#) of the RIT during Phase I to provide recommendations for the next phase. The consultant interviewed the RIT, CEPF Secretariat staff, grantees, government representatives and other stakeholders (including donors) to evaluate the RIT's performance in relation to seven elements of the standard RIT terms of reference: coordination; biodiversity mainstreaming; communication; capacity building; solicitation and review of large grants; management of small grants; and monitoring and evaluation. The main conclusions and recommendations of this work are as follows.

1. **The RIT may play a greater role in assuring impact.** Impact is difficult to achieve in a relatively short amount of time (e.g., grants of two years when biophysical and socioeconomic changes take much longer) or where grantees have limited capacity. A future RIT might broker more relationships between groups with complementary skills, and might provide its own expertise, or engage a third party, for impact assessment.
2. **Local CSOs rely on the RIT for donor engagement.** This is particularly important in Kazakhstan, where the capital (Astana) is not in the primary hotspot city (Almaty), but is true in each of the countries, where RIT personnel serve as the effective liaison to donors. The RIT can leverage the different elements of donor work or create networks of donor alignment around targeted KBAs or policies.
3. **CSOs would benefit from more project development and management training.** This could take the form of more deliberative proposal development periods, as well as more hands-on mentoring between RIT country officers and grantees. There could then be implications for the timing of calls for proposals and for focused geographies of work.
4. **The RIT is in a position to identify organizational development and capacity building needs.** CSOs would benefit from training in technical skills (conservation science, small enterprise), communications, and financial management, but also in entire ways of working, understanding their role in relation to communities, the government, the private sector, and donors. The RIT can identify needs and articulate them to providers.
5. **The RIT can foster networks of CSOs.** To the extent that budget allows, a future RIT might consider regular (annual) meetings of conservation CSOs (or CEPF grantees) within each country, online thematic communities of practice, and regular peer-to-peer exchanges.
6. **The RIT plays a lead communication role.** This includes broadcasting grantee results, synthesizing messages, and relaying these to government partners and donors. In particular, the RIT can advocate for the role of CSOs in nature conservation.

4. BIOLOGICAL IMPORTANCE OF THE HOTSPOT

This chapter describes the geography, climate, and biological history of the hotspot; provides a summary of species diversity, levels of endemism, and global threat status among major taxonomic groups in the hotspot; and describes ecosystem services.

Mountain regions are crucial to the maintenance of the natural and agricultural global biodiversity. The vertical distribution of natural species by elevation results in a wide range of species and ecosystems spread over a relatively small surface area. Endemic species find homes in isolated islands of mountain habitat with characteristics conducive to unique life forms and varieties.

4.1. Geography, Climate, and History

The Mountains of Central Asia hotspot consists of two of Asia's major mountain ranges, the Pamir and the Tien Shan. The total area covered is about 860,000 square kilometers. The highest peak, Kongur, in the Chinese Pamir, rises to 7,719 meters, the lowest point is in the Turfan depression in China, 150 meters below sea level, and glaciers cover 25,000 - 35,000 km². The hotspot borders several major deserts, including the Taklamakan in China, the Kyzylkum in Uzbekistan, and the Karakum in Turkmenistan.

The Pamir was known to early Persian geographers as Bam-i-Dunya, or "roof of the world" and is situated at the center of several great ranges. The Tien Shan, or "celestial mountains," lie adjacent to the north, the Hindu Kush to the south, and the Karakoram and the Kun Lun Shan to the east.

The Pamir Mountains have a average elevation range of 3,000-4,000 meters and its central parts are plateau-like in character. The western Pamir, in contrast, is characterized by sharp ridges and steep slopes cut by deep valleys and gorges. The Pamir includes the Fedchenko (Vanchyah) Glacier, which is more than 70 kilometers long and one of the longest non-polar glaciers in the world.

Several mountain ranges – the Alai, Hissar, Zeravshan and Turkestan – lie between the Pamir and the Ferghana Valley, a deeply downfaulted basin, about 300 kilometers long and 150 kilometers wide. The Ferghana Valley extends into Uzbekistan, Kyrgyzstan, and Tajikistan, and is the one of most densely populated and ethnically diverse regions of Central Asia, with a population density of 300-400 persons per square kilometer.

To the north of the Ferghana Valley, the Tien Shan Mountains extend for 2,500 kilometers from west to east. The Tien Shan are made up of a complex series of ranges and are around 300 kilometers wide in the center, narrowing at the eastern and western ends. The highest peaks are located in a central cluster on the borders of China, Kyrgyzstan, and Kazakhstan, and include Mt. Tomur at 7,439 meters (also called Janysh/Pobeda in Kyrgyzstan). The Inylchek Glacier, over 50 kilometers long and the largest in the Tien Shan, is also located in this part of the range.

Figure 4.1. Topography of the Mountains of Central Asia



The central Tien Shan, with a mean altitude of over 3,000 meters, contains a high, uplifted massif (plateau) that shares some of the same landscape features as the central Pamir. On the western and northern edges of the Tien Shan, lower arid mountains such as the Nuratau, Chu-Ili Divide, and Karatau run northwestward into Central Asia's deserts. The Tien Shan drains mainly to the north, south and west, and the many streams plunging down the steep northern slopes have formed alluvial deposits on the plains below. These deposits provide sites for settlements and several major population centers.

The Pamir Mountains of Tajikistan and China join the Tien Shan in Kyrgyzstan in the north and the Hindu Kush Mountains in Afghanistan and Pakistan in the south, and contain some of world's highest peaks including Kongur (7,719, China) and Somoni (7,495 meters, Tajikistan). The largest river of Central Asia – the Amu Darya – has its origins in the Wakhan corridor between Pamir and Hindu Kush with many deep valleys, spectacular gorges, and traditional settlements nestled on alluvial fans. People living there – in the Badakshan and the Wakhan regions – are among the most isolated and impoverished in the region.

Glaciers cover four percent of Kyrgyzstan and six percent of Tajikistan, but spread throughout the mountains. Glaciers are crucial to maintaining water flow during the hot and dry summer months.

The climate is arid with most rain falling in the winter and spring. The Tien Shan and Pamir act as a climatic divide and intercepts moist air from the north and west and prevent it from reaching the hyper-arid Taklamakan desert and the Tarim Basin in China. Precipitation falls mainly in winter and spring and varies from over 1,000 mm in the Hissar and Ferghana Ranges in the west to below 100 mm in the east. The southwest of the area – the western parts of the Tien Shan and of the Pamir – is influenced by subtropical air and enjoys mild winters. Temperatures decrease to the east, although there are considerable variations due to altitude. The high plateaus of the Pamir and Tien Shan are the coldest areas, having an annual mean temperature below zero and a very short growing season. Winter temperatures there may reach -40°C.

Much of the high mountain environment is inhospitable to humans, with barren ground and glaciers, but is still home to such charismatic species as the Marco Polo sheep and the snow leopard. At lower altitudes, the mountains have fine grasslands and forests.

Only half of Kyrgyzstan's land area and less than one third of Tajikistan's land area is suitable for agriculture, mainly for grazing. Croplands and gardens occupy less than 7 and 5 percent of their land areas, respectively. Other lands are considered not suitable for agriculture due to harsh climate, poor soils, and the predominance of rocks and glaciers. Nevertheless, a majority of the mountain communities of Central Asia practice agriculture: principally cultivating cereals and vegetables, gardening, collecting forest products, and livestock grazing on a wide range of pastures.

4.2. Habitats and Ecosystems

The predominant vegetation types in the hotspot are desert, semi-desert, and steppe on all the lower slopes and foothills and in some of the outlying ranges and major basins. Patches of riverine woodland forest, called "tugai," survive along the Amu Darya, Zeravshan, Syr Darya, Chu-Talas, and Ili rivers and a few other places. At higher altitudes, steppe communities dominated by various species of grasses and herbs occur, while shrub

communities are widespread in the lower steppe zone. Spruce forests occur on the moist northern slopes of the Tien Shan, while open juniper forest occurs widely in the Pamir-Alai. Meadows typically occur at higher elevations. At the very highest and coldest elevations, there is limited vegetation cover and diversity, with cushion plants, snow-patch plants, and tundra-like vegetation as well as glaciers. The distinctiveness of grasslands is well indicated by the proportion of endemic species.

The hotspot contains ancestors of domestic fruit and nut varieties: apricots, plums, cherries, apples, pears, cherry plums, grapes, pistachios, almonds, walnuts, and pomegranates. In addition, the wild crop relatives of many cultural herbaceous plants – wheat, barley, oats, rhubarb, sorrel, anise, coriander, onions, garlic, tulips – are still found here, making the region an important storehouse of genetic diversity. Further, ancient forms of domesticated animals and their wild ancestors have survived in the region. The fauna of mountain ungulates is particularly diverse, which includes several species of wild goats and subspecies of mountain sheep. The hotspot is also home to magnificent wild cats, the most famous of which is the snow leopard, and it was once home to the now extinct Caspian Tiger.

The geological evolution of the mountains, the wide range of elevations, and the extreme climatic variation have combined to produce great landscape and biotic diversity. The number, extent, and sequence of vegetation zones vary across the hotspot as a function of temperature gradients, moisture gradients, slope aspect, altitude, and latitude, and depending on the system of classification, countries report 20-30 different ecosystem types within their borders (Kyrgyzstan NBSAP 2014 and 2025; Tajikistan NBSAP 2003). This section summarizes the ecosystems in the hotspot by sorting types into larger groupings. At lower altitudes and in the foothills, dryland ecosystems prevail. At medium altitudes, grasslands, shrubs and forests are widespread. Meadows and tundra-like ecosystems are found in the high mountains. (See Figure 4.2. and Figure 4.3.)

4.2.1 Deserts, Semi-Deserts and Arid Steppes

Desert, semi-desert, and arid steppe vegetation types predominate on all the lower slopes, foothills, and in some of the outlying ranges. Common plants here include species of widespread genera such as *Artemisia*, *Salsola*, and *Ephedra*, as well as annual grasses such as *Poa* and *Festuca* spp. In the Ili, Amu Darya and Syr Darya river valleys and a few other places, patches of riverine woodland survive, composed of poplar (*Populus* spp.), eleagnus, tamarisks (*Tamarix* spp.), and willows (*Salix* spp.) (Mittermeier *et al.* 2004).

4.2.2 High Steppes

Steppe communities, dominated by various species of grasses and herbs, occur at higher altitudes. A distinctive type of tall-grass steppe, characterized by *Elytrigia trichophora* and *Hordeum bulbosum*, occurs in the western Tien Shan and Pamir. Shrub communities are widespread in the lower steppe zone and may form dense thickets in gorges. Species present include hawthorns (*Crataegus pontica*, *C. turkestanica*), *Cotoneaster melanocarpa*, *Euonymus semenovii*, *Lonicera* spp., *Rosa* spp., and *Berberis* spp.

4.2.3 Forests

Mountain forests provide invaluable watershed protection and erosion control, and contribute to the regulation of water resources by decreasing or smoothing runoff – with a corresponding decrease in erosion – and by retaining groundwater. They also provide mountain people with a rich source of the fuelwood essential to the heating of living spaces,

the cooking of food and the purification of drinking water, and with timber and other forest products such as wild fruits, nuts and medicinal plants for subsistence or trade. A relic species of Tien Shan spruce forms a unique and spectacular forest belt in the Tien Shan Mountains.

Walnut and fruit forests. A type of wild walnut-fruit forest unique to Central Asia grows above the steppe zone in warm, sheltered places in the Pamir and Tien Shan. These are diverse and are composed of walnut (*Juglans regia*), almonds (*Amygdalus communis* and *A. bucharensis*), pears (*Pyrus korshinskyi* and *P. regelii*), plums (*Prunus sogdiana* and *P. ferganica*), cherry (*Cerasus mahaleb*), and apple (*Malus sieversii*), along with maples (*Acer turkestanicum* and *A. semenovii*). Some of the surviving walnut trees are estimated to be 500 years old. The area occupied by this habitat has greatly declined, with around 90 percent lost during the last 50 years (Mittermeier *et al.* 2004).

Spruce forest. Spruce forests occur on moist northern slopes of the Tien Shan. They grow in a broad altitude band and include the regional endemic Schrenk's spruce (*Picea schrenkiana*) with some silver fir sub-species (*Abies semenovii*) and associated species of endemic Tien Shan rowan (*Sorbus tianshanica*) and birches (*Betula* spp.). Stands of closed-canopy forest are found in patches of varying size, with the largest on the Kyrgyz Range. More open stands also occur in a forest-meadow mosaic.

Juniper forest. Open juniper forest occurs widely between 1,500 meters and 3,300 meters, particularly in the Pamir-Alai, especially the Zaravshan and Turkestan ranges, and is composed of *Juniperus seravschanica*, *J. turkestanica*, and *J. semiglobosa*. In the Tien Shan it grows above the spruce belt. (Mittermeier *et al.* 2004).

4.2.4 Subalpine and Alpine Meadows

Subalpine and alpine meadows occur from 2,000-4,000 meters and above, mainly in the northern and western more humid parts of the hotspot. Plant cover is high, with a tight sward made up of grasses such as *Poa alpina*, sedges (*Carex* and *Kobresia* spp.) and carpeted with a rich variety of herbs including many endemic species. The fritillary (*Rhinopetalum stenanthum*), gentians (*Gentiana* spp.), globeflower (*Trollius dshungaricus*), primulas (*Primula* spp.), tulips (*Tulipa* spp.), anemones (e.g., *Anemone protracta*), louseworts (*Pedicularis* spp.), and aconites (*Aconitum talassicum*, *A. leucostomum*) are prominent among them. These meadows are at their most attractive in early summer when the flowers are in full bloom. In drier areas of the Pamir and Tien Shan, the mountain meadows are replaced by high-elevation steppes, characterized by grasses such as *Festuca*, *Poa*, *Puccinellia*, sedges (*Carex* and *Kobresia* spp.), together with xerophytic perennial herbs (Mittermeier *et al.* 2004).

4.2.5 High-Elevation Vegetation

Vegetation cover and plant diversity declines rapidly as one approaches the upper limits of plant cover, and cushion plants and those with low rosettes that can withstand the high winds, cold temperatures, and aridity become more common. *Acantholimon diapensioides* is the most widespread cushion plant and species of *Saxifraga*, *Androsace*, *Rhodiola*, *Saussurea*, and *Tanacetum* are also frequent. At 4,000 to 4,500 m, even more hardy perennials are found, such as *Thylacospermum caespitosum*, the large, tight cushions of which resemble a moss more than a vascular plant, and *Dryadanthe tetrandra*. Snow patch plants also include attractive species, such as the alp lily (*Lloydia serotina*), the large, pale blue and white globeflower (*Trollius lilacinus*), and several crucifers (*Draba* spp.). At such high elevations the vegetation is short with sedge meadows dominated by species of

Kobresia, *Shmalhausenia* and *Carex* in areas along valley bottoms. Above this, there are only a few lichens and rare algal films on some glaciers (Mittermeier *et al.* 2004). Due to climate warming and glacier retreat, nival-glacial ecosystems show signs of greening and expansion, as observed from satellite observations in the past 20-30 years.

4.3. Species Diversity and Endemism

The hotspot harbors significant numbers of wild crop relatives and around 5,000 species of vascular plants, almost one quarter of which are endemic. By contrast, the nearby lowland deserts, which are twice as large, have only a quarter the number of plant species due to harsh environmental conditions: lack of water and fluctuating temperatures.

Mountains of Central Asia with their rugged landscapes, deep gorges, rocky ranges and high mountain peaks, water-flows and diversity of ecological conditions within relatively small areas provided ideal conditions for evolution processes and speciation, but mostly for small and sedentary organisms: plants, arthropods, crustaceans, mollusks. Isolation of mountain areas facilitated appearing of some new species and many subspecies, for example, in such taxonomic group as the genus *Parnassius* (swallowtail-butterflies), which often associated in their evolution with certain types of plants such as *Coridalis*, *Papaver*, and other plants having poisonous substances that ensure development of larval forms. The high mountain regions have driven the evolution of many endemic species. But their distribution is not well- documented, making it challenging to identify conservation priorities.

Endemism among plant species is very high, and this defines the endemism of many insects associated with specific plant species. However, there are not many studies of invertebrate endemism in Central Asia. It is known that the region hosts endemic genera across various insect groups, including, for example, ground beetles (*Discoptera*), scarabs (*Thinorycter*, *Clioneosoma*), darkling beetles (*Ammosoum*, *Argyrophana*, *Sternodes*), leaf beetles (*Theone*), and weevils (*Mesostylus*).

Threatened vertebrate animal taxa include snow leopard (of which the hotspot supports about half the world population), Persian leopard (*Panthera pardus tulliana*), as well as numerous birds, reptiles, and fishes. Caspian tiger (*Panthera tigris virgata*), an iconic large cat that inhabited lower altitude riparian forests, went extinct in the last century. The reintroduction of tigers began in 2024 in the Ili River Delta and around Lake Balkhash in Kazakhstan (with animals from a different subspecies brought from a zoo in the Netherlands). Other species have suffered from anthropogenic transformation, especially in the foothills zone, where natural habitats have been converted to croplands.

Table 4.1. Species Diversity and Endemism in the Hotspot by Taxonomic Group

Taxonomic Group	Species	Endemic Species
Plants	5,000-6,000	1,500
Mammals	140	10
Birds	530	1
Reptiles	60-80	10
Amphibians	10	2
Freshwater Fishes	30-60	5

4.3.1 Plants

The flora of the Mountains of Central Asia is a mix of Siberian, Mediterranean, Indo-Himalayan, and Iranian elements. There are also 64 endemic genera, including 21 from the

family *Umbelliferae* and 12 from the family *Compositae*. The endemic flora includes tree species, flowers, onions, and grasses.

More than 20 endemic and regionally threatened species of tulip grow in the hotspot. Collecting for horticulture and decoration has led to the decline of many of the hotspot's tulip species, especially in the lowlands and along the roads (Mittermeier *et al.* 2004).

Among the most prominent endemics of alpine grasslands in Central Asia are the following: *Schmalhausenia nidulans*, *Phlomis pratensis*, *Oxytropis ochroleuca*, *Aconitum nemorum*, *Saussurea sordida*, *Alfredia acantholepis*, *Astragalus nivalis*, *Seseli valentinae*, *Oxytropis ruebsaamenii*, *Artemisia viridis*, *A. aschurbaevii*, *Tulipa dasystemon*, *Festuca alata*, *Hedysarum kirghisorum*, and others. This specific distinctiveness is due to geographical differences and environmental conditions, which provide refuge or are the cradle of many species (Nowak & Nobis, 2020; Nowak *et al.*, 2011; Raduła *et al.*, 2021).

Trees

Recognizing the particular importance of tree species, the hotspot is home to 12 globally threatened species, of which six are endemic, including *Crataegus knorringiana*, *Prunus tadzhikistanica*, *Pyrus cajon*, *Pyrus tadshikistanica*, *Ribes malvifolium*, and *Prunus ledebouriana*.

4.3.2 Mammals

At least 10 species of about 140 mammals found in the hotspot are sub-regional endemics (depending on the definition of endemic and sub-species). These include Menzibier's marmot (*Marmota menzbieri*, VU), found only in the western Tien Shan at elevation of 2,000 meters, and Ili Pika (*Ochotona iliensis*, VU), a small species of lagomorph found only in the Chinese part of the Tien Shan.

Two species of ground squirrels, Tien-Shan Ground Squirrel (*Spermophilus ralli*) and Relict Ground (*Squirrel relictus*) as well as the Pamir shrew (*Sorex bucharensis*) and the Alai mole vole (*Ellobius alaicus*), are among regional endemics. Turkestan Red Pika (*Ochotona rutilla*) is endemic of Tien-Shan and Pamir.

The hotspot also holds a variety of mountain ungulates, including several endemic sub-species of the argali wild sheep (*Ovis ammon*), among them the Marco Polo sheep (*O. a. polii*), whose magnificent curling horns have made it a favored target of trophy hunters. The Siberian ibex (*Capra sibirica*) is quite numerous and widespread species, occurring in all parts of the area above the tree line. However, its population is currently decreasing and species status is now considered as Near Threatened (NT).

Because of their location in the central part of Asia, the Mountains of Central Asia play an important connecting role in the distribution of many important montane species. Perhaps the best-known symbol is the snow leopard (*Panthera uncia*). Twenty years ago, this species declined here, as elsewhere, as a result of poaching and a depletion of its prey base through illegal hunting (Mittermeier *et al.* 2004). However, similar to the success story of the saiga, snow leopard population stabilized and showed signs of recovery between 2015 and 2025 thanks to globally coordinated efforts, stringent government controls and CSOs engagement, including CEPF grantees. In 2016-2017, the IUCN Red List status for this species was downlisted from Endangered (EN) to Vulnerable (VU). This success does not otherwise undercut the need for continued action.

In addition to the endemic and threatened species, there are other iconic large mammals of local importance, including Turkestan lynx (*Lynx lynx*) and white-clawed brown bear (*Ursus arctos*). These and other large mammals have important role in mountain ecosystems. In the hotspot countries their populations are fragile, and they are included in the national red lists.

4.3.3 Birds

There are nearly 500 bird species occur regularly in the hotspot, none are narrow endemics, although one species just outside of the mountain area, occurring in sandy deserts of Kazakhstan, Turkmenistan and Uzbekistan - Turkestan Ground Jay (*Podoces panderi*) – is considered a regional endemic. This is because most species make seasonal latitudinal and/or altitudinal migrations, typically to plains regions to the south. Many species belong to genera typical of the high ranges of Asia, such as redstarts (*Phoenicurus*), accentors (*Prunella*) and rosefinches (*Carpodacus*). Coniferous forests on the northern side of the Tien Shan form the southern limits of several boreal species, including black grouse (*Lyrurus tetrix*) and northern hawk owl (*Surnia ulula*), while steppe and desert birds, including great bustard (*Otis tarda*) and Asian houbara (*Chlamydotis macqueenii*) occur, predominantly in the lowlands (Mittermeier *et al.* 2004).

The Mountains of Central Asia are an important stronghold for birds of prey, with important breeding populations of such species as golden eagle (*Aquila chrysaetos*), eastern imperial eagle (*A. heliaca*), steppe eagle (*A. nipalensis*), booted eagle (*Hieraaetus pennatus*), bearded vulture (*Gypaetus barbatus*), cinereous vulture (*Aegypius monachus*), Eurasian griffon (*Gyps fulvus*), Himalayan griffon (*G. himalayensis*), peregrine falcon (*Falco peregrinus*) and saker falcon (*F. cherrug*).

4.3.4 Reptiles

More than 60 reptiles are found in the hotspot, including 10 endemics. Diversity is highest in the lower elevations, in desert and semi-desert areas. There are a significant number of species of lizards and snakes, including regional endemic species of toad-headed agamas (*Paralaudakia bochariensis*, *P. erhyrogaster*, *P. lehmanni*). CEPF grantees have discovered in 2022 new endemic species of lizards in the Ferghana Valley of Uzbekistan - *Alsophylax ferganensis* and *A. emilia*. Other endemics include *Teratoscincus rustamovii* in the Ferghana Valley, Turkmenistan Eyelid Gecko (*Eublepharis turkmenicus*) in the Kopetdag Mountains of Turkmenistan (outside of the hotspot).

Cobra snake (*Naja oxyana*) is widely distributed both in lowland deserts and in mountain areas. The Eastern steppe viper (*Vipera renardi*) is found in some parts of the Western Tien Shan, its population is fragmented and declining.

Central Asian tortoise (*Testudo horsfieldii*) used to be widely distributed from the lowlands to the foothills. However, its populations are declining in many areas due to illegal trade and habitat disturbance and require region-wide conservation and recovery efforts.

4.3.5 Amphibians

Amphibian diversity and richness patterns are opposite of that for reptiles. Species richness is low – only 8-10 species of amphibians have been recorded here, two of them are endemic, including the Semirechensk salamander (*Ranodon sibiricus*) found in the Jungaria of China and Kazakhstan and Asian frog (*Rana asiatica*) – a regional endemic in the mountains of Kazakhstan, Kyrgyzstan and China.

4.3.6 Freshwater Fishes

This arid hotspot has about 30-60 freshwater fish species (depending if introduced species and sub-endemics are counted), about 5-10 of which are narrow endemics. Endemism is centered in the Issyk-Kul Lake and Talas River basin, which lacks outlets to connect it with any other bodies of water. In addition, the Koytendag blind cave fish (*Troglocobitis starostini*) is found in a cave system of the Koytendag Mountains in Turkmenistan (Mittermeier *et al.* 2004).

The relict genus *Pseudoscaphirinchus* includes three near-extinct species in the Amudarya and Syrdarya rivers. Several loach, dace and trout species inhabit mountain streams, and many are threatened due to introduction of invasive fish and fragmentation (small hydropower and dams construction, gravel extraction and other disruption of river ecosystems).

4.3.7 Invertebrates

The regional endemics include *Euranoxia*, *Trochaloschema*, *Colpostoma*.

4.4. Ecosystem Services

The hotspot provides an astonishing array of ecosystem goods and services that are essential for the sustainable development of the whole region. These goods and services fall into four broad categories – provisioning, regulating, cultural, and supporting – and include food products; fiber and wood; land for food production; genetic and medical resources; watershed protection; habitat for flora and fauna of local and global significance; the regulation of natural hazards and climate; natural areas for leisure and recreational activities; and perhaps most important of all, the storage and release of water (Table 4.2). In the Regional Sustainable Development Strategy of Central Asia (2009), the governments officially acknowledge the role of mountains as "water towers" and storehouses of biodiversity.

Most of the population of Central Asia relies on water that falls in the mountains, where it is stored until making its way downstream to population centers. Densely populated valleys and oases of the vast drylands depend on numerous rivers and streams, especially the Syr Darya River, which rises in the Tien Shan Mountains, and the Amu Darya, which rises in the Pamir. Each flows more than 2,000 kilometers to empty into the Aral Sea. Other major regional rivers originating in the mountains are the Sarydjaz, Ili, Chu, and Talas.

Tajikistan holds 40 percent and Kyrgyzstan 30 percent of the water resources serving the five former republics. Uzbekistan, with the largest share of population in the hotspot, is the biggest water consumer, in large part because of an economy based on irrigated agriculture. Uzbekistan and Turkmenistan, with 90 percent of their water resources coming from mountains located outside their country borders, are highly vulnerable to water shortages.

Mountains provide a profound sense of place, a source of inspiration, and a rich cultural heritage. People in isolated parts of the hotspot, especially in the Pamir and Wakhan, differ from those in the main valleys, and communities have developed distinct cultural identities, agricultural traditions, and languages. However, with modernization and the dominant influence of Soviet and Chinese cultures, many minorities have lost some of that identity.

The diverse culture of the region, and the strong sense of place that the mountains provide, attract visitors from around the world, and tourism offers an additional income source for mountain communities.

Residents of the region's largest cities – Tashkent, Almaty, Bishkek, Dushanbe, and Urumqi rely on the mountains for water, fresh air, and breezes that disperse urban air pollution. The mountains' lakes and white-water streams are among the most popular weekend destinations for urban residents. The mountains also provide hiking, picnics, horseback riding, skiing, geothermal spas and resorts, and family farms selling fresh products to urban dwellers. However, many areas are suffering from poorly planned tourism development.

To varying degrees, the NBSAPs and governments of the hotspot countries have recognized the importance of ecosystem services. In several pilot areas, these services were assessed and quantified.

Table 4.2. Principal Ecosystem Services

Type of Service	Ecosystem Service	Beneficiaries	Relative Importance within the hotspot
Provisioning	Water (artisanal and run-off) for drinking, irrigation, industrial use, energy generation	Entire population	High
	Fisheries in freshwater	Local fishers, fish consumers, associated economic activity	Locally important
	Wood for firewood, charcoal	Rural communities	Minor, but significant for some remote communities
	Timber, poles and other construction material	Timber traders, forest owners, crafts-people	Significant in some areas
	Non-timber forest products (e.g. resins, fibers, fruits)	Rural and agrarian communities	Locally important for forest communities
	Grazing and fodder for livestock	Local livestock herders and, indirectly, consumers of milk, meat	High
	Medicinal plants	Local populations	Locally important, in China active use in traditional medicine
	Genetic resources	Agro-industry	High
Regulating	Moderation of extreme events	Entire population	Significant in some areas
	Reduction of soil erosion through stabilization of soils	Local population, economic activity, especially in mountains	Significant in some areas
	Local air quality	Urban populations	Moderate
Supporting	Habitat for plants and animals	Agricultural population, global existence value	Significant
	Maintenance of genetic diversity	Agricultural community and users	High
	Carbon sequestration	Global	Moderate

Type of Service	Ecosystem Service	Beneficiaries	Relative Importance within the hotspot
Cultural	Recreation	Local populations, especially urban populations using natural areas	High
	Tourism using natural spaces	Global tourists, local people engaged in the tourism economy	High
	Spirituality	Local populations	Significant in some areas

5. CONSERVATION OUTCOMES

CEPF identifies conservation outcomes at three scales, which are collectively needed to conserve global biodiversity:

1. Globally threatened species on the IUCN Red List (Critically Endangered (CR), Endangered (EN), and Vulnerable (VU)).
2. Sites that contribute significantly to the global persistence of biodiversity: Key Biodiversity Areas (KBAs).
3. The landscape-scale conservation corridors necessary to maintain the ecological and evolutionary processes upon which those sites and species depend.

To track and evaluate the effectiveness of its investments (in synergy with other projects and funding), CEPF sets quantitative targets and monitors the performance of its grants and portfolios towards these targets. To this end, conservation outcomes can be measured in terms of “number of globally threatened species benefiting from conservation action”, “area of Key Biodiversity Areas with improved management” and “area of production landscapes with strengthened management of biodiversity”.

Conservation outcomes are defined sequentially, with species outcomes being defined first, then site outcomes and, finally, corridor outcomes. Since species outcomes are extinctions avoided at the global level, they encompass globally threatened species, in the IUCN Red List categories Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). Species threatened nationally – but not globally – are not identified as species outcomes: while they may be high local and national priorities, if they are common or widespread in other parts of the world, they are not global priorities. Similarly, if no formal assessment has been conducted to define a global threat status, species cannot be global priorities.

Compared to the 2016 Red List, when the initial ecosystem profile was compiled, more plant and fish species were added by 2025 and the conservation status of several animal species was revised — for better or worse, depending on the impacts, population trends, and efforts. Revised editions of the National Red Lists (“Red Books”) were published in 2024–2025. Although these references are not always compatible with the IUCN Red List, they are official national lists used by CSOs, scientists, and environmental authorities for species conservation, making them important for consideration in the context of CEPF grants.

Site outcomes are defined next, to provide a lens for focusing investments on site-level conservation action. Within the global biodiversity hotspots, CEPF targets investment toward sites that are globally important for biodiversity. The principal basis for defining site outcomes are key biodiversity areas. The initial profile (compiled in 2016) used A *Global Standard for the Identification of Key Biodiversity Areas* (IUCN 2016; hereafter the “global KBA Standard”). It was new to the region, but thanks to participatory efforts, trainings and scientific curiosity, KBAs in the Mountains of Central Asia were defined for the first time. In 2022, the IUCN published *Guidelines for using the Global Standard for Identifying Key Biodiversity Areas*. In 2025, the ecosystem profile update process made use of relevant sections of these guidelines, along with the Q&A.

It should be noted that identifying and mapping KBAs can be a time-consuming and resource-intensive task. It requires the participation of many biology experts, as well as good data, a good understanding of the guidelines, and the ability to apply them to different local circumstances. The CEPF ecosystem profile-making calendar and budget allow for the screening and identification of sites with varying degrees of data quality, taxonomic and

geographic completeness. Robust KBA identification and documentation require considerable time. Although the profile update in May-October 2025 was conducted with the best effort and local science expertise available and participatory approach, the process faced several limitations. The recommendations resulting from the process and limitations are outlined in the final section of this chapter.

KBAs are identified for globally threatened species and ecosystems that are best conserved through the network of sites at which they are present in significant proportions. In addition, many KBAs in the hotspot are defined based on the populations of geographically restricted species (mostly endemic plants) and congregatory species (mostly birds). Sites supporting significant populations of restricted-range species contribute significantly to the global persistence of biodiversity, because there are few or no other sites in the world for which conservation action for these species can be taken. Sites that support globally significant aggregations of one or more species at particular times of year (e.g. for breeding, feeding, wintering) can also be identified as KBAs.

Site outcomes are achieved when a KBA is safeguarded through improved management of an existing protected area, creation of a new area with effective conservation measures (including conventional, government-managed protected areas as well as micro-reserves or privately managed areas), and improved management of KBAs without protection status. Improved management may include changing or adjusting management practices for a KBA to improve the long-term persistence of species and ecosystems. Expansion or modification of protected areas or management plans may involve increasing the proportion of a KBA under conservation management to meet species' requirements or introducing species-focused measures to ensure that (previously) neglected species or sites receive due attention. Creation of a new protected area may involve designating all or part of a KBA as a national, local, community or privately managed area with special conservation or land-use status.

The long-term persistence of biodiversity requires the protection of landscape-scale conservation corridors. This is particularly important for the conservation of broad-scale ecological and evolutionary processes, and for the conservation of species with wide ranges, low natural densities and migratory behavior. In addition, conservation corridors may effectively support cross-border collaboration between the managers of neighboring KBAs that are ecologically similar but divided by a national border. Conservation corridors can also be an effective tool for mainstreaming conservation requirements into land-use planning and promoting biodiversity-friendly management practices in production landscapes, such as cultivated land, pasture and forestry concessions.

Corridors are the largest scale at which conservation outcomes are identified. Corridor outcomes are achieved when a corridor contributes to ecological connectivity of KBAs and species through "stepping stones" of natural habitats and facilitate movement of migratory species. In the Mountains of Central Asia, habitat requirements of landscape species, latitudinal and altitudinal migrations of species, and considerations of potential climate change impacts on the future distribution of species and ecosystems inform the definition of conservation corridors. In addition, conservation corridors take into consideration the results of previous conservation planning exercises. In the initial ecosystem profile (2016) corridors were defined based on elaborations of WWF ECONET for Central Asia (2003-2008), and in 2025, CAMCA and GEF Snow Leopard project results were partly used.

5.1. Species Outcomes

5.1.1 Methodology

Species outcomes comprise those species that regularly occur in the hotspot and are classified as globally threatened (Table 5.1, Appendix 1). The identification of these species is based on the IUCN Red List and includes species in categories Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) at the time of ecosystem profile update (summer 2025). Extinct taxa, such as Caspian tiger are not listed, neither are species that have not been observed in the hotspot for the last 30 years, such as Syr-Darya shovelnose sturgeon (*Pseudoscaphirhynchus fedtschenkoi*, CR) and dhole (*Cuon alpinus*) (Appendix 2). CR, EN and VU species that occur in the hotspot countries but not within the hotspot limits are also excluded, although some gaps are possible (see Section 5.2.3).

5.1.2 Species Outcomes in the Hotspot

A total of 126 species outcomes were identified during the ecosystem profile updating (for comparison in 2017 – 68), around half are animals (mainly vertebrates) and other half are plants (Table 5.1). Assessments of the global conservation status of mammals, birds and amphibians are comprehensive, and relatively up to date. Assessments of reptiles and fishes are patchier, while only a tiny proportion of invertebrates have been assessed according to the Red List categories and criteria. The same is true for plants, only a small fraction of which have been assessed for their conservation status. Even considering this, 22 of the 29 CR species in the hotspot are plants. The part of the hotspot within Uzbekistan, Tajikistan, Kazakhstan and Kyrgyzstan has a high number of globally threatened species.

Table 5.1 Synthesis of globally threatened species in the hotspot

Group	CR	EN	VU	Total
Vertebrates (total)	7	16	35	58
<i>Mammals</i>	0	3	5	8
<i>Birds</i>	2	6	14	22
<i>Reptiles</i>	2	1	4	7
<i>Amphibians</i>	0	1	1	2
<i>Fishes</i>	3	5	11	19
Invertebrates	0	0	7	7
Plants	22	20	19	61
Total	29	36	61	126

Table 5.2 Distribution of terrestrial and freshwater threatened species by country

Country	CR	EN	VU
Afghanistan	5	9	23
China	2	11	16
Kazakhstan	8	23	36
Kyrgyzstan	7	22	38
Tajikistan	13	14	34
Turkmenistan	4	10	27
Uzbekistan	13	21	37

Note: Tajikistan and Kyrgyzstan fall entirely within the hotspot. Other countries only partially fall within the hotspot. Migratory and other endangered species live across countries with ranges beyond the hotspot boundary within specific country. For example,

some endangered mammals or birds are present in both Afghanistan and Uzbekistan; however, the Wakhan National Park in Afghanistan – the only area and KBA of Afghanistan within the hotspot – may not have the same red-listed species, which are present in Uzbekistan’s part of the hotspot and KBAs. For convenience, the species list focuses on those species present within the hotspot but not necessarily in the specific sites of the country. For species information linked to sites, see the site outcomes with species list.

Mammals

There are currently 8 globally threatened mammal species occurring in the hotspot. The snow leopard remains a regional conservation priority and a focus species for many donors. In 2023, the snow leopard was declared the national symbol of the Kyrgyz Republic by presidential decree. Its conservation status has improved since the initial ecosystem profile (currently VU, in the past EN). The status of many threatened ungulates, such as urial, argali, morkhur, and saiga (outside the hotspot), has improved. They receive attention from private sector actors, donors, and governments. This makes them less of a priority for CEPF but does not preclude grantee efforts to protect these species. Stakeholders during consultations noted the importance of lynx, bear and otter, although they are not assessed as globally threatened. (Lynxes and bears are protected by law in most of the hotspot countries.)

Birds

Twenty two bird species occurring in the hotspot are globally threatened, two of which are Critically Endangered. Talymarjan, the artificial wetland created by the canals and water reservoir between Turkmenistan and Uzbekistan, is a key migratory spot that hosts 30-50% of its total population during migration. This site is both an Important Bird Area (IBA) and Key Biodiversity Area (KBA). For many bird species, for example lesser white-fronted goose (*Anser erythropus*, VU), the wetlands of the hotspot play a key role in their survival. Among threatened birds of prey, the hotspot is particularly important for the conservation of eastern imperial eagle (VU), steppe eagle (EN), symbolized on the national flag of Kazakhstan, and Egyptian vulture (*Neophron percnopterus*, EN). In addition to species currently assessed as globally threatened, participants suggested that attention be given to large-billed reed warbler, cinereous vulture, bearded vulture and Himalayan griffon (Appendix 3).

Reptiles

There are seven globally threatened reptiles within the hotspot. Several of them are endemics of the Ferghana Valley, such as Fergana Even-toed Gecko (CR), Fergana toad-headed agama (VU), Strauch’s toad agama (VU). Central Asian tortoise (*Testudo horsfieldii*, VU) is a relatively common species, but is under growing risk, including due to illicit trade and excessive collection. Greater numbers of threatened reptiles are found in the vast deserts of Central Asia outside of the hotspot boundaries.

Amphibians

The hotspot supports very few amphibian species (up to 10 in total). These include one Endangered and narrowly endemic species: Semirechensk salamander. China has established a specialized nature reserve to protect this salamander, but more efforts are needed. In 2021, CEPF-funded project on monitoring of this species and its habitat in Kazakhstan’s Dzungaria ecological corridor (Oisaz and Shymbulak rivers) found that excessive and uncontrolled grazing poses the greatest risk to the salamander’s habitat. Creating a protected area for salamanders is strongly recommended to preserve its population.

Freshwater Fishes

There are at least nineteen threatened species in the hotspot. Fringebarbel sturgeon (*Acipenser nudipectus*) is a Critically Endangered species native to the Aral Sea, where it went extinct due to habitat degradation. To save the species, it was introduced to Balkhash Lake in Kazakhstan and the Upper Ili River in China that flows into this lake. The species is considered as a conservation priority in both countries but there are enough research and protection efforts in place already, and it does not require additional support from CEPF. Two endemic fish species—the Talas dace (*Leuciscus lindbergi*) and the Talas loach (*Triplophysa paradoxa*)—were placed on the red list by the IUCN in 2020. These species are found in the geographically isolated Talas River, which is shared by Kyrgyzstan (upstream) and Kazakhstan (downstream). The area and species in question were initially mapped in 2016 by the CEPF ecosystem profile. The growing threats for this area and species make it one of the conservation priorities. A new endemic species, *Triplophysa ferganaensis*, found in the isolated river of the Ferghana Valley (Shakhimardan stream), was described in 2021 and is included in the updated list (Sheraliyev 2021).

Little conservation and monitoring are conducted on the Amu-Darya shovelnose sturgeon (*Pseudoscaphirhynchus kaufmanni*), a Critically Endangered species in the Amu-Darya River. Although this species was identified as a priority in the initial phase of CEPF, its main current habitat is reportedly outside the hotspot area (in the middle part of the river, rather than the upstream part). Additionally, access is restricted because many sections of this river constitute state boundaries (Tajikistan and Uzbekistan with Afghanistan, and Turkmenistan with Uzbekistan). This factor may contribute indirectly to species protection, even without conservation as a primary objective (a potential OECM candidate).

Considering that many small and large mountain rivers of Central Asia are under multiple stress factors – boom in small hydropower, dams, gravel extraction, invasives, climate impacts – participants of the consultations in 2025 suggested a focus on water ecosystems in general, including endemic and threatened fish species, as well as migratory species aggregations, and fly corridors along rivers (e.g. the Vakhsh River, Tajikistan), and tugai forests.

Plants

Sixty one plant species found in the hotspot have been assessed as globally threatened as of 2025. Many of these are narrow endemics, including some known from no more than a handful of sites. Participants at the national and regional consultations gave particular priority to crop wild relatives, because of their high value genetic resources. These include wild relatives of pear (*Pyrus cajan*, EN, *P. korshinskyi*, CR, and *P. tadshikistanica*, CR), apple (*Malus niedzwetzkyana*, EN, and *M. sieversii*, VU) and apricot (*Armeniaca vulgaris*, EN). Beyond the species currently included on the IUCN Red List, there are many narrowly endemic plants that are under growing pressure. Some of these species were identified by participants at the consultations and are listed as species outcomes pending formal assessment (Appendix 3). Some of these species were used to identify KBAs, which can be triggered by the occurrence of restricted-range species or endemic species assessed as globally threatened at the national or regional level. Since most of the KBAs in the hotspot are defined by or include narrowly endemic plant species, site-level conservation actions will address their main conservation need (habitat protection), even if they are not recognized as species outcomes. With this in mind, participants suggested that monitoring efforts should focus on poorly known restricted-range plant species, with few or no known populations within KBAs.

Particular attention was also given to tree species, as reflected in Appendix 4. In the steppe, high altitude, and high latitude regions of the hotspot, tree endemism is not high

relative to other parts of the world (e.g., the tropics). Nonetheless, with 12 globally threatened species and six endemics – at least across the five Central Asian countries – recognition of *in situ* and *ex situ* conservation efforts is relevant

5.2. Site Outcomes – Key Biodiversity Areas

5.2.1 Methodology

Site outcomes comprise KBAs: sites of importance for the global persistence of biodiversity. KBAs are identified for biodiversity elements for which specific sites contribute significantly to their global persistence, such as globally threatened species or ecosystems. The identification of KBAs uses multiple criteria and sub-criteria, each with associated quantitative thresholds (IUCN, 2016). Sites are identified as KBAs when they meet at least one of the following criteria:

- A1: presence of a significant proportion of the global population of one or more globally threatened species.
- A2: presence of a significant proportion of a threatened ecosystem.
- B1 to B4: presence of geographically restricted biodiversity (which may not necessarily be threatened), including individual species, co-occurring species, assemblages of species, and ecosystem types.
- C: ecological integrity: sites that hold wholly intact ecological communities with supporting ecological processes.
- D: exceptional biological processes, including demographic aggregations (such as seasonal breeding or feeding aggregations of a species), ecological refugia, and source populations essential for the survival of the species.
- E: irreplaceability: sites identified through a complementarity-based quantitative analysis of irreplaceability as being essential for achieving conservation goals, where loss would significantly reduce options for biodiversity protection.

In consultation with CEPF, the ecosystem profiling team at Zoï Environment Network and in-country experts focused on a subset of these criteria, in response to limitations of time, and information. Criterion A1 was applied, using available information on globally threatened species. Criterion A2 was initially considered by the team, but the IUCN Red List of Ecosystems does not yet cover the Mountains of Central Asia, meaning that this criterion could not be applied. Criterion B1 (individual geographically restricted species) was applied, due to the availability of data on restricted-range species, especially plants. The other B criteria were not applied, due to their complex nature and lack of time and budget. Nevertheless, some KBA triggers under Criteria B2 (co-occurring geographically restricted species) have been considered in limited cases for Uzbekistan, where the available data and scientific expertise allow for such definitions. Criterion B3 (geographically restricted assemblages) could also be considered. Criterion D1 (demographic aggregations) was applied, especially to data on birds. This was largely through reassessment of IBA data against the new thresholds in the new Global Standard for the Identification of KBAs (IUCN 2016) and new data, where they are available. Criteria D2 (ecological refugia) and D3 (recruitment sources) were not applied, due to lack of relevant information. Finally, Criteria C and E were not applied due to lack of time, data and budget.

KBAs are sites, meaning that they have a boundary that can be shown on a map. The aim of KBA delineation is to develop boundaries that are ecologically relevant yet practical for management. Thus, delineating the boundary of a site requires both spatial data and expert judgment on the likely limits of the ecological communities or individual trigger species for

which the site is identified. It also requires pragmatic judgment so that, for example, it may make sense to use an existing boundary of a protected area or an administrative boundary or other type of management unit, such as a hunting concession, forest management unit (known as “leshoz” in the five countries of Central Asia) or water protection zone, to yield a site that is actually or potentially manageable as a single unit, where this appears to coincide with the ecological boundary of the site.

The global KBA Standard (IUCN 2016) and the guidelines provide additional guidance on approaches and choices for delineation. In two situations delineation was relatively simple and straightforward:

- Where a candidate KBA generally coincided with the boundaries of an existing protected area with effective enforcement and management.
- Where a candidate KBA could be defined geographically, such as a section of a river, a micro-catchment, or other geographic element (mountain ridge, a distinct occurrence of sand or rock), where conservation management could be applied effectively or is already in use.

Many KBAs in the Mountains of Central Asia Hotspot fell into one or both categories. Even then, the application of these apparently simple rules could be complicated. For example, large protected areas (such as Tajik National Park in Tajikistan or Khan Tengri National Park in Kyrgyzstan or the largest mountain lake of Central Asia – Issyk Kul) or protected areas nominated as UNESCO World Heritage sites often have different management sub-units. Some examples are discussed in Section 4.2.3.

Another challenge is that the quality of available protected area maps varies from country to country. In Kazakhstan and Uzbekistan, protected areas maps are detailed and relatively easy to access (except for the newest protected areas). Turkmenistan has good maps. In Tajikistan and Kyrgyzstan, reliable, up-to-date protected area contours (as well as the latest state border lines in selected areas) are not available. In China, many protected areas are well defined, while some are not. With the exception of Uzbekistan, the data in the World Database of Protected Areas (WDPA) is incomplete and outdated.

5.2.2 Departure Points and Steps in KBA Identification

In the past, a site could qualify as a global KBA on the basis of the confirmed presence of a globally threatened species or a single-site endemic. However, the Global Standard on KBAs imposes higher documentation requirements, needing proposers to demonstrate that a site must regularly hold a specific proportion of a species’ global population for it to qualify as a global KBA. A number of metrics can be used to infer that the global population thresholds are met at a site, such as range, area of occupancy and extent of suitable habitat (IUCN 2016).

For many globally threatened and restricted-range species in the Mountains of Central Asia Hotspot, the required and up-to-date data on global and site-level population (observed or inferred) are not available. Thus, it is not always possible to determine whether a given candidate site meet the global criteria and could be confirmed as a global KBA within the timeframe of the ecosystem profiling process. Such sites are considered “KBAs with global/regional status”. This also applies to selected sites identified as IBAs under a previous analysis by the BirdLife International, which used an earlier set of thresholds. Sites for which the available data showed that they met the thresholds of the standard could be considered as “global KBAs”. Further work to mobilize data to determine the status of the KBAs with global/regional status is needed. If such analysis confirms that KBAs qualify at

global KBAs, they could be added to the list of site outcomes and registered in the Key Biodiversity Areas global database.

The profile team analyzed the globally threatened species on the IUCN Red List that occur within the area of the Mountains of Central Asia. For Kyrgyzstan and Tajikistan, these essentially comprised the entire country list. For the other hotspot countries, national experts screened and analyzed the list of species to remove those that did not regularly occur within the hotspot boundaries or were considered extinct. Further work involved detailed, site-specific screening of species populations to assess which ones could potentially meet the global thresholds established in the new standard.

At the time of compilation of the initial CEPF ecosystem profile (2016-2017), the BirdLife International kindly provided an extract from its World Bird and Biodiversity Database, of all IBAs that lie within the hotspot boundaries. At that time bird species data for these pre-existing IBAs were analyzed and those sites that the available data enabled Criteria A1 (globally threatened species) or D1 (demographic aggregations) to be triggered were designated as global KBAs. Other IBAs were designated as “KBA global/regional status not confirmed”, and were shown on the maps as pink-shaded polygons.

As of the 2025 update, the IBA database covering the Mountains of Central Asia hotspot had not changed, including the years of the last assessment, which were usually between 2006 and 2010. National experts sought the most recent data on migratory and threatened birds from national Red Books, monitoring studies, and CEPF projects. While situation on some sites did not change, others experienced changes. It would be helpful to update the KBA global database as a co-product and co-benefit of the next phase of CEPF grants. This would make site assessments more up-to-date.

WWF’s ECONET data provided baseline information for screening core biodiversity areas against KBA criteria and corridors in the initial profile. However, due to a lack of site-specific species information and an outdated assessment (twenty years old by 2025), it was used only as a supplemental source.

The following sources were used to update the ecosystem profile, particularly Conservation Outcomes section: the Central Asian Mammals Migration and Linear Infrastructure Atlas (second edition, 2025); national state of the environment reports and biodiversity reports produced between 2015 and 2024; the latest available national maps of protected areas, atlases and the national Red Books; CEPF project reports and academic research / expedition reports; other sources. See the References section for further details.

In contrast to ecosystem profiling efforts in other hotspots, there were no Alliance for Zero Extinction (AZE) sites identified for the Mountains of Central Asia. Data on Important Plant Areas (IPAs), which is useful for applying the global KBA standard, is available for parts of Uzbekistan and was used in the KBA update, along with results of recent flora assessments in northern Tajikistan and southern Kazakhstan.

In 2016, when the initial profile was produced, the KBA concept was new to the region (and known to a narrow conservation group who had worked on IBA identification), and the profiling team had to make a major effort to introduce the concept, including translating the global KBA Standard (IUCN 2016) into Russian and produce simple explainers. Across the region the profiling team of Zoï Environment Network provided detailed explanations of the global KBA criteria at meetings and consultations, which brought together biodiversity experts, the general public and politicians. The consultations gave a wide range of

stakeholders the chance to contribute to draft lists of KBAs and species, discuss delineation, and suggest candidate KBAs.

By 2025, when the ecosystem profile update was being developed, the profiling team at Zoï Environment Network noted limited progress in understanding KBAs, especially science and delineation nuances, among CEPF project partners and during stakeholder consultations. This is probably due to a combination of factors, including overly scientific concepts and documentation requirements, limited work and follow-up trainings on KBA identification and documentation, as well as limited use of KBAs beyond CEPF and GEF projects. KBA/IBA use in environmental impact assessments (EIA) is restricted to a narrow group of EIA developers.

Multiple factors and arguments were applied to prioritize KBAs for CEPF conservation investments, encompassing considerations of biological importance, existing and planned conservation actions, security and accessibility of the site, status of legal protection, geography and other aspects of feasibility. Biological prioritization was carried out on the basis of uniqueness (i.e., irreplaceability, or how many other sites are known to hold the same species or ecosystems), vulnerability (i.e. global threat status of the species triggering KBA status) and perceived or assessed level of threats to the site (i.e., the likelihood that the site will lose the features that qualify it as a KBA). Given the intense nature of the assignment, and an extensive list of species and sites, the decisions on prioritization of specific species and sites were primarily based on:

- Practical feasibility for implementation of CEPF-funded conservation projects by CSOs, including lessons and follow-up options from projects in the initial phase of CEPF investments.
- Likelihood of achieving conservation outcomes for priority species and sites.

Given the complex topography of the hotspot, and the concentration of biodiversity in areas away from major centers, many KBAs lie along international borders, and require coordinated actions on both sides. To provide opportunities for cross-border conservation, attention was given to selected contiguous KBAs in neighboring countries (and corridors). In 2025, participants emphasized the growing population and infrastructure pressures in and around densely populated areas. Some KBAs were prioritized in these areas.

The IUCN has recently designed the new concept of Key Geoheritage Areas (KGAs) envisioned as a complement to the existing Key Biodiversity Areas (KBAs). KGAs are sites with significant geologic features, such as rocks, fossils, and landscapes, that contribute to the global understanding of Earth's natural history and processes. The Mountains of Central Asia possess many unique geologic features and sites located both within and outside of KBAs, such as Madygen geo-park in southern Kyrgyzstan, Small Karatau geo-park in Kazakhstan, nature reserves with outstanding geo-features (Kitab and Sarmysh in Uzbekistan, Shirkent in Tajikistan) and could potentially be considered for multi-purpose management.

The final list of priorities considers both biological criteria and local specificities capturing political priorities and realities, as well as opportunities for synergistic investments with other projects. The final prioritization of sites for CEPF investment is presented in Chapter 13.

5.2.3 Limitations of the Assessment and Outlooks for Improving the Analysis and Practical Engagement with KBA Stakeholders

All KBAs were defined using the global KBA Standard (IUCN 2016), which remains a novel concept to the region. The identification of KBAs requires confirmed records of the presence of trigger species or communities, with sufficiently accurate and up-to-date data on species populations and distribution of communities and ecosystems. The lack of data on species distribution among sites remains a significant challenge in many areas of the hotspot, especially in Kyrgyzstan and Tajikistan. There were only a few recent surveys. Distributional data on most restricted-range species and many globally threatened species, except Uzbekistan and Turkmenistan's Koytendag section, are scarce and outdated and insufficiently precise (e.g., no detailed geographic information or site locations). There was, thus, a bias in the identification of KBAs towards known and observed species, and towards areas where there has been a recent and robust survey effort.

The contrasts of biodiversity survey and monitoring levels are remarkable across the hotspot. For example, in Afghanistan, the Wakhan National Park established in 2014-2016 has been spared from conflicts and thanks to the efforts of WCS and the National Environmental Protection Agency (NEPA), this site was better studied for large mammals than most other biodiversity-rich areas of Central Asia. It meets the global KBA criteria based on the number of snow leopards alone and holds significant populations of other species. However, the current and future wildlife monitoring here is uncertain (Bohnett *et al* 2025, Moheb 2024).

On the other hand, in many KBA sites of Kyrgyzstan, data on snow leopard, not to mention numerous lesser-known species, are outdated, incomplete or poorly documented. Thus, many sites could not be confirmed with high confidence as global KBAs. The recently updated and published national Red Books with threatened flora and fauna species could have been very useful for KBA identification. However, the lack of spatial and numerical information on species distribution place limits on their use.

Tajik National Park covers 2.2 million hectares (equivalent to the half the size of Switzerland). It includes numerous sub-sites that have trigger species and qualify as KBAs in their own right, such as Karakul Lake, Murghab, and areas of the Western Pamirs that hold endemic wild crop relatives. On the other hand, such fragmentation of a single management unit is not in line with the global KBA Standard, which encourages delineating KBA boundaries to correspond with the most appropriate management unit(s). In this case, the KBA boundaries followed the official boundaries of the national park, which was nominated as a UNESCO natural World Heritage site in 2013. While amalgamation of smaller KBAs into a single large one does result in a loss of information about sub-sites, it makes more sense from the conservation point of view, especially when species with large ranges are considered. For example, the assessed (inferred) number of snow leopards in the national park triggers the global KBA Criterion A1 when the park is considered as a single unit but would not do so if each of the smaller units were considered separately.

The Issyk Kul Biosphere Territory, which comprises the entirety of Issyk-Kul province of Kyrgyzstan, covers 4.3 million hectares: an area larger than Switzerland. Its official status and legal regulations date back to 1998-2001 but, in reality, it does not function as a protected area, since enforcement capacities are not adequate for conservation tasks across such a large area. Numerous individual nature reserves within the biosphere territory work well, however, with Sarychat-Ertash Strict Nature Reserve being one the best protected and monitored sites in Kyrgyzstan. This site, and the new Khan-Tengri National Park established in 2016, both qualify as KBAs.

Issyk Kul Lake, the central element of the biosphere territory, a biologically important site listed under the Ramsar Convention, is a more complicated case. The lake is very large (1.6

million ha, half the size of the current Aral Sea, which is 3.2 million ha) and supports a number of endemic fish, many of which are on the brink of extinction due to over-fishing and introduction of non-native predatory fishes. On the one hand, the entirety of Issyk Kul Lake could be considered as one KBA based on species and possibly ecosystem-based criteria. On the other hand, its original aquatic and shoreline ecosystem (especially northern more developed and touristic part) has changed over the last 50 years and its designation as a single, effective management unit is doubtful due to its size. Consequently, the western and eastern parts of the lake and adjacent shoreline were identified as separate KBAs.

The upstream Ili River basin protection zone in China posed similar challenges. The size of the management unit was considered inappropriate for site and species-focused conservation. The same was true for the downstream Ili basin in Kazakhstan, which discharges into Bakhsh Lake (outside of the hotspot boundary). This area was also considered too large to effectively manage as a single unit, especially given the activities of numerous economic sectors (e.g., mining, tourism and agriculture) that contribute to water pollution and river-flow fragmentation. Consequently, several smaller KBAs were identified within the Ili basin.

In the 2025 update, the ecosystem profiling team collaborated with the NBSAP update and national target processes in Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan to promote the recognition and importance of KBAs. Additionally, new KBAs were identified through new research in certain regions.

Other challenges and limitations in applying the global KBA Standard in the context of the Mountains of Central Asia Hotspot are listed below. To the extent that these can be addressed, whether as part of the CEPF investment phase or through separate initiatives, the quality and efficiency of future conservation planning processes in Central Asia will be improved.

- **Species synonyms and sub-species:** Some of the species that were screened and analyzed as part of the KBA identification process have multiple sub-species or synonyms. One example is argali (*Ovis ammon*, NT), which has four sub-species present within the hotspot: *O. a. karelini*; *O. a. severtzovi*; *O. a. nigrimontana*; and *O. a. polii*. Some of these sub-species are considered as regional endemics, such as Karatau mountain sheep (*O. a. nigrimontana*) and Severtzov mountain sheep (*O. a. severtzovi*), which are recognized nationally as distinct species. There are differing opinions regarding the taxonomic status of these and other taxa of large, globally threatened mammals, as well as regarding various endemic fishes and plants. In many cases, the taxonomy debates are ongoing. The global KBA Standard emphasizes the use of species, rather than sub-specific taxa, for application of the KBA criteria. This conflicts with the opinion of some experts, who suggest that sub-species of mammals and reptiles or flora could be considered in KBAs, as proposed during consultations. The result is that local sub-species of brown bear, locally known as Tien Shan brown bear, or otter, locally known as Central Asian river otter, among others, are not used as KBA trigger species or included as species outcomes (Appendix 1).
- **Definitions of endemism and ecosystems:** The definitions of these terms used in the global KBA Standard differ from those used in the region traditionally. Given that spatial information on species distribution is missing or incomplete, it was not always possible to define which species have a global range of less than 50,000 square kilometers or to comprehensively check the linear distributions of aquatic species to see if these are less than 200 kilometers. There are also several ecosystem

classifications available for the hotspot, depending on the group of authors or the country in focus. Ecosystem classifications and maps already differ among the hotspot countries and adding a global approach and definitions makes the task even more complicated. Recent botanical research published in 2018-2025 presents interesting new insights on co-occurring species and assemblages of species (could be considered under B2 and B3 criteria). However, these data were not used in KBA updates and identification due to limited time.

- **Anthropogenic ecosystems and agro-ecosystems:** It is not always obvious to the general public and policy makers why some anthropogenic ecosystems, such as wastewater lakes, reservoirs with dams and irrigated lands with extensive canals, could qualify as KBAs of global importance. However, during the 2025 update, stakeholders suggested including certain sites in the CEPF scope of work to demonstrate and introduce monitoring and conservation management approaches among non-biodiversity actors, such as energy companies, water authorities, pasture use committees, or urban administrations.
- **Limitations in access to and the use of global assessments and information:** These limitations are linked to both English-language skills of local experts and inconsistencies among global, regional and national assessments of the conservation status of species. For example, the global threat level for markhor (*Capra falconeri*) was been downgraded in 2015 from EN to NT, and it remained at this level (NT) in 2025, with an indication of growing populations both worldwide and within the hotspot thanks to conservation efforts. But in the hotspot countries, it is still officially considered to be a threatened species (in addition to being a regional endemic). What is more, some NT and VU species with a large area of occupancy, for example, birds of prey, may have their largest populations or best-preserved habitats in the hotspot, as compared to other parts of the world. While they are not threatened with extinction, conservation efforts for these species in the hotspot, especially in Kazakhstan, may make a disproportionate contribution to their global persistence. Global databases are insufficient for KBA identification, delineation, and updates. Therefore, the formation of national KBA working groups is encouraged.
- **Lack of species global population data:** Lack of data needed to estimate or infer global population sizes of globally threatened or restricted-range species became a barrier to applying KBA Criteria A1 and B1, especially for plants. For example, there is no global or comprehensive regional assessment of the distribution of *Malus sieversii* (VU), which is believed to be the ancestor of the domesticated apple. While it is known to occur in China, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, and local data exists, it proved impossible to apply the KBA criteria for this species, as its global population could not be either estimated or inferred with a good degree of accuracy, and the IUCN assessment is twenty years old. In order to partially compensate for this gap, Kazakh experts applied the metric for “distinct genetic diversity”, which can be used to infer that KBA thresholds are met under the threatened and geographically restricted species criteria, based on Kazakhstan’s extensive research on this topic, particularly for the wild apple forests in Dhungaria, which are among the best preserved, remote and least affected by hybridization.
- **Lack of robust local data:** Large differences still exist among countries in terms of the availability of up-to-date, spatially precise data on the status and distribution of species. For example, thanks to the support of the government, the GEF and other partners, Uzbekistan has digitalized flora and fauna data, and has conducted extensive research on potential expansion of the protected area system, which

helped enormously in the KBA analysis. Data on the Wakhan valley in Afghanistan are good and relatively up-to-date at least until 2021 (when a major change in governance occurred). In Tajikistan, data exist at the National Biodiversity Centre and the Academy of Science. However, due to a lack of modern research, except for selected species and sites, many datasets are based on past studies, and only a few areas with ongoing and recent biodiversity projects (e.g. northern and central Tajikistan) have robust, up-to-date information. In Kyrgyzstan, there is a diversity of data but, unfortunately, it is very fragmented, and the limited timeframe and budget for the profile update process, prevented the use of such data. In China, Kazakhstan and Turkmenistan good information exists but it is limited to protected areas. Areas outside protected sites have little information, except for selected sites with regular monitoring. In all hotspot countries, official data on the wildlife population sizes tend to be aggregated and focused on hunting species (ungulates) or iconic species (snow leopard, saiga).

- **Language:** the profiling team made an effort to translate key int. references into Russian, one of the regional working languages. It is encouraging to note that the number of English-language references about the flora and fauna in the Mountains of Central Asia published in international journals and publications increased from 2017 to 2025 and inputs to the Global Biodiversity Information Facility (GBIF) increased. During this period, the Chinese Academy of Sciences' contributions to environmental and biodiversity research in Central Asia have also increased, and some publications are already available. However, new databases are not yet available and in the next phase of CEPF grants efforts could encourage CSOs in the solicitation, access, and updating of various national and regional data.
- **Lack of access to local and international expertise:** Invertebrates and fishes are among the most challenging groups, as research on these species is patchy, there are very few experts in each country with good knowledge, and, in general, the top experts are very busy. Engaging the top experts requires forward planning, as they may be busy with other projects or away in the field. It also requires good compensation and enough time for preparation. The ecosystem profiling team had only four months during the peak field season and a limited budget to engage experts on numerous taxa, which limited the use of available expertise.

Because of varying availability and quality of data in different hotspot countries, the local experts took a different approach to KBA delineation in each case. For example, in Kazakhstan and Turkmenistan delineation often follows well-defined units, mainly protected areas, hunting areas and sites with well defined ecologically boundaries (e.g. wetlands). In China and Tajikistan some areas are expanded or modified with a view towards more effective management. KBA delineation is a challenge in situations of agricultural lands that are quasi-private, because the land ownership is a mosaic. One of the solutions for such groups with multiple land holdings is to apply ecological criteria and local management perspective, since the local administrations in charge of land could be a lead actor in conservation within production landscapes. In Uzbekistan, the expert team applied their field knowledge to KBA delineation decisions that combined official management units (i.e., protected areas or forest management units) with ecological units that sometimes stretched beyond them. This was the case for Western Gissar Mountains KBA, which is centered on but extends beyond Gissar Nature Reserve. In the opinion of the expert team, a larger management unit allows more effective conservation actions for the KBA trigger species than if the site was sub-divided into several separate KBAs. The recommendations of a UNDP-GEF project on the expansion of the protected areas and the NBSAP update in Uzbekistan also informed KBA delineations. In Tajikistan, some KBAs boundaries are fully

aligned with protected areas, while others expand beyond them, with the intention that existing protected areas could be expanded into or take responsibility for conservation management in adjacent areas of habitat. In Kyrgyzstan, many KBAs are defined within protected area and the forestry management units around them.

In the small section of the hotspot within Turkmenistan, three KBAs are identified. Two of these are based on IBAs, whose boundaries were followed with no changes in delineation. The third KBA, Koytendag Mountains, which is triggered by numerous taxa, is centered on a strict nature reserve and includes the species management areas attached to it.

In Afghanistan's section of the hotspot, the large KBA, Wakhan National Park, is well-defined geographically, and its boundaries have not changed in 2025 since they were first identified in 2016.

5.2.4 Site Outcomes in the Hotspot

A total of 170 KBAs, covering a combined area of about 200,000 square kilometers, were identified in the ecosystem profiling update process (Appendix 4, Figures 5.1 to 5.8). In the 2025 update, Tajikistan, Uzbekistan and Kyrgyzstan have the most KBAs by number and the combined area (plus China, but its data was not updated comprehensively in 2025). Afghanistan and Turkmenistan have the fewest KBAs, due to the relatively small area of these countries included within the hotspot boundaries. Because of the data limitations discussed in the previous section, there is no doubt that further desk research and fieldwork as part of projects or targeted research grants would improve the quality of KBA delineation and identify additional global KBAs in the hotspot.

Of the 170 KBAs identified within the hotspot boundaries during the initial ecosystem profile and its subsequent update, **154 are confirmed, global KBAs** (Table 5.3). These cover an area of 176,000 square kilometers, equivalent to about 20 percent of the total area of the hotspot. The remaining 16 KBAs support globally threatened species, restricted-range species or other elements of biodiversity relevant to the KBA criteria but the available data are insufficient to determine whether they meet the thresholds for the global KBA criteria. These sites are therefore considered "candidate" site outcomes: KBAs with global/regional status. The final confirmation of global KBAs will only occur when they are entered into the global database of KBAs (<http://www.keybiodiversityareas.org>), where additional peer review and documentation may be required.

As of summer 2025, when the ecosystem profile was updated, about 50 KBAs within the Mountains of Central Asia hotspot were considered as "confirmed global KBAs" in the global database, primarily for birds (A1 or D1 criteria) or mammals (A1). The global database did not include any "confirmed" KBAs focused on flora in the Mountains of Central Asia. According to the initial (2017) and updated (2025) ecosystem profiles, the majority of KBAs within this hotspot are triggered by endemic flora species and their communities (B1, B2 criteria for 80-100 sites).

Collaborating further with the KBA Secretariat and through national KBA working groups and processes (to be promoted and established) can help improve the completeness of the KBA database and expand its coverage to include species beyond birds and mammals for the Mountains of Central Asia hotspot.

Table 5.3. Number and area of KBAs in the hotspot

Country	Number of confirmed global KBAs	Total area of confirmed global KBAs (ha)	Number of KBAs with global/regional status not confirmed
Afghanistan	1	1,090,000	0
China	14	3,146,000	9
Kazakhstan	24	2,609,000	2
Kyrgyzstan	35	2,903,000	2
Tajikistan	37	4,313,000	2
Turkmenistan	3	377,000	0
Uzbekistan	40	3,165,000	1
TOTAL	154	17,603,000	16

Figure 5.1 Map of KBA(s) in the Afghanistan part of the Mountains of Central Asia Hotspot



Table 5.4. KBAs in Afghanistan

Code	KBA name
1	Wakhan National Park

Figure 5.2 Map of KBAs in the China part of the Mountains of Central Asia Hotspot



Table 5.5. KBAs in China

Code	KBA name
1	Pamir Plateau Nature Reserve
2	Tuomuer Nature Reserve
3	Bayanbuluke and Kaidu River Valleys
4	Kunes forest
5	Nalati Prairie Nature Reserve
6	Tangbula Forest
7	Gongliu Wild Fruit Forest Nature Reserve

Code	KBA name
8	Ili River Basin
9	Yining Xiaoyebaila Nature Reserve
10	Xitianshan Nature Reserve
11	Wenquan Nature Reserve and River Basin
12	Xiaerxili Nature Reserve
13	Tianshan Tien Chi Lake (Bogdashaan) Nature Reserve
14	Jiangbulake Forest

Figure 5.3. Map of KBAs in the Kazakhstan part of the Mountains of Central Asia Hotspot



Table 5.6. KBAs in Kazakhstan

Code	KBA name
1	Karatau
2	Kyzylkol
3	Arystandy
4	Turkestan
5	Ugam
6	Tolebi
7	Boraldai
8	Aksu-Zhabagly
9	Chapak Pass and Ters-Ashchibulak Reservoir
10	Berikkara
11	Merke
12	Aksay
13	Almaty Nature Reserve
14	Issyk
15	Assy Plateau
16	Kolsai
17	Toraigyr
18	Narynkol
19	Tuzkol
20	Charyn Park
21	Altyn-Emel
22	Koksu
23	Zhongar-Alatau
24	Chu-Ili Mountains

Figure 5.4. Map of KBAs in the Kyrgyzstan part of the Mountains of Central Asia Hotspot



Table 5.7. KBAs in Kyrgyzstan

Code	KBA name
1	Besh-Aral
2	Chandalash
3	Sumsar
4	Kassan-Sai
5	Aflatun-Padyshata
6	Sary-Chalek
7	Besh-Tash
8	Talas River
9	Nyldy
10	Chychkan
11	Torkent
12	Suusamyr
13	Sumsar
14	Kara-Suu
15	Dashman
16	Isfairam Sai
17	Ravat
18	Shiretki-Ortontuz

Code	KBA name
19	Leilek
20	Alai
21	Bulolu-Koksuu
22	Alai Kuu
23	Aksai-Arpa
24	Chatyr Kul lake
25	Son Kul lake
26	Ara Bel
27	Kumtor, Sarychat Ertash
28	Altyn Arashan
29	Karkyra
30	Sary Djaz, Khan Tengri
31	Eastern Issyk Kul
32	Western Issyk Kul
33	Chon Aksu
34	Kyrgyz Ala-Too
35	Tulek Valley

Figure 5.5. Map of KBAs in the Tajikistan part of the Mountains of Central Asia Hotspot



Table 5.8. KBAs in Tajikistan

Code	KBA name
1	Upper Asht and Aktash
2	Adrasman
3	Kayrakkum (Bakhri Tojik) and the right bank of the Syr Darya
4	Turkestan Mountains Southern Slope
5	Upper Zeravshan
6	Yagnob National Park
7	Sarazm
8	Romit
9	Sarikhadang and Iskanderkul Lake
10	Kondara
11	Shirkent
12	Karoni
13	Tajik Babatag
14	Gazimalik
15	Sarsaryak
16	Ayvaj-Upper Amu Darya
17	Tigrovaya Balka Reserve
18	Tajik Karatau

Code	KBA name
19	Khojamumin
20	Kushvoristan
21	Baljuvan
22	Muminabad
23	Dashtijum
24	Darvaz
25	Kamarou
26	Tavildara
27	Vanj
28	Rushan
29	Shakhdara
30	Kudara
31	Ishkashim
32	Alichur Valley
33	Zorkul Mountains
34	Shorkul Lake
35	Tajik National Park
36	Mogoltau
37	Shokh-Kurjalakum

Figure 5.6. Map of KBAs in the Turkmenistan part of the Mountains of Central Asia Hotspot



Table 5.9. KBAs in Turkmenistan

Code	KBA name
1	Koytendag
2	Tallymerjen
3	Zeyid Reservoir and Kelif Lakes

Figure 5.7. Map of KBAs in the Uzbekistan part of the Mountains of Central Asia Hotspot

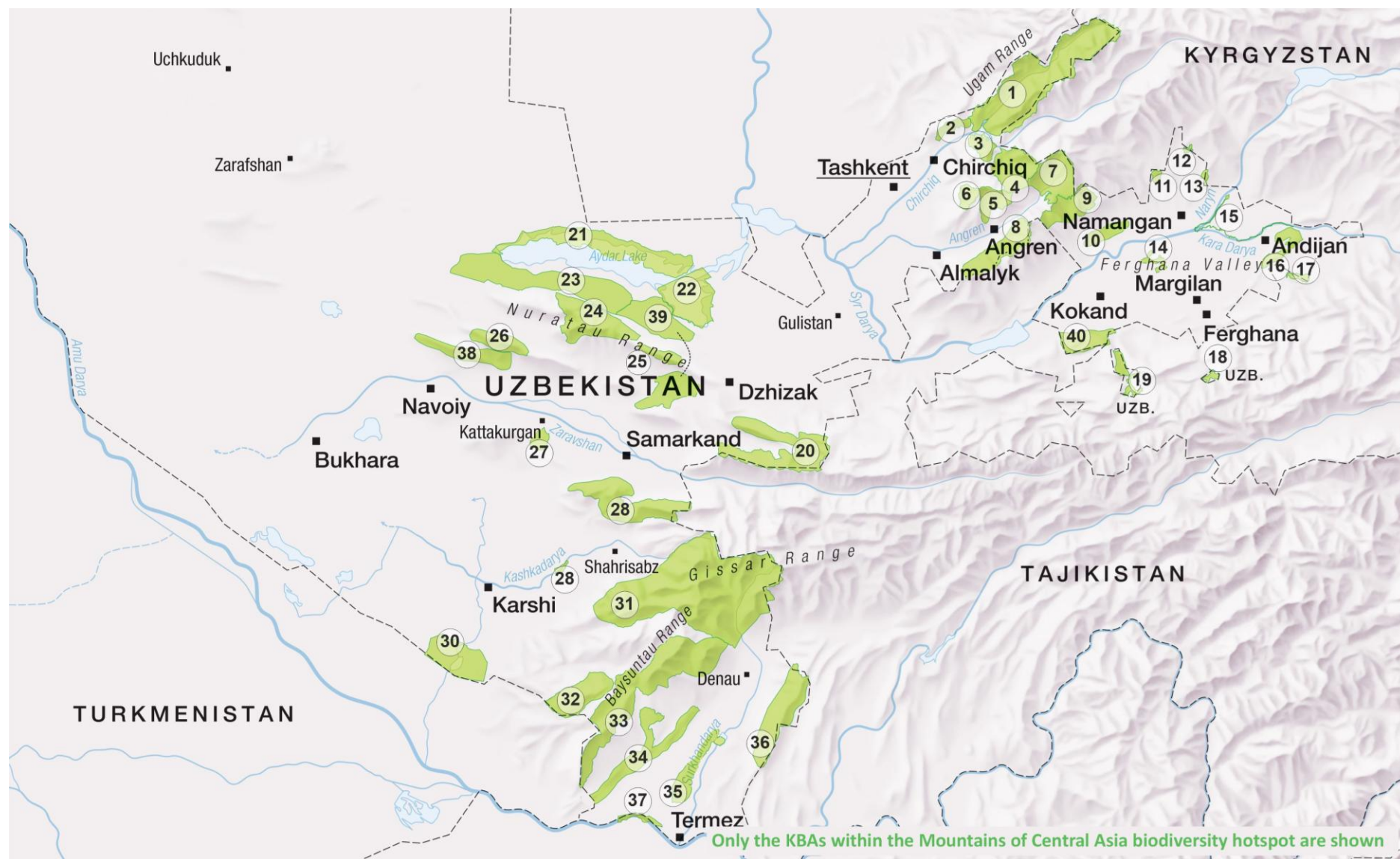


Table 5.10. KBAs in Uzbekistan

Code	KBA name
1	Pskem River Basin
2	Karzhantau Ridge
3	Chimgan
4	Akbulak River Basin
5	Bashkizylsay River Basin
6	Karabau and Dukentsay River Basins
7	Angren Plateau
8	Northern Slope of the Kuramin Ridge
9	Upper Reaches of Chadak and Chorkesar Rivers
10	Pap Foothills
11	Karatag
12	Ungor Tepa
13	Chartak Foothills
14	Akkum Sands
15	Syr Darya Upstream
16	Teshiktash Foothills
17	Chilustun and Kyrtashtau Mountains
18	Shakhimardan
19	Sokh
20	Northern Slope of the Turkestan Mountains

Code	KBA name
21	Northern Aydarkul
22	Tuzkan Lake
23	Northern Piedmont Plain of Nuratau Ridge
24	Nuratau Ridge
25	Koytash Ridge
26	Aktau Ridge
27	Kattakurgan Reservoir
28	Western Zeravshan
29	Chimkurgan Reservoir
30	Talimarjan Reservoir
31	Western Hissar
32	Tarkapchigay River Basin
33	Kugitang and Baysuntay Ridges
34	Kelif-Sherabad Range
35	Khaudaktau
36	Uzbek Babatag
37	Amu Darya floodlands
38	Karatau Ridge
39	Forish and Gallyaral
40	Shorsuv

Figure 5.8. Overview map of KBAs in the Mountains of Central Asia Hotspot



5.3. Corridor Outcomes

Conservation corridors are large-scale spatial units necessary to maintain ecological and evolutionary processes. Corridors were identified with a view to: meeting the area requirements of wide-ranging species; maintaining ecological connectivity among KBAs; ensuring the uninterrupted delivery of key ecosystem services; and enhancing resilience of ecosystems to climate change. Twenty-six conservation corridors were identified in the ecosystem profile update process, covering a combined area of 580,000 square kilometers, equivalent to 67 percent of the area of the hotspot (Appendix 5, Figure 5.9). During stakeholder consultations in 2025, an additional corridor covering water ecosystems (on top of the Upper Amudarya and Panj River and Kelif-Talimarjan-Termez) proposed considering growing pressures and risks to connectivity.

The conservation corridors range in size, reflecting variation in the appropriate scale of landscape-level conservation in different ecosystem types. One of the smallest corridors, the Upper Amudarya and Panj River, covers 1,600 square kilometers along the borders of Afghanistan, Tajikistan and Uzbekistan. The largest corridor, the Pamir-Alai and Wakhan, covers 122,000 square kilometers centered on the Pamirs.

The Kelif-Talimarjan-Termez corridor, shared by Turkmenistan and Uzbekistan, mainly consists of wetlands. Its KBAs are important for threatened and wetland-dependent species. As is the case with several other corridors, CEPF could support coordinated efforts on both sides of the border so that conservation actions are well aligned, effective and collaborative. Further upstream, cooperation in the Upper Amudarya and Panj River corridor may help to strengthen exchange of biodiversity information and conservation experience between Afghanistan and Tajikistan.

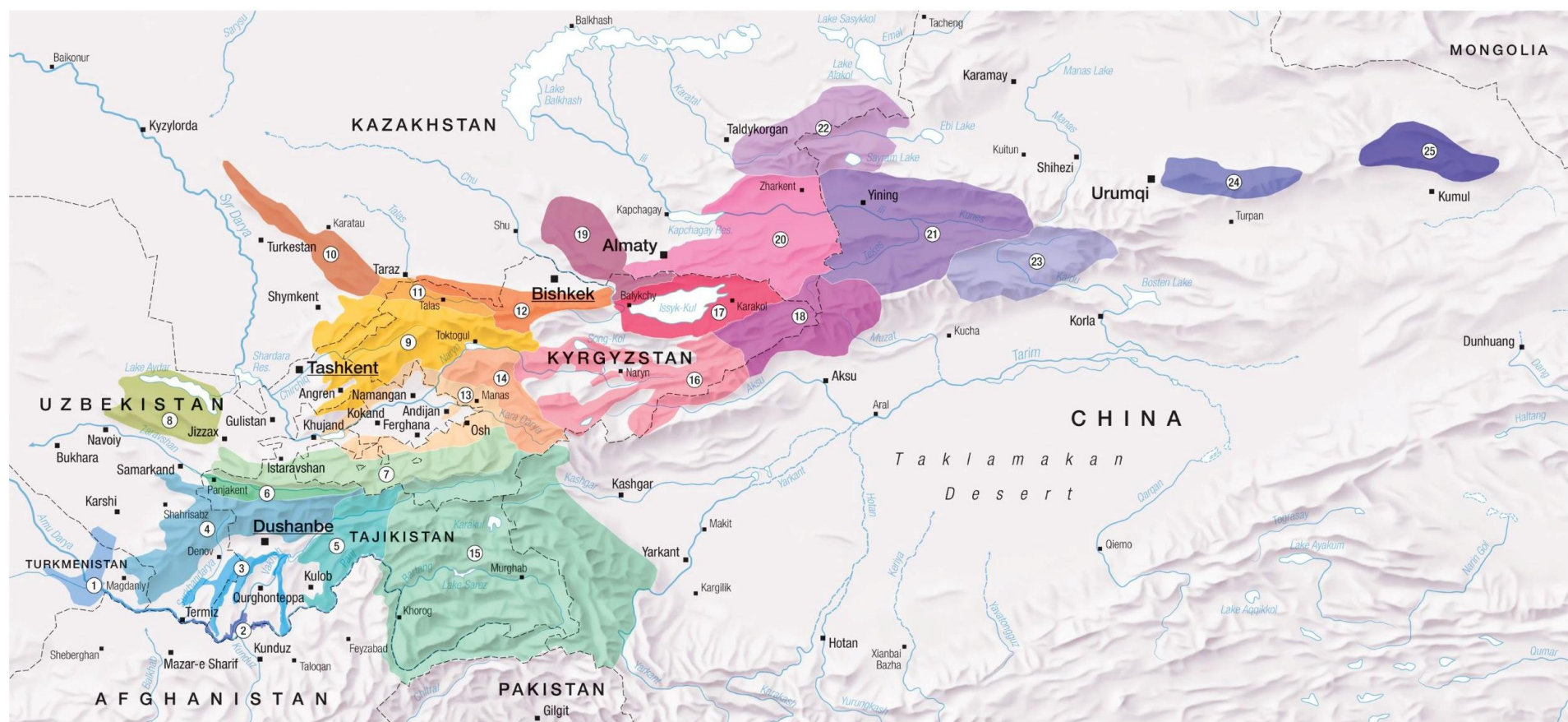
Two other corridors on the edge of the hotspot are Aidarkul Lake and the Nuratau Mountains corridor in Uzbekistan, the Karatau Mountains and Chu-Ili Mountains in Kazakhstan. Both are important for the conservation of endemic plants and animals requiring sufficient area of habitat for dispersal and migration routes. Linking fragmented habitats is important for species' conservation needs.

A rich diversity of species and habitats is found in the Koytendag Mountains corridor, shared by Turkmenistan and Uzbekistan, and good potential exists for cross-border collaboration. One of the CEPF grantees worked in this area to enhance cross-border collaboration and apply for joint nomination as a UNESCO World Natural Heritage Site. The Central Tajikistan corridor includes broadleaf forests, wild-fruit-and-nut forests, steppes and cliffs. These habitats are of high biological importance, with many threatened and endemic species. Agriculture and infrastructure expansion threaten the KBAs here. Hence, better-coordinated conservation efforts and increased engagement with the private sector and government land-use planning processes may help to reduce the growing pressures on these KBAs, complementary to any site-level actions that could be implemented in parallel.

The Talas River Basin and the Kyrgyz Range mountains corridors are both shared by Kazakhstan and Kyrgyzstan, where a joint Chu-Talas water basin management commission operates. These corridors host many endemics, but receive limited conservation attention, especially as production landscape. The population in the Talas River basin is concerned about pollution risks by planned mining developments and disruptions to water supply due to river diversions for agriculture and climate change impacts. The two countries have established the Chu-Talas River Commission, which was informed about KBAs in the area.

Both corridors require further research to identify KBAs and engage stakeholders in their management.

Figure 5.9. Overview map of conservation corridors in the Mountains of Central Asia Hotspot



Note: The representation of corridors in the figure above reflects three elements: biological and ecological (for migration routes, continuous habitat areas, areas of connectivity between KBAs, already established cooperation landscapes; political (i.e., in terms of viability); and otherwise-agreed-upon official corridors (e.g., snow leopard landscapes).

Table 5.11. Corridors in the Mountains of Central Asia

Code	Corridor name
1	Kelif-Talimarjan-Termez wetlands
2	Upper Amudarya and Panj River
3	Babatag and Karatau Mountains
4	Koytendag and Hissar Mountains
5	Central Tajikistan
6	Upper and middle Zeravhan River Basin
7	Turkestan and Alai Mountains
8	Aidarkul Lake and Nuratau Mountains
9	Western Tien Shan
10	Kazakh Karatau Mountains
11	Upper Talas River Basin
12	Kyrgyz Mountains
13	Ferghana Valley Periphery (including KBAs inside the Ferghana Valley)
14	Ferghana Mountains
15	Pamir-Alai and Wakhan Mountains
16	Central Tien Shan
17	Issyk-Kul Lake Basin
18	Khan-Tengri and Tomur Mountains
19	Chu Ili Divide
20	Middle Ili River Basin
21	Upper Ili River Basin
22	Dzungaria
23	Bayanbuluke
24	Bogdashan Mountains
25	Barkolshan Mountains
26	Riverine ecosystems and waterways in the Pamir and Tien Shan Mountains

The Turkestan and Alai Mountains corridor comprises several separate mountain ranges, which comprise a single ecological network of mountain habitat with many endemic species and well-preserved ancient juniper forests. While several KBAs have been identified in each country sharing the corridor (Kyrgyzstan, Tajikistan and Uzbekistan), further efforts at the landscape level are needed to identify and confirm additional KBAs, refine the delineations and designations of existing ones, and exchange experience and information on the conservation of juniper forests. The main threats to biodiversity within the corridor include overexploitation of wild plants, overgrazing (which causes soil erosion and prevents forest regeneration), and illegal tree cutting.

The Western Tien Shan and the Pamir-Alai and Wakhan Mountains corridors area each shared among four countries: the former among Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan; and the latter among Afghanistan, China, Kyrgyzstan and Tajikistan. They contain almost 40 KBAs, including UNESCO sites. Both corridors are characterized by high levels of endemism and are large enough to support viable populations of wide-ranging species, like snow leopard and ungulates. Landscape-level conservation approaches are very appropriate here, as these can increase the efficiency of conservation efforts across national borders and increase resilience to climate change, which may shift habitats to higher elevations, alter species composition and cause other disruptions.

The Khan-Tengri and Tomur Mountains corridor, shared by Kyrgyzstan, Kazakhstan and China, are equally important for snow leopard conservation, and provide opportunities to contribute to ongoing and planned conservation efforts. The high elevations (3,000 to 7,000 meters above sea level), remoteness, and complicated access make individual initiatives difficult, hence synergies with existing programs are recommended. With the support of the CAMCA project, an ecological corridor was established in Kyrgyzstan in 2025. This area could potentially be of interest to CEPF grantees.

The Ferghana Mountains corridor in Kyrgyzstan includes significant examples of the wild-fruit-and-nut forests that are characteristic of this part of the hotspot. Considering that an estimated 200,000 people live within these forests, which are spread over large areas, a landscape-level approach to conservation, involving forest users and sustainable forest management associations, is appropriate.

The Ili River Basin is shared by Kazakhstan (middle and lower parts) and China (upper part). Due to the large size of each section and the number of important KBAs in each, a decision was made to define the upper and middle parts of the basin as separate corridors (the lower part being outside of the hotspot). In this way, conservation actors in the two countries can work individually with clusters of KBAs, with the shared task of sustainable use and development of the Ili River basin, while coordinating efforts on conservation of priority species and ecosystems they have in common, such as wild apple forests.

The Dzungaria corridor, shared by Kazakhstan and China, hosts endemic and threatened species, as well as some of the best remaining examples of wild apple forests in the hotspot. Coordinated actions may help to improve the persistence of the threatened and endemic species and prevent pressures growing.

The Bayanbuluke corridor is a UNESCO World Heritage site, famous for its iconic wetland ecosystem, which is facing growing pressures from development. The landscape approach may help in better integrating conservation objectives into development planning.

Areas around the Bogdasha Mountains corridor, near Urumqi city, are densely populated and more industrialized. Industrial pollution, growth in infrastructure and mass tourism pose

major threats to ecosystems here. Given these threats, the potential exists for tackling land use and development issues at a landscape scale, an approach that will allow for greater connectivity in the corridor, and address the challenges outside the KBAs, in addition to site-level actions within them.

Riverine ecosystems and waterways in the Pamir and Tien Shan Mountains corridor were added during the 2025 profile update because of stakeholder consultations. The corridor covers several main rivers – Vakhsh-Kyzylsuu, Syr Darya-Naryn, Talas, Zaravshan and small rivers in the Pamirs and Tien Shan Mountains. It extends partly inside other terrestrial corridors to emphasize the importance of waterways for migratory birds (including intermountain valleys), endemic and red-listed fish species, and riparian ecosystems.

5.4. Recommendations for Improving the Outcomes Analysis

The following actions are priorities for improving the definition of conservation outcomes:

- Conduct new studies and publish data on existing studies to describe species and clarify the taxonomic status of known species. Promote digitalization of the wealth of data from the Soviet period and new research, to integrate all data.
- Update red list assessments for more species in the region and species that have not been assessed for over 10 years. Focus on data-deficient species with limited ranges.
- Invite scientists to conduct regular or targeted monitoring as part of CEPF grants to improve knowledge of the status, population size, and distribution of threatened and narrowly endemic species. Identify restricted range species, review how well these are covered by the KBAs compiled by the profile team and refine data. Maintain good documentation of species-related findings by CEPF grantees to update KBAs and assess conservation successes.
- Develop a data sharing mechanism to locate, store and facilitate access to all relevant data on species, sites and project activities, and use this to periodically reevaluate the conservation outcomes and monitor progress.

6. SOCIOECONOMIC CONTEXT

This chapter provides a socioeconomic overview of the hotspot and an analysis of how socioeconomic factors affect conservation outcomes. The analysis covers population demographics, income and poverty, the relationships between natural resources and the main economic sectors, and the cultural differences that have relevance to conservation.

The hotspot is a politically nuanced and sensitive region, but all countries share deep cultural links. The five Central Asia countries share a common regional communication language (Russian) and cultural, political, and economic history. There are obvious differences in economic power and stability when comparing countries across the hotspot, including China and Afghanistan. As a whole, the population within the hotspot is young and rapidly growing. Urban populations and city sizes are growing across the region; nonetheless, more than half the people of Afghanistan, Kyrgyzstan, and Tajikistan live in rural areas and are directly dependent upon natural resources.

Population growth and high population density in some areas causes increasing demand for land and water resources, and has the potential to increase fragmentation of habitats and increase overexploitation of natural resources, particularly water and pastures. Conservation efforts in the region need to address pressures on the land and water resources by mitigating infrastructure risks and supporting sustainable rural livelihoods.

6.1. Population

The Mountains of Central Asia hotspot is home to 71 to 77 million people (table 5.1). Most are young (median age 17-25) and live along the main rivers or oases. In the next 25 years, by 2050 the population in the hotspot may approach 90-100 million. The Ferghana Valley has the highest rural population density in Central Asia. Out of Uzbekistan's total population of 37 million, at least 27 million live in the hotspot, including the Ferghana Valley. Kyrgyzstan and Tajikistan are noteworthy: their populations in 1950 were each about 1.5 million, and today, they have 7.3 million and 10.5 million people, respectively. Due to natural population growth and migration, the population of Xinjiang Uygur Autonomous Region of China has grown from 4 million in 1950 to 26 million today.

Table 6.1. Population estimates in the hotspot, 2025

Country	Estimated population within hotspot (million)	Density per km ² (within the hotspot)	Annual population growth (percent)	Population increase 2000 - 2025 (percent) in the hotspot	Rural population as percent of total*
Afghanistan	0.1	1-5	2.5	-	73
China	20-25	20-30	0	20	35
Kazakhstan	7-8	10-20	1.3	-	40
Kyrgyzstan	7	35	1.6	40	58
Tajikistan	10	70	2.1	60	73
Turkmenistan	0.1	10-20	1.5	-	53
Uzbekistan	27	80-500	2	50	50
Total	71-77	90	-	-	

Source: national statistics and authors' estimate

Nomads work the high mountain pastures of Kyrgyzstan and China and the semi-desert areas of Turkmenistan and Kazakhstan pursuing a centuries-old lifestyle reshaped by modern conditions. In addition to the capital cities and other urban centers, some areas such as the Ferghana and Zarafshan Valleys are a mix of urban and rural. The population in the rapidly growing Chinese section of the hotspot, in Urumqi city, has jumped from about 1.5 million in 2000 to 5 million today. The relative number of Han Chinese in this region has grown from 6 percent in the 1950s to 40 percent today.

Despite major urban centers in each of the countries within the hotspot, the population depends upon agriculture. The use of agrichemicals and extensification of agricultural land are both common, and rural needs are still supplemented by collection of firewood, fruits and nuts, and medicinal plants.

Noted in Chapter 4, the region is the source of several major rivers, including the Amu Darya and Syr Darya, which feed the Aral Sea. Downstream from the mountains, and outside the hotspot, there were severe droughts in 2000-2001 and low water years in the 2010-2020s. Despite the successful efforts to restore the northern Aral Sea levels in Kazakhstan and to expand the green cover and saxaul tree forests in the southern Aral Sea, the local population still faces socio-economic and ecological challenges.

Currently many working-age people (3-4 million in total) from Kyrgyzstan, Tajikistan, and Uzbekistan migrate to Russia for work and remittances are an important source of income for many families.

Xinjiang stands in contrast to the other parts of the hotspot, where government incentives have led to in-migration from other parts of China, and the province has booming agricultural, industrial, energy and tourism sectors. The region's spectacular nature – part of the mountain biodiversity hotspot – has become a hugely popular destination among domestic tourists in China, receiving 300 million visits in 2024 (China's State Council 2024). Chinese businesses and projects are increasingly present in Central Asia too and people follow jobs in energy and road construction and mining.

6.2. Income

Over the past ten years (2015-2025), economic development has increased significantly within the biodiversity hotspot, except in Afghanistan and its Wakhan Valley – part of the hotspot. However, income levels vary greatly. Kazakhstan and China have comparable GDP per capita, while Tajikistan remains less developed, and Afghanistan is one of the least developed countries in the world. Since 2021, the country has faced various sanctions, and donor support has ended with the takeover of the national government by the Taliban.

Table 6.2. Economic statistics for the countries in the hotspot

Country	GDP per capita, 2020-2024 (range)	Percent Annual GDP Growth, 2020-2025
Afghanistan	\$400-600	2-5
China	\$10,000-13,000*	5-10*
Kazakhstan	\$9,000-14,000	5
Kyrgyzstan	\$1,400-2,400	5-8
Tajikistan	\$800-1,400	5-8
Turkmenistan	\$6,500-8,500	5-8
Uzbekistan	\$2,000-3,000	2-6

Sources: World Bank and national statistics, the Observatory of Economic Complexity and national statistics. Data in current US\$.

Note: * Xinjiang only

6.2.1 Poverty

Since the initial ecosystem profile was released in 2017, poverty levels have fallen in most of the hotspot countries. Kazakhstan, Turkmenistan and China are considered the wealthiest in the region with minimal poverty levels, strong social support and jobs in state-owned enterprises. Uzbekistan's poverty rates fell below 10%, driven by economic growth and rural poverty reduction. The Poverty and Equity Assessment for Tajikistan produced by the World Bank (2025) indicates that national poverty rate declined from 56% in 2010 to below 20% in 2024. Over the same period, the proportion of the population considered middle class increased from 8% to 33%. Low education is a major factor in multi-dimensional poverty.

According to the national statistics, the poverty rate in Kyrgyzstan increased from 20% to 30% between 2019 and 2024, due to the COVID-19 pandemic impacts on job market and rising food prices. Despite the more stable security situation, poverty in Afghanistan remains widespread, with estimates ranging from 55% to 65%. Levels of hunger and food insecurity are high. Years of conflict, sanctions, foreign aid cuts, and limited access to finance hinder the country's socio-economic development.

6.2.2 Remittances

2024 was a year of record-high remittances for Central Asian countries: Uzbekistan received \$15 billion (13% of GDP), Tajikistan \$5.8 billion (49% of GDP), and Kyrgyzstan \$3 billion (24% of GDP). Russia remains the main source of remittances, despite decline in the number of migrants. Remittances reduced rural poverty in Tajikistan and fueled consumption growth, which drove GDP growth.

6.3. Reliance on Natural Resources

The hotspot has abundant natural resources: rivers for hydropower and irrigation; canyons and plateaus that allow for wind power; oil, gas, and coal in China, Kazakhstan, Uzbekistan, and Turkmenistan. Economic development has relied on these renewable and non-renewable resources; however, exploitation of these resources has had environmental consequences in sensitive ecosystems.

Irrigated agriculture has long been vital to food and fiber production. Extensive agricultural development, mechanized development, and use of fertilizers, pesticides, and herbicides have led to polluted discharge in new inland water bodies, called "solonchak" ecosystems, such as Aidar Lake in Uzbekistan and Sarykamysh Lake in Turkmenistan. Where irrigation does return to the main rivers – the Syr Darya and Amu Darya – the downstream effects on ecology and human health have been dire. In turn, concerns about water quality and quantity have led to interstate or inter-communal tensions.

6.3.1 Agriculture

The area of cultivated land rapidly increased in Central Asia from the 1960s to 1990s, and more recently in Xinjiang. The major zones of agriculture -- Ferghana, Tarim, Chu-Talas, Zeravshan – all rely on irrigation. Currently, Central Asia has 10 million hectares of irrigated lands: Uzbekistan 4.3 million ha, Kazakhstan 2.2 million ha, Turkmenistan 1.8 million ha,

Kyrgyzstan almost 1 million ha, Tajikistan 0.8 million ha. With climate change, the area is increasingly vulnerable to drought and soil degradation.

Over the past 30 years, the Central Asian states transitioned from collectively owned farms to private ownership and long-term private rentals. As a result, the number of formal farming units skyrocketed: over 360,000 private farms in Kyrgyzstan and 200,000 in Tajikistan. In rural parts of the hotspot, agriculture and animal husbandry are widely practiced at the household level, often using methods like those used decades or centuries ago. In 2025, the FAO included Almosi Valley in Tajikistan as the first site in Central Asia on the list of Globally Important Agricultural Heritage Systems for its combination of sheep transhumance and the cultivation of grapes, cereals, orchards, and vegetables (FAO GIAHS). In China and Turkmenistan, the state plays a strong role in the agricultural sector.

Capricious weather can have a big impact on those reliant on cash crops like apricots, rainfed and subsistence crops. Grazing communities can suffer cattle losses from harsh weather.

In Tajikistan, local conflicts over grazing are linked to the unfair distribution of pastures. Most of the land has become privately owned (or in long-term lease) by influential or wealthy individuals, which deprives the poor population of access to natural pastures and creates tensions. The overuse of pastures exacerbates this situation, leading to degradation and affecting biodiversity. Many projects, reforms, and initiatives aimed at regulating pasture use have been implemented in Kyrgyzstan. Nevertheless, overgrazing in natural forests (especially fruit and nut forests) and grasslands remain a problem.

As part of land use and agricultural reforms, many state-controlled cotton fields have been converted to grow grains and other food crops. Orchard and irrigated crops equipped with water-saving technologies and greenhouses are now increasingly common in the region. The increased water use efficiency has helped mitigate water demand. The Aral Sea region, a victim of large-scale agriculture and inefficient water use in the past, is now recovering. The water level in its northern section of the Aral Sea in Kazakhstan has stabilized (thanks to Kok-Aral dam), and numerous small delta lakes and extensive saxaul plantations have been established and maintained in the southern part of the Aral Sea in Uzbekistan.

6.3.2 Mineral Resources and Mining

In terms of revenue, if not employment, mining is most notable in Kyrgyzstan, Tajikistan, and China. In Kyrgyzstan, most of the large mineral reserves are in the high mountains (above 2,500 meters), as they are in Tajikistan, where the mining reserves are less developed and the resources are not as well known. Mining and minerals contribute about 50 percent of the national export earnings in Tajikistan (gold, aluminum, antimony, other) and Kyrgyzstan (gold, coal, other minerals).

A series of changes in the operators of the mines, dubious hiring practices, compensation inequities, and environmental damage have all hardened resistance to mining in Kyrgyzstan. The conflict between the use of land for traditional pasture and grazing, nature conservation, and for mining activities is also a source of friction in Kyrgyzstan. The melting of glaciers and permafrost in the mountains is complicating the infrastructure and waste management requirements of mining operations (Torgoev 2013).

Kyrgyzstan has created conditions favorable to mining operators by enacting reforms and by allowing access to geological information. Currently many companies in such territories are licensed for mining activities. Tajikistan continues to consider its geological information

semi-confidential and its legislation and the ease of doing business lags behind Kyrgyzstan's. As a result, Tajikistan has attracted fewer investors in the mining sector, mainly Chinese companies. Tajikistan had been famous for silver mining from ancient times, and a recent geological audit of Kani Mansur site suggests that it has probably one of the largest silver reserves in world in the Kuramin, the Tajik section of the Western Tien Shan.

At the time of the 2025 ecosystem profile update, global geopolitical tensions, trade wars, inflation and militarization, pushed the prices of gold, silver, and critical minerals to record highs. These developments may increase mining exploration and production, which could consequently lead to environmental pressures.

Existing laws and regulations on mining sometimes contravene the goal of environmental protection. For example, mining, including gravel extraction, combined with small hydropower projects, is often allowed in riverbeds and sometimes in the buffer zones of protected areas. Local populations are sensitive to the negative impacts of mining, if not for biodiversity conservation, and for the impacts on health. Further, there is a perception that agricultural products from areas with mining are harmful.

Artisanal mining by communities is not widespread in the hotspot due to tight governmental control, but it exists in Afghanistan, Kyrgyzstan, Tajikistan, and China. Artisanal mining tends to be used as a supplement and seasonal activity rather than as a primary or regular source of income. However, as artisanal miners begin to use machinery, the threats to the environment grow.

6.3.3 Energy and Transport

Kyrgyzstan and Tajikistan have the largest hydropower potential, and both countries are actively seeking to exploit this. International financing institutions as well as Russia and China are promoting markets for energy generation and transfer, and in some cases, are investing directly in infrastructure. Pakistan, India, and Afghanistan have signed agreements with Central Asian neighbors in energy and hydropower. Currently, Kyrgyzstan has 2,700 MW of installed hydropower and Tajikistan 5,000 MW, combined less than ten percent of their technically feasible hydropower potential. Ongoing development and planning are taking place on Kyrgyzstan's Naryn and Sary-Djaz rivers and in Tajikistan's Vakhsh and Zeravshan.

The most significant change since the initial ecosystem profile published in 2017 is the boom in small hydropower across the mountain biodiversity hotspot ([Rivers.help](#)). Both the governments and the private sector are participating and investing, resulting in the growth of small hydropower capacities. This development is alarming for some conservation CSOs and groups of citizens, who fear the potential destruction or disruption of previously untouched rivers and their ecosystems. Some small hydropower projects lack proper environmental assessments, public consultations, and safeguards.

Rapid economic and population growth has led to an increasing demand for energy. While countries are increasing their power capacities, this growth lags behind the demand. As a result, rural populations that lack affordable, secure energy supplies must rely on natural resources, such as fuelwood. Tajikistan still experiences power outages during the cold winter months. While the impact of the energy deficit on natural resources is not as severe as it was twenty years ago, it is still a driving factor of pressure.

One of the drivers of the small hydropower boom in this hot spot is the growing IT sector, including data centers and crypto mining. In 2025, Kyrgyzstan had 17 small hydropower stations officially in operation and 20 more under construction, all dedicated to cryptocurrency mining. The country's abundant and low-cost hydropower, the dynamic IT sector and mountain profile make it an attractive location for crypto mining and blockchain, as evidenced by its recent partnership agreement with Binance.

The countries in the hotspot are exploring and expanding zero and low-carbon energy sources (solar, wind, nuclear and gas) to varying degrees, and coal-fired plants are still common. Natural gas from Turkmenistan and Kazakhstan flows to Xinjiang and petrochemicals account for 60 percent of Xinjiang's economy. The EU (through EBRD and the private sector), China, and the countries of the Gulf Cooperation Council are actively investing in wind and solar installations in Uzbekistan and Kazakhstan. Most of these installations are located outside or on the edge of the mountain biodiversity hotspot.

Kazakhstan is the world's leading uranium producer (23,300 tons in 2024), accounting for more than 40% of global output, but currently has no nuclear power. A reactor in Aktau on the Caspian Sea was decommissioned in 1999. Kazakhstan's population and environment suffered major damage from open air nuclear tests in the past, and civil society organizations in the late 1980s and 1990s were very active in matters of non-proliferation and environmental rehabilitation. In October 2024, a referendum on the use of nuclear energy in Kazakhstan was held and supported by 70% of voters. The first nuclear power plant will be built on the shore of Balkhash Lake (Ulken site), outside the boundary of the hotspot. Construction began in 2025 and is expected to be completed by 2035.

Uzbekistan is another major uranium producer (with an expected output of 4,400 tons in 2025) and aims to double its production by 2030. Like Kazakhstan, Uzbekistan is pursuing the development of nuclear power and plans to build an installation at the Aydar-Arnasay lakes. So far, access of CSOs to public discussions and information on plans and the design of biodiversity safeguards has been limited.

Like in the mining sector, major hydropower development projects attract attention and controversy. This includes the Rogun Dam on Tajikistan's Vakhsh River, with ongoing active construction planned to be completed by 2035. Its construction began in 1976 but was interrupted from 1992 to 2009. In this period, in addition to the lack of financing the construction plans caused tensions with downstream Uzbekistan. The World Bank has stepped in to conduct regional environmental and social impact assessments, and in the past 10 years this project has been actively developed. In addition to government funding, the project receives financial support from several major international banks. The total costs by the time of completion in 2035 may exceed \$16-18 billion. Once completed the Rogun hydropower station will have 3.7 GW of installed capacity and its electricity can be exported via the CASA-1000 project to Afghanistan, Pakistan and India. Some environmental CSOs raise concerns over the cumulative impacts on riverine and aquatic ecosystems.

Kyrgyzstan is preparing to construct the Kambar-Ata 1 hydropower plant on the Naryn River. With the support of international banks and the participation of Uzbekistan and Kazakhstan, the construction may be completed within 10 years. The plant will optimize the operation of Kyrgyzstan's largest existing Toktogul hydropower plant and increase energy production and security for the country. The plant will feature a 250-meter-high dam, an 1.7-MW capacity, and a 5.4-km³ reservoir. At the time of the 2025 update to the ecosystem profile, preparations for construction and socio-environmental impact assessment were underway, with construction expected to begin in 2026.

In addition to large energy projects, the long-discussed new rail link between China and Central Asia — which would pass through the mountains of Kyrgyzstan to the Ferghana Valley of Uzbekistan — has recently been endorsed, and preparations for construction have begun. Currently, the countries are conducting environmental impact assessments and engineering studies.

A major project that is nearing completion is the construction of a new north-south road in Kyrgyzstan. This road, which will connect Issyk Kul Lake to the southern provinces of Kyrgyzstan, is scheduled to open in 2026. There are other plans for road expansions and new roads, which may have implications for biodiversity and socio-economic development, as well as the development prospects for new industries (mining, power and gas pipelines) due to new infrastructure and improved accessibility.

6.3.4 Water-ecosystems-agriculture-energy nexus

The tension between the highlands and the lowlands over the use of water for energy production and irrigated agriculture is a long-lasting issue in the region. Climate change is expected to make a difficult situation more unpredictable.

The water resources in the Aral Sea basin in Central Asia and Tarim River in China basin are already used to such an extent that any significant change (e.g. Kosh Teppa Cana construction in Afghanistan) or stress (e.g. drought and climate change impacts) may affect many users, especially downstream. The downstream states prefer to maintain the status quo in regional water management, counting on the historical hydrological baseline, water allocations, and arrangements. The upstream states, especially Kyrgyzstan, promote reforms in the water governance. The new authorities in Afghanistan are actively pursuing the construction of the Kosh Teppa Canal, which could affect the availability of water.

6.3.5 Forest management

As table 6.5 shows, the percentage of forest cover in this arid region is low. Arid lowlands outside of the hotspot boundaries have low-density saxaul species that are well adapted to the arid conditions. There are patches of tugai forests along the rivers. The mountains are home to forests consisting of coniferous and deciduous trees with a mixture of shrubs. Most natural forests and plantations are state owned and managed, although individuals and associations can enter long-term leases with the state and often do so for fruit and nut forests and for timber plantations. Leasing of plantations has led to increased reforestation, although there is the risk of fencing and artificial barriers as leaseholders try to secure their holdings.

Table 6.5. Forest cover

Country	Total Forests		Forests within the hotspot
	Km ²	Percent of land area	Km ²
Afghanistan	13,500	2	No forests in Wakhan
China	2,100,000	22	23,350 (Xinjiang)
Tajikistan	4,200	3	4,200
Kyrgyzstan	8,600	5	8,600
Kazakhstan	136,000	5	No data
Turkmenistan	41,270	8.8	Marginal
Uzbekistan	36,000	8	No data

Sources: World Bank, UNECE, FAO, national statistics.

All countries in the biodiversity hotspot are actively pursuing afforestation programs that focus on desert forests (especially in the Aral Sea region) and green belts in and around populated areas.

Fuel wood is one of the main sources of energy for cooking and heating in the mountains, due to the lack of affordable alternatives and irregular power supply. Other challenges to forest management are discussed in Chapter 9.

Forest certification schemes do not yet exist, although the Forest Stewardship Council initiated efforts to promote sustainable, "eco-friendly" use and management of non-timber forest products (NTFPs).

While plantation forests use non-native species in various cases, within the hotspot in general, most community plantations use local species of poplars for building materials and fuelwood, as well as local species of fruit and nut trees. In Kazakhstan there is even a movement to avoid using non-native apple trees to avoid cross-fertilization with the locally regarded native stock.

6.3.6 Tourism

With the exception Afghanistan, international and domestic tourism within the region is common and booming, with destinations based around hot springs, ski resorts, mountaineering, rock climbing, major lake-based resorts, and cultural heritage sites. Hunting tourism is locally important in Kyrgyzstan and Tajikistan. Nature parks – lakes, forests, view-sites – are all extraordinarily popular and frequently suffer from the number of visitors.

About 80 percent of tourists come from hotspot countries. There are also tourists from Russia, Europe, Turkey, and Asia. Tourism from the Gulf states for niche products like falconry represent a small fraction of tourism revenue but is related to bird conservation initiatives. In terms of national revenue, tourism and related services represent around 4 percent of GDP in Kyrgyzstan and Tajikistan.

Almaty is considering developing a major tourism hub in the nearby mountains, which contains several protected areas and KBAs. Uzbekistan is building and planning major ski and mountain resorts upstream from Tashkent (Charvak Lake) and in the Turkestan Mountains. Some CSOs and environmental activists express concern about potential implications for water and biodiversity (Gazeta.uz 2025). Kyrgyzstan is developing the "Three Peaks" resort near Karakol and Jyrgalan in the eastern part of Issyk Kul Lake (Ski.ru 2025). There are also plans to develop the Chatkal Valley, which is shared by Uzbekistan and Kyrgyzstan, for skiing and tourism (Kyrgyzstan Ministry of Economy 2024). All these plans and developments must be sustainable and consider biodiversity conservation rules, water protection and sound waste management.

From 2017 to 2024, the number of foreign tourists in Uzbekistan quadrupled with 10 million people visiting Uzbekistan in 2024 (Forbes.kz and Zamin.uz 2025). Exports of tourism services increased tenfold and amounted to \$3.4 billion. There are 3,600 tour operators active in the country, five times higher than in 2017. The number of domestic tourists increased from 10 million to 22 million / year over the same period. Uzbekistan aims to double the number of tourists by 2030 and increase the contribution of tourism to country's GDP from 3.5% to 7% (Gazeta.uz 2025). In Kazakhstan, annual number of visitors to the national parks is estimated the 2-3 million range in 2024-2025 (Qaztourism.kz 2025).

Xinjiang has nearly 500 designated scenic areas, many are related to Silk Road history and culture. Since the release of the initial profile in 2017, the number of domestic tourists visiting Xinjiang nature sites hugely increased. Thousands per day visiting the Tien Shan and Tianchi Lake Nature Reserves, an hour's drive from Urumqi, millions per year are visiting Kanas Lake and Altay Mountains in the northern part.

Authorities throughout the region see the value of nature-based tourism and understand the importance of protecting the nature people are coming to visit. However, capacity to manage tourism is sometimes surpassed, with habitat disturbance being the negative side effect of too many visitors and too much of infrastructure.

6.4. Cultural Distinctions

6.4.1 Ethnicity

The main ethnic groups are Kazakh, Kyrgyz, Uzbek, Turkmen, Uyghur, Han, Tajik and Wakhi. The Kazakh, Kyrgyz, Uzbek, Turkmen, and Uyghur live throughout the mountains and speak a series of Turkic languages. Kazakhs are cattle breeders in the plains and lowlands, whereas the Kyrgyz are often cattle breeders in the middle and higher altitudes. Uzbeks and Uyghurs are known for agriculture and trading. Tajiks are known for home gardens in the high mountains, and Turkmen (*teke* and *nuhura*) are known as are pastoralists of the desert. Added to these are Eastern Europeans who came in the last centuries, plus Koreans and Han Chinese, especially in the cities and industrial areas.

6.4.2 Religion

The dominant religion is Islam, which came to the region in the 6th-7th centuries, but was not firmly established until the 12th century. Historic religions include Zoroastrianism, Buddhism, and Tengriism. During Soviet times, the practice of religion was not encouraged by the state, but with independence, religiosity returned in widely varying degrees. The rise of radical movements has led to outbreaks of violence in some places. When the Taliban came to power in Afghanistan in 2021, they imposed religious laws and customs.

6.4.3 Language

Each country in the hotspot has its own national language. Russian language retains its position in Central Asia as a language of communication in business, science, and education, and in intergovernmental meetings and it continues to be one of the six languages of the UN. In Xinjiang, the official languages are Chinese and Uyghur, plus many minority languages; some members of the business and scientific communities speak Russian and English. Meanwhile, Chinese is becoming popular among students and people with business interests. English is rarely spoken outside of major cities, but younger generation (30-40 years old) in government agencies and CSOs often have good English skills.

Table 5.6 summarizes the primary or notable ethnicities, languages, and religions *within the hotspot portion* of each country. Certainly, there are dozens of languages and ethnicities, across seven countries. The table demonstrates the diversity of the region and suggests the need for tailored outreach and communication in implementation of a grants program.

Table 6.6. Ethnic Groups, Languages, and Religions within the Hotspot

Country	Main Ethnicities	Other Ethnicities	Main Languages	Main Religions
Afghanistan (Wakhan)	Wakhi, Kyrgyz	Badahshi, Tajik, Uzbek	Wakhi, Kyrgyz, Dari, Pashto, English	Islam
China (Xinjiang)	Han, Uyghur	Kazakh, Hui, Kyrgyz	Mandarin, Uyghur, Kazakh, Kyrgyz	Islam, local regions
Kazakhstan	Kazakh	Russian, Uyghur	Kazakh, Russian, Uyghur, English	Islam, Christianity
Kyrgyzstan	Kyrgyz	Uzbek, Russian, Tajik	Kyrgyz, Russian, Uzbek, English	Islam, Christianity
Tajikistan	Tajik	Uzbek, Russian, Kyrgyz, Pamiri	Tajik, Russian, Uzbek	Islam
Turkmenistan	Turkmen	Uzbek, Russian	Turkmen, Russian, Uzbek	Islam
Uzbekistan	Uzbek	Tajik, Russian, Kazakh, Uyghur, Karakalpak	Uzbek, Russian, Tajik, English	Islam

6.4.4 Gender

The role of women varies across the region, and the differences in gender – in terms of gender development and equality – are reflective of the varying levels of development and traditions of each country. The role of women (e.g., the relationship of women to decision-making on natural resources; barriers to women and women’s organizations in organizational management) is a factor in the CEPF investments that needs to be considered by grantees.

Under the Taliban rule, Afghanistan has the highest gender inequality. Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan all show high rates of female secondary education. Overall, situation with engaging women in conservation and natural resources management is improving, and many local CSOs and conservation initiatives are led or promoted by women. Although women have a quota for public office participation, including environmental bodies, they are most often employed in science, education, and healthcare. In the first phase of CEPF grants, there was balanced participation of women and men.

6.4.5 Indigenous People

The concept of “indigenous people” with enshrined legal rights is difficult to find in Central Asia. The current state policies promote national identities, even while celebrating ethnic differences. There are remote mountain populations of Yagnobi and Pamiri people in Tajikistan, and Uyghurs and others in Xinjiang, but by law, these people have no special privileges or limitations as any others. Before the Taliban came to power, in the Wakhan Valley and Badakhshan Province, ethnicities (sub-national groups) of Wakhi, Shugnani, Ishkashimi, and Yazgulyami had customary rights.

CEPF should not expect limitations to engagement based on ethnicity or a group’s status as “indigenous,” but will need to proceed cautiously if it tries to promote legal rights of a particular ethnic group in a way that contravenes state policy.

7. POLICY CONTEXT

This chapter reviews the main national, regional, and global environmental management frameworks, including policies, agreements and institutions, relevant in the Mountains of Central Asia Hotspot. It provides an overview, per country, and highlights national biodiversity strategies and goals. Further discussion of policy is addressed indirectly in the Risk Analysis table in Chapter 14.

7.1. Environmental Governance

Governments of each country of the hotspot have agencies, committees or ministries responsible for natural resource management and conservation. Strict nature reserves, national parks and state forest lands are usually managed by national authorities, while wildlife management areas and wetlands may be under control of local administrations. Other agencies – such as academies of science or ministries of agriculture, water and other institutions – may play a role and have the political “weight”. In some countries, enforcement is integrated with permitting and policy making, while in others these functions are separated. Tables 7.1 to 7.7 summarize the relative “weights” of selected government agencies in the context of natural resource management and conservation, using the following denotation.

- *** Major weight and role
- ** Medium weight and role
- * Marginal weight and role

7.1.1. Afghanistan

In Afghanistan, under the new (Taliban-led) and previous government the National Environmental Protection Agency (NEPA, www.nepa.gov.af) is the government body in charge of policy making on climate change, natural heritage and environmental quality. The Ministry of Agriculture, Irrigation, and Livestock (MAIL, <https://mail.gov.af>) manages protected areas, forests and rangelands. The Ministry of Energy and Water (MEW, <https://mew.gov.af>) is responsible for planning and management of water resources, energy infrastructure, and facilitating water governance at the river basin level. Both ministries oversee the Kosh Teppa Canal construction – one of the largest infrastructure projects of the modern Afghanistan started in 2021. This canal will consume 5-10 km³ of water from the Amu Darya River to irrigate up to 500 thousand ha of agricultural lands. (Table 7.1).

Table 7.1. Nature use and conservation-related governance and functions in Afghanistan

Function	NEPA	MAIL	MEW	Other	Local authorities
Biodiversity policy and planning	***	**	-	*	*
Biodiversity monitoring	***	***	-	*	
Species protection	***	**	-	*	
Protected areas	**	**	-	*	*
Forests	*	***	-	*	*
Pastures	*	***	-	*	*

Function	NEPA	MAIL	MEW	Other	Local authorities
Fish resources	*	**		-	
Spatial planning, land use decisions	**	***	*	*	
Water planning and management	-	**	***	*	*
Pollution control	***	**	-	-	*
Public awareness of the environment	***	**	*	*	*
Environmental laws and regulations enforcement	***	*	*	-	
Climate adaptation and mitigation (nature-based)	***	**	*	*	**
Nature-based solutions for disaster risk reduction	*	**	-	*	**

Responsibility for biodiversity is divided among the NEPA and MAIL and overlapping powers between institutions persist. National structures mandated to protect biodiversity tend to be understaffed and operate with insufficient budgets, especially considering the near total freeze of international projects and funding since 2021 (GEF and other donors). Employees often lack the knowledge and skills necessary for effective conservation. Poor pay, low motivation and training, and lack of incentives lead to underperformance. Some former NEPA employees have created CSOs (e.g. REHA), which now collaborate with NEPA and other ministries on climate change, biodiversity and the environment.

As part of the Amu Darya river basin cooperation, in the past (2011-2021), Afghanistan and Tajikistan signed agreements on bilateral cooperation on hydrology, disaster risk reduction, and environmental protection, and conducted several joint expeditions, high level and technical meetings. However, these agreements were suspended after the Taliban take-over. Cooperation on economic, trade and energy issues is maintained between Afghanistan and Uzbekistan and Turkmenistan.

7.1.2 China

The part of China within the biodiversity hotspot is located within the Uygur Autonomous Region of Xinjiang. It is the largest sub-national administrative region of China, which consists of prefectures, municipalities, and counties, with varying levels of autonomy and management. Since the initial edition of ecosystem profile, this area has been under tighter central authority control. Land along borders, large areas with multiple resources, are mainly controlled by the central authorities, whereas smaller land units in less sensitive areas are controlled by provincial authorities. These authorities cooperate with their Central Asia neighbors on the issue of shared water resources.

China's protected areas are evolving and cover 18% of the country's area (China's State Council 2024a.). They consist of nearly 2 800 sites, including nature reserves, scenic spots, protected forests and wetlands. The Ministry of Ecology and Environment (MEE) coordinates the environmental management, including climate, pollution and biodiversity. Its responsibilities include formulating national programs, regulations and standards. MEE is responsible for environmental conventions, including the CBD.

Responsibility for managing forests, grasslands and protected areas lies with the State Forestry and Grassland Administration (National Park Administration). It is engaged in drafting relevant laws and regulations, monitoring forests, grasslands, wetlands, deserts

and wildlife. Its actions cover afforestation, combating desertification, administering the hunting and collection of wild flora and fauna as well as import and export of species. Other institutions have some biodiversity-related mandates, including the Ministry of Agriculture and Rural Affairs, the Ministry of Water Resources, and the Chinese Academy of Sciences (CAS). (Table 7.2).

CAS is active in science cooperation with Central Asia led by Xinjiang Institute of Ecology and Geography (XIEG) focusing on biodiversity, glaciers and water resources, through the Research Center for Ecology and Environment of Central Asia (RCEECA, <http://www.rceeca.com>). There are joint laboratories, field stations, demonstration sites and expeditions. The Central Asian plants database being designed by RCEECA, includes thousands of digitized plant specimens and the checklist of Vascular Plants of Central Asia, that documents nearly 10 000 vascular plant species of Central Asia.

Table 7.2. Nature use and conservation-related governance and functions in China's Xinjiang

Function	Ministry of Ecology and Environment	State Forestry and Grassland Administration	Ministry of Agriculture and Rural Affairs	Ministry of Water Resources	Chinese Academy of Sciences	Local and provincial authorities, departments
Biodiversity policy and planning	***	**	*	*	**	**
Biodiversity monitoring	**	***	*	-	***	*
Species protection	**	***	*	*	**	**
Protected areas	**	***	*	*	**	**
Forests	**	***	*	-	*	**
Pastures	**	***	**	-	*	**
Fish resources	**	*	*	*	*	*
Spatial planning, land use decisions	***	**	***	*	**	**
Water planning & management	**	*	**	***	**	**
Pollution control	***	*	*	*	*	**
Public awareness of the environment	***	**	*	**	**	**
Environmental laws and regulations enforcement	***	**	*	*	*	**
Climate adaptation and mitigation (nature-based)	***	***	**	**	**	**
Nature-based solutions for disaster risk reduction	**	***	*	*	*	**

7.1.3 Kazakhstan

The Ministry of Ecology and Natural Resources (www.gov.kz/memleket/entities/ecogeo) supervises the “green economy” agenda, waste management, control over the use of natural resources, forests and wildlife (except for fish), and manages protected areas. The Committee for Forests and Wildlife under this ministry oversees forestry, wildlife and protected areas. The Information-Analytical Centre under the ministry manages environmental records and the state cadaster of natural resources. Its task is to provide information to support policy making and inform the public about the state of the environment, including biodiversity. Kazakh conservation CSOs often act as consultants or advisers for the country’s biodiversity governance. The (Science) Institute of Botany under the ministry (<https://botsad.kz/>) oversees flora monitoring and science support. The (Science) Institute of Zoology (<https://zool.kz/>) under Ministry of Science and Education conducts monitoring and research on fauna. The Kazakh Research Institute of Soil Science and Agrochemistry (<https://soil.kz/>) provide research and consultancy services on soil and land use mapping. The Ministry of Agriculture (www.gov.kz/memleket/entities/moa/) deals with food security, fisheries, protected areas and species in the aquatic environment and agricultural land use planning. The Ministry of Water Resources and Irrigation (www.gov.kz/memleket/entities/water/) deals with water use planning and protection. In 2025, Kazakhstan established the Ministry of Artificial Intelligence and Digital Development (www.gov.kz/memleket/entities/maidd/) including geo-services (<https://nkgf.kz/>).

Table 7.3. Nature use and conservation-related governance and functions in Kazakhstan

Function	Ministry of Ecology and Natural Resources	Ministry of Agriculture	Ministry of Water Resources and Irrigation	Science Institutes	Local and provincial authorities
Biodiversity policy and planning	***	*	*	*	*
Biodiversity monitoring	**	*	-	**	-
Species protection	***	** (aquatic)	*	*	*
Protected areas	***	*	*	*	*
Forests	***	-	-	*	*
Pastures	**	**	-	*	*
Fish resources	-	***	*	*	*
Spatial planning, land use decisions	***	**	*	*	**
Water planning and management	*	*	***	*	**
Pollution control	***	*	*	*	*
Public awareness on the environment	***	**	**	**	**
Environmental laws and regulations enforcement	***	**	*	*	*
Climate adaptation and mitigation (nature-based)	***	***	**	*	*
Nature-based solutions for disaster risk reduction	*	*	*	*	*

7.1.4 Kyrgyzstan

The Ministry of Natural Resources, Ecology and Technical Supervision (<https://mnr.gov.kg/>) and its Department of Biodiversity Conservation and Protected Areas (<https://fauna.kg>) is the main authority responsible for policy planning, implementation and regulation in the area of conservation. The Ministry of Water Resources, Agriculture and Processing Industries (<https://agro.gov.kg/>) has a leading mandate in land and water use, including irrigation, rangelands and fisheries. The National Water Service (<https://www.water.gov.kg>) is responsible for the river basin management and planning, water supply and reservoir projects. Since 2024, the National Forest Service has been part of the Ministry of Emergencies (<https://www.mchs.gov.kg>) considering that forest and nature-based solutions as essential for reducing natural hazards. The National Academy of Sciences of Kyrgyzstan (<https://kruia.gov.kg/>) plays a prominent role in biodiversity research, preparation of scientific feasibility assessments for new protected areas and national red listing.

Personnel movement and rotation within Kyrgyzstan's civil service is frequent. Such turnover means individuals are often new to their jobs, or agencies have multiple people in transition, which may impede performance. The level of decentralization is remarkable in Kyrgyzstan, but cooperation among authorities, provincial administrations, and local self-government needs to be strengthened. CSOs are key partners to the state authorities in revision of legislation and policies, and contrary views and positions are not uncommon.

Table 7.4. Nature use and conservation-related governance and functions in Kyrgyzstan

Function	Ministry of Natural Resources, Ecology and Technical Supervision	Ministry of Water Resources, Agriculture and Processing Industries	Ministry of Emergencies	National Academy of Sciences	Local and provincial authorities
Biodiversity policy and planning	***	*	-	*	*
Biodiversity monitoring	**	*	-	**	-
Species protection	***	**	-	*	*
Protected areas	***	-	-	*	*
Forests	*	-	***	*	*
Pastures	*	**	-	*	*
Fish resources	-	*	-	*	*
Spatial planning, land use decisions	**	**	*	-	*
Water planning and management	*	***	*	-	*
Pollution control	***	*	*	-	*
Public awareness on the environment	***	**	**	**	*
Environmental laws and regulations enforcement	***	**	*	-	*

Function	Ministry of Natural Resources, Ecology and Technical Supervision	Ministry of Water Resources, Agriculture and Processing Industries	Ministry of Emergencies	National Academy of Sciences	Local and provincial authorities
Climate adaptation and mitigation (nature-based)	***	**	**	-	*
Nature-based solutions for disaster risk reduction	*	*	***	-	*

The Kyrgyz Republic actively promotes the conservation of mountain ecosystems and sustainable mountain development at the international level. In 2021, the UN General Assembly adopted a resolution proposed by the Kyrgyz Republic titled "Nature Knows No Borders: Transboundary Cooperation as a Key Factor in Biodiversity Conservation, Restoration, and Sustainable Use." In 2022, Kyrgyzstan initiated the adoption of a UN General Assembly resolution declaring 2023-2027 the "Five Years of Action on Mountain Development." In 2023-2024, the Kyrgyz government established the Mountain Secretariat and designed a roadmap to contribute to and oversee this initiative. In 2024, Kyrgyzstan proposed designating October 23 as International Snow Leopard Day. The Global Mountain Summit is planned for 2027 in Bishkek to assess mountain development issues and strengthen regional and international partnerships.

7.1.5 Tajikistan

The Committee on Environmental Protection (<http://tajnature.tj> and <https://egov.tj/site/nature-tjk>) under the Government of the Republic of Tajikistan is the central authority involved in the planning and implementation of environment policy and measures, and exercises control over the protection of the environment and the use of nature. It is a member of IUCN since April 2025. The National Biodiversity and Biosafety Center (NBBC, <https://biodiv.tj>) under the Committee monitors biodiversity actions, supports policy making through information, and participates in conservation projects. NBBC is the focal point to the Convention on Biodiversity. The Forest Agency (<https://forest.tj>) under the Government of the Republic of Tajikistan manages national forests. The Academy of Sciences (<https://amt.tj/>) provides information on the status of threatened species and periodically (every 5-7 years) updates the national Red List. The Ministry of Energy and Water (<https://mewr.tj/>) oversees energy and water policies and projects. The national flagship Rogun Dam project involves several ministries. The parliament holds a working group on the environment and is active in drafting and revising legislation. Qualified experts are in short supply, and information on the current state of species and ecosystems is generally lacking.

Table 7.5. Nature use and conservation-related governance and functions in Tajikistan

Function	Committee on Environmental Protection	NBBC	Forest Agency	Others	Academy of Sciences	Local and provincial authorities
Biodiversity policy and planning	***	**	**	*	*	*
Biodiversity monitoring	**	**	**	*	**	-

Function	Committee on Environmental Protection	NBBC	Forest Agency	Others	Academy of Sciences	Local and provincial authorities
Species protection	***	**	**	*	**	*
Protected areas	***	*	*	*	*	*
Forests	*	*	***	*	*	*
Pastures	*	*	*	**	*	*
Fish resources	-	-	-	*	*	*
Spatial planning, land use decisions	**	**	*	*	-	*
Water planning and management	-	-	-	**	-	*
Pollution control	***	*	*	*	-	*
Public awareness on the environment	***	**	**	*	**	*
Environmental laws and regulations enforcement	***	*	*	*	-	*
Climate adaptation and mitigation (nature-based)	***	**	**	**	*	*
Nature-based solutions for disaster risk reduction	*	-	**	**	-	*

7.1.6 Turkmenistan

Turkmenistan's environmental governance structures were reorganized in 2016, 2019 and 2023. The Ministry of Environmental Protection (<https://mineco.gov.tm/>) is in charge of conservation and nature use policies. Its structure includes departments on flora and fauna, forestry, ecological monitoring, nature reserves and the Institute of deserts, flora and fauna.

Table 7.6. Nature use and conservation-related governance and functions in Turkmenistan

Function	Ministry of Environmental Protection	Other ministries	Local authorities
Biodiversity policy and planning	***	*	*
Biodiversity monitoring	***	*	*
Species protection	***	*	*
Protected areas	***	-	*
Forests	**	*	*
Pastures	*	**	*
Fish resources	*	-	-
Spatial planning, land use decisions	*	*	*
Water planning and management	-	*	-

Function	Ministry of Environmental Protection	Other ministries	Local authorities
Pollution control	***	-	*
Public awareness on the environment	***	*	*
Environmental laws and regulations enforcement	***	-	*
Climate adaptation and mitigation (nature-based)	**	*	*
Nature-based solutions for disaster risk reduction	*	*	*

7.1.7 Uzbekistan

In recent years Uzbekistan's environmental sector went through major reforms. Uzbekistan has upgraded its State Committee on Ecology to the Ministry of Ecology, Environmental Protection and Climate Change (<https://gov.uz/ru/eco>) with broad mandate, including state control over nature use, forests, protected areas, wildlife, waste management; climate change policy and actions. In November 2025, the Ministry of Ecology was transformed into the National Committee on Ecology and Climate Change of the Republic of Uzbekistan and is reporting to the President of Uzbekistan directly (formerly it was part of the Cabinet of Ministries). It hosts the Green University of Central Asia, providing space and operational conditions for the new IUCN Central Asia office. Forestry agency (<https://gov.uz/ru/urmon>) under the ministry oversees forests, green initiatives and combating desertification.

Uzbekistan has hosted major international environmental meetings in Samarkand on desertification (UNCCD), migratory species (CMS), trade in endangered species (CITES), regional environmental expo. In 2026, Uzbekistan will host the 8th GEF Assembly. The public council under the Ministry / National Committee (<https://gov.uz/ru/eco/news/view/82226>) allows for public participation and inputs, while periodic environmental performance review (EPR) missions and reports contribute to external feedback and better performance. Country has recently joined the Espoo Convention (environmental impact assessment) and the Aarhus Convention (public access to environmental information). The extent of its protected areas has expanded significantly.

Since 2025, quotas and permits for collecting wild plants and using flora (and prospectively fishing, hunting etc.) are provided exclusively through digital auctions and e-governance portals of Uzbekistan. To monitor and manage its ambitious "Yashil Makon" tree planting and urban greening campaign more effectively, Uzbekistan established a digital portal (<https://admin.yashilmakon.eco>). "Green Customs" portal (yashiltamojnya.uz), produced by the local CSO "Ekomaktab" in collaboration with scientists and TRAFFIC, helps quickly identify nationally red-listed and CITES-listed animal and plant species and check permits.

The Academy of Sciences (<https://academy.uz>) was reformed and includes the Institute of Zoology (<https://izooology.uz>) and the Institute of Botany (<https://botany.uz>), which collaborate internationally and provide inputs to the national red lists and biodiversity assessments. Other institutions relevant to nature use include Ministry of Agriculture, Ministry of Water Resources, Ministry of Emergencies, and the Ministry of Energy.

Table 7.7. Nature use and conservation-related governance and functions in Uzbekistan

Function	National Committee on Ecology and Climate Change	Forest Agency	Others	Academy of Sciences	Local and provincial authorities
Biodiversity policy and planning	***	*	*	*	*
Biodiversity monitoring	**	*	*	***	-
Species protection	***	*	*	*	*
Protected areas	***	*	*	*	*
Forests	*	***	*	*	*
Pastures	*	*	**	-	*
Fish resources	*	-	*	-	*
Spatial planning, land use decisions	**	*	*	-	*
Water planning and management	-	-	**	-	*
Pollution control	***	*	*	-	*
Public awareness on the environment	***	*	*	**	*
Environmental laws and regulations enforcement	***	*	*	-	*
Climate adaptation and mitigation (nature-based)	***	**	**	-	*
Nature-based solutions for disaster risk reduction	**	**	**	-	*

7.2. Environmental Policy

Each of the hotspot countries has established law and policy that supports conservation, including legislation on protected areas, wildlife, and pollution controls. Common legislation includes:

- Ecological code / framework environmental legislation
- Protected areas law and associate regulations on management
- Flora and fauna laws and associate regulations and permitting systems on hunting, fishing, and trade
- Forestry law
- Water law
- Land law
- Mining law
- Air pollution laws and regulations
- Environmental impact assessment regulations
- Pollution prevention laws
- Green economy and green procurement policies, green taxonomy of the state budget

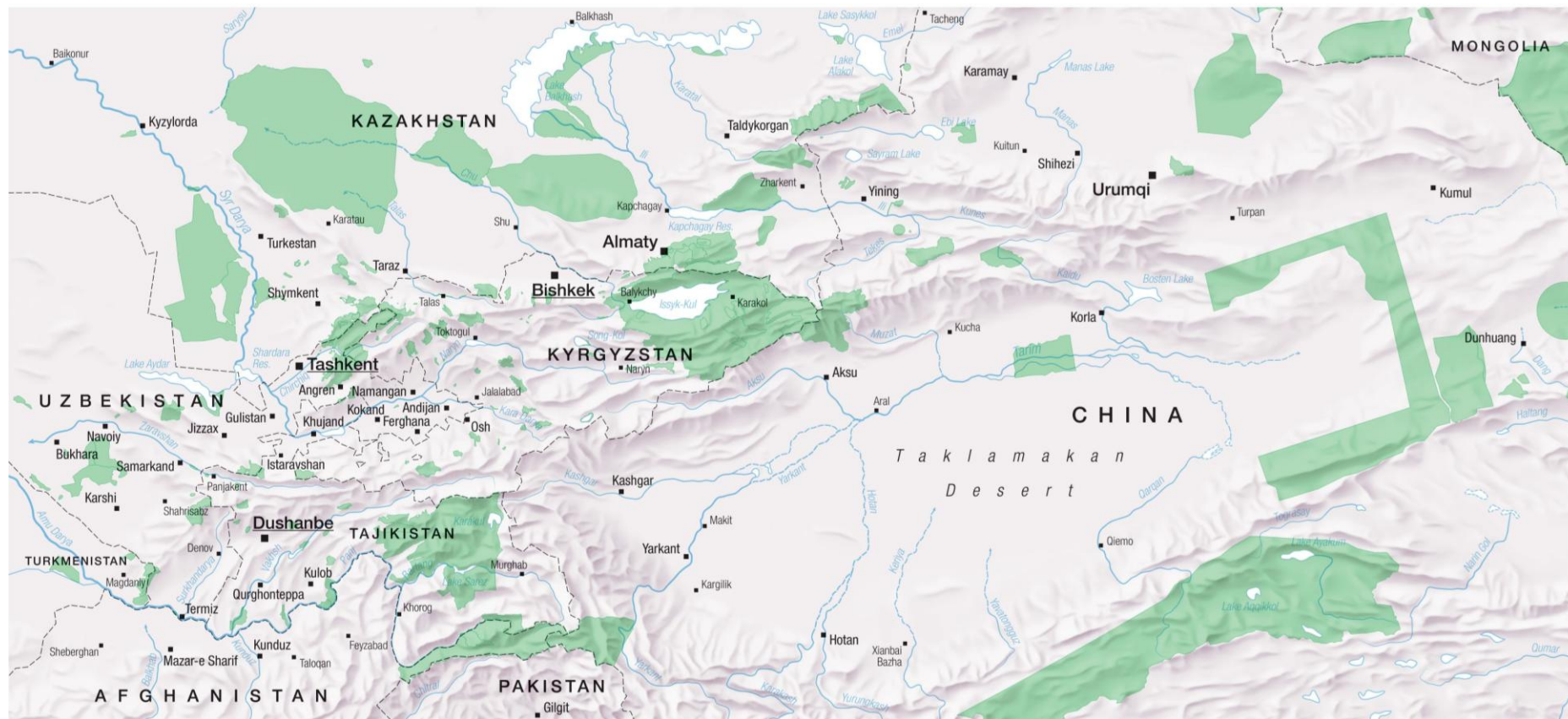
In general, legislation in the region is robust, but implementation is conducted by a diverse array of government agencies that may not be coordinated well or have sufficient capacities and budgets.

In recent years (2023-2025), environmental legislation and regulations in most countries of the hotspot have been reviewed and updated to include more stringent controls, penalties, and performance requirements. Digital services, hotlines, and e-governance portals have advanced and now allow users to submit complaints and proposals and access digital information. Procedures and mechanisms for environmental assessments of water and land use have been revised and strengthened.

7.3. Protected Areas

Formal protected areas within the hotspot vary by country from 4 percent in Turkmenistan to 22 percent in Tajikistan. The first protected areas in the region were created in the 1930s. Authorities created protected areas based on geographic representation or to target species. The protected area system was periodically upgraded and expanded.

Figure 7.1. Protected Areas in the Mountains of Central Asia (multiple categories combined)



Protected areas in the region range in size from the 1,200 hectare Gongliuyehetao Chinese Walnut Reserve to the massive Wakhan National Park in Afghanistan (1 million hectares), Taxkorgan Nature Reserve in China (1.4 million hectares), and Tajik National Park in Tajikistan (2.6 million hectares).

Since the release of the initial ecosystem profile in 2017, Uzbekistan has seen the largest growth and change in the protected area network: the share of protected areas increased from 10% to 14.5% of the country's total (from 4.6 million ha to 6.5 million ha), including new national parks (Surkhon, Ugam-Chatkal, Nurata), expansion and upgrade of the existing reserves.

In 2013, Tajik National Park, in the Pamir, and three sites in the Tien Shan Mountains of China became UNESCO World Heritage sites. In 2016, a similar designation was applied to several protected areas in the Western Tien Shan shared by Kazakhstan, Kyrgyzstan and Uzbekistan. In 2023, the tugai forests of Tigrovaya Balka reserve in southern Tajikistan were designated as UNESCO site. The same year the Cold Winter Deserts of Turan, shared by Kazakhstan, Turkmenistan and Uzbekistan, located outside of the biodiversity hotspot, were inscribed as UNESCO world heritage in 2023, located outside of the biodiversity hotspot. Map (Figure 7.1) shows protected areas network in the hotspot – all categories combined.

In addition to formally declared and core protected areas such as **strict nature reserves** and **national parks** (corresponding to IUCN categories I-II), the region has other traditional and emerging designations for land under conservation and sustainable management.

1. **Species management areas** – locally known as *zakaznik* – correspond to IUCN category IV. These are quite numerous protected areas in the hotspot, but many of them are “paper parks.” They often lack legal status, delineation and up-to-date species inventory and their management is often delegated to local authorities or nearby nature reserves. This category is applied in areas with particular species or natural features; such reserves can be temporary. There is need to have greater recognition and national-level support, better management, or transformation in status. They would benefit from better local citizen and decision-maker awareness about their importance and KBA status. A similar category are the parks or sites of regional and local conservation importance: they tend to be less protected and often under-resourced with no staff and limited enforcement.
2. **Forestry management areas** – locally known as *leskhoz* – apply to many forest lands in the five Central Asia countries and set regimes for fire management, pest control, grazing, and harvest. These areas tend to have well-defined boundaries, although open data is only available for Kazakhstan and Kyrgyzstan. Several *leskhoz* units could be considered and managed as KBAs. While most forest management units are state-owned and governed, they often self-finance their operations through income generated from grazing leases, the collection and sale of non-timber forest products, and other activities. While they play an integral role in nature protection, they are not considered protected areas.
3. **Hunting concessions and wildlife development and rehabilitation centers** are supervised and licensed by the state environmental authorities, and increasingly, are managed privately. These areas are valuable for conservation, but management varies. Not all concessions are managed for the long-term, and some are managed to promote high-value trophy species, as opposed to species that make the area

important for biodiversity. On the other hand, these concessions are good at preventing poaching, with notable examples from Khushvoristan KBA in Tajikistan leading to substantial increase in the population of the markhor goat (*Capra falconeri*) between 2010 and 2025 and in the Eastern Pamirs for argali sheep. Work remains to build trust and align priorities between concessions, communities, and government stakeholders. Kazakhstan, Turkmenistan, Kyrgyzstan and Uzbekistan are frequented by wealthy visitors from Gulf states practicing falconry hunting on Houbara Bustard. Kazakhstan and Uzbekistan have established breeding centers and programs for the houbara bustard and release hundreds of birds into the wild each year. Hunting fees finance species rehabilitation and conservation, and the Gulf states support falcon recovery programs. Wildlife rehabilitation centers such as "Djeiran," run by the Ministry of Ecology of Uzbekistan, "Snow Leopard Rehabilitation Centre" in the Murghab District of Tajikistan, and "Suluktu-Terek," run by NABU Kyrgyzstan and "Jeiren-Ordo" center for the goitered gazelle restoration in the southern Issyk Kul (run by Argali Fund), support species recovery in the natural environment and act as educational centers.

4. **Water protection zones** – essentially rivers themselves, their riverbanks, and associated groundwater reserves (with sizes varying depending on the importance for drinking water supply or other purposes) – are legally protected and controlled by government entities. The institutional responsibilities vary and include local authorities and water agencies. Water protection zones are primarily intended to safeguard water sources and streams from pollution and unauthorized use rather than for conservation purposes. However, in the context of conservation, they are important for protecting aquatic ecosystems and species.
5. **Botanical gardens and zoological parks** display flora and fauna to the general public. They also play a key role in the *ex-situ* conservation and research of endangered and endemic species, and they may harbor species confiscated from illegal trade (particularly zoos). The botanical gardens in Almaty and Tashkent have the best botanical collections and research facilities in the region. The Bishkek botanical garden is being improved with support from the state and CSOs. The Kondara Valley and botanical research site in Tajikistan combines *in-situ* and *ex-situ* conservation.
6. **Ecological and migratory corridors and micro-reserves**, are among the new types of protected areas in Central Asia. Thanks to CEPF support and the active engagement of local civil society organizations, several micro-reserves have been established and officially recognized in Kyrgyzstan's regulations. In 2025, the first 800 000 ha ecological corridor was created in Central Tien Shan, Kyrgyzstan, to support the ecological connectivity for snow leopards, mountain sheep, and goats, as well as to reduce grazing pressure (in collaboration with CAMCA project).
7. In Kyrgyzstan, the entire Issyk Kul province, including the iconic Issyk Kul Lake, has been designated a **biosphere territory** with a protected status since 2000. It covers an area of 43,100 km² and is regulated by the Law on the Sustainable Development of the Ecological-Economic System of Issyk Kul and relevant legislation, governmental and presidential decrees and strategies. However, this area is rarely included in the official protected area statistics.
8. Other Effective Area-based Conservation Measures (**OECMs**) are being contemplated in Central Asia as part of the efforts to expand conservation coverage beyond formally protected areas. New generation of NBSAPs envision OECMs, which might

include glacier and water formation zones, prioritized by governments for protection, as well as border zones and other sites.

In addition to these, there are other land designations that, while not targeted at conservation, still have a conservation effect. These include mining and infrastructure sites, or pasture lands that sometimes prevent poaching or protect unique locations by excluding other development.

Non-protected state lands are leased to households and farming enterprises for pasture or crop cultivation for 10-, 20- 30- years, up to 49 years. But over vast and sparsely populated areas, it is difficult for the government to control what happens on these lands.

In the five Central Asia states and in China, “protected areas” are, by definition, state land: there are no privately-owned protected areas and there is no system of private management over areas designated for conservation, except for hunting concessions with selective conservation targets. Afghanistan remains unique in the region for having community-based management as a formal element in the management of Band-e-Amir National Park and Wakhan National Park.

7.4. International and Regional Environmental Agreements and Initiatives

Table 7.8 shows the status of ratification or participation by each of the countries to the Convention on Biological Diversity (CBD), the Convention on Conservation of Migratory Species (CMS), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Wetlands (Ramsar), the World Heritage Convention (WHC), the Global Snow Leopard Programme (GLSEP), the Central Asian Mammals Initiative (CAMI), as well as climate (UNFCCC) and desertification (UNCCD) conventions. Table 7.9 shows membership in regional action plans and agreements.

Table 7.8. Membership in international conventions and regional conservation initiatives

Country	CBD	CITES	Ramsar	CMS	GSLEP	CAMI	UNFCCC	UNCCD
Afghanistan	X	X		X	X	X	X	X
China	X	X	X	X	X	X	X	X
Kazakhstan	X	X	X	X	X	X	X	X
Kyrgyzstan	X	X	X	X	X	X	X	X
Tajikistan	X	X	X	X	X	X	X	X
Turkmenistan	X	X	X	X		X	X	X
Uzbekistan	X	X	X	X	X	X	X	X

Table 7.9. Membership in regional environmental agreements and cooperation mechanisms

Country	Regional adaptation action plan	Regional environmental action plan	Aral Sea (IFAS). commissions (ICWC, ICSD)	The Ustyurt Memorandum on wildlife	Water	Aarhu s	Espo o
Afghanistan	-	-	-	N/A	-	-	-
China	N/A	N/A	N/A	N/A	-	-	-
Kazakhstan	X	X	X	X	X	X	X
Kyrgyzstan	X	<i>suspended</i>	<i>suspended</i>	N/A	-	X	X
Tajikistan	X	X	X	N/A	-	X	-
Turkmenistan	X	X	X	X	X	X	-
Uzbekistan	X	X	X	X	X	X	-

Table 7.10. Participation in species action plans and MoUs

Country	Argali	Bukhara deer	Saiga	Siberian crane, Demoiselle crane	Raptors	Great bustard
Afghanistan	X			X		
China				X		
Kazakhstan	X	X	X	X	X	X
Kyrgyzstan	X				X	
Tajikistan	X	X				
Turkmenistan			X	X		X
Uzbekistan		X	X	X	X	X

Since the initial ecosystem profile was published in 2017, Central Asian countries have made progress in cross-border conservation cooperation. They have actively participated in memorandums of understanding (MoUs) and species action plans under the Convention on Migratory Species (CMS) and have initiated cross-border MoUs. For instance, a Memorandum of Cooperation was signed in 2024 between the adjacent border protected areas of Kazakhstan (Ile-Alatau National Park, Kolsay Kolderi National Park, and Almaty Nature Reserve) and Kyrgyzstan (Chon Kemin Nature Park). Additionally, an MoU was signed in 2022 between the environmental authorities of Tajikistan and Uzbekistan, which facilitated experience exchange in wildlife conservation and collaboration on the Zaravshan river ecosystems. The Ustyurt Memorandum on Wildlife (2024), an agreement between the environmental authorities of Kazakhstan, Uzbekistan, and Turkmenistan, is another example of cross-border collaboration (this area is outside the hotspot).

In November 2025, the Samarkand Declaration, developed jointly with TRAFFIC, was signed by the Central Asia officials to strengthen regional cooperation in combating illegal trade in fauna and flora. The Action Plan 2026–2032 includes measures to enhance coordination among customs, environmental and law enforcement authorities.

Saiga, an iconic species of the Central Asian grasslands that lives outside of a biodiversity hotspot, receives attention from governments and CSOs, including the award-winning Altyn Dala (Golden Steppe) Conservation Initiative (altyndala.org).

The Central Asian Mammals and Climate Adaptation (CAMCA) project [CAMCA](#) aims to increase the resilience of several flagship species, such as the snow leopard, argali, Bukhara deer, Tien Shan maral (*Cervus canadensis songaricus*), and Tien Shan brown bear, as well as their habitats and communities, to climate change. The project covers species habitats in

central and southern Tajikistan; Jungaria and southern Balkhash Lake in Kazakhstan; southern Issyk Kul Lake and central Tien Shan in Kyrgyzstan. The ongoing and parallel “Vanishing Treasures” project ([Vanishing Treasures](#)) focuses on monitoring and conserving mountain species in the face of climate change.

The Central Asian Mammals Initiative ([CAMI](#)) is a Convention on Migratory Species (CMS) framework launched in 2014 to foster international cooperation for conserving migratory mammals and their habitats in Central Asia, which face threats like poaching, habitat loss, and infrastructure development. CAMI covers 15 species, including snow leopard, argali, saiga, Bukhara deer, Persian leopard, Pallas’s cat, lynx and others. CAMI promotes synergy between conservation efforts, strengthens transboundary cooperation, and seeks to reverse population declines. As part of the ongoing CAMI Work Programme, CMS experts identified transboundary conservation hotspots and cooperation areas, prepared an atlas of migratory species and obstacles, and compiled an overview of community-based wildlife management experience in Central Asia. The new CAMI Work Program (2026-2032) to be approved by CMS CoP-16 aims to build on results, strengthen partnerships, and reinforce conservation actions. Transboundary conservation priority regions within the hotspot include: Koytendag, Western Tian Shan, Northern and Inner Tian Shan, and Pamirs-Hindukush-Karakoram.

There are two ongoing “One Health” Initiatives in Central Asia. One initiative (Health4Nature), launched at the 14th Conference of the Parties of the Convention on Migratory Species (CMS), is coordinated and led by the International Union for Conservation of Nature (IUCN) and funded by €11 million grant by the German Ministry for Environment, Nature Conservation Nuclear Safety and Consumer Protection (BMUV) via the International Climate Initiative (IKI). Over the next six years (2025-2030) it will promote the “One Health” approach across Central Asia to enhance resilience to zoonotic diseases by consolidating nature conservation in Central Asia and focus on the interconnectedness of human, animal, and environmental health. It will introduce and promote relevant IUCN tools and standards, provide training and mapping of OECMs, ecological connectivity and support for protected areas. It brings together such partners as the Michael Succow Foundation, CMS Secretariat, UNEP World Conservation Monitoring Centre (WCMC), and the Zoological Society of London (ZSL). They collaborate with national authorities and CSOs, such as CAMP Alatau in Kyrgyzstan, the Institute of Zoology of Kazakhstan, the Institute of Zoology of Uzbek Academy of Sciences, and the Tajikistan Nature Foundation.

Another “One Health” Initiative is led by the World Bank. Following preparations in 2023-2024, including the adoption of the Central Asia One Health Framework for Action, the program was launched in May 2025, receiving \$60 million for the first phase in Kyrgyzstan (\$30 million loan) and Tajikistan (\$30 million grant), which will help them strengthen their ability to prevent, detect, and respond to health risks affecting humans and animals. Up to \$130 million in total financing will support Central Asian countries in safeguarding the health of people, animals, and the environment from 2025 to 2032. The Regional Environmental Center for Central Asia will host a coordination secretariat.

The International Fund for Saving the Aral Sea (IFAS) maintains the Interstate Commission on Sustainable Development (ICSD), which is the main regional body chaired by the environmental ministers and tasked to coordinate regional cooperation on environment and sustainable development, including the Regional environmental action plan (REAP). Each country has three representatives on the ICSD: the head of the national environmental authority, a representative from an economic affairs ministry, and a representative from the scientific community. In the past, civil society was able to participate in ICSD, however, recently its role remains marginal.

The ICSD's mandate includes mountain ecosystem protection, and the Regional Mountain Center, which is currently not very functional and acts as a CSO based in Bishkek. Since 2016, Kyrgyzstan has suspended its participation in IFAS processes. The country has justified this suspension by pointing to the need for IFAS reforms. The IFAS reforms are supported by several donors, but the process is slow. Nevertheless, the Kyrgyz Republic actively promotes sustainable mountain development and has designed a National Road Map, as well as established a secretariat within the government. It plans to organize the Global Bishkek Mountain Summit in 2027, and its regional and global role is prominent.

7.5.NBSAPs and Other Targets

The Convention on Biological Diversity requires countries to prepare and regularly revise National Biodiversity Strategies and Action Plans (NBSAPs) as the principal instruments for implementing the Convention at the national level. Additionally, national climate adaptation plans (NAPs), nationally determined contributions (NDCs), national green economy and low carbon strategies, and state forestry programs include provisions and targets related to biodiversity.

When the ecosystem profile update was underway in 2025, the countries in the hotspot were revising their NBSAPs to align with the Kunming-Montreal Global Biodiversity Framework. This summary includes the main elements of each country's NBSAP and related targets. Note that some of this information is based on drafts and may change.

7.5.1 Afghanistan

- Improve the protected areas system
- Implement regulations and public awareness necessary for the conservation of biodiversity
- Develop and implement mechanisms for the sustainable use of natural resources
- Develop and implement mechanisms for preventing damage to native species and natural ecosystems from invasive species
- Reduce the illegal or unsustainable use of biodiversity resources

7.5.2 China

- Further improve policies, regulations and systems on biodiversity conservation
- Promote mainstreaming of biodiversity conservation into planning processes
- Strengthen capacities for biodiversity monitoring and conservation
- Strengthen in-situ conservation of biodiversity and carry out ex-situ conservation
- Promote sustainable development and use of biological resources
- Improve benefit sharing of biological and genetic resources and traditional knowledge
- Improve capacities to cope with new threats and challenges to biodiversity
- Raise public awareness and strengthen international cooperation and knowledge exchange

Priorities for Tian Shan – Jungar Mountains and the Tarim Basin include:

- Expand the network of nature areas, taking into consideration bio-geographical units such as mountains, watersheds, and deserts.
- Strengthen protection of desert and grassland species as well as rare birds and their habitats
- Improve the conservation of rare and endemic fish and their habitats

- Reinforce protection of the gene resources of wild fruit trees, including wild apple and apricot

7.5.3 Kazakhstan

- Expansion of protected areas by 4 million ha by 2035
- Strengthening wetlands protection outside of the formal protected areas
- Introducing new management concepts, including OECMs, ecological corridors and KBAs
- Improving geo-portals and inventories on species, forests and protected areas ([Tabigat](#)) and eco-tourism information and services
- Design and introduction of modern biodiversity-related training and information for schools
- Expanding forest cover, strengthening forest monitoring, fire and pest controls
- Improved methods and approaches in forest management, including climate adaptation
- Expand green belts and plantations in and around cities, along roads, railroads and rivers
- Improving and upscaling of sustainable forestry
- Expanding number of species covered by state-funded monitoring and conservation measures
- Improving species populations through rehabilitation, re-introduction and habitat protection
- Strengthening the collaboration with hunting concessions and the private sector funding and actors into wildlife conservation and monitoring
- Improving inter-agency collaboration on illegal trade of flora and fauna and on invasive species
- Improving the safeguards for migratory species in infrastructure development and implementing measures to reduce bird mortality from power lines and generators
- Making biodiversity an integral part of site and strategic environmental impact assessments
- Expanding the areas covered by flora inventories, mapping and documenting Important Plant Areas (IPAs) and Key Biodiversity Areas (KBAs), and strengthening *in-situ* and *ex-situ* conservation of endemic and threatened flora species, including botanical garden collections
- Improving fishery management, fish protection and monitoring
- Improving pasture management, inventory and restoration of degraded pastures (4 million ha)
- Improving biodiversity finance data and statistics, integrating data on biodiversity projects

7.5.4 Kyrgyzstan

Draft elements of the State Programme for Biodiversity Conservation until 2040 and actions to 2030:

- Conservation and restoration of ecosystem and species diversity
- Sustainable use of biodiversity and minimization of threats
- Creating favorable conditions for biodiversity conservation through management, financing, gender mainstreaming, and public engagement
- Implementing a national ecological network that covers at least 30% of Kyrgyzstan's territory
- Expanding the coverage of ecosystems by the protected areas network

- Ensuring the conservation of species diversity, especially rare, endemic, and threatened species.
- Conserving genetic diversity and strengthening climate resilience
- Promoting the sustainable use of biodiversity to ensure economic well-being
- Minimizing threats to biodiversity
- Ensuring good governance, awareness, and the engagement of local communities
- Mobilizing resources to conserve biodiversity hotspots
- Strengthening public participation, scientific monitoring, and reporting

7.5.5 Tajikistan

- Strengthening *in-situ* and *ex-situ* conservation
- Conservation of genetic resources
- Ensuring biosafety and addressing invasive species
- Promoting the sustainable use of biological resources to reduce poverty and improve well-being
- Improving public awareness and engagement on biodiversity and the environment

Note that Canada is funding the [NBSAP Accelerator Partnership](#) (NBSAP AP) through the project, [Accelerating Systemic Change for Gender Equality and Biodiversity Conservation through NBSAPs](#). The project funded through Canada's International Biodiversity Program supports seven countries (including Tajikistan in the MCA) to implement gender-responsive NBSAPs by applying a gender-transformative systems thinking approach to improve biodiversity and gender equality outcomes.

Tajikistan highlighted the importance of gender in its 6th National Report under the CBD underscoring women's roles in agriculture, forestry, and biodiversity conservation, while also noting gender inequality challenges. With support from NBSAP-AP's Gender Project, a Tajikistan core country team is receiving technical and institutional capacity building to develop country-specific solutions for gender-responsive biodiversity actions. The solutions will be submitted to the NBSAP AP's MatchMaking Mechanism, linking country needs with technical support and financing.

7.5.6 Turkmenistan

- Improving the organizational structure, technical capacity, and interdepartmental cooperation regarding biodiversity conservation
- Developing and implementing a state program and projects on sustainable pasture management
- Update and implement the state program on forests
- Improve legal and regulatory provisions for environmental impact assessments to incorporate biodiversity risks and safeguards
- Improve financing mechanisms for conservation, including in extractive industries
- Expand nature-based solutions and climate resilience measures for ecosystems
- Expand protected areas by 10%
- Improve the management effectiveness of the protected areas
- Emphasize the socioeconomic benefits of biodiversity conservation, including ecotourism and ecosystem services
- Increase public awareness and understanding of biodiversity values and benefits

7.5.7 Uzbekistan

- Expanding the protected area coverage by 30%, strengthening efficiency of national parks and biosphere reserves
- Scaling up programs for the restoration of degraded lands, including deserts, pastures, forests
- Promoting the sustainable use of biodiversity and ecosystem services by combining traditional and modern management tools, developing ecotourism, sustainable agriculture, and forestry
- Improving environmental education programs for schools, communities, and farmers
- Raising awareness and engaging the local population in conservation
- Advancing environmental monitoring systems and designing a national biodiversity information system integrated with global platforms (GBIF, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services – IPBES, and others)
- Promoting and leading in international and regional cooperation on biodiversity, including the CBD, CITES, CMS, and the Ramsar Convention
- Strengthening regional cooperation on migratory species (saiga, argali, crane, snow leopard), and the management of transboundary water resources

8. CIVIL SOCIETY CONTEXT

CEPF was founded with an understanding that the engagement of civil society leads to more effective and sustainable conservation outcomes, and CEPF's fundamental role is to make grants to civil society organizations who then implement conservation programs. This chapter summarizes civil society "sector" in the region and the possible roles that CSOs might play in conservation.

CEPF defines civil society as all the national and international nongovernment actors that are relevant to the achievement of conservation outcomes and strategic directions. This includes, at least, local and international conservation NGOs; economic and community development NGOs; scientific, research and academic institutions; professional organizations; producer and sales associations; religious organizations; non-state media outlets; advocacy groups; outreach, education and awareness groups; sport clubs and associations; social welfare agencies; indigenous groups and indigenous rights groups; land reform groups; and the parts of the private sector concerned with the sustainable use of natural resources.

CSOs in the Mountains of Central Asia have a variety of legal structures and approaches. They can be grouped into the following broad categories:

People's Organizations serve the interests of their members. These organizations may address either economic interests, such as associations of farmers and pastoralists, associations of fishers and hunters, or socio-cultural and local development aspirations, such as jamoats in Kyrgyzstan, mahallas in Uzbekistan, or sport clubs and associations. Several eligible organizations received grants in phase one.

Non-governmental non-profit organizations (NGOs) pursue a vision of change that is external to the organization, such as community development or conservation. NGOs made up most grantees in the first phase of CEPF investment, and included local, national and international organizations. One observation is that many NGOs working on issues indirectly related to conservation, such as pasture management, disaster risk reduction, community development, or women and youth, have difficulty making the link between their work and environmental considerations or conservation benefits.

For-profit organizations address environmental issues but use a business model and have profit generation as one (if not their main) purpose. Examples include women's cooperatives, hunting reserves, consulting firms, and small enterprises (e.g. honey). Media organizations and photojournalists are usually for-profit, except when government-owned. They are important in addressing environmental issues when they promote information and take a position on issues such as wildlife, harmful practices, and local sustainability. In phase one, several for-profit groups received grants.

Academic and research organizations are gatekeepers to knowledge. In Central Asia many such institutions are state-owned, but their experts may work in conservation NGOs or projects; they may operate as non-profit NGOs and as for-profit organizations. Two universities (UCA and AUCA) were among CEPF grantees in phase one.

The capabilities, niches, and areas of activity of civil society organizations vary among the hotspot countries. Conservation- and mountain-focused organizations in Central Asia have a rich history. With climate change becoming a more prominent issue internationally, many CSOs have started to integrate green energy, landscape and ecosystem adaptation, climate-

resilient development, and agricultural practices into the scope of their activities. Because of CSO engagement, the Key Biodiversity Areas of Central Asia have been mapped; multiple national parks, reserves and lake shores have been better cared for; and, flagship species have been better protected and monitored.

In general, the trend in the region is one of greater government control over CSOs, particularly since a high point of civil society engagement following the dissolution of the Soviet Union. The reasons for this are many and can be sensitive, but include issues of democratic governance, ethnicity and religion, and perceived and real threats from abroad and from within countries. The end result is that there are now more requirements for organizational and project registration than in the recent past. Nonetheless, CSOs are generally welcome to engage at the local level, particularly for biodiversity monitoring, environmental education, public awareness, and to demonstrate “best practice” from abroad.

Comparing across countries, Turkmenistan, Uzbekistan and China have the strictest rules for the engagement of CSOs via support from international donors. Scientific institutes in these two countries have high standards and adequate funding from national authorities, while CSOs play a role in protection of flagship species and education. In both countries, funding from international entities to local NGOs must be first approved by appropriate authorities. Engagement of civil society in Xinjiang is prescribed in various ways. Academic and scientific organizations, such as the Academy of Science and universities, receive the most funding and have the greatest ability to conduct field work, especially compared to smaller and independent groups, which are underrepresented.

Perhaps at the next level are Tajikistan and Kazakhstan. Tajikistan’s environmental CSOs are largely based in Dushanbe. Some CSOs operate in the north (Khudjand), south (Khatlon) or Pamirs (Khorog). A significant amount of climate change money coming into the country over the past 15 years flows to adaptation and disaster risk reduction. Local CSOs and public groups are also active in species surveys, support for protected areas, conservation of agro-biodiversity, and sustainable development and forestry projects. Kazakhstan has numerous CSOs in its various large ecosystems (e.g, northern steppes, southern deserts, mountains). Those focused on the mountain environment are in Almaty and south-east Kazakhstan (Shymkent, Taraz, Ustkemen), in the Tien Shan, Karatau and Altai Mountains. Many have offices in the capital city, Astana, outside the hotspot, to maintain links to the government and donors. Kazakh CSOs play an active role in biodiversity programs and legislation, implement field projects on conservation and maintain regional and international relations.

CSOs in Kyrgyzstan play a significant role in shaping biodiversity programmes, environmental monitoring and innovations. However, there is a growing conflict between conservation aims and development aims (typically related to mining, hydropower and infrastructure), particularly in the western and central Tien Shan. In addition to CSOs, civil society activists and community leaders play important role.

CSOs in Afghanistan played a similar role like in Kyrgyzstan, but now with Taliban in power, women cannot participate and CSOs face many restrictions. Some environment-focused CSOs still operate but face a shortage of funds.

Table 8.1 lists a sample of local and national CSOs by work area and country.

Table 8.1. Selected local CSOs with Links to Biodiversity Conservation

Technical Area	Examples of CSOs
Land, Water and Nature Resources Rights; Right of Access to Justice and Environmental Information	Kazakhstan: Green Salvation, Eco-Atameken, Farmers of Kazakhstan, Eco-Forum Kyrgyzstan: Independent Ecological Expertise, Lesik-South, Osh and Bishkek Aarhus Centres, Rural Development Fund Tajikistan: Association of smallholder farmers, Azal, Surkhob, all Aarhus centres in the country (seven Aarhus centres in total) Uzbekistan: Union for the Defense of the Aral Sea and Amudarya, Armon, Zarafshan, Salomatlik-Ecology, Chashma Suv, Okar Bulok, Obi Zam Zam, Water Users Association, CSO "For ecologically clean Fergana"
Local development	Kazakhstan: Biogen Kyrgyzstan: CAMP Alattoo, ARIS, numerous jamaats Tajikistan: Shifo, Jovid, CAMP Kukhiston
Artisans and traditional crafts	Tajikistan: Komroni, Association of artisans of northern Tajikistan Kyrgyzstan: CBT (Community Based Tourism) network, numerous organizations around Issyk Kul Lake, One Village One Product partners Turkmenistan: Toranny
Children and youth	Kazakhstan: Human Health Institute Tajikistan: Dushanbe Aarhus Centre, Little Earth, Youth Ecological Center Uzbekistan: Eko-maktab
Women and gender	Kazakhstan: Kazakh National Committee of the UNESCO Man and Biosphere Tajikistan: Avesto, Bonu, Women for Science and Progress, Zan va Zamin Uzbekistan: Women Union of Uzbekistan, Zaamin Int. Public Foundation
Ecological tourism and business opportunities	Kazakhstan: Avalon, Kazakhstan Hunters and Fisherman Society, Kansonar Kyrgyzstan: CBT (Community Based Tourism) network, KATO, One Village One Product partners, Union of Photojournalists Tajikistan: Ruhafzo Uzbekistan: Community Based Tourism network
Biodiversity conservation	Afghanistan: REHA, Rupani Foundation China: Institute of Geography and Ecology and numerous nature societies and associations (geographic, botanic, wildlife, tourism) Kazakhstan: Association for Conservation of Biodiversity of Kazakhstan (ACBK), Jabagly-Manas, Institute of Zoology, Wildlife Without Boundaries Kyrgyzstan: Kyrgyz Association of Land and Forest Users, Kyrgyz Wildlife Society, BIOM, GLIP, Kyrgyz society of hunters and fishermen, Tabyat-South, CAMP Tajikistan: Nature protection team, Kukhiston, Tajik Association for the Protection of Forests and Wildlife, Noosfera, CSO "Genetic Resources", CAMP Turkmenistan: Turkmen Society of Nature Protection Uzbekistan: Uzbekistan Society for the Protection of Birds (UzSPB), Eko-Maktab
Environmental education, advocacy and awareness	Afghanistan: REHA Kazakhstan: Green Salvation, Institute of sustainable development, Jabagly-Manas Kyrgyzstan: Independent Ecological Expertise, Muras Bashaty, Osh Aarhus Centre Tajikistan: Little Earth, Youth Ecological Center, Youth Group for Environmental Protection, Zumrad, CAMP Turkmenistan: Aarhus Centre of Turkmenistan, Tebigy Kuwwat Uzbekistan: Uzbek Society for the Protection of Birds, Eko-Maktab, Zaamin International Public Foundation

Some of the above-mentioned CSOs are conservation leaders. They have some influence when it comes to decision-making and can mentor smaller groups. Other CSOs, including many that are not listed, have limited visibility and require support to strengthen their organizational and financial capacity.

The text below addresses CSOs in each country, although there are commonalities. All have “sub-national” (or local level) CSOs covering a district or province in the country, “national” CSOs covering the majority of the country, “regional” CSOs with offices in multiple countries, and “international” CSOs that are based outside the hotspot, sometime with offices in one or several countries. National CSOs face similar challenges, to varying degrees:

- Tightening governmental controls, “foreign agent” monitoring, and inspections
- Limited technical and organizational capacity
- Lack of recurrent or sustainable funding
- Differing and challenging donor requirements and expectations

The Civicus global monitor measures trends in respect of general political and social freedoms, classifying countries into five categories, from ‘open’ to ‘closed’. In 2024, five of the seven hotspot countries were classified as “closed”.

Table 8.2. Civicus monitor classifications of the hotspot countries

Country	Score 2024	State 2024	Trend 2018-2024
Afghanistan	11	Closed	Slight deterioration
China	10	Closed	Stable
Kazakhstan	31	Repressed	Slight deterioration
Kyrgyzstan	36	Repressed	Slight deterioration
Tajikistan	11	Closed	Slight deterioration
Turkmenistan	9	Closed	Stable
Uzbekistan	20	Closed	Stable

Source: Civicus Monitor <https://monitor.civicus.org/>

Note: Civicus allocates countries to categories based on respect in law and practice for the freedoms of association, peaceful assembly and expression, drawing on data from multiple sources. Countries are categorized as closed (score 1-20); repressed (21-40); obstructed (41-60); narrowed (61-80) and open (81-100).

One of the factors impeding the development of CSOs is the growing state control over their activities, as expressed in recent legislative revisions regarding “foreign representatives” and tax procedures. The digitalization of accounting adds new challenges, especially for rural and lower capacity organizations that operate in environments where the use of invoices and Internet access is limited. During the ecosystem profile update consultations, CEPF grantees (usually smaller organizations) mentioned complex and demanding financial accounting as one of the most time-consuming and labor-intensive parts of grants and project work and asked for simplified financial and reporting requirements.

Although it is challenging to measure, CSOs emphasize a recent trend of decreased funding from donors. Donors rarely support CSO organizational development, which negatively impacts the quality and sustainability of their staff and operations. In this context, CEPF stands out because it has already helped with the organizational development of CSOs and can potentially do more in phase 2, in addition to conservation-focused projects. Decreasing funding leads to increased competition among CSOs and a less collaborative environment and information sharing.

Access to environmental information and data from monitoring and research remains limited. Despite digitalization, many sources from government agencies remain fragmented or inaccessible to CSOs. CSOs do not always have the necessary level of scientific knowledge and competence to accurately identify species and the many sub-species, or to assess the ecological situation. Different species are studied to different degrees: birds and mammals are better studied and more frequently observed by scientists and volunteers than fish, insects and plants. Many local CSOs and scientists face problems with KBA Standard methodology and lack knowledge on monitoring and measuring the state of the environment and biodiversity.

CSOs who have mastered online meetings, social media and impact reporting are more visible, including to donors and governments. Conversely, local, science-focused, and field-oriented CSOs who lack the time, skills, or capacity for social media and impact reporting are less visible, even when they do a good job and achieve results. This is partly visible among local CEPF grantees in Phase I.

One of the issues is a growing gap between the generations of staff working at environmental CSOs. The "backbone" of large organizations consists of experienced experts in their 40s-60s who may lack new skills such as proficiency in English, knowledge of software and social media, marketing and fundraising strategies. The younger generation, aged 18-30, often possesses or can quickly learn new skills, but prefers to work in business, change jobs frequently or organize their own CSOs, which are often short-lived. Sometimes, CSOs are created solely to initiate or implement internationally funded projects, after which they either cease operations or change their title and status.

Another element of generational gap is the younger staff's lack of exposure to and knowledge of fieldwork. Younger staff are experts in desktop work but have limited skills in species surveys and identification. Although modern digital tools and apps (e.g., drones, SMART, iNaturalist) may be helpful for fieldwork, the basic field science skills are essential for targeted and sustained conservation efforts.

An issue repeatedly highlighted by CSOs is the lack of capacity to assess the state of the environment or the state of species and habitats. In the absence of science mentoring and organizational backstopping, they find it difficult to ensure that their work is focused and effective and they face difficulty in impact reporting. CEPF can support training in simple techniques for assessments of key species and habitats, planning conservation interventions, and sharing information with local and central governments.

CSOs with skills in community development and natural resource-based businesses such as tourism or responsible hunting are likely to be important for the success of conservation activities. CEPF grantees are thus likely to be organizations that are working on livelihoods and social development issues, and that are aware in a general way of the importance of natural resources and ecological services but lack the knowledge to define these links clearly or to address environmental issues. CEPF can support capacity building and organizational development activities that assist CSOs in understanding conservation outcomes and enable them to link their work to conservation.

8.1. Organizational development for CSOs in the Mountains of Central Asia

The concept of more *resilient* organizations is central to CEPF's vision for civil society in the Mountains of Central Asia Hotspot. The journey towards becoming a resilient organization will be different for every CSO, depending on its history, purpose, stakeholders and the

political and cultural environment in which it operates but common features of a resilient organization include that it:

- Has a clear mission that is ecologically and culturally relevant to a place.
- Delivers a program that is aligned with the mission.
- Has in place mechanisms to sustain financing and impact.
- Has appropriate governance and is accountable to key stakeholders.
- Forms part of a conservation community, collaborating with and not stifling others.
- Has a positive organizational culture, and motivated and satisfied staff.
- Is innovative, and able to learn, embrace change and manage risk.

This definition does not imply that an organization must be a certain size or level of complexity. Resilience is equally important for a small, community-based organization as it is for a professional, national NGO.

There are a wide range of actions that can support an organization on this journey to becoming more resilient, from simple, technical training (e.g., how to operate software) to a long-term, multi-faceted intervention that is intended to bring about fundamental change in the way an organization works. For the purposes of analysis and planning, it is useful to divide these needs and responses into capacity building and organizational development (see Table 8.3):

- Capacity building is the delivery of specific knowledge and skills needed to enhance the performance of a CSO. In the context of CEPF support, capacity building will normally be linked to the development, delivery, monitoring and reporting of grant-funded conservation projects.
- Organizational development is the delivery of a package of support that addresses core institutional needs identified by a CSO, usually over a long timeframe and with the involvement of all or core members of the organization.

Table 8.3. Key features of capacity building and organizational development

	Capacity building	Organization development
Objective	Specific personnel improve their knowledge and skills in a defined area.	The organization has greater long-term resilience and adaptability.
Delivery approach	Often through standard training events and modules, allowing for efficiencies such as training in groups and remote or online learning.	Tailored to the needs of the organization and its environment, with a variety of delivery types and phases over an extended period.
Time and resources needed	Discrete, predictable, typically requiring limited funding and time.	Long-term, requiring significant commitment of time from all levels of the organizations as well as external facilitators. Likely to be costly, but difficult to budget in detail from the start because of the iterative process.
Measurement of impact	An immediate impact (e.g., acquisition of knowledge) is easy to define and measure, although demonstrating application of that knowledge to improve performance may be more difficult and long-term.	Impact is long-term, may not be possible to define at the start, difficult to measure objectively.

It is important to recognize that there is not a clear division between capacity building and organizational development, and that many actions and interventions will have some of the

characteristics of both. For example, CSO staff trying to implement a newly acquired skill may encounter barriers that are to do with the organization's decision-making processes, governance or culture, so capacity building may have to engage with organizational development issues to ensure it has an impact. Conversely, organizational development demands time and commitment from staff, which may take them away from delivering on short-term commitments to donors and stakeholders. It may be that capacity building is needed first, to deliver immediate improvements in performance, which, in turn, motivate staff and create the flexibility, before more organizational development activities can begin.

Organizational development is a continuous process of positive change towards becoming a more resilient organization. Organizational development does not have to involve external actors but, in many cases, will benefit from expertise and resources from donors and organizational development specialists. Donor funding brings with it the risk of donor influence. For effective organizational development, it is critical that the CSO remains in control of its own process.

The organizational development "journey" is tailored to the needs of the organization, so there is no single blueprint. However, a typical process will have the following stages: initiating the process; planning; delivering organizational development support; monitoring and evaluating impacts; and sustaining organizational development.

Initiating the organizational development process

Leadership commitment from the beneficiary CSO is central, as is buy-in from the personnel who will be involved. The need to secure leadership commitment may influence the entire shape of the organizational development process and having leaders' participation should be mandatory. Having a financial contribution from the beneficiary may be needed as an indication of organizational commitment.

Allocation of staff time and resources is also important, recognizing, for example, that staff who are under pressure to meet project-driven deadlines need to be allowed to allocate dedicated time to the organizational development process. This may require negotiating with project donors, beneficiaries, and partners.

The amount of funding needed may be substantial and needs to be available on a flexible timeline, because outputs and objectives will often be redefined as the organizational development process develops.

Establishing and maintaining trust between the parties involved allows for open communication and discussion of sensitive issues. Where the organizational development process is linked to project funding, the imbalance of power in the donor-grantee relationship is a barrier to open communication. This issue can be mitigated by having organizational development staff at the donor who are (mostly) independent of the grant-making and administration process. The issue can also be mitigated by outsourcing delivery of organizational development support to a third party (which has the additional benefit of bringing in relevant expertise). The way in which the agenda and objectives of the organizational development process are established, which often uses diagnostic tools, also has an important impact on trust and openness.

As part of building trust, adequate time to build a relationship between the CSO and the organizational development facilitator is key and requires the funding flexibility and organizational commitment noted above. Some organizational development providers expect to spend several months getting to know an organization. They may implement a due diligence process or a single activity with the partner (such as a strategic planning

process or training in a specific area), to test collaboration, before committing to a long-term process. Where CSOs are already familiar with the donor and organizational development provider, there may already be a level of trust that can provide a foundation for further work.

Planning the organizational development intervention

Any kind of organizational development intervention should start with an assessment of the specific needs of the organization, leading to agreement on the objectives and delivery. The way that this initial assessment is done should clarify expectations and set the tone for the relationship between funder, facilitator and beneficiary. The process should be driven by the beneficiary, with guidance and support from the facilitator. Initial discussions may include helping the CSO understand what can be achieved and what an organizational development intervention might involve.

To structure the discussion on existing capacity and identify strengths and gaps, supporting organizations typically use some form of diagnostic tool. A common weakness of diagnostic tools is that they ask the respondent to score their own organization against a set of normative criteria, which may not be relevant to the aspirations of the organization. The highest scoring criteria typically resembles the properties of a large, complex, professional NGO, implying that all CSOs should aspire to become larger and more professional, and provide little room for discussion of what is important for the CSO and the local context. There are options where respondents define for themselves what constitutes a satisfactory or less-than-satisfactory situation. There is also a risk that the application of diagnostic tools focuses on weaknesses and failures, which can, in turn, erode trust and support for the organizational development process. One option is an appreciative enquiry/experience-based approach, focused on identifying and valuing strengths, and building on these to address challenges, rather than starting by looking for the weaknesses and deficiencies in an organization's structure and operations.

Planning for a typical, long-term organizational development intervention may progress from diagnostic tool to agreement on overall aims, a first year workplan, and plans and budgets for delivery of specific training and facilitation support. However, approaches that take an individually tailored approach need to be controlled by the beneficiary and respond to changes as the process progresses, so there is no predetermined blueprint. It is more useful to think in terms of a "toolbox" of support that is available, and a process that is created collaboratively by the beneficiary and facilitator, with the backing of a funder.

Delivering organizational development support

Choices and issues that need to be considered in the planning of a program of support include: online versus in-person approaches; and single-organization versus multiple-organization approaches.

Key advantages of online learning versus in-person learning are minimal cost for participants to attend, convenience, and flexibility for participants to engage at a time that works for them. Important disadvantages, however, include the lack of personal interaction, the temptation for participants to multitask or otherwise be distracted by other pressures in their environment, and a plethora of technical issues, including poor connectivity. Conversely, in-person learning provides high-quality opportunities to engage, share and bond with other participants, including during time spent together outside of formal sessions. Well facilitated, in-person sessions can allow for effective discussion of issues, consensus building and inclusion of voices, which are not normally well-represented. In contrast to online, in-person sessions also offer a more focused experience, with participants less likely to try and multi-task during the training. The challenges of in-person

approaches include the cost of travel and accommodation, and the need for all participants to commit to meeting at a particular time and place.

A key advantage of single-organization approaches versus multiple-organization approaches is that they allow for organizational development to be co-designed and tailored to the specific needs of the CSO and delivered at a time and place that is most effective for the CSO. However, these approaches demand more time from the facilitator, and so are more costly, although they are likely to have a greater impact because they are targeted to specific needs.

Many providers of organizational development services offer programs where peer-to-peer learning and the creation of a cohort of graduates is an explicit objective. These are delivered through a series of workshops and events that bring people from different organizations together. This approach has a strong emphasis on selection, with applicants invited to apply and a screening process to ensure that they will benefit from the process. In-person and online events are used to create opportunities for participants to share and learn from each other and may extend to the formation of links between participants after the events and become the basis for collaboration. In addition, multi-organization training can be an efficient way to deliver a set of skills, such as project management or financial management or KBA concept, to a large group of CSOs.

Monitoring and evaluating the impacts of organizational development

Monitoring is important, primarily to enable the staff and other stakeholders of the CSO to see that the time and resources invested in organizational development are having a positive impact. "Pause and reflect" periods are valuable during the process, to recognize progress and allow adjustment of plans. In these cases, monitoring may rely more on personal impressions than objectively measurable indicators.

Monitoring is also important to demonstrate to donors supporting the capacity development process that their funding is having the intended impact. When communicating to donors (and other supporters and stakeholders), it is important to present monitoring results in the context of the long-term aims of the organizational development process, and to make it clear that evidence of transformative change in an organization may not emerge for some years.

Diagnostic frameworks help compare results with baseline data. The CEPF has a CSTT tool that may be better suited for monitoring capacity building than organizational development. While this approach has the advantage of producing measurable data that can be compared with that of other organizations or over time, changes in personal, team, and institutional capacity may be intangible and not effectively captured by the criteria used in these frameworks. Additionally, the scoring is influenced by who fills out the form, and the results can be difficult to interpret.

It is easier to evaluate the immediate impact of capacity building for participants in a group training event that is structured around a fixed syllabus. This does not, however, necessarily correlate with implementation of the newly acquired skills or with wider impact. Post-training follow-up is recommended to give an assessment of the real impact of the skills acquired on performance. Online training presents specific challenges for monitoring.

Sustaining the impact of organizational development

Given that organizational development is an ongoing process, "sustainability" of a specific intervention does not mean that the client organization will never need support with organizational development again but that it is in a better position to plan, access and fund

such support when needed. Options may exist for access to on-demand advisory services or mentors, and engagement of networks of similar organizations and communities of practice.

8.2. Sources of organizational development expertise

While the idea of CEPF explicitly addressing organizational development is new to the second phase of grant program, the concept of support for civil society in Central Asia has a long history. Perhaps the main expertise and momentum for environment-related CSOs on “civil society strengthening,” “organizational development,” and “capacity building” was developed in the 1990s and early 2000s, during the transition to independence. Nowadays, local expertise in organizational development is available; however, it is primarily focused on the private sector and social CSOs.

In the state environmental sector, UN entities (UNDP and FAO), as well as Germany’s programs, organizations, or advisors, have played a dominant role in organizational development, particularly in national and regional governance frameworks and structures. GO-NGOs, including CAREC, benefited from frequent support by donors to organizational development.

Only a few NGOs, who were engaged in long-term international programs and projects (e.g. on energy efficiency or conservation of emblematic biodiversity) benefited from continuous organizational development. Due to a lack of organizational development over the past twenty years, mature environmental CSOs have a generational gap, while new CSOs have capacity and continuity gaps.

Nevertheless, there are several good examples of how investments in organizational development have paid off in the long term. For years, the WCS has worked with Afghan CSOs to create or strengthen their capacity. Fifteen to twenty years ago BirdLife International has worked with its Central Asian partners to develop their scientific capacity and institutional base. Twenty years ago, the Swiss support led to the establishment of mountain-focused organizations and networks, such as CAMP and CBT. Initially, these organizations received support for organizational development, and they evolved into independently operating organizations and networks. Similarly, the JICA-supported “One Village, One Product (OVOP)” approach, which initially focused on the Issyk-Kul Lake region of Kyrgyzstan, is now being scaled up. Established in 2002, UNISON Group in Kyrgyzstan, an alliance of civil society (Unison Public Foundation) and consulting (Unison Consulting LLC) has implemented more 100 projects on energy efficiency, renewable energy, sustainable development and has gained competence in organizational development. The OSCE helped create the Aarhus environmental information centers network and provided regular organizational support.

8.3 CSO networks

The Central Asian Civil Society Climate Network is an informal voluntary association of climate and environmental CSOs of Central Asia created in 2023 to facilitate the exchange information, dialogue and discussion on environmental and climate issues. It is based on the network initiative in 2019 via the Regional Environmental Center for Central Asia (CAREC) and includes the Ecoforum of Kazakhstan, the Green Alliance of Kyrgyzstan, TajCN (Tajik Climate Network), Turkmenistan Nature Conservation Society and the Ecological Movement of Uzbekistan. The climate focus of this network is supported by various donors. Donors have paid less attention to conservation, and there is no comparable network. On the other hand, CEPF support has been crucial in advancing cross-border cooperation in the Western Tien Shan UNESCO world heritage sites, mobilizing efforts, and raising awareness of

biodiversity issues across the region. Some CEPF grantees focused on local organizational development. For instance, ACTED in Uzbekistan provided training and capacity-building for women, local, and youth CSOs. The Kazakh Civil Society Development Association (ARGO) co-hosted CEPF's RIT and provided CSOs with trainings on grant management. In addition to its core focus on conservation, Fauna & Flora has worked on capacity building with several CSOs in Tajikistan, including mentoring and organizational development.

Creating CSO associations, networks, or coalitions can be useful when a multifaceted approach is required or when a broad target group needs to be reached. It also helps unregistered and informal groups get involved in project implementation. However, some CSOs or CSO coalitions created under the grant programs closed their activities soon after project or program completion.

8.4 Funding organizational development

The cost of long-term organizational development support is dependent on the specific needs of the CSO and the design of the process. The main costs will be the time of facilitators/mentors to support the process, travel and accommodation costs for the facilitator to meet with the CSO, and the organization of workshops, retreats and other meetings. Costs could vary widely based on the provider and their typical clientele.

Funding agencies that support CSOs to undertake conservation projects are unwilling to allocate more than a fraction of their funding to activities that are not directly connected with delivering the objectives of the project, such as organizational development. Where they do support capacity, this is often delivered to suit the donor's agenda, timetable and budget, rather than being tailored to the specific needs of the CSO. Secure funding, that does not impose an agenda on the recipient or otherwise exacerbate donor-beneficiary power inequality is critical for organizational development.

Donors adopt at least four models of funding organizational development:

- Unrestricted funding to the beneficiary CSO that does not require any detailed reporting or accounting and allows the organization freedom to invest in organizational development or projects. Unrestricted approaches are typically used where there is a long-standing relationship and high level of trust between donor and CSO.
- Grants specifically for organizational development to the beneficiary CSO, which are typically managed as a project, with a budget, defined objectives and accountability to the donor. This model means that a degree of control is retained by the donor (depending on donor requirements) and the CSO is accountable to the donor for its own capacity development. However, compared to making a grant to an organizational development provider (see below), this model gives the CSO greater control over choosing and managing the support it receives.
- An organizational development component included in a larger grant for a conservation project. For donors such as CEPF, where organizational development is a means to achieve lasting biodiversity conservation, this modality has the advantage of maintaining closer links between the investment in organizational development and conservation objectives. Organizational development may have a greater and more sustained impact when it is combined with project implementation. At the same time, there is a risk that the organizational development element is eclipsed as grantees strive to achieve conservation targets. It may be most appropriate for capacity building activities, where the capacity to be developed has direct links to delivery of the project.

- Grants awarded directly to organizational development service providers. This approach reduces the administrative burden on the CSO and allows for efficiencies (e.g., a service provider might be funded to provide organizational development support to several grantees under one grant) but it reduces the agency of the beneficiary CSO in selecting and managing the provider. This problem could be overcome if the CSO was involved in the selection of the provider.

Combinations of these modalities are possible and, indeed, may be very effective. For example, a grantee awarded a grant for conservation action could apply for a specific organizational development grant, or an organizational development service provider could receive a grant to provide support to set of CSOs implementing conservation projects. In these cases, there may be tensions between the pace at which different CSOs are proceeding with organizational development and the timeframes of projects, and it may be useful to allow organizational development support to continue beyond the end of conservation projects.

There is an argument for maintaining a strong link between conservation project funding and organizational development funding. The purpose is to enhance both aspects of the work. Organizational development interventions are more likely to have a sustained impact if they deliver priority skills that can be applied immediately, while management of a conservation project will be more effective if areas of weakness, for example financial management or accountability to local stakeholders, receive targeted support. Experience from CEPF's global portfolio is that new ways of working developed in the context of conservation projects are more likely to be internalized and to result in permanent changes in the way that teams and organizations work.

However, combining organizational development and conservation project implementation has risks, if the CSO loses control of the support for organizational development. This risk can be managed by providing separate funds for conservation projects and organizational development support, and by maintaining an institutional firewall between the donor (i.e., CEPF) and the organizational development advisory team, which is a small team based in the region.

Investment in long-term organizational development requires trust between beneficiary, service provider and donor, and a high degree of control over the process by the former. This is challenging to achieve when organizational development funding is tied to the delivery of a short-term (1-3 year) conservation project, and seems to argue for separate organizational development funding, with a long-term commitment and a high degree of autonomy for the CSO. Such an approach carries its own risks, including that the organizational development process loses focus to deliver hoped-for improvements.

Ultimately, given the diversity of CSOs working on conservation and of their organizational development needs, a combination of approaches is likely to be needed that reflects the type of need, the stage of development of the CSO, and the history of grant-making and collaboration between the CSO and CEPF. A targeted, short-term approach to capacity building, linked to a conservation project grant is likely to be appropriate for:

- Situations where a specific technical skill/knowledge is required and can be efficiently delivered.
- Organizations with limited project implementation capacity.
- Organizations that are unknown to CEPF.

Conversely, a separate organizational development grant is likely to be appropriate where:

- The CSO wants to engage in a long-term program of organizational development.
- The CSO has the capacity to plan and manage the organizational development process (with support as necessary).
- The CSO has a strong track record with CEPF and potential to have a major impact on conservation, which justifies the greater risk and investment likely to be involved.

8.5 The state of civil society capacity in the Mountains of Central Asia region

8.5.1. Afghanistan

In Afghanistan, where community-based approaches are a fundamental component of political and institutional structures (e.g., via formal Community Development Councils, or CDCs), and are enshrined in environmental legislation, CSOs are partners in all types of development and conservation strategies. As a result, and despite some policy and the practical limitations of remoteness, there are many small CSOs working in concert with international NGOs and government.

After the Taliban took power, many local CSOs lost access to funding. However, some new CSOs were established by former environmental officials, such as REHA, which focuses on environmental education and information. The operational environment for CSOs in Afghanistan remains suitable, and there are no general restrictions on environmental activities. However, challenges persist concerning women's participation, coordination with the de facto authorities, and access to funding, which makes project implementation complex and opportunity-driven. The current donors for Afghan CSOs include SDC, UNDP, and UN Women that focus on climate, disaster risk reduction, environmental protection and humanitarian support. It is unclear if CEPF can fund activities in Afghanistan in the foreseeable future.

The remote Wakhan National Park, established in 2016 with the support of a GEF project and the engagement of the Wildlife Conservation Society, is the country's only section of a biodiversity hotspot. The Wakhan Pamir Association has provided the government and CSOs with training in conservation techniques, wildlife surveys, and controlling illegal hunting.

8.5.2 China

Civil society legal framework and operational conditions have become more complex in western China. The Overseas NGO Law, which came into effect in 2017, has raised the barriers for international NGOs seeking to work in China. Further, Chinese organizations raising funds from abroad face additional requirements for reporting on international contacts and require approval to receive donations or visitors. WWF, WCS, BirdLife, and Conservation International, among others, work in China, but not within the hotspot.

There are several forms of CSOs in China: social associations (*shehuituanti*), which are the equivalent of membership associations; social service organizations (*shehuifuwujigou*); and foundations (*jijinhui*). There are also various informal CSOs, small community-based organizations, and rural cooperatives.

Civil society engaged in conservation in Xinjiang is mainly nested within or associated with scientific institutions. The Xinjiang Institute of Ecology and Geography (XIEG), within the

Chinese Academy of Sciences, is the largest and the most important player in environment protection and natural resources management. The major science-based CSOs are:

- The Xinjiang Botanical Society conducts teaching and research, popularizes plant science and protection, provides advisory services, conducts international and local botanical expeditions, leads workshops, and disseminates knowledge.
- The Xinjiang Geographical Society leads expeditions and promotes geographical knowledge.
- The Xinjiang Wildlife Conservation Association is a member of the China Wildlife Conservation Association. It is engaged in wildlife conservation, research, education, and reserve planning.
- The Xinjiang Zoological Society is active in animal science, training, and research.
- The Xinjiang Institute of Zoology, Xinjiang Society, Xinjiang Natural Resources Society, and Xinjiang Tourism Institute are all also important in biodiversity initiatives in the province.

In 2023-2025, the Regional Centre on Ecology under XIEG established cooperation hubs in Central Asia, conducted expeditions to map flora and fauna and assess the state of the environment related to the Belt and Road Initiative. In Central Asia it mainly works with experts from the academy of sciences.

8.5.3 Kazakhstan

Kazakhstan is an upper-middle-income country, and the government is one the main sources of funding for CSOs. Kazakhstan's CSOs help to design and achieve national goals and strategies, mainly in education, environment, family and skills development. CSOs participate in consultative mechanisms, such as public councils at the national and local government entities. But they also face challenges, related to strict oversight and a lack of support for advocacy initiatives.

The 1994 Civil Code recognizes noncommercial (non-profit) organizations as organizations that are not created to generate income and should not distribute net income among their members. The 1996 Law on Public Associations establishes a legal framework for CSOs, which include political parties, trade unions, and other associations of citizens established on a voluntary basis to achieve their common goals. Other laws govern religious organizations, chambers of commerce and industry and professional associations. Most CSOs register as public associations with the Ministry of Justice or a local justice department. CSOs may engage only in the activities stipulated in their charters and operate only in their declared jurisdictions. The authorities have broad powers to deny or restrict public assemblies.

Over the past two decades the government increased control over civil society in response to the "revolutions" in the Kyrgyz Republic, Georgia, Ukraine, the Middle East and Asia. The 2016 Law on Payments and Payment Systems allows the government to monitor funding flows and impose penalties on entities, including CSOs, which do not comply with reporting requirements.

The Committee for Civil Society Development under the Ministry of Information and Social Development maintains a register of over 13,000 public associations and 1,000 charitable organizations.

Most CSOs are governed by general assemblies of members. Foundations and charities are governed by boards. All CSOs must provide annual accounts of their activities and funding to the Civil Society Development, which maintains a public database. Charities must publish

their financial and activity reports in the media or on their websites. Starting in 2023, the State Revenue Committee posted the names of CSOs receiving foreign funding on its website. Although the "foreign agent" label was not used, CSOs were concerned that it might be implemented. At the time of the ecosystem profile update in 2025, CSOs faced no constraints on accepting foreign funds, provided they report on funding sources.

Government maintains an approved list of international donors whose contributions are recognized as grants and are therefore not taxed. The list excludes international organizations that do not have offices in Kazakhstan or donate for the first time. Under the Tax Code, large corporations can deduct donations to CSOs, equivalent to up to 4% of their taxable income, from their profits, reducing their tax liability. However, charitable contributions by individuals and small businesses are not deductible.

A new Law on Social Entrepreneurship (2022) allows CSOs to run business operations provided that any profits are reinvested in the organization and for offering services to socially vulnerable groups, or promoting environmental, educational, or cultural initiatives.

The government funds CSOs through several mechanisms. Most funding is through contracts overseen by the CCSD. Each year, about 2,000 projects are implemented on the topics of national unity and peace, youth and children, support for vulnerable populations, family and gender issues. From 2003 to 2020, the government disbursed 13.5 billion tenge (\$30 million) from the central budget and 119 billion tenge (\$264 million) from local budgets for CSO projects. Since 2022, government entities have been able to contract with CSOs to co-implement national priority projects.

Kazakhstan's civil society organizations have some common weaknesses: many cannot afford to own offices, lack strategic planning, fundraising and financial management skills. Staff turnover is relatively high, especially among young people, mainly due to low pay and irregular work.

The early 1990s saw the rapid entry of many groups into the CSO sector in Kazakhstan primarily for human rights and environmental issues, such as nuclear non-proliferation, clean-up of the Semipalatinsk (Semey) nuclear test site, and the Aral Sea. There are about 100 CSO engaged on environmental issues. They include science-oriented CSOs that conduct research, hunters' associations that do wildlife surveys, and groups that promote access to environmental information. The largest conservation-focused CSO within the Kazakh portion of the biodiversity hotspot is the Association of Biodiversity Conservation of Kazakhstan (ACBK). ACBK mapped Important Bird Areas, helped to establish several reserves, and has ongoing work on biodiversity monitoring, legislation reform and public awareness.

Selected examples of CEPF projects in Kazakhstan:

The local CSOs **Zhabagly-Manas** and **Biogen** helped develop and implement ecological education and awareness materials for schools in the mountain areas of Karatau and Western Tien Shan, as did **Eco-Atameken** in the mountains of Kentau and Turkestan. Work with local people on the identification of endangered plant and animal species has helped raise awareness and reduce environmental impacts from illegal or irresponsible plant collection and grazing. Involving local authorities in the projects improved their understanding of the value of biodiversity and their attitude toward responsible environmental management and licensing. Widespread dissemination of information through local media and social networks about rare and endangered species, threats to biodiversity

and methods to reduce environmental threats contributed to the restoration and conservation of local nature.

Wildlife Without Borders installed up to 50 camera traps, carried out field research on the number and habitats of snow leopards and assessed their survival conditions. The study covered habitats near the country's largest city, Almaty. The scientific data were used to raise public awareness of the snow leopard, and included festivals and events for youth, art competitions and field trips. Proposals were developed to improve the ecological connectivity of snow leopard landscapes between the Tien Shan and Dzungaria. The **Association of Ecological Organizations of Kazakhstan** helped raise awareness among the population and tourists in the Almaty province on the conservation of unique biodiversity, encouraged community members and local authorities in creating conditions for ecotourism, and in monitoring and reducing pressure from mass tourism.

The **Association for the Conservation of Biodiversity of Kazakhstan (ACBK)** conducted research on the Semirechensk salamander, an endemic amphibian species (*Ranodon sibiricus*) in Dzungaria, on the border with China, and participated in the conservation efforts with the Koksus nature reserve and other protected areas. Pasture use and nature management practices have been improved. In the same region, the **Republican Association of Hunting Farms "Tabigat"** enforced hunting regulations in accordance with legislation, supported the development of equestrian tourism, and monitored ungulates and snow leopards.

The **Biodiversity Conservation Fund of Kazakhstan** along with **Ugam**, a local CSO, supported the development of ecotourism, agrotourism, and the raising of environmental awareness and responsibility among the population living nearby the nature reserves and KBAs in the Western Tien Shan. A catalogue of eco-trails and ecotourism services has been produced; sites are equipped with waste collection bins and guesthouses with renewable energy sources. Regional meetings were held to promote cross-border cooperation.

The **Socio-Ecological Fund** assessed the potential for ecotourism development in protected areas of southern Kazakhstan, developed and presented alternative approaches for ecotourism development and recommendations for filling gaps in legislation to government agencies. The **Karaganda Ecological Centre** contributed to the restoration of the ecosystem of the Yesik River and Lake in the Almaty nature reserve. **Zhasyl Azyk**, a local CSO, in partnership with Sairam-Ugam National Park, introduced integrated pasture management to reduce pressure and damage from overgrazing. Other CEPF partners implemented integrated pasture and forest management in Narynkol, and helped build the capacity of the Kolsai Lakes national park to monitor and protect rare animal and plant species and develop ecotourism routes.

The **Biodiversity Research and Conservation Centre (BRCC)**, in partnership with Earth Island Institute, conducted studies on the flight paths of globally threatened eagle species and is working with energy companies and government agencies to promote the adoption of energy infrastructure standards and good practices that reduce accidental bird mortality.

Other CSOs and farms worked with CEPF to restore degraded pastures, establish tree nurseries, help communities develop alternatives and improve access of wildlife to water sources in key biodiversity areas of south-eastern Kazakhstan, including in the Karatau, Toraigyr, Charyn and Altyn-Emel Mountains. Actions have been undertaken to record and conserve the argali, eagle, wild apple and apricot.

8.5.4 Kyrgyzstan

Kyrgyzstan has a diverse and active civil society community. Legislation on CSOs is liberal and local *jamoats* (people's associations) can register in local government offices and gain legal status.

In 2024, Kyrgyzstan amended its legislation on non-profit organizations, introducing the concept of "foreign representatives" (or "foreign agents") for civil society organizations that receive foreign funding and engage in "political activities." This term covers a broad range of activities, including organizing and participating in meetings and debates, raising public awareness, engaging youth, addressing political parties and governmental entities and proposals for legislation or strategies. Although conservation of flora and fauna is not affected and not covered by this revision, some environmental CSOs in Kyrgyzstan are considering scaling down their work because some of their actions may be equated with political activity under the revised legislation.

There are about 100 environment- and nature use-related CSOs, including *jamoats*, which could be engaged in conservation. The largest in terms of members are the Kyrgyz Association of Forest and Land Users (<https://kaflu.kg>), the National Pasture Users Association of Kyrgyzstan and the Kyrgyz Society of Hunters and Fishers. Among the prominent and larger CSOs: CAMP Ala-Too (<https://www.camp.kg/>) works on mountain development issues; Ecological Movement "BIOM" (<https://next.biom.kg>) is active in environmental education and awareness, the introduction of an ecosystem approach into the country's strategic documents, including NBSAP 2025; Akmena (<https://ecoaiyl.kg/>) promotes local sustainable development and ecotourism; UNISON (<https://www.unisongroup.org>) works on energy efficiency, green finance and climate change; Rural Development Fund (RDF, <https://rdf.kg>) promotes sustainable rural development. CSOs focused on conservation include: Kyrgyz Wildlife Society, Bugu Ene, Ilbirs and Argali Foundations, NABU Kyrgyzstan, which combat poaching and species rehabilitation. The Union of Photojournalists and "ECOIS" are leaders in informing the public about environmental issues. The innovative approaches used by the Kyrgyz CSOs led to the creation of locally-managed micro-reserves and nurseries for endemic species (CSO "Leader", jamaats "Orchun", "Kelechek").

Kyrgyzstan CSOs participate as observers in international conventions and contribute to the development of the National Strategy and Plan for the Conservation of Biological Diversity (NBSAP). In the past, they helped in drafting and revising environmental legislation and compliance monitoring. They launched campaigns on clean air (Move Green), expansion of the green urban spaces (Archa), destruction of species habitat (Union of Photojournalists and Eco-MIR) and waste clean-up. They pioneered in Central Asia online mapping tools for KBAs (map.kg) and citizen pollution monitoring.

Several above-mentioned CSOs have permanent staff, including accountants, PR experts, and fundraising managers. However, many local CSOs are small and lack secure funding, and do not have permanent staff. They hire experts mainly for the duration of specific projects and tasks. The core tasks are implemented by the organization's director and a visiting accountant.

CSOs in Kyrgyzstan have rely on international grant funding, overlooking other fundraising options, including crowdfunding and paid services, such as ecological tours and souvenir products. However, there are success stories, where initial grant projects and organizations evolved into sustainable eco-production and services, such as "One Village One Product"

(<https://ovopkg.com>), community-based tourism (<https://cbtkyrgyzstan.kg>), community-based wildlife management, others.

The main platform for environmental CSOs of Kyrgyzstan is “Green Alliance”. National CSOs are also members of regional and international networks, coalitions and partnerships. For example, BIOM and the Kyrgyz Association of Forest and Land Users are the IUCN members. CAMP-Alatoo and "Independent Ecological Expertise" are members of the public observers in the IFAS. Akmena, Aleine+, and the Kyrgyz Wildlife Society are members of the Global Forest Coalition. The Snow Leopard Conservation Fund in Kyrgyzstan is a partner of the Global Snow Leopard and Ecosystem Protection Programme. CAMP-Alatoo is a member of the FAO-led Mountain Partnership. New CSO created in 2024, the Nature Foundation, is co-hosting the Central Asian Conservation Network (CACN), which was established to support the Initiative for the Central Asian Flyway (ICAF).

Selected examples of CEPF projects in Kyrgyzstan:

A local civil society organization, “**Clean Issyk-Kul**”, supported by CEPF, partially cleaned the largest mountain lake of Kyrgyzstan, Issyk-Kul, of abandoned illegal fishing nets and plastic waste from tourism, and carried out environmental awareness and monitoring. The **Kyrgyz Union of Pastoralists** involved local communities in restoring degraded pastures and habitats for priority species. The **Wildlife Conservation Society of Kyrgyzstan** implemented a project called “Restaurant” for scavenging birds in the western part of Issyk-Kul Lake.

The **Rural Development Fund (RDF)** is working with local governments, communities and organizations in the Chyckan Valley to raise awareness of the value of biodiversity, develop management plans, and provide micro-grants to demonstrate and implement good practices. The **Kyrgyz Pasture Association** and other community organizations are creating small artificial glaciers in high mountain areas of the country to provide additional water for pastures during the dry season and to reduce pressures on water resources. The **American University of Central Asia (AUCA)** is also working in the Chyckan and Suusamyr valleys to optimize pasture use, develop grazing plans, and protect KBAs and unique flora from livestock.

Leader, a local CSO, is promoting micro-reserves in Kyrgyzstan, and has already created five in a process involving women and young people in conservation and floodplain protection. Another local CSO, **Muztor**, is helping to develop alternative sources of income for communities living near the Sary-Chelek nature reserve to reduce pressures. The **Global and Local Information Partnership (GLIP)** assessed the management effectiveness of the Kulun-Ata and Karatal-Zhapyryk nature reserves and produced recommendations. Eco-festivals and conservation volunteer teams are being organized to reduce illegal poaching, while protected area staff are being trained in modern management plans and innovations.

Orchun, a local CSO, has carried out extensive work to restore endemic flora and fauna in southern Kyrgyzstan; to clean the Tar River, Lake Kulun-Ata and streams from pollution; and to improve the water supply to tree nurseries. Parallel work is underway to restore pastures and develop agroforestry.

The **Kyrgyz Association of Land and Forest Users (KALFU)** carried out activities to improve forest management in the Batken province in southern Kyrgyzstan, near the Surmatash nature reserve and the Uch-Korgon forestry. The Association conducted research and prepared information for the inclusion of wild almonds and apricots in the national Red List of Kyrgyzstan.

Flora and Fauna International (FFI) monitored the habitat of the endemic Menzbir's marmot in the Besh-Aral state nature reserve, training staff, and facilitated interaction with local communities to reduce grazing pressure and damage from extractive industries. The **Wildlife Conservation Society (WCS)** is implementing the Spatial Monitoring and Reporting Tool (SMART) in protected areas in eastern Kyrgyzstan, helping improve connectivity and create an ecological corridor, as well as providing technical assistance in modern monitoring techniques, and facilitating community engagement. **Zoï Environment Network** together with the **Osh Aarhus Centre** and state authorities held consultations on the establishment of a new national park in the Chon-Alai Valley, based on the KBAs.

The **University of Central Asia (UCA)** facilitated training of local communities near the Sary-Chelek, Padysha-Ata and Kara-Alma state nature reserves on sustainable forest management and conservation of endangered wild apple and pear species. The status and distribution of these species were assessed and recommendations were made to improve the efficiency of reserve management. A local organization, **Lesik-Yug**, worked to restore the key biodiversity area of Kyzyl-Unkur and working with local communities on the conservation and natural regeneration of walnut forests; low-impact forest pest and disease control methods; sustainable forest management; and the establishment of forest nurseries.

The **Green Energy Association** has assessed the effects of mining and overgrazing on the floodplain and mountain slopes in the Sumsar Valley in Chatkal. This assessment led to work on the conservation and restoration of endemic species of Knorring hawthorn (*Crataegus knorringiana*) and to the reinforcement of mountain slopes with wild almond and Tien-Shan birch plantations to reduce the risk of landslides and erosion. **Akmena** involved the local population to develop plans for ecotourism and help restore the ecosystems of the Chatkal damaged by extractive industries in the Kasan-Sai River. **Harmony Plus** involved local people in protecting wetlands and combating poaching and illegal logging.

The **Union of Photojournalists of Kyrgyzstan** and **Eco-MiR** organized expeditions, exhibitions and lectures to raise awareness of key biodiversity areas in Kyrgyzstan, pollution and solutions at the national and local levels. Open and free photo database on KBAs, endangered and unique species and environmental issues in Kyrgyzstan is available through online mapping platforms (<https://map.kg> and <https://ecomap.kg>).

Several civil society organizations are working to reduce wildlife-human conflict. The **Bugu-Enë Foundation** supports the wildlife rehabilitation center in Novopokrovka. The **Panthera** and **Ilbirs** work in the high mountain areas of Kyrgyzstan – snow leopard habitat – by monitoring, training herders and local communities, helping to build secure livestock pens, and using non-lethal methods to deter predators. These and other civil society organizations are also helping to develop alternatives to reduce local poverty and environmental pressures.

Nurmukhamed, a local CSO, has helped develop a small business for women's groups that involves planting, caring for and responsible harvesting wild apples, and restoring degraded pastures in southern Kyrgyzstan. Public awareness activities and eco-festivals were organized.

8.5.5 Tajikistan

CSOs in Tajikistan are engaged in a wide range of activities, including humanitarian work, social aid, crafts and environmental protection. They are registered as non-commercial organizations and operate under the Law on Public Associations (2007). They are split into public associations or public foundations, both of which register with the Ministry of Justice.

In 2016, the Government passed new regulations on humanitarian aid that, among other things, required groups receiving funding from abroad to formally notify the Ministry of Justice. More recent restrictions and regulations create a challenging operational environment for CSOs. In 2024 the Ministry of Justice liquidated 700 CSOs. The recurrent bank and cash issues are making conditions even more difficult for local CSOs. The mountain environment in Tajikistan – high mountains, remote locations, long distances, border zones that require special permissions – makes work for CSOs more expensive and slower.

There are about 2000-3000 CSOs overall, but less than 50 have an environmental focus or significant expertise in conservation. Of these, the Tajik Socio-Ecological Union is one of the oldest; it helped create Tajik National Park and Shirkent Natural Park. Others include the Youth Eco-Center, Youth Group for Environmental Protection; Nature Protection Team; Kukhiston; Noosfera. CSOs are active in promoting the role of women in nature resource management and local climate solutions – clean energy and energy efficiency, adaptation. In recent years, field-based conservation work, particularly on ungulates and snow leopards, has been dominated by international CSOs and their local partners involved in wildlife management and trophy hunting.

Selected examples of CEPF projects in Tajikistan:

The **Youth Group for Environmental Protection (YGEP)** is involved in the conservation of the wetland and key biodiversity area in the upper part of Bakhri Tojik reservoir on the Syrdarya River (formerly known as the Kairakkum) in northern Tajikistan. The scope of work entails the restoration of natural channels in the river floodplain and the preservation of riparian and reed vegetation, the feeding and monitoring of migratory birds, the breeding and stocking of local fish, the creation of forest protection strips, and environmental education for local communities. Proposals have been made for the creation of a local nature reserve.

In southern Tajikistan, **Olima**, is working to restore and preserve natural lakes in the Tigrovaya Balka reserve in the delta of the Vakhsh River, an area inscribed on the UNESCO World Heritage List in 2023. The **Youth Eco-Centre** provides technical assistance and training for local population in the construction of energy-efficient stoves, solar greenhouses and installations to reduce the environmental impact on the reserve's riparian forests.

The **Association of Nature Conservation Organizations of Tajikistan (ANCOT)** worked with the **Wildlife Conservation Society (WCS)** to improve participatory conservation management between the private sector and local communities in Baljuvan in southern Tajikistan. Hunting reserve staff have been trained in better management, species monitoring and community outreach, and helped to develop alternatives. The local organization, **Nature Protection Team**, raised awareness among local populations and authorities about rare and endemic plant species in the same area, and promoted joint research between Tajik and Polish ecologists to improve scientific knowledge. The local organization, **Noosfera**, helped improve mountain forests in Sangvor and Sarikhosor in central Tajikistan for the conservation of wild fruit and high-value flora species through the establishment of *ex-situ* and *in-situ* nurseries and public awareness program. With the support of **Ikhtidor**, similar work has been carried out in Darwaz to conserve endangered and endemic flora species – the Darwaz hawthorn (*Crataegus necopinata*) and Bukhara almond (*Prunus bucharica*).

In southern Tajikistan, a local women-led CSO, **Dunoyi Mukhabbat**, has been working to conserve biodiversity and genetic resources on the Khojamumin salt mountain. It has

worked with women's groups and established cooperation with the forestry for more efficient management. In the same area, the **Youth Eco-Centre** helped establish tree nurseries and sustainable development plans to reduce local environmental pressures.

In the highest mountain part of Tajikistan, the Pamirs, the Aga Khan Network with support from the CEPF helped improve the management and monitoring of an ecological corridor between the high-mountain Zorkul State Nature Reserve and the Tajik National Park. Wildlife camera traps, population and migratory routes assessments for argali and snow leopards, and work with local hunters, herders and authorities on sustainable environmental management were carried out. In parallel, **Flora & Fauna** is building the capacity of civil society in Tajikistan to improve the implementation of conservation projects in key biodiversity areas.

The local organization, **Khunoi Pamir**, initiated the restoration of a natural grove of endemic pear species (*Pyrus cajan*) in the Shahdarya River valley in the Pamir. In the Vanch River valley, **Agro-Ecology Zarzamin** worked to preserve the genetic diversity of rare flora species and to reduce threats to natural groves of sea buckthorn, rose hip, wild apple and almond trees. **Ganji Tabiat**'s efforts improved the conservation prospects of the Tajik pear (*Pyrus tadshikistanica*) and wild apple (*Malus sieversii*) by establishing micro-nurseries in the Childukhtaron and Dashtijum districts and storing seeds in the Kulob Botanical Garden.

Plateau Perspectives helped develop co-management of the recently established Yagnob National Park in central Tajikistan, train staff in wildlife monitoring and ecotourism. **Zoï Environment Network** organized a series of meetings for CSOs from all regions of Tajikistan to facilitate experience exchange, discuss methods and channels for communicating and raising awareness on biodiversity. Zoï also prepared information products and posters, including for the International Day of the Markhor (24 May) and the International Day for Biodiversity.

8.5.6 Turkmenistan

The Constitution of Turkmenistan states that citizens have the right to establish public associations and that the government should support civil society. The Law on Public Associations (2014) regulates civil society activities, including requiring registration of any project receiving foreign funding or technical assistance. The registration process can be complex, regardless of the size of the grant. There are relatively few CSOs, all that are well-established, with close relations with the government and a clear mandate for their work. The government supported the formation of national public associations, including the Youth Organization, the Women's Union, and the Union of Industrialists and Entrepreneurs. Many CSOs are sports federations and many focus on youth, women, and social protection. In total, there are approximately 100 national and local public associations, and there are no international CSOs. However, organizations can implement international projects through locally based partners. The most active CSOs are based in Ashgabat. To obtain permission to implement projects in remote locations, they need to show grant registration documents to local authorities.

National public associations that receive governmental funding, such as the Union of Industrialists and Entrepreneurs, enjoy high-level patronage. Local associations and economic societies rely on grants from international agencies. The typical grant size for local CSOs is about \$25,000. The nuances of exchange rates (official vs. market) can make CSO projects difficult to implement (the purchasing power of grants is reduced after conversion). However, expert fees and honorarium payments in USD are possible, which helps maintain financial motivation.

National public associations usually have well-developed organizational structures with secretariats, national and regional branches, and local representatives in all or most provinces. Established local CSOs have good management capacity, skilled personnel, and sound policies. The term "non-governmental organization" (NGO) is not used in Turkmenistan. Instead, there are public organizations (PO) / public associations (PA) and nonprofit economic entities. PO/PAs can be local, operating in one or two velayats, or national, operating throughout the country. Nonprofit economic entities can operate throughout the country and participate in environmental and nature conservation project implementation.

The Turkmenistan Society of Nature Protection is the oldest and largest public association in the country dealing with nature conservation (400,000 members). Its activities cover a broad array of work: combating desertification; environmental education; the protection of wildlife; the protection of forests; conservation of natural and cultural heritage; the environment and health of children; alternative energy; and water, sanitation, and the protection of water resources. Another CSO "Tebigy Kuvvat" has legal status as an enterprise of the Turkmen Society of Nature Protection and can act as an independent legal entity with its account. CSO "Bosphorus" is also an enterprise of the public organization "Union of Youth of Turkmenistan" and acts as an independent legal entity.

CSO "Ynanch-Vepa" has experience in grant projects of various international donors and partnerships with governmental agencies. "Agama" mountain club organizes waste clean-up campaigns in the mountains, supports protected areas and restoration of mountain forests, and promotes sustainable tourism. Society "Archylar Balchylar" (Society of Beekeepers) unites almost all beekeeping enthusiasts of Turkmenistan. "Tebigat Pet Shop" deals with homeless animals. New youth organization "Yash tebigatchy" covers all Turkmenistan and focuses on environmental awareness and education. CSO "Yenme" helps families and children with disabilities through training, education and social support.

Foreign donors to local CSOs must consult with authorities in advance or funds can be blocked by banks receiving international transfers. CSO access to nature reserves must be negotiated in advance, considering that many of them are located in border zones. If the donor and CSO comply with all requirements, project implementation tends to go smoothly.

Considering that the GEF Small Grants Programme (SGP) for Turkmenistan under GEF-8 will be implemented by Conservation International, through CEPF as the executing entity, there are opportunities for synergies between the SGP and grants under the CEPF Mountains of Central Asia program.

Selected examples of CEPF projects in Turkmenistan:

In the Koytendag (Kugitang) Mountains in eastern Turkmenistan, several CSOs, in close cooperation with government agencies, are working in different niches to protect the unique biodiversity. The **US-based Centre for Large Landscapes Conservation** has helped through local partners to improve the management of the Koytendag nature reserve by introducing the SMART monitoring, engaging with local communities on grazing issues, and preparing an assessment for the site's nomination as a UNESCO World Natural Heritage Site. **Tebigy Kuwwat** raised awareness of the ecological value and responsible tourism in Koytendag, where overtourism has recently become a major issue due to the massive influx of visitors. **Jananch Vepa** organized training for the staff of the Koytendag reserve on communication with the local population and environmental awareness. **Obadeskahyzmat** involved women's groups in the establishment and maintenance of pistachio plantations and

helped improve recreational and agricultural conditions for people living near the Koytendag reserve. Jointly CSOs also contributed to the improved water supply.

To conserve riparian ecosystems and species, the **Turkmenistan Society of Nature Protection** helped improve conditions for wildlife and fish in the Amu Darya, conducted surveys of the Bukhara deer (*Cervus hanglu*) population and habitats, and delivered lectures on conservation and reduction of threats. **Agzybir Khereket** conducted the monitoring program for migratory birds in the Talimarjan-Kelif-Zeid wetlands important for the Eurasian-African flyway, prepared reports and proposals for the establishment of a hunting farm in Lebap province of south-eastern Turkmenistan, and involved the local population in the protection of biodiversity.

8.5.7 Uzbekistan

Civil society is active in Uzbekistan, but in a country specific manner. Civil society organizations as usually understood in the West emerged in Uzbekistan mostly because of donor activities. The Uzbek government supports government-organized NGOs (GO-NGOs), such as the Mahalla Foundation, the Red Crescent Society, the Society of Disabled People, the Women's Committee, the Youth Union.

The 1999 Law on Non-government Non-commercial Organizations states that an NGO is a self-governing organization created on a voluntary basis by individuals or legal entities, not pursuing profit as the main goal. In the 1990s-2000s NGOs were viewed with suspicion, especially after "color revolutions" in the former Soviet states. With the new president and decrees in 2017-2019 NGOs have more freedom to operate and receive funding from international organizations. There are about 10,000 organizations in Uzbekistan which could be defined as NGOs. This scope includes political parties, their divisions, and regional branches of organizations. About 70% of the country's NGOs could be considered as GO-NGOs. Focus areas of Uzbek NGOs are farm and rural development, sports, democratic institutions and political parties, and youth development.

Those CSOs that do manage to operate actually have relatively high capacity. Zoology and botany institutes under the Academy of Science, the Uzbek Society for the Protection of Birds, Uzbek Zoological Society, Eko-Maktab, the Ecological Movement of Uzbekistan, the Society of Hunters are all prominent. World Youth Association of Uzbekistan is active in environmental awareness and education. Yuksalish Movement is implementing several projects on the environment. Uzbekistan's Eco-Forum established in 2007 unites the efforts of public organizations working on nature protection. There are other local and national CSOs that focus on the Aral Sea, water and sanitation, and cultural heritage.

Despite reforms, the civil society organizations in Uzbekistan continue to face many challenges. While CSO registration process has been simplified, bureaucratic difficulties in obtaining permits and reporting remain complex, especially for small organizations. Most NGOs depend on governmental funding. International funding is limited and requires notification and permission by the Ministry of Justice. NGOs face difficulties in accessing data from governmental entities. Local NGO may not be given permission to operate or receive funds for implementation in other provinces of Uzbekistan, beyond registration site. For many CSOs of Uzbekistan, it is easier and more comfortable to work with international partners. The private sector funding for CSOs is not developed. Private companies prefer to provide assistance directly (e.g. building schools or supporting cultural events) bypassing NGOs.

Selected examples of CEPF projects in Uzbekistan:

The **Uzbekistan Society for the Protection of Birds (UzSPB)** monitored the sociable lapwing (*Vanellus gregarius*), an endangered migratory bird species, at the Talimarjan reservoir. Based on scientific data and observations, local population and authorities were informed and recommendations for the reduction of grazing pressures and the establishment of a local nature reserve have been elaborated.

In the Zaravshan River basin, near Samarkand, **Zoï Environment Network**, in cooperation with state authorities and local CSOs, organized events to celebrate the International Day for Biodiversity and to exchange experiences. Activities included the planting of seedlings, clean-up, art competitions for youth in the Zaravshan and Amangutan national parks. Information materials on biodiversity and the environment of Uzbekistan were prepared and presented at the 14th Conference of the Parties (CoP-14) to the Convention on Migratory Species and the CoP-20 CITES held in Samarkand in 2024 and 2025. Together with local CSOs, including **Eco-Maktab**, environmental awareness campaigns were carried out in Khiva, Tashkent and the Chatkal Mountains.

Under the umbrella of the **Michael Succow Foundation**, local environmentalists, scientists and journalists studied the population and habitat of endemic species of lizards – Strauch's lizard, the Ferghana sand lizard, and Rustamov's gecko – in the Yazyavan sands, a local nature monument, located in the center of the densely populated Ferghana Valley, currently under growing pressure from sand extraction, agricultural expansion and waterlogging. Proposals based on scientific data have been developed to conserve habitats and unique species.

The **Ecological Movement of Uzbekistan** contributed to nature conservation and restoration of juniper forests and sustainable forest management in the Nuratau Mountains in central Uzbekistan. **Zhonly Tabiat** has helped improve environmental knowledge and introduce alternative livelihood options in the Nuratau Mountains and the buffer zone of the Gissar (Hissar) state nature reserve to reduce environmental pressures on local natural resources and habitats of rare and unique species.

8.6 Regional and International CSOs and Networks

The University of Central Asia, a private entity with campuses in mountain locations of Kyrgyzstan and Tajikistan, and the central office in Bishkek, focuses on mountain research and development issues.

The Central Asia Regional Environmental Center (CAREC) was established in 2001 by the five Central Asian countries and international donors, including the EU. CAREC is headquartered in Almaty and has offices in each of the five countries. CAREC formally addresses regional environmental issues of all types, as well as conducting pilot programs on payment for ecosystem services and awareness campaigns. CAREC has well-established links with government in each country and experience in grant-making. In 2025, the leadership changed and an updated strategy was developed for organizational development and work areas. Since 2024, CAREC in partnership with IUCN Regional Office for Eastern Europe and Central Asia (ECARO) acts as Technical and Science Cooperation center for Central Asia. Since 2025, CAREC serves as the secretariat for the World Bank's One Health program. Finally, CAREC is a regional collaborating centre for the Ramsar Regional Initiative for Central Asia (RRI-CA).

ACTED (Agence d'aide à la Coopération Technique et au Développement) and the Aga Khan Network work on humanitarian issues and natural resources management in Kyrgyzstan and Tajikistan. ACTED was among the recipients of CEPF grants for CSO capacity building work in Uzbekistan. The University of Central Asia (one of Aga Khan's structures) worked in Kyrgyzstan and the Aga Khan Agency for Habitat worked on ecological corridor in the Pamirs, Tajikistan.

BirdLife International does not maintain a program office in the region, but instead works through its national country partners in all the countries other than Afghanistan and Tajikistan. Its United Kingdom partner, the RSPB, is working directly on several projects throughout the region.

Two international research institutions are based in Tashkent. One is the International Center for Agricultural Research in the Dry Areas (ICARDA) that provides science-based solutions for rural communities. Since 2008 its Central Asia office has been working on the research and development of better agricultural systems, disease and pest-resistant crops, the conservation and management of genetic resources (crop wild relatives) and crop diversification. It conducts workshops, field days, and training on sustainable land management and participated in the development of Central Asia climate information portal (CACIP) for CAREC. Another entity is the International Water Management Institute (IWMI), active in Central Asia since 2001 and is involved in water-related research and projects, including the Swiss-funded Blue Peace Initiative.

In June 2025, The International Union for Conservation of Nature (IUCN) has opened Central Asia office in Tashkent, hosted at the Central Asian Green University under the Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan. Its work portfolio in 2025 included the "One Health" initiative, which integrates ecosystem and human health into landscape planning and "Blue Peace Central Asia 2.0" initiative, which advances transboundary water cooperation and hydro-diplomacy. The IUCN Central Asia office will link national and regional stakeholders with global tools and standards, including the IUCN Red List of Threatened Species™, the IUCN Green List of Protected Areas, the IUCN Global Standard for Nature-based Solutions™, support recognition of selected border areas as OECMs and promote connectivity through ecological networks and corridors under CAMI. In addition, the IUCN cooperates with the GEF-FAO's FOLUR (Food System, Land Use and Restoration Impact Program) project in Uzbekistan on restoration of high nature value habitats and sustainable land use and the Dryland Sustainable Landscapes Impact Programme in Kazakhstan on pasture management and restoration.

Since 2022, TRAFFIC International has been working through the Bishkek project office on monitoring of illegal wildlife trade and improving capacities of law enforcement agencies and regional cooperation.

Pallas's cat International Conservation Alliance works on advancing conservation efforts for the Pallas's cat (manul) across its range in Central Asia by improving knowledge and awareness, developing tools and resources for practitioners, building conservation capacity and raising funds. The Snow Leopard Foundation (SLF) is another species-focused entity that works on species monitoring, including citizen science, anti-poaching and awareness.

Wildlife Conservation Society (WCS) works on flagship species (Argali, Goitered Gazelle, Snow Leopard, Urial, others) and assist in advancing OECM recognition in border areas, enhancing habitat connectivity through eco-corridors, introducing innovative technologies for wildlife protection, species monitoring and awareness-raising.

The Germany's Nature Conservation Union (Naturschutzbund Deutschland, NABU) has been active in Central Asia since the 1990s, with projects focusing on Kyrgyzstan, including snow leopard conservation and wildlife rehabilitation centers. Recently NABU supported the expansion of a reintroduction project for goitered gazelles, transporting animals from Uzbekistan to Kyrgyzstan. NABU is supporting cross-border conservation of the great bustard in Uzbekistan and Kazakhstan. In partnership with the Ministry of Ecology of Uzbekistan NABU conducts training for environmental professionals in species monitoring, anti-poaching campaigns and supports young scientists with internships at German institutes.

Fauna & Flora has resident experts in Central Asia and focuses on conserving unique flora (especially wild fruit and nut forests) and fauna through community-based approaches, habitat restoration initiatives, and combating illegal wildlife trade, capacity building for local CSOs.

Similarly, Zoï Environment Network, engaged by CEPF to produce an ecosystem profile, has experts and associates in Central Asia who contribute to analyses, communications, and capacity-building efforts on a broad range of environmental issues and works with the governments, CSOs, international organizations and the private sector.

8.7 Research organizations

Participants of stakeholder consultations suggested that science and education are important for capacity building of CSOs and monitoring of CEPF-supported and other biodiversity conservation projects. The hotspot has several universities and several research institutions that teach and conduct research on topics relevant to conservation (Table 8.4). Of the seven hotspot countries, China, Uzbekistan, and Kazakhstan have the strongest science and education capacities related to conservation. Universities and research centers in Kyrgyzstan are proactive internationally.

Table 8.4. Research institutions and universities in hotspot countries

Country	Institution
Afghanistan	Kabul University, Kabul Polytechnic University
China	Xinjiang Institute of Ecology and Geography of the Chinese Academy of Sciences, China-Central Asia Environmental Research Centre
Kazakhstan	Al-Farabi Kazakh National University, Institute of Zoology, Institute of Botany and the Botanical Garden of Almaty, Deutsch-Kasachische Universität / German-Kazakh University (DKU), Shymkent University
Kyrgyzstan	Kyrgyz National University, National Academy of Science, American University of Central Asia in Bishkek (AUCA), Osh State University, Central-Asian Institute for Applied Geosciences (CAIAG), International University of Kyrgyzstan (IUK)
Tajikistan	Tajik National and Agricultural Universities, Kulob University, Khujand University, Khorog University, Academy of Science
Turkmenistan	Turkmen National and Agricultural Universities, Academy of Science
Uzbekistan	Central Asia Green University, National University of Uzbekistan, Silk Road International University of Tourism, Samarkand University
Regional	IWMI (Tashkent), ICARDA (Tashkent), University of Central Asia (UCA has campuses in Bishkek KG, Naryn KG, and Khorog TJ)

9. THREATS TO BIODIVERSITY IN THE HOTSPOT

This chapter presents an overview of the main threats to biodiversity and natural habitats in the hotspot and is closely linked to Chapter 5 (socioeconomic profile). Humans have influenced terrestrial biodiversity over much of the region for millennia, particularly in terms of farmland, grazing land, and predator control. However, as in the rest of the world, industrialization, political change, population growth and movement, and economic development have increased biodiversity threats.

Information on threats to biodiversity in the hotspot comes from stakeholder consultations, the experience of CEPF grantees, various national, regional, and thematic assessments (e.g., climate change and desertification), project documents (GEF, GCF, others), and species-specific overviews of threats in National Red Books & Lists. Information also comes from conventions (e.g., CMS Atlas), specialized civil society organizations and advocacy groups (e.g. TRAFFIC, the Rivers Without Boundaries Coalition). Additionally, national overviews of threats in the latest NBSAPs (published or in the preparation in 2025) were consulted. Although the sources of information vary and the situations in different countries and subregions differ, they provide an overall picture of the dominant threats, trends, root causes, and barriers to conservation.

In the table 9.1, upward arrows indicate growing threats, downward arrows indicate declining threats, and straight arrows indicate continuing threats.

Table 9.1. Threat Trends by Main Ecosystems (2015-2025)

Main Ecosystems	Habitat change, fragmentation	Pollution, including plastic	Overuse	Climate change	Invasive species, gene pool erosion
Evergreen forests	→	→	→	→	-
Wild fruit & nut forests	→	→	→	↗	↗
Desert forests	↘	→	→	-	-
Tugai, riparian forests	→	→	↗	↗	-
Deserts, semi-deserts	↘	→	→	↗	-
Steppes	→	→	→	↗	-
High mountains	→	→	→	↗	-
Rivers and lakes	↗	↗	↗	↗	↗

Rivers and lakes, both large and small, are the most stressed ecosystems in the hotspot and in Central Asia as a whole. The threat levels are driven upwards by the boom in small and large hydropower, gravel extraction and mining in riverbeds, mass tourism, plastic and pollution, climate impacts, and invasive species. Climate change represents a recurrent and long-term threat to almost every type of ecosystem and is addressed separately in Chapter 10. Positive trends (i.e., decreasing threats) are primarily found in desert and semi-desert areas where new protected areas have been established, including cross-border UNESCO World Heritage Site "Cold Deserts of Turan," saxaul plantations expanded, and land improved — areas where the state, local and international actors have invested significant resources, including as part of the Aral Sea area stabilization and greening efforts. Similar situations are observed in arid regions of Xinjiang. Nevertheless, species of lowland and highland deserts and semi-deserts continue to be affected by barriers (e.g. border and infrastructure fences), overgrazing and climate impacts. While forest areas – their total area

– increased over the past 10 years thanks to intense afforestation efforts, forest quality and management barely improved, and forest-related threat levels did not diminish.

Table 9.2. shows threats by type and significance, based on a rapid analysis of situations in selected Key Biodiversity Areas (KBAs) and the hotspot level. For the national and hotspot levels, National Red List and NBSAP indications are used. In some cases, large-scale threats may affect larger areas and habitats more than specific KBAs (e.g., epizootic diseases and migratory barriers). In other cases, site-specific threats, such as tourism or mining, can be less significant on a larger scale. The most common threat is overgrazing, which affects unique and endangered flora, fauna, and ecosystems. Because metrics and perceptions of threats vary by type, source, stakeholder type (government, CSO), and reference period, this compilation should be viewed as an indication of the current aggregated situation.

Table 9.2. Threat types and significance within the hotspot

Description of threat	Prevalence of threat in KBAs	Prevalence of threat at national and hotspot levels
Illegal hunting & collecting animals	**	**
Retaliatory killing, wildlife-human conflict	*	*
Excessive collection of rare, unique plants (for trade, medicine, other purposes)	**	**
Agriculture expansion (rainfed and irrigated croplands, grazing areas)	**	*
Use of agrochemicals	*	*
Gene pool erosion, hybridization	**	**
Overgrazing, desertification	***	***
Migratory barriers (fences), noise, light	*	**
Logging & deforestation	*	*
Urbanization, built-up area expansion	*	-
Renewable energy (solar, wind, biofuels)	*	*
Large dams and major canals (existing and under construction)	*	*
Small dams and water diversions	***	*
Oil, gas and coal production, transport	*	*
Mass tourism, tourism infrastructure	**	*
Mining & quarrying, gravel extraction	**	*
Industrial pollution and waste	*	*
Development of transport corridors	**	**
Ecosystem and land cover change	*	*
Fires and pests	*	*
Epizootic disease outbreaks	*	**
Climate change, extreme weather events	**	**
Overfishing and illegal fishing	*	*
Invasive species	*	**
Solid municipal waste mismanagement	*	-
Tourism waste and plastic pollution of terrestrial and water ecosystems	**	*

*** dominant ** medium * marginal - not reported or no information

Sources: Results of stakeholder consultations (May 2025) and online survey (May 2025 and 2024); NBSAPs (KRG and KAZ drafts 2025), author estimates, the latest available National biodiversity reporting to CBD.

9.1. Habitat Fragmentation and Change

Changes in land use, the modification of natural river flows (dams, canals, riverbed and lake shore development), sizable withdrawals of water from rivers for irrigation or installation of large renewable energy parks (wind, solar) are the common examples of habitat change. Tugai (riparian) forests have been particularly affected by irrigation and hydropower projects. Although some CSOs raise concerns about such threats, local CSOs rarely critically review and address the multi-billion dollar investments with high-level interests associated with hydropower, large renewable energy parks, regional roads and energy corridor projects. They do, however, participate in public consultations and safeguards review.

New large-scale irrigation plans in northern Afghanistan and the construction of the Kosh Teppa Canal, started in 2021 by the Taliban authorities and expected to be completed in 2026-2030, may increase water withdrawals from the Amu Darya River by 5-10%. The canal's intake and location are on the edge of the biodiversity hotspot and KBAs. These developments are of concern to both governments and CSOs in downstream states. The Aral Sea, located well outside the mountain biodiversity hotspot, is a dramatic example of habitat change, water and land resource overuse, and their cumulative impacts.

In this region, most lowland semi-deserts and foothills have long been converted to agricultural use, mainly for cultivation of cotton and cereals. Conversion and use of land for grazing is also historical in the lowlands and foothills, while upland natural pastures (alpine meadows and grasslands) are used in the summer. This conversion has resulted in the loss of grasslands and semi-desert grass-wormwood communities, with loss in soil fertility. Poor water management and irrigation practices have led to salinization of soils, and the overuse of fertilizers and pesticides.

Threats resulting from the expansion of linear and industrial infrastructure and changes resulting from economic development are relatively significant. Rapid growth in trade and connectivity in Central Asia is driven by socioeconomic and geopolitical factors. Strategic economic corridors are national and regional priorities and part of the regional ADB CAREC program, EU Global Gateway and China's Belt and Road. However, some infrastructure projects can cut across ecological corridors and habitats.

Trenches excavated around agricultural fields to protect them from livestock grazing may seem no obstacle for large migratory species, but they are deadly traps for thousands of Central Asia tortoise. Once they fall in, they cannot climb out, and perish from heat, thirst, and exhaustion. It is not uncommon for tortoises to perish under the wheels of cars while crossing roads.

The saiga population (outside of the hotspot) recovered, but the so-called Ustyurt population of saiga still faces severe migratory constraints and habitat fragmentation due to infrastructure, in addition to risks from poaching and disease outbreaks. In 2015, Kazakhstan constructed a major railway through the center of the country, dividing the range of the Ustyurt population. Tracking data from before and after the construction illustrated how dramatically infrastructure altered species' movements by cutting their migratory range. Saiga stayed north of the railroad and no longer accessed land in the south. In 2016, conservationists learned of a new government plan to build a major highway across central Kazakhstan as part of transit routes expansion from China via the

Caspian Sea. The Association for the Conservation of Biodiversity in Kazakhstan (ACBK) approached the government and presented tracking data collected over years, showing how migratory movements would be severed if the route were built as planned. Ultimately, the highway was not approved, partly due to economic reasons. This regional example illustrates how timely and robust biodiversity data from a CSO can inform discussions with planners.

In diminished and fragmented habitats, migratory species of wild animals often encounter and compete with livestock for pasture and water. This increases the risk of disease transmission between them. Therefore, preserving habitat connectivity helps mitigate the risk of disease outbreaks in wildlife and reduces the transmission of diseases between wildlife and livestock and decreases the risk of zoonoses. These issues are already addressed by the "One Health" approach and ongoing projects.

Expansion of settlements, development of mining, boom in large and small tourism and energy infrastructure is accompanied by loss, change and fragmentation of habitats and reduction of ranges. In some cases, for example in areas near the large, highly visited cities of Almaty (KAZ) and Samarkand (UZB), local authorities and businesses have attempted to develop pristine natural areas for tourism with little regard for biodiversity, including modifications to existing national parks and nature reserves (this was prevented, in part, thanks to the campaign and complaints by civil activists, CSOs, and the involvement of national authorities).

Extensive development of small hydropower may have significant cumulative impacts on water ecosystems – a recent concern raised in almost all consultations on the update of ecosystem profile. CSOs working with birds of prey note with concern the quick and dramatic decline of their populations in Kazakhstan's Karatau and Ili- Balkhash mountains, located on the edges of the biodiversity hotspot.

9.2. Overexploitation of Species and Ecosystems

9.2.1 Poaching, Excessive Hunting and Collection and Trade of Animals and Plants

Illegal hunting reached high levels in the hotspot and across Central Asia in the 1990s-2000s, a period of socio-economic disruptions and transition. However, in the past 10 years (2015-2025), hunting bans and major restrictions in Turkmenistan and Uzbekistan, as well as stricter penalties and enforcement elsewhere, have improved the situation of many large mammals and flagship species. The markhor goat, snow leopard, argali, and urial have all recovered, as have some bird species used in falcon hunting or popular in tourism (bird watching).

Outside of the mountain hotspot boundaries, the ban on saiga hunting and the targeted conservation efforts that began in 2005 helped in species recovery. By 2025, the saiga population in Kazakhstan had reached 3.9 million, surpassing the historical maximum levels in the 1970s. Now farmers even complain that saigas are destroying their fields and that cattle are losing pastures. The authorities are currently contemplating the reintroduction of regulated hunting in certain regions of Kazakhstan.

On the other hand, populations of less charismatic or "common" species, such as the Menzbier marmot or Central Asian tortoise, as well as species on the edge of their range, are declining, largely due to illegal hunting, excessive collection, often in combination with other pressure factors. For example, in Kazakhstan for several decades until the 2001 ban,

the tortoise was officially a harvested species. State and private entities collected thousands of tortoises annually for the domestic market and on requests from foreign firms (e.g., for culinary purposes, zoos, research, sale as pets). As a result of uncontrolled harvesting, the age and sex structure of many populations was disrupted, key habitats declined and number of animals per hectare reduced. The species is listed as Vulnerable (VU) on the IUCN Red List and included in Appendix II of CITES.

According to TRAFFIC monitoring and reports, Kyrgyzstan is one of key sources and transit points in Central Asia's wildlife trade. Several iconic and endangered species are at risk because of trade:

- Saker falcon, used in falconry, smuggled live across borders
- Central Asian tortoise, trafficked in large numbers for the exotic pet trade
- Saiga antelope, targeted for horns, which are used in traditional medicine
- Argali sheep and Marco Polo sheep, hunted for trophies

Similar to illegal or excessive hunting, the illegal collection of plants is a threat for endemics for sale (e.g., various tulip species) and for household use (e.g., medicinal plants). Species with alluring, beautiful flowers – such as *Tulipa* and *Eremurus* (*Eremurus albertii*, *E. korovinii*, *E. pubescens*, *Fritillaria eduardii*) are at higher risk of loss. The early blooming plants tend to be more threatened than the other groups. The local tradition is to harvest beautiful flowers from the wild and sell them along roads and at markets.

In remote areas where plants are collected for medicinal use, people often do not realize that these species can be threatened. Useful plants are less threatened than decorative ones. Apart from awareness campaigns and promotion of alternative products, options exist for creation of cooperatives, nurseries, and cultivation of species used in medicine and local trade. For example, Kyrgyzstan's national program 2024-2028 to revive ferula (*Ferula spp.*) aims to save this species from excessive collection by creating plantations (estimated area 11,000 ha). A similar program exists in Uzbekistan since 2018, covering an area of 25,000 ha. The program intends to promote ferula nurseries and plantations on non-agricultural lands. The source material, a ferula resin, is transformed into an exportable commodity, generating income for local farmers while reducing the demand for ferula excessive collection in the wild.

9.2.2 Overgrazing

Following the fall of the Soviet Union in Central Asia, domestic livestock numbers initially declined in the 1990s. However, as economies transitioned and recovered, sheep and goat herding increased in the foothills. In Kyrgyzstan, the number of sheep and goats remains below Soviet levels (9 million), which were clearly excessive. However, the number of horses and cattle has increased, almost doubled. In Tajikistan, the number of sheep, goats, and cattle is 50 percent higher than 30 years ago. Overgrazing limits further growth as well as the ecological productivity and quality of pastures.

Degradation from overgrazing is apparent around settlements, but its impact is much wider. Intensive grazing causes strong compaction of the upper soil. At the same time, the composition and structure of the grass cover changes significantly, and the renewal of tree species stops almost completely.

Overgrazing leads to soil erosion and reduces fresh grass yields and species compositions, leading to growth of less palatable or inedible grasses, and consequent extensification by herders. The overgrazing of preferred grasses then leads to less fodder for native ungulates,

such as argali and urial. A high concentration of livestock can lead to disease transmission and epizootic risks. Additionally, overgrazing is common in forests and protected areas.

Kyrgyzstan has perhaps the broadest experience with modern pasture management and restoration within the hotspot. Several ongoing projects continue to address this threat.

9.2.3 Human-Wildlife Conflict and Co-existence

Human-wildlife conflict was and perhaps still is primarily a threat in Afghanistan's Wakhan Valley, where there are retaliatory killing, trapping, and poisoning of snow leopards by herders trying to protect livestock. In the other countries of the hotspot, the criminal penalties for killing a snow leopard and very high fines seem to serve as sufficient deterrent. However, for other predators, such as wolves, authorities allow and even reward trapping and hunting.

Another significant challenge is gene pool erosion for native, geographically restricted, and endangered fauna and especially plants. Wild apple is particularly affected by gene pool erosion due to the threat of hybridization from commercial apple plantations and the high pressure on its wild habitats.

9.3. Invasive Alien Species

Invasive alien species (IAS) are a serious threat to freshwater and isolated mountain ecosystems. In the past, commercial fish species were introduced to Issyk Kul Lake and the Talas River with immediate impacts on endemics. More typical than purposeful introduction, however, has been the spread of invasives due to habitat change. IAS plants have moved into overgrazed areas, parasitic plants have grown off excessive fertilizers in water, and various birds, like the Common myna, have displaced natives. Growing trade and transport linkages as well as climate change increase IAS risks further. During ecosystem profile update consultations, stakeholders suggested covering this threat under CEPF grants.

9.4. Pollution

Pollution is a threat in the industrialized parts of the hotspot and downstream. Xinjiang stands out as being at risk from industrial discharges and hazardous waste due to its rapid economic growth, although it is not alone. The freshwater basins of Issyk-Kul Lake, in the Ferghana Valley, and the Ili-Balkhash are also at risk of water pollution. Several active and abandoned tailings sites pose risks. The improper use of agrochemicals or incomplete knowledge of their environmental impacts can severely impact populations of raptors and fish.

One of the CEPF grantees reported that the main reason for the rapid and large-scale decline of the griffon vulture (*Gyps fulvus*, LC) population in Kazakhstan, despite an increase in food supply and no major habitat changes, is poisoning by anti-inflammatory drugs (diclofenac), which are used to treat livestock. For vultures that consume the remains of cattle treated with diclofenac, the drug acts as a lethal nephrotoxin (Raptor Conservation, 2023).

CEPF grantees and other CSOs are concerned about the growing presence and impact of plastic waste and illegally dumped solid waste in waterways. In August 2025, the president of Kyrgyzstan filmed a video with plastic and waste on the shores of Issyk Kul Lake left by tourists and urged citizens to keep the Issyk Kul Lake and Kyrgyzstan's environment free of

waste and plastic (Vesti.kg). Clean-up campaigns conducted annually by state authorities and CSOs yield 1,500–2,000 tons of waste from the shores of the lake and the water, as well as tens of kilometers of plastic fishing nets installed and used illegally.

9.5. Indirect Drivers of Threats

9.5.1 Demographic Pressures

Pressure from demographic growth is inevitable. More people require more land, food, water. Estimated number of people living within the hotspot is about 77 million people. Overall population density in the hotspot is 90 people/km². Densities are as low as 5–10/km² in the high mountain areas, which should be advantage for conservation. The Ferghana Valley and Tarim Oasis have 500 people/km² making predictable demands on the landscape.

9.5.2 Socio-Economic and Geographic Factors

As addressed in Chapter 6, socio-economic transitions and changes have been a driver of land conversion. Much of the region was only accessible on foot or on horseback 80–100 years ago. Since then, roads have opened wide areas to exploitation. Even in areas without significant resources, there are scenic areas and ski resorts that draw increasing tourism and associated infrastructure.

Some remote and isolated areas, such as the Wakhan Valley and National Park in Afghanistan, have missed out on socio-economic development. However, Wakhan's isolation and conservation programs led by WCS have contributed to preserving one of the largest snow leopard populations in the region (100–150 animals). Camera trap-based estimates suggest that the snow leopard population in Wakhan increased between 2012–2013 and 2017–2019 (Moheb 2024, Bohnett 2025). However, difficult operational conditions, high poverty and low education levels, and uncontrolled poaching create uncertain conditions for wildlife management and the sustainable use of natural resources in Afghanistan.

9.5.3 Institutions and Enforcement

Several institutional factors contribute to the poor management and protection of natural resources. Low salaries make it difficult for government agencies to attract and retain qualified personnel, especially young people. Reforms to governmental agency structures, such as institutional fusions or divisions, changes in status (e.g. ministry vs. agency), and department detachments (e.g. forestry moving from one agency to another), create discontinuity and uncertainty in the implementation of NBSAP and wildlife and forest policies. Despite the rapid growth of digitalization and e-government portals, state institutions remain rather conservative when it comes to allowing access to data and making it easily understandable and used. They also lack the resources, staff and capacity to continue efforts to raise public awareness of many environmental issues, including biodiversity.

At the inter-institutional level, there are structural disconnects, if not competing priorities, between central and local authorities (e.g., regarding the establishment of new protected areas) and between line ministries. State bodies responsible for agriculture, mining, energy, or water may have competing or diverging interests or different levels of power and influence compared to environmental entities.

Although there were no major institutional changes in Afghanistan in 2017-2025, the overall change in authority in 2021 when the Taliban came to power led to dramatic cuts in foreign assistance and grants. The departure of many specialists and the suspension of some civil society organizations (CSOs) affected conservation efforts, as did the reduced participation of women in environmental actions. MoU signed in 2020 on environmental cooperation between Tajikistan and Afghanistan is suspended since 2021.

Since the initial ecosystem profile (2017), major institutional changes have occurred in Uzbekistan with the creation of the new Ministry of Ecology, Environmental Protection, and Climate Change (in November 2025 the National Committee on Ecology and Climate Change was established, based on this ministry), and in Kyrgyzstan with the creation of a new ministry responsible for environmental protection, natural resource use, mining, and industrial safety, as well as the restructuring of some units (e.g., forestry). Some changes also occurred in scientific institutions across the hotspot, such as the establishment of new centers (e.g. jointly with the Chinese Academy of Sciences) and the division of institutes. While many changes led or will lead to potentially positive developments for conservation, some had negative side effects, such as lost or disconnected databases, institutional and staff knowledge and contacts, and the dismantling or downsizing of science units in the protected area network.

In the same period (2017-2025), CSOs demonstrated stability and gradual evolution, though some of them changed names or introduced structural changes, and others, including those promoting citizen science and monitoring of waste and air quality, emerged. Many local CSOs had the opportunity to participate in the implementation of CEPF grants, which focused on both conservation and organizational development. CSOs introduced innovations to state-run conservation approaches, such as SMART monitoring, eco-tourism standards and practices, ecological corridors, and micro-reserves.

Local CSOs note that state institutions are now the primary recipients and implementers of many grant projects funded by the GEF, GCF, and other donors. They established centers for project implementation, taking on most of the responsibilities and functions. In 2024, ARIS – the Community Development and Investment Agency of Kyrgyzstan and the Center for Implementation of Investment Projects under the Committee for Environmental Protection of Tajikistan became the national direct access entities to work with GCF. But traditional CSOs still play a role: in 2024-25 on a competitive basis in Kazakhstan (ABCK) and Kyrgyzstan (Biom) they were given mandate to lead the development of updated NBSAPs.

Cross-border cooperation between state institutions and CSOs has improved, but some challenges remain. Disputes along the Kyrgyzstan-Tajikistan border have reduced cooperation. CSOs are less present at meetings of the Interstate Commission on Sustainable Development. Mountain-focused CSOs, such as AGOCA, the Regional Mountain Centre (GO-NGO), CAMP network, and the Aga Khan structures are less visible compared to the past.

9.5.4 Conservation Knowledge, Awareness and Education

The median age in Afghanistan is 18, indicating that half of the population is younger than this age. The median age in Tajikistan, Kyrgyzstan, Turkmenistan and Uzbekistan is 22-26. Given the high proportion of children and youth in the hotspot, there is a need for very broad and systematic actions to raise nature conservation awareness and educate young citizens (and their parents). Tajikistan is the only country with state programs on environmental awareness and education. Recognizing the urgent need for environmental

education, Uzbekistan recently established the Central Asia Green University under the Ministry of Ecology. However, state organizations often lack the capacity and know-how (e.g. innovations in communications vs traditional approaches) to effectively raise public awareness and knowledge about conservation issues.

Information about climate change, biodiversity and the environment is often limited to scientific or official publications, which are not always accessible, understandable or interesting to a wider audience. Environmental projects are rarely accompanied by good information campaigns. Mass media information is fragmented. Climate change, conservation and environment are not sufficiently covered in school and university curricula, which reduces the overall level of environmental literacy.

Student field trips and summer camps, which were common in the past, are no longer practiced, and basic skills and “culture” of waste prevention and sorting are lacking. A lack of conservation awareness puts additional pressure on waterways, pastures, forests, and red-listed species through pollution (e.g. plastic and other waste), excessive or irresponsible use of natural resources. Recognizing this, many CSOs promote environmental awareness, often collaborating with authorities, schools and universities.

At the same time, Tajikistan and Kyrgyzstan face critical gaps in the education and retention of young professionals in the field of nature conservation and biodiversity science. This factor limits the scope of conservation efforts and was a constraint when producing the initial and updated ecosystem profiles (conservation outcome analysis covering both countries).

Finally, implementation of the CEPF phase I projects in Central Asia demonstrated that conservation efforts by CSOs (and governments) suffer from a lack of consistent, harmonized knowledge of flora and fauna and monitoring, as well as proper understanding of KBAs. Few CSOs have in-house experts or invite local or international scientists to participate in grants design, co-implementation, and “impact” reporting. There is a lack of collaboration between science and citizen groups working in different domains, such as educators (university and national park staff), zoologists, botanists, agronomists, tree enthusiasts, bird watchers, wildlife monitors, speleologists, eco-bloggers. Additionally, there are no national KBA working groups. There are only a few experienced biodiversity scientists, and they are often busy with multiple assignments (field work, Red List updates, EIA studies, multiple projects and articles), while young scientists and specialists often lack the knowledge to contribute effectively. This issue was raised during the ecosystem profile update consultations in May-June 2025 and could be addressed further in CEPF Phase II (2026-2030).

9.6. Summary of Threats by Country

- **Afghanistan’s** NBSAP (2024-2030) identifies three major threats: loss and degradation of natural habitat; climate change impacts; and overexploitation of natural resources. Lesser, but still significant, threats are pollution, invasive species, the diversion and unsustainable use of water, and the loss of genetic diversity. The underlying issues are population growth, a low level of education and socio-economic development, and widespread poverty. Within the Wakhan Valley, the threats are overgrazing and poaching. Out of 9 formally declared protected areas covering 4.2% of the country, only two recently established parks (covering 2% of the country) – the Wakhan National Park and Band-e-Amir National Park (outside of the hotspot)

are considered functional, properly registered with land use and management planning.

- Threats in **Xinjiang, China** are from extractive industries, rapid infrastructure development, and increasing consumption. Mass tourism is threatening particular sites.
- **Kazakhstan's** updated NBSAP (2025, in development) indicates overgrazing, collection of plants, boom in tourism and renewables, and gene pool erosion are among the main or emerging threats. The use of chemicals to protect crops and livestock poses a threat to birds of prey.
- **Kyrgyzstan's** updated NBSAP (2025, in development) indicates overgrazing and the overuse of natural resources (especially of fruit and nut forests) among the main threats. Other threats include pollution of water streams with waste and plastics, destruction of water ecosystems by mining and gravel extraction, poaching, and illegal collection of wild plants. An emerging threat is growing tourism (a 60% increase from 2019 to 2024). Like in Kazakhstan, the use of chemicals for crop and livestock protection poses a threat to birds of prey and aquatic species.
- **Tajikistan** suffers from a declining knowledge base in science and monitoring that struggle to provide up-to-date information on the state of biodiversity, except for flagship species or results of joint expeditions (Chinese, Korean and the EU researchers and publications); low capacity of state actors responsible for conservation; rapid population growth combined with limited socio-economic prospects and energy deficit; agricultural expansion around the protected areas and forests. Many of the threats described above for other countries also apply to Tajikistan.
- The portion of **Turkmenistan** within the hotspot is limited to the Koytendag mountains, which is the country's highest point and home to several nature reserves, and the Talymarjan and Amu Darya wetlands. Overgrazing, changes in land and water use, and poorly organized tourism are the main threats in this area. Climate change, particularly the recent decrease in rain, worsens the overall condition of the Koytendag mountain ecosystem. Many streams have dried up, and larger ones, including the Koytendag River, have experienced a decrease in water flow.
- The portion of **Uzbekistan** that lies in the hotspot includes the densely populated areas of greater Tashkent and the Ferghana, Kashkadarya, and Zeravshan Valleys. Loss of habitat, agriculture-related pollution, unregulated and growing tourism, and infrastructure development are among main threats. Poaching is a lesser issue now, compared to the past.

10. CLIMATE CHANGE ASSESSMENT

Climate change impacts are being felt across the hotspot, where temperature increases range from 0.2°C to 0.4°C per decade over the last 60 years (as shown in numerous national and international reports on climate change). The spring and fall seasons exhibit the largest warming. Winter temperatures increased in the southern parts of Central Asia. Higher temperatures have resulted in increased evaporation and reduced soil moisture content, especially during the dry summer months, thereby amplifying the risk of droughts in lowlands and reducing the amount of surface run-off in small river basins, especially in Turkmenistan and in the Ferghana Valley rivers (PIK, national climate reports).

In China's section of the hotspot, Xinjiang, climate warmed by 0.3 °C per decade and precipitation showed an incremental trend, resulting in glacial retreat, reduced snowfall, increased river runoff, lake expansion, and changes in vegetation cover (Zhang 2024, Wang 2025).

National and regional climate projections expect increases in temperatures across the hotspot. Projections for precipitation show a differentiated picture. Less precipitation and higher SPEI is expected in southern and central lowland parts of Central Asia, and the Western Tien Shan (PIK, national climate reports). Uncertain and possibly growing precipitation is likely in the inner and eastern part of the hotspot. As much as a fifty percent loss in glacial cover and volume is expected by mid-century, and near total loss by the end of century in strong warming scenarios (except for large and high altitude glaciers). Many small and low altitude glaciers have already vanished (CROMO-Adapt and Central Asia Cryosphere projects: snow and glacier scenario).

The high-altitude and large glaciers in the central and eastern Pamir (Fedchenko / Vanchyah, Alai Valley) – sources of the Amu Darya River and in the inner Tien Shan (Enylchek glacier, Saryjaz-Tarim river) are more resilient to climate warming and have experienced less significant loss of ice area and volume.

Tajikistan launched a state program on glacier monitoring and protection and was among the initiators and promoters of the International Year of Glacier Preservation in 2025. Several research and donor projects such as CAMCA, GLORIA, CAMMON and "Green Central Asia" are studying climate impacts on biodiversity and introducing ecosystem-based and species-focused adaptation measures.

10.1. Impact on Human Populations and the Economy

The number of days with temperatures above 40°C has been increasing in the densely populated areas of Central Asia. This has a negative impact on agriculture and rural and urban populations affected by heatwaves.

The climate effects on water regimes are variable. As glaciers retreat and snow cover patterns change, the hydrological changes in small and medium rivers in the high mountains are becoming noticeable. The flow of rivers fed by large glaciers is expected to increase, but in rivers with fewer or no glaciers, flow may decline due to declining precipitation and growing evaporation. Noticeable shifts in monthly flow are expected for most rivers: less water in summer, more in spring and late winter.

Extreme weather events are expected to grow in intensity and duration (e.g. heatwaves, rain or snow events, droughts). Climate warming is affecting the permafrost, which may

lead to an increased risk of rock instability and changes in land use in high altitude pasture areas and nival-glacier ecosystems, which cover a third of Kyrgyzstan and Tajikistan. Satellite observations over the past two decades indicate that the former glacial zones are greening, especially the inner parts of Tien Shan. Phenological phases may change, with earlier blooming and changing times of harvest and grazing seasons.

Climate change may allow new pests to affect the region, and for existing pests and diseases to increase in geographic spread.

Human health is directly affected by heat, including agricultural workers, the elderly, the young, and pregnant women. As average temperatures increase, some diseases (e.g. malaria, water-borne bacteria) are likely to spread more easily, thus adding threats to both animal and human health. Heat stress contributes to cardiovascular disease, and warming patterns can increase the risk of malaria outbreaks. Heavy rainfall in areas with inadequate water supplies and substandard sanitation can increase the risk of water-related infections such as typhoid and dysentery.

10.2. Impact on Biodiversity

Mountain forests are expected to move up in elevation, but it is not known if higher elevation soils can support these ecosystems. Productivity of mountain forests may decline for slow-growing juniper forests due to combination of climate factors and ongoing stress from overgrazing. Table 10.1 summarizes information from the studies and the profiling team's stakeholder consultations.

Table 10.1. Climate Change Effects on Biodiversity

Possible effects	Likely indicators and consequences
Changes migratory bird arrivals, sites and populations	New wintering areas for some birds: avocet (<i>Recurvirostra avosetta</i>), ruff (<i>Philomaxis pugnax</i>), wood sandpiper (<i>Tringa glareola</i>), redshank (<i>Tringa totanus</i>) and earlier arrival.
Shift in habitat extent for some plant species and animal ranges	Elevation changes in the spread of the mountain forests in the long term. Impacts on cryophilic species. Changes in cryosphere and nival-glacial areas. Changes in the habitat of snow leopard and its prey species.
More favorable conditions for pests and diseases	Impacts on wild fruit and nut forests of Kyrgyzstan and endemic plants of Uzbekistan (<i>Moluccella bucharica</i>).
Changes in water quality and quantity and impacts on freshwater species and ecosystems	Impacts on southern regions of Central Asia: less snow, less water, higher aridity and temperatures. Impacts on nature reserves and wetlands.

Research conducted in the Chatkal Mountains of Kyrgyzstan (Western Tien Shan) covering observations from the 1970s to the 2010s indicates that the mountain steppe, meadow steppe, and subalpine meadows underwent notable changes in composition of species. The alpine (high-altitude) zone now has a higher species diversity. Of the 35 species that experienced significant changes in elevation, 24 showed upward shifts (an average of 170 m over 40 years), and 11 showed downward shifts. Shrubs characteristic of desert ecosystems were absent in the 1970s and shifted upward due to aridification (Zhumanova *et al* 2021).

Rising winter and spring temperatures have made the forests of Kyrgyzstan more vulnerable to diseases and pests. A projected increase of 1.2°C to 3.7°C by 2080 will cause forests to shift upward by 200-600 meters. Under a strong warming scenario, forest loss could reach 30% or more (Kyrgyzstan's 1st and 3rd climate change communications to the UNFCCC).

Research in southern Uzbekistan (1982-2020), shows that endemic and critically endangered species *Moluccella bucharica* is affected by climate aridification, fragmentation and insect damage to seeds (Khabibullaev et al 2022).

The hotspot is important for both endemic and endangered species as well as for agrobiodiversity, from which cultivated plants have originated. The hotspot harbors wild relatives (landraces) of important agricultural crops and domesticated fruit and nut trees that possess resistance and tolerance to pests, diseases, and climatic stress; thus, are of incredibly high value.

Research in Tajikistan predicts an increase in temperature of 3°C in 2050. Given that air temperatures cool by 0.6°C per 100 meters, climatic conditions at any given site today will be 500 meters higher in elevation in the future. Forest sites today can potentially grow at these new elevations, but only if soil conditions and precipitation/moisture allow. Conservation planners need to devise *in situ* and *ex situ* measures to allow adaptation (recommendations available from the Tajik GEF agrobiodiversity project).

10.3.Mitigation and Adaptation Opportunities

The main greenhouse gas emitters in the biodiversity hotspot are Kazakhstan, Turkmenistan, and China's Xinjiang. Xinjiang's carbon emissions increased from 161 million tons in 2005 to 605 million tons in 2021, growing annually by 8 percent. Such significant growth reflects the region's rapid industrialization and urbanization. The industry accounts for most of the carbon emissions (450 million tons, or 75% of the total) (Jing et al 2024). Xinjiang per capita emissions are twice as high as those of Kazakhstan and Turkmenistan, both of which are considered high. Xinjiang is also rapidly expanding its renewable energy capacity. In 2024, the region generated 41 billion kWh of photovoltaic power and 75 billion kWh of wind power. China dominates the global electric vehicle market, and imports to Central Asia are growing rapidly. Most renewable energy projects in Central Asia use Chinese technology.

Kazakhstan's current emissions (340 million tons) are below the 1990 level (380 million tons), though growth in emissions is observed in the industrial, transport, and waste sectors. According to Kazakhstan's carbon neutrality strategy, forest ecosystems are expected to absorb 20 million tons of CO₂ by 2030 and 40-45 million tons by 2050–2060. The current carbon sequestration of forests is estimated at 10 million tons/year. The main emitters within Kazakhstan's part of the hotspot are the industries, transport and waste in and around Almaty and Shymkent.

Most of Turkmenistan's carbon emissions occur in the energy sector. Total emissions are estimated in the range of 70-80 million tons, though this figure may be higher, given the likely presence of super-emitters (EU Copernicus Methane Hotspot Explorer, He *et al* 2025). The country's emissions are likely to continue growing, so its climate goals focus on decoupling. Within its small portion of the hotspot, few sectors emit. Main carbon emission sources are in the middle and western (Caspian Sea) parts of the country. As part of the State Forest Program, 30 million seedlings were planted (3 million annually).

In Uzbekistan, GHG emissions remained relatively stable over the past 30 years, in the range of 190-210 million tons. Per capita carbon emissions are declining, and the share of renewable energy is growing.

Tajikistan and Kyrgyzstan have low carbon emissions – about 15-20 million tons each (30-40% below of the 1990 level) – due to the high share of hydropower in their energy mix and their less industrialized economies. They aspire to achieve carbon neutrality by increasing hydropower and transitioning to a green economy. Twenty years ago, after the sharp decline in greenhouse gas (GHG) emissions following the end of the Soviet Union, they have already achieved carbon neutrality, when their man-made emissions equaled natural sinks. Since 2022 Kyrgyzstan implements GCF-FAO project to increase carbon sequestration in forests and rangelands in the middle part of the country. Tajikistan is the major recipient of grants from the GCF, GEF, and other international funding sources in Central Asia. Some projects on ecosystem-based adaptation and landscape resilience are compatible with CEPF priorities.

The total estimated emissions in Afghanistan range from 20 to 30 million tons (depending on the year of reference and estimates). This puts the country's per capita emissions at less than 1 ton/person, which is one of the lowest in the world. Although the suspension of internationally funded climate projects has reduced Afghanistan's ability to address climate challenges, its population and industries are using renewable energy (mainly solar panels), the government efforts focus on afforestation.

All countries have designed national climate strategies and NDCs that cover both mitigation and adaptation. The NDCs of Afghanistan, Tajikistan, Kyrgyzstan, and Turkmenistan pay particular attention to adaptation, including nature-based solutions. Resilience and the capacity to adapt will determine the response to climate change. Strong, stable economies and effective governance improve adaptive capacity. Healthy ecosystems ensure higher climate resiliency.

By analyzing the contents of NDCs and NAPs in relation to national biodiversity goals, as well as biodiversity risks and concerns in the hotspot, one can see a misalignment in planned investments in small- and medium-scale dams for daily, weekly, or seasonal water regulation as well as small scale hydropower expansion plans. Though these plans may help reduce flood and drought risk and avoid emissions, as climate strategies suggest, they may also impact biodiversity. The state programs on large-scale planting of trees can be a win-win for biodiversity and climate. However, inappropriate planting, including non-native trees, has the potential to have negative consequences. These climate adaptation and mitigation solutions need to be weighed against their biodiversity impact.

On the other hand, CSOs propose innovative solutions that secure the water supply with no negative impacts on biodiversity. These include artificial mini-glaciers in high mountain pastures and small-scale, nature-friendly reservoirs and drinking points in reserves and along migratory routes affected by droughts or energy efficiency stoves, as implemented by CEPF grantees in the past phase.

10.3.1 Regional Responses

Several organizations and projects at the regional level contribute to Central Asia's collective and cross-border capacity to respond to climate change. The International Fund for Saving the Aral Sea (IFAS) serves as a high-level political structure for discussion and management of regional environmental issues. From 2016 to 2024, the Climate Adaptation and Mitigation Program for the Aral Sea basin (CAMP4ASB), designed and implemented with

support of the World Bank, has been the main regional climate cooperation and policy coordination platform. The Regional Environmental Center for Central Asia (CAREC) was the main facilitator of regional collaboration under CAMP4ASB and designed Climate Information Portal (CACIP). In addition, CAREC annually organized Central Asian climate change forums attended by 500–800 delegates and supported regional pavilions of Central Asia at UNFCCC CoPs.

In 2023-2030, the World Bank implements the Central Asian Regional Resilient Landscapes Restoration Program (RESILAND CA+), which focuses on forest and pasture restoration, nature-based disaster risk reduction measures, and improving the management effectiveness of forestry units and protected areas. CAREC is acting as regional collaboration and knowledge hub under this program.

Other regional structures partially dealing with climate change responses include the Regional Centre for Hydrology, Regional Glaciology Centre, Regional Mountain Centre, Regional Centre for Disaster Risk Reduction, and the Central Asia Institute of Applied Geosciences (CAIAG). Turkmenistan and Kazakhstan are pursuing the establishment of the Regional Centres on Climate and Green Technologies.

GIZ-led "Green Central Asia" program, which focuses on climate adaptation and improving the management of water, land, and natural resources, is another flagship program relevant to the work of the CEPF. GIZ facilitated the elaboration of the regional climate adaptation strategy for Central Asia (2023) and Germany's scientific institutes and experts were instrumental in regional climate and water assessments and modeling. The recently completed EU-Central Asia Water, Environment, and Climate Change Cooperation (WECCOOP) program (2019-2023) supported policy dialogues and capacity building.

The UN Economic Commission for Europe (UNECE) is supporting climate adaptation in transboundary basins of Central Asia; Its past activities have focused on the Chu-Talas basin shared by Kyrgyzstan and Kazakhstan. UNESCO is developing a regional transboundary diagnostic assessment and action plan on the cryosphere under the GEF project. In 2025, Central Asia, particularly Tajikistan, organized many expeditions and international events dedicated to the International Year of Glaciers' Preservation.

Nature-related climate mitigation and adaptation measures may have a direct or indirect positive effect on conservation. Efforts on cryosphere and environmental monitoring, watershed protection, and better forest management will all benefit the natural areas in which key biodiversity areas and corridors are found, and civil society organizations that are involved in climate actions may become more involved in biodiversity actions.

10.3.2 National climate and low-carbon emission strategies and their alignment with biodiversity

The new generation of Nationally Determined Contributions (NDCs) for 2025-2026 considers the alignment of climate and biodiversity measures. Therefore, the implementation of new national climate and biodiversity strategies is expected to generate more synergies and benefits.

As part of their efforts to increase their international visibility and develop contacts, Tajikistan, Kyrgyzstan, Kazakhstan, and Uzbekistan, along with China, have organized national pavilions at international climate meetings (UNFCCC COP-28, 29, and 30). Their approach to climate change has significantly evolved over the last 10-15 years. In the past, national hydrometeorological services and environmental authorities were the main players,

if not the only ones, in national, regional, and international climate actions. Now, the finance, economy, energy, and agriculture ministries are all involved, as are civil society organizations (CSOs) and the private sector (banks, energy companies).

The Green Climate Fund (GCF) is providing opportunities for countries to address climate change concerns. One of the first GCF projects within the hotspot was initiated in Tajikistan through the EBRD in 2017 to strengthen the energy sector's climate resiliency with a focus on the Kairakum dam on the Syr Darya River (Kairakum is one of KBAs with CEPF grants). Since then, more than 10 GCF national and regional projects were launched on renewable energy, disaster risk reduction, agriculture and forests.

The Kazakh government has adopted several green economy strategies and programs, launched carbon emissions trading system (ETS), and introduced incentives for renewable energy, energy efficiency, and annual afforestation. Several wind and solar energy parks have been established in the country's windy steppes and mountains, and small- and large-scale hydropower is expanding. While some wind parks and hydropower projects are considered acceptable in environmental context, others cause concern by CSOs due to bird collisions and damage to river ecosystems. The planned construction of a nuclear power plant on Balkhash Lake — promoted as a solution to the energy deficit in the country's south and the transition to a low-carbon economy — is questioned by some CSOs and civil groups.

Kyrgyzstan's climate policy and legislation include provisions on energy efficiency and renewable energy. The country has established an intersectoral and interagency platform for high-level dialogue and coordination on climate issues. The National Adaptation Plan (NAP) includes measures in six priority sectors: agriculture and irrigation, healthcare, disaster risk reduction, biodiversity, energy, green cities. Kyrgyzstan published GCF country program for 2025–2028 that includes projects focusing on ecosystem-based adaptation and improving ecosystem services in the Issyk-Kul Lake and mountain areas. Some Kyrgyz CSOs, such as UNISON Group, have achieved remarkable results through their engagement in the KyrSEEF / GEF (Kyrgyz Sustainable Energy / Green Economy Finance Facility), jointly with EBRD.

Kyrgyzstan promotes sustainable mountain development and has developed a roadmap to implement the Five Years of Actions on Mountain Regions. The new NBSAP (in preparation in 2025) covers assessment of climate impacts on biodiversity, improving the conditions of protected areas, forests, and afforestation. A list of nature-based solutions for restoring degraded landscapes, planting protective tree belts, and restoring pastures will be introduced. The forest agency and management were transferred to the Ministry of Emergencies to expand nature-based solutions for disaster risk reduction.

Tajikistan was the first country in the hotspot to develop and implement a national climate mitigation and adaptation plan in 2002, and it remains the largest recipient of donor-funded climate programs and initiatives. Other national initiatives include strategies related to glaciers, energy efficiency, small-scale hydropower, disaster risk reduction, and forests.

Turkmenistan's updated National Climate Change Strategy outlines the policy framework for building climate resilience and a low-emission economy. The country has made significant investments to modernize power generation and introduce energy-efficient buildings. However, as the large producer of natural gas, Turkmenistan still needs to address methane emissions. Turkmenistan prioritizes and funds adaptation measures improve health, agricultural and water sectors and advance socioeconomic reforms. As part of the State forest program (2021–2025), 3 million seedlings were planted annually and over the past

twenty years 227,000 hectares of tree plantations in mountains, deserts, and around urban areas have been established.

Uzbekistan is investing in afforestation in the Aral Sea region to mitigate sand and dust storms (e.g., 2 million hectares planted) and has quickly expanded renewable energy, particularly wind and solar parks (most of them are outside of the hotspot). Its climate agenda is well coordinated domestically, and there are synergies between biodiversity and climate actions, including use of water- and soil-saving technologies to address the impacts of droughts and heat, wetlands conservation, nature-based measures to disaster risk reduction and landscape restoration in the mountain areas. Like Kazakhstan, Uzbekistan is pursuing nuclear power development as part of solutions to growing energy demand, reduction of reliance on fossil fuels, and a pathway to carbon neutrality. In 2017, it signed an agreement with Russia and later with other countries to develop nuclear power. After extensive studies and negotiations, the location was agreed upon in 2025: the Aydar-Arnasay Lakes (Tuzkan) in the Jizzakh province (designated as Ramsar and KBAs). Construction of the 2.1 GW nuclear power facility is expected to begin in 2026 and conclude in 2035.

Afghanistan has previously designed national adaptation plans (NAP), submitted national reports and NDCs under the UNFCCC, and issued policies on climate change. The National Environmental Protection Agency (NEPA) coordinates environmental and climate efforts of Afghanistan. The change in power did not significantly affect climate governance arrangements but did affect international funding.

10.3.3 International carbon markets, climate initiatives and biodiversity in Central Asia

In 2024, the National Chamber of Entrepreneurs of Kazakhstan, "Atameken," signed the first Emission Removal Purchase Agreement (ERPA) with a UK company for forest planting in the Almaty Province, nearby the Kapshagay Reservoir (on the edge of hotspot). The 30-year agreement aims to establish a 1,500-ha forest consisting of 3.3 million trees. The estimated carbon sequestration is 26 tonnes of CO₂/ha, a total of 1.2 million tonnes of CO₂ over the project's lifetime. In 2025, Kazakhstan passed amendments to the Forest Code to enable carbon offset projects on the lands of the State Forest Fund.

In 2024, Uzbekistan has become the first country receiving a payment, \$7.5 million grant, from the World Bank for reducing 500,000 tonnes of carbon emissions through Innovative Carbon Resource Application for Energy Transition (iCRAFT) focusing on energy efficiency, phasing out energy subsidies, and transitioning to clean energy. In 2025 the country introduced a new Law on Limiting Greenhouse Gas Emissions that enables the issuing of carbon credits, which may include afforestation measures. The country can use carbon markets and credits to finance forestry and sustainable land management.

Kyrgyzstan is integrating climate actions with afforestation efforts through initiatives like the "Jashyl Muras" (Green Heritage) and the Carbon Sequestration through Climate Investment in Forests and Rangelands (GCF-FAO) project. In spring 2025, the Asian Forest Cooperation Organization (AFoCO headquartered in Seoul, Korea) and Rabobank (based in the Netherlands) co-hosted a Carbon Removal Unit (CRU) Incentive payment ceremony in Bishkek under the ACORN agroforestry carbon project ([ACORN agroforestry carbon project](#)). It is the first of its kind project in Central Asia that directly links grassroot forestry practices with global carbon markets and impact investments. Rabobank plans expanding ACORN in Kyrgyzstan to 11,700 farmers in 2025. The AFoCO has established a country office in Kyrgyzstan, which will serve as a coordination hub for Central Asia.

In Tajikistan, AFoCO has identified key areas for cooperation, including restoration of riparian Tugai forests impacted by land use; establishment of fuelwood forests to reduce pressure on ecosystems; expansion of nurseries to enhance seedling production; implementation of agroforestry and shelterbelt systems in degraded lands; introduction of the Acorn carbon platform as a tool for delivering climate finance to rural communities via smallholder-driven carbon projects and draft GCF concept on forests.

In 2016-2019, KfW Entwicklungsbank in collaboration with GIZ carried out in Tajikistan a large-scale climate-driven afforestation on behalf of the German Federal Ministry for Economic Cooperation and Development in Farkhor, Khovaling, Vanj and Gorno Badakhshan. New forests were created or damaged forests restored on 6,500 ha, jointly with the local population (600 leaseholders) and local forestries. To ensure that enough seedlings were available, 60 plant nurseries were created with native species.

10.3.4 Climate Change Responses at the Household Level

Despite numerous climate change and “green” projects, stakeholder surveys show that awareness of climate change and environmental risks among residents and households remains relatively low. A 2025 UNDP survey in Kazakhstan shows that, although environmental concerns are frequently cited by respondents, especially by women, knowledge of international, national, and local climate actions and responses is limited, particularly among rural residents. About or less than half of respondents are aware of climate issues, take individual actions and ready to pay higher tariffs for climate and environment solutions. In the regions with legacies of industrial pollution, the environment is often cited as an issue (e.g. Abay and Karaganda provinces of Kazakhstan). Overall, the population is concerned about urban air quality and pollution, the accumulation of industrial and municipal solid waste, and the decline and pollution of water resources. Poaching and biodiversity decline were among the least concern issues in Kazakhstan. Meanwhile, experts cited biodiversity decline and the deterioration of urban ecosystems among high concern issues, which indicate gaps in knowledge and perceptions.

At the local level, education, healthcare, and alternative income opportunities may contribute to better preparedness and socio-economic resilience in the face of climate change. Mountain districts and their residents in Tajikistan and Kyrgyzstan are at the greatest risk due to the higher frequency and severity of natural disasters. Within the biodiversity hotspot, climate risks are considered high at the local and household levels in the mountains around the Ferghana Valley (climate change hotspots).

Building household resilience to climate change may have an indirect effect on conservation. More resilient households have less impetus to engage in destructive practices (e.g., cutting firewood) or illegal activities (e.g., poaching of threatened species, whether for meat or for sale). It is important to raise awareness and provide incentives for climate change response.

11. CURRENT CONSERVATION INVESTMENTS

Funding for biodiversity conservation in the hotspot comes from governments, donors, multilateral funds, foundations, and the private sector. This chapter summarizes funding sources and relevant projects as well as alignment with state-funded or managed programs to help determine the niche for CEPF investment.

In all countries of Central Asia and China, governmental budget is the main source of regular funding for biodiversity conservation. According to BIOFIN estimates for Kazakhstan, Kyrgyzstan and Uzbekistan, around 60-80% of funding is allocated for the salaries of staff working on biodiversity within government bodies, with the remainder for basic operational expenses. Most of the funding goes to the network of protected areas and forestry.

At the global level, since the release of the initial ecosystem profile (2017), global biodiversity finance increased at least two-fold, driven by both public and private sectors (OECD 2025). Public international biodiversity-related finance expanded to US\$25 billion, driven by additional funding from developed countries under the Kunming-Montreal Global Biodiversity Framework and multilateral channels such as the Green Climate Fund (GCF).

Because of the economic diversity and variety of conservation stakeholders in the hotspot countries, it can be difficult to assess the source or amount of conservation funding. A large NGO might implement a single program with multiple bilateral or private donors or in several countries. Similarly, ongoing programs might start with funds from one donor, but then transition to another or re-brand, expand and blend financing.

Nonetheless, consultations with stakeholders and analysis of available information suggest that around \$50 per year is allocated to conservation and related topics (e.g., forestry, agro-biodiversity) from sources of domestic, international, and private funding within the hotspot (excluding China). Table 11.1 shows an assessment of the relative level of funding by country and donor with a scale, from greatest to least, of predominant, medium, minor, marginal, and negligible.

Table 11.1. Indicative Proportions of Investments to Biodiversity Conservation in the Hotspot

Country	Domestic Public Sector	International Donors (mainly public funding)	Private Sector (includes state-owned enterprises)
Afghanistan (Wakhan)	Marginal	Negligible	Negligible
China (Xinjiang)	Predominant	Negligible	Marginal
Kazakhstan	Predominant	Moderate	Minor
Kyrgyzstan	Minor	Moderate	Marginal
Tajikistan	Minor	High	Marginal
Turkmenistan	Predominant	Marginal	Negligible
Uzbekistan	Predominant	Moderate	Marginal

Since the release of the initial ecosystem profile in 2017, the most significant change in funding occurred in Afghanistan following the 2021 (Taliban) power change, when most donors suspended or canceled their projects. For example, out of the \$11 million available in the GEF-8 cycle (2022-2026), Afghanistan had access to and used less than \$1 million by 2025. CEPF had to suspend funding for projects in Afghanistan (Wakhan National Park). The country has depended on foreign donors for environmental efforts over the past two decades, but the focus has now shifted mainly to humanitarian assistance.

Tajikistan is likely the most donor-dependent country in the region (after Afghanistan, considering the aforementioned changes). It receives significant funding in the form of grants and technical assistance, including funding for conservation and landscape restoration. The World Bank's 2025 "Analysis of International Donor Funding to Combat Illegal Wildlife Trade" covering 2010–2023, indicates that Asia received a total of \$900 million in donor funding, 10 percent of which (\$9 million) was allocated to Tajikistan. Although Kyrgyzstan has access to international funds, most of them are in the form of loans (except for GEF, GCF), and grant instruments are usually blended.

Major changes are occurring in Uzbekistan, linked to the country's socio-economic and political transformations since 2017. Despite lingering constraints, local CSOs can access foreign funding, but government-organized NGOs (GO-NGOs) and the state funding channels prevail. The main change occurred in state-funded environmental programs and larger donor-funded (GEF, GCF) and green investment projects. Major afforestation efforts around the Aral Sea, green plantations across the country, a rapid increase in renewables and water saving installations, the creation of a new environmental ministry and university, the expansion of protected areas, new offices of international organizations, and new projects have all increased environmental funding to unprecedented levels. Funding for conservation in Uzbekistan is difficult to assess in terms of the hotspot boundary, because large amounts go for the Aral Sea region (outside the hotspot) or for water- and climate-related measures (outside and inside the hotspot, but not necessarily for conservation).

International conservation funding for China, Kazakhstan, and Turkmenistan is relatively limited. Their status as upper-middle-income countries with relatively high GDPs makes them ineligible or less attractive to donors. These states can fund their own conservation and research efforts, including national CSOs. Nevertheless, these countries engage in technical assistance, cross-border exchange and introduce new technologies and approaches with international support considering global and national conservation goals. They also lead in combating desertification.

11.1. Government Funding

Kazakhstan, Kyrgyzstan and Uzbekistan have joined Biodiversity Finance Initiative (BIOFIN), which assist in review of biodiversity expenditures, institutional and policy frameworks, determine the cost of implementing NBSAPs and design biodiversity finance plans. In 2025 Tajikistan joined BIOFIN.

In all countries of Central Asia, governmental funds are the main source of regular funding for biodiversity conservation. In Kazakhstan, according to the latest reports by BIOFIN, the share of contribution of local budgets to biodiversity has increased from 10% to 30-35%, and the total biodiversity expenditures of the republican budget grew 115%. Around 60-80% of funding is allocated for the salaries, and the remainder for operational expenses. Most of the funding goes to the network of protected areas and forestry.

Additional sources of funding include hunting fees, pasture and forest use fees, which, depending on the country, context and regulations, are channeled into the national budget or dedicated government ecological funds and programs. Penalties, fines and other payments related to the environment may also be used or linked with biodiversity conservation or recovery measures. Self-generated funds (from haymaking, tourism) of protected areas or forestry units are marginal (1-5%) but can be important locally. Local authorities are important actors in the management of local natural resources, including

protected areas of local importance, but they usually have little, or no funding (except China and Kazakhstan) or expertise for conservation. Therefore, protected areas of local importance often remain underfunded.

Table 11.2 shows results of BIOFIN estimates for the whole country, not the hotspot portion alone.

Table 11.2. Indicative Proportion of Conservation Financing for Kazakhstan, Uzbekistan and Kyrgyzstan

Funding sources	KAZ	KRG	UZB	Description
National budget	40-45%	50-60%	75-85%	Reforestation, pest and wildfire control, new forest belts, flora and fauna, state nature reserves and national parks
Local governments budget	30-35%	1%	No data	Reforestation, local nature reserves and ecological corridors
International organizations, funds, donors and CSOs	10-20%	20-25%	10-15%	Various biodiversity-related projects
Hunting concessions, wildlife management projects, self-generated and extrabudgetary funds of environmental and forest agencies	3-5%	No data	5-10%	Trophy fees, income from forest fund land use and other
Private sector	3-5%	20-25%	No data	Caspian and Aral Sea oil-gas operators' allocations, partnership programs on protected areas, PPP in national parks

Source: BIOFIN estimates for different years (2011-2024) and authors' assessment. Please note that the numbers for each country and category refer to different years and capture different details, which makes them not easily comparable.

Financing conservation by the governments of the five Central Asia countries remains insufficient within the hotspot. Financial needs assessments by BIOFIN indicate a substantial financing gap of 50% and more to implement NBSAPs.

Funding for ecosystem restoration remains limited, though funding for reforestation increased from national, local, and international sources (RESILAND+). Additional pressures on biodiversity stem from agricultural subsidies (agrochemicals) and low fees for the use of natural resources (water in irrigation, pasture use).

International financial support plays an important role in conservation, especially for CSOs, which support multi-year conservation programs, research, capacity building for state and non-state actors, and the introduction of innovative methods and approaches.

Financial incentives for private-sector participation in conservation are underdeveloped. The wildlife management with the engagement of the private sector (trophy hunting) and benefit sharing and participation of local communities is well developed by now, but other areas such as payments for ecosystem services tested in pilot projects are not used on a wider scale. Green bonds mainly cover renewable energy.

To increase environmental financing, a Multi-Partner Human Security Trust Fund was established by the UN in Uzbekistan for the Aral Sea. A similar fund in Kyrgyzstan, the Conservation Trust Fund (CTF) was initiated by UNDP in 2025 to consolidate governmental, private, and donor contributions to conserve biodiversity and promote sustainable mountain

development. The Fund for Biodiversity Conservation of Kazakhstan (FBCK) was established in 2007 via a UNDP-GEF project and is now an independent legal entity. The fund was originally designed to raise money from private companies (extractive industries, airlines) and re-distribute as conservation grants. However, awards and disbursements have been limited, and FBCK acted as CSO, implementing projects, including CEPF, rather than acting as a fund.

Finally, the International Fund for Saving the Aral Sea (IFAS), which is currently (2024-2026) chaired by Kazakhstan, receives funding from Central Asian governments – member states (although the Kyrgyz Republic has suspended its participation, and Afghanistan, which is part of the Aral Sea basin, is not an IFAS member). Some of the funding supports afforestation and reforestation in the Aral Sea region, and there is Regional environmental action plan, that includes actions on shared water ecosystems and ecological corridors. However, CSOs have limited access to funding and participation in IFAS's work and structures. Most of the IFAS work is outside the mountain biodiversity hotspot.

Table 11.3. Indicative Levels of Public Funding for Biodiversity Conservation

Country	Protected areas I-II (nature reserves and national parks)	Protected areas III-V (zakazniks and areas without legal person)	Forest protection and reforestation	Flagship species, incl. international initiatives	Non-flagship species
Afghanistan	Marginal	No funding	Marginal	Marginal	No funding
China	Sufficient	Limited	Sufficient	Sufficient	Limited
Kazakhstan	Sufficient	Marginal	Sufficient	Sufficient	Limited
Kyrgyzstan	Limited	No funding	Limited	Sufficient	No funding
Tajikistan	Limited	No funding	Limited	Sufficient	No funding
Turkmenistan	Sufficient	Marginal	Self-funded	Sufficient	Limited
Uzbekistan	Sufficient	Marginal	Sufficient	Sufficient	Limited

Protected areas and forestry areas are major recipients of public finance, with the bulk of this funding for staff salaries and operating costs, such as patrolling.

BIOFIN in Kazakhstan and Kyrgyzstan introduced Results-Based Budgeting (RBB) to protected areas to shift focus from inputs to outcomes, fostering more efficient use of public funding. This initiative also supported the development of five-year management plans for selected protected areas. In Kazakhstan RBB has already resulted in improved financial performance and two-fold increase in state budget allocations for protected areas, reaching \$60 million in 2024 (including areas outside of the hotspot) (BIOFIN 2025). Unlike traditional line-item budgeting, which allocates funds based on pre-determined categories, result-based budgeting focuses on the outcomes and impact of investments rather than inputs. The introduction of the new budgeting approach was supported by training sessions for professionals and a new academic course, "Financial Planning for Protected Areas," offered at 3 universities in Kazakhstan.

In Kyrgyzstan BIOFIN conducted a feasibility study on financial self-sufficiency of selected protected areas, including Khan-Tengri National Park, Chon-Kemin National Park, and Sary-Chelek Nature Reserve. The study recommended the following ways for improving protected areas financing:

- Well-organized ecotourism, including collaboration with tourism associations, the provision of additional tourism and value-added services, and improved management and use of entry fees
- Additional revenues from permitted nature use activities.
- Grants from international and domestic organizations to improve protected area infrastructure, scientific research capacities, and monitoring of endemic and threatened flora and fauna.
- Regulating land use revenues through amendments.
- Receiving financing from provincial and local development funds through project applications.
- Protected area sponsorship programs and crowdfunding

In 2024, BIOFIN released the Global Biodiversity Expenditure Taxonomy (GLOBE) and conducted training for government officials and technical specialists from Kazakhstan, Kyrgyzstan and Uzbekistan. There is an abundance of taxonomies to screen investments based on national or global standards to guide nature finance, climate finance or SDG finance. GLOBE focuses on public sector finance to biodiversity. It includes 9 primary biodiversity expenditure categories and biodiversity attribution factors. BIOFIN has designed finance solutions portals, which could be useful for CSOs (<https://www.biofin.org/finance-solutions> and <https://fire.biofin.org/>)

Kazakhstan was the first country in Central Asia to develop and introduce a national Green Taxonomy system that classifies green projects and investments and is supported by the Astana International Financial Centre (AIFC). In 2023, Uzbekistan introduced its national Green Economy Taxonomy, which categorizes "green" economic activities that contribute to the country's 2030 Green Economy Strategy. In 2025, Kyrgyzstan introduced a pilot national green taxonomy. The Ministry of Economy and the Tax and Customs Service will design a database of "green" goods and services, as well as instructions for businesses and government agencies. Currently, green taxonomies mainly focus on renewable energy, energy efficiency, transportation, water, and waste. As countries learn and progress in this area, integrating biodiversity would be beneficial, an area in which CSO and BIOFIN could contribute.

Public-Private Partnerships and the management of protected areas

Public-Private Partnerships (PPPs) in protected areas are growing in Kazakhstan. In 2020, the first project of its kind to establish visitor centers was implemented by Qazaq National Parks Ltd and Foundation (<https://www.qnpf.org/>) with the financial support of Kaspi.kz, Kazakhstan's largest online banking and marketplace. As part of ESG, Kaspi.kz provided 7 billion Kazakh tenge (\$1.3 million) for the development of visitor centers in the Ile-Alatau National Park, the Charyn National Park and the Altyn-Emel State National Park, all located nearby Almaty. These three parks received more than 200,000 visitors in 2023. Park administrations report that their areas have become cleaner due to improved waste collection, clean-up days and organized tours. Similarly, Kyrgyzstan, Tajikistan and Uzbekistan are exploring PPP to develop their protected areas and tourism.

11.2. Multilateral and Bilateral Donors

The GEF remains one of the main sources of predictable international funding for conservation in the Mountains of Central Asia biodiversity hotspot. It operates through implementing agencies, such as the UNDP, UNEP, FAO, and World Bank, and its main recipients and counterparts are usually governmental institutions.

The GCF also supports biodiversity-related actions through carbon sequestration and climate resiliency of forests and pastures (e.g. GCF-FAO project in Kyrgyzstan).

Table 11.4 summarizes GEF-8 STAR allocations, most of which had been utilized by 2025, with the exceptions of China and Afghanistan.

Table 11.4. GEF-8 STAR Allocations for Hotspot Countries (USD millions), 2022-2026

Country	Climate Change	Biodiversity	Land Degradation	Total
Afghanistan	2	4	5	11
China	47	43	3	93
Kazakhstan	5.9	4.8	3.8	17.5
Kyrgyzstan	1	3	4.7	8.7
Tajikistan	1	3	5	9
Turkmenistan	3.7	3	2.8	9.5
Uzbekistan	5	3	5	13

Although governments across the hotspot welcome contributions from civil society organizations and their engagement in conservation activities and projects, they rarely provide funding for these organizations or allocate roles for them in international projects (e.g. GEF, GCF, others).

The experience of grantees in the initial phase of CEPF indicates that collaboration with GEF and GCF projects relevant to biodiversity was less encouraging than expected. Limitations in project procedures, siloed work, and an overall lack of interaction between grantees, RIT, and GEF/GCF project agencies, resulted in limited synergies and complementarities. However, some CSOs made efforts in this regard.

While the majority of GEF funds go to government entities, the GEF Small Grants Program (SGP) targets civil society organizations and small entrepreneurs. The SGP provides grants of up to \$50,000.

Challenges facing CSOs seeking access to GEF SGP are requirements for matching funds (50-50) and application procedures that can be difficult for nascent groups. Another challenge is that financial reporting must follow standards, which can be daunting for small NGOs. Uzbekistan SGP provides an example of good outreach via a network of local partners and grant champions and pro-active team.

Although the SGP teams in Uzbekistan, Tajikistan and Kyrgyzstan were consulted during the initial ecosystem profiling (2016-2017) and implementation phase (2019-2025), no synergies were realized due to differences in geographic scope, timing, and type of applicants. The SGP usually covers land degradation, food production, renewable energy, and water-saving technologies. In Kyrgyzstan, the SGP recently supported a wildlife rehabilitation project in the Issyk Kul Lake region and in China on snow leopard community engagement in conservation. Overall, CEPF and the SGP can collaborate on grant-making or search for geographic or thematic synergies. This is particularly relevant in Turkmenistan, where CI plans to implement the GEF SGP program in Turkmenistan in 2026, through CEPF as the executing agency.

Tables 11.5 and 11.6 provide overviews of funding via multilateral and bilateral agencies, respectively. Examples of specific projects relevant to the phase two CEPF investments are provided in Table 11.7.

Table 11.5. Overview of Investments by Multilateral Agencies

Donor	Countries	Areas of support
FAO (with GEF)	Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan	Agricultural reforms, forestry and land use sector, climate resiliency, GHG emissions and carbon sinks, GEF SGP in Tajikistan
World Bank (combined with GEF and trust funds)	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	Agriculture development and reforms, land restoration, forest inventory and reforestation, water management, hydrometeorological monitoring and modernization, major road and hydropower development, CASA-1000
ADB (combined with GCF and trust funds)	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	CAREC – Central Asia Regional Economic and Transport Corridor, land and water reforms, disaster risk reduction, Glaciers to Farmers (G2F)
EBRD (with GCF and EU)	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan	Energy efficiency and renewable energy, waste management improvements, environmental restoration (uranium legacy sites)
GCF	All countries of the hotspot	Climate resilient ecosystems and nature-based solutions, forest and pasture management projects
GEF	All countries of the hotspot	Biodiversity-related projects in the hotspot; GEF SGP: sustainable use of natural resources, support to protected areas, access to clean energy, ecological awareness, ecotourism

Table 11.6. Overview of Conservation-Related Investments by Bilateral Agencies

Donor	Countries	Areas of support
China	Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan	Research and training, environmental monitoring, infrastructure (Belt and Road)
European Union / European Commission	All countries of the hotspot	Regional environmental cooperation, water management, disaster risk reduction, forest and pasture improvements, river basin management (Zeravshan Basin in Tajikistan), clean-up of the hazardous waste and toxic legacies, education
Switzerland (SDC)	Kyrgyzstan, Uzbekistan, Tajikistan	Water reforms, mountain development, disaster risk reduction, health and sanitation, waste management, education
Germany (BMZ, BMUB via GIZ + KfW)	Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan	Sustainable pasture, land, forest and wildlife management, education, health, energy, basic infrastructure
Russia	Kyrgyzstan, Tajikistan	Uranium waste rehabilitation, education, capacity building
Japan (JICA)	China, Kyrgyzstan, Tajikistan, Afghanistan	Sustainable natural resource use, disaster risk reduction
Korea	Kyrgyzstan, Tajikistan, Uzbekistan	Botanical research, forestry projects

In 2020-2025, Germany (IKI, Green Central Asia) and the European Union (WECOOP, SWITCH, country grant programs, Larger Than Tigers strategy, other instruments) were the main sources of bilateral funding and policy attention to biodiversity conservation and monitoring, wildlife management, and sustainable pasture and forest use in Central Asia. In 2025, with support from Germany, CMS CAMI organized a technical workshop to identify funding options for the implementation of CAMI.

As part of the Belt and Road Initiative, China established the Central Asian Center for Ecology and Environment in Urumqi, hosted by the Xinjiang Institute of Ecology and Geography, with offices and stations in Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Through their development agencies (JICA, KOICA) and science institutes, Korea and Japan supported biodiversity expeditions and *in-situ* and *ex-situ* conservation.

Table 11.7. Selected Ongoing and Upcoming Projects Relevant to CEPF Investments

Project Name	Country	Donors and partners	Duration	Project aims and scope	Budget, \$ million
The Central Asian Mammals and Climate Adaptation project (CAMCA) camcaproject.org	Kyrgyzstan, Tajikistan, Kazakhstan	IKI, UNEP, CMS	2019-2025	Project collaborates with local communities and the governments to increase the resilience of flagship mountain species, including snow leopard, argali, Bukhara deer, ibex, maral, and brown bear, as well as their habitat, in the face of climate change	8
The Vanishing Treasures Program	Kyrgyzstan, Tajikistan, Turkmenistan, Global	UNEP funded by the Grand Duchy of Luxembourg	2020-ongoing	Synergies between climate adaptation and conservation: protecting flagship species (Persian Leopard, Snow Leopard, others) that are key to ecosystem functioning.	8
Zeravshan River basin project: climate smart management	Uzbekistan	SDC	2024-2030	Sustainable water use, climate resilience	8
Regional program for sustainable and climate sensitive land use in Central Asia ILUMA and Green Central Asia	Regional	Germany, GIZ	2020-ongoing	Land users, government agencies and the private sector in Central Asia adopt integrated, economically and ecologically sustainable forms of land use, taking climate change into account.	10
Catalyzing the Nature-Positive Transformation of the Agricultural Sector in Turkmenistan towards Enhanced Resilience to Climate Change project	Turkmenistan	GEF, FAO	2025-2030	Promote the transition to "nature-positive" agriculture that conserves biodiversity, reduces land degradation, and adapts to climate change	3
One Health, IUCN	Central Asia	IKI	2025-2030	Improve protected areas system, reduce risk of zoonotic diseases	6
One Health, World Bank	Central Asia	WB Trust funds	2025-2032		160
Biodiversity finance Initiative (BIOFIN)	Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan	UNDP, Switzerland, Germany	2013-2027	Promote biodiversity financing and address financing gaps.	3

Project Name	Country	Donors and partners	Duration	Project aims and scope	Budget, \$ million
Strengthening Integrated Water Management in Amu Darya, Zarafshon and Panj River Basins	Uzbekistan, Tajikistan, Turkmenistan	GEF and FAO, with UNECE and SIC ICWC	2026-2032	Improve water security and climate resilience in the Amu Darya, Zarafshon, and Panj River Basins by mainstreaming the Water-Land Nexus in transboundary cooperation, integrated watershed management and monitoring technologies.	5
Conservation and Sustainable Management of High-Value Arid Ecosystems in the Lower Amu Darya Basin	Tajikistan	GEF and UNDP	2023-2028	Improve the management of forests, pastures, and protected areas in the upper Amu Darya basin of Tajikistan and involve communities in conservation actions.	3
Integrated Conservation Management and Restoration of High-Value Landscapes in Uzbekistan ("EcoLand")	Uzbekistan	GEF and UNDP	2025-2030	Innovative integrated approaches to ecosystem restoration and conservation in the West Tien Shan, Nuratau, and Kugitang landscapes.	6
Integrated Natural Resources Management for Improved Ecosystem Conservation and Biodiversity Preservation in Uzbekistan	Uzbekistan	GEF and FAO	2026-2030	Integration of water and land management practices for agro-biodiversity conservation and sustainability of food systems	5
Integrated water resources (IWR) management for the restoration of agro-woodlands in the Syrdarya River basin	Kyrgyzstan	GEF and FAO	2026-2030	Demonstration of IWR in the Kyzyl-Unkur and Toskool-Ata forestry (central Kyrgyzstan), support to Forest Service including remote sensing capabilities, local farmers, business opportunities.	3
Enhancing the Conservation in the Tian Shan mountain regions in Central and Eastern Kyrgyzstan	Kyrgyzstan	GEF and UNDP	2026-2030	Integrated management of landscapes to promote biodiversity conservation, improve protected areas management, enhance habitat connectivity with KBAs, and improve economic opportunities for local communities. Recognize the critical importance of IBAs and KBAs outside of the protected areas to maintain the natural resources and biodiversity in the central and eastern Kyrgyzstan, including the Issyk Kul Lake region.	3

Project Name	Country	Donors and partners	Duration	Project aims and scope	Budget, \$ million
Integrated Community-based Management of High Value Mountain Ecosystems in Southern Kyrgyzstan for Multiple Benefits	Kyrgyzstan	GEF and UNDP	2023-2028	To preserve biodiversity in high-value mountain ecosystems and the associated ecosystem services, while ensuring sustainable and resilient livelihoods for local communities in Kyrgyzstan's Pamir-Alai landscape.	2.6
An integrated landscape approach to enhancing the climate resilience of small-scale farmers and pastoralists in Tajikistan	Tajikistan	Adaptation Fund and UNDP	2020-2027	Introduce an integrated approach to landscape management and develop the climate resilience of rural communities in southern Tajikistan (Kafarnihon River basin).	10
Resilient Pastoral Communities in Kyrgyzstan	Kyrgyzstan	Adaptation Fund and IFAD	2024-2030	Sustainable rangeland management, water harvesting, green livestock practices, forest rehabilitation	10
Carbon Sequestration through Climate Investment in Forests and Rangelands in Kyrgyz Republic (CS-FOR)	Kyrgyzstan	GCF and FAO	2020-2030	Reduce the drivers of land and forest degradation and improve carbon sequestration through participatory and ecosystem-based management of pastures and forests.	50
Community-based Agriculture Support Programme 'plus' (CASP+)	Tajikistan	GCF and IFAD	2024-2031	Enhance climate resilience at both the national and local levels through improved public sector capacity for climate-resilient management of natural resources, community actions for adaptation, market approaches.	80
Glaciers to Farmers (G2F) regional program	Central Asia	GCF and ADB	2025-2035	Climate-informed planning tools, adaptation actions, outcome-based climate resilience bonds, mentoring for agriculture enterprises, climate resilience measures for communities and ecosystems.	\$3.5 billion, including \$250 million from GCF <i>with co-financing</i>
Resiland+	Uzbekistan	World Bank	2025-2028	Improve forestry and land management practices and promote collaboration with Central Asia countries on landscape restoration.	153
Resiland+	Kyrgyzstan	World Bank	2024-2030	Nature based solutions to disaster risk reduction through afforestation and land restoration, technical measures and early warning systems	57

Project Name	Country	Donors and partners	Duration	Project aims and scope	Budget, \$ million
Resiland+	Tajikistan	World Bank	2022-2028	Improving rural livelihoods and reducing land degradation through investments in fruit and nut plantations, pasture restoration.	45
Rural Water Supply and Sanitation	Tajikistan	World Bank	2019-2026	Capacity, infrastructure, district governments	59
Climate Resilience Development in Tajikistan	Tajikistan	SDC and Helvetas	2023-2028	Climate resilient development in southern Tajikistan, including the Tigrovaya Balka nature reserve.	2

AFD (l'Agence Française de Développement), one of CEPF's global donors, has offices in Tashkent and Astana. AFD supported Uzbekistan's efforts to restore forests and the Aral Sea (outside of the hotspot), as well as transition to a green economy by the €375 million loan, complimented by the EU €10 million grant. In Kazakhstan AFD is supporting the development of sustainable water management master plan for the Balkhash Lake basin with €1.35 million grant (partly in the hotspot) and the IFAS work. France is engaged at the high political level and supported by Central Asian leaders in the "One Planet" and "One Water" summits, which aim to catalyze actions on the environment, water, and glaciers.

The European Union is a CEPF global donors and a key partner for countries in Central Asia with overall package of investments and assistance estimated at €12 billion (\$13 billion) under its Global Gateway program. Noteworthy environment- and biodiversity-related projects with potential synergies with CEPF include:

- EU4SustainableCentralAsia: Joint Action and Coordination on Water, Energy and Climate Change
- EU Civil Society Facility for Central Asia and thematic working groups
- EU Switch Asia (<https://www.switch-asia.eu>) offering grants and capacity building on sustainable production and consumption, including tourism, agri-food production and other sectors
- Environmental Remediation Account (ERA) for Central Asia to clean up the uranium mining legacies in Tajikistan and Kyrgyzstan implemented by EBRD, €56 million (€16 million EU funds)
- EU Horizon projects on sustainable energy (secca.eu), sustainable small-scale hydropower (hydro4u.eu), climate-smart water allocation in the upper Syr Darya basin (weact-project.eu)

In Tajikistan, Uzbekistan, Kazakhstan, the EU delegations have a grant program for CSOs focusing on human rights, gender equality, legal and media literacy, youth and women organizations, environmental sustainability, improving the capacity of CSOs to act as development actors, engage in policy dialogue with the authorities (€2-3 million per country in 2025). In Kyrgyzstan, the EU via UNDP provided support for climate resilience in the Ferghana Valley, BIOFIN Kyrgyzstan 2.0, SDG Central Asia Platform, etc.

The **EU's strategic approach** to conservation in Asia, called "**Larger Than Tigers**," was unveiled in 2018 shortly after the initial CEPF ecosystem profile was published, taking its key findings into account. This approach was intended to be part of the EU's "Biodiversity for Life" (B4Life) program. However, integrating biodiversity into development cooperation sparked limited interest and the follow-up actions became parts of green growth and the general environmental management.

The World Bank, another CEPF donor, works variously by country. The most notable effort is the Resilient Landscape Restoration project (called Resiland CA+) operating in Kyrgyzstan, Tajikistan, and Uzbekistan. CEPF grants can be used to engage civil society groups to complement this impactful program. Separately, in Kazakhstan, conservation efforts focus on the Aral Sea – outside the hotspot – but there are projects for energy and utility modernization, water supply, irrigation, and transportation that take place, at least partially, in the hotspot. These projects present opportunities for engagement or leverage of efforts. In Kyrgyzstan, notable programs include the Regional Economic Development Project (RED-1), which supports, among others, tourism promotion and the K1-STEP program for clean hydroelectricity. In Tajikistan, the Socio-Economic Resilience Strengthening Project (SERSP) offers opportunities for building off its community-defined climate-resilient infrastructure efforts, and the Bank is a leader in promoting a [socially inclusive approach to climate change](#). The Bank is supporting irrigation modernization and

renewable energy in Uzbekistan, but one effort that stands out is the Geospatial Infrastructure for Sustainable Territorial Development (GISTD) project. CEPF grantees may be able to contribute to the project's efforts to modernize and improve geospatial data for planning, private investment, and climate resilience.

Separately, the World Bank supports partnerships with others, including the [Central Asia Water and Energy Program](#), a partnership with European Union, Switzerland, and the United Kingdom to promote regional cooperation on water and energy security, and the [African-Eurasian Flyway Initiative](#) to coordinate protection for migratory birds.

The World Bank also maintains analytical tools and reports, such as:

- [Country Climate and Development Reports \(CCDRs\)](#), which highlight priorities for action that allow for alignment between donors, government agencies, and civil society.
- [Country Environmental Analyses \(CEAs\)](#), which provide assessments of environmental governance, land degradation, biodiversity pressures, and policy gaps. These are relevant as CEPF grantees and stakeholders consider drivers of degradation and enabling conditions.
- [Climate Change Knowledge Portal \(CCKP\)](#), which includes climate risk data, hydrological projections, and sector-specific climate vulnerabilities.

Japan is one of the CEPF donors active in Central Asia. Japan's program "One Village, One Product" around Issyk-Kul Lake in Kyrgyzstan on unique agricultural products and handicrafts was very successful and is now being upscaled across the country. In the past JICA in Kyrgyzstan supported joint forest management, organic farming and reconciling nature conservation with livelihood promotion, while in Tajikistan and Uzbekistan JICA focuses on water and energy infrastructure, health and social issues. In 2013 Japan launched the Satoyama Initiative (satoyamainitiative.org), with the Issyk-Kul Lake selected as a pilot area for the Community Development and Knowledge Management project. The Satoyama Development Mechanism awards up to 5 grants globally (up to \$20,000 each) for projects on collaboration, capacity building and outreach that link ecosystems and communities.

Korea is active in forest and plant research via the Korea National Arboretum (KNA). In Uzbekistan and Tajikistan, KNA supported field work on and publication of the inventory of flora of the Western Tien Shan. In northern Tajikistan, between 2016 and 2019, over 20,000 herbarium specimens were collected and analyzed, leading to the identification of 500 plants previously unrecorded, including many endemic species of the Kuramin and Mogoltau Mountains in Tajikistan. The results were used in the update of ecosystem profile and KBAs for northern Tajikistan. In 2025, Korea's Baekdudaegan National Arboretum and the Tashkent Botanical Garden hosted the Central Asia regional workshop on seed conservation and cooperation on crop wild relatives. About 1000 species of wild plants and their seeds were collected and are stored in the Baekdudaegan Global Seed Vault.

Korea's international development agency, KOICA, supports rural, education, health and food security projects in Central Asia. In Uzbekistan, KOICA funded (\$5 million, 2021-2025) the Aral Sea "GRIP" project on climate smart agriculture, implemented by the Green Growth Institute (GGI), based in Tashkent. Korea Green Growth Trust Fund via World Bank co-finances Landscape Resilience program for Central Asia (RESILAND+), including updates of forest inventories, forest ecotourism and new technologies in forestry. In Kyrgyzstan, Korea supports the establishment of modern forest nurseries to produce deciduous and coniferous seedlings adapted to local climate conditions (300 ha). Korea hosts and sponsors AFoCO –

the Asian Forest Cooperation Organization, which is active in Central Asia (details explained in climate chapter).

Germany is the largest single country donor and long-term contributor to conservation and sustainable nature resource management in Central Asia. Much of its funding comes from the Ministry for Economic Cooperation (BMZ), the Ministry for the Environment (BMUV), and Germany's Climate Initiative (IKI). This funding is usually channeled through the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), which works in partnership with CSOs, such as NABU, as well as the KfW Development Bank and international organizations, such as the UNEP and the CMS Secretariat. GIZ also engages German science institutes and experts, such as the Potsdam Institute for Climate Impact Research (PIK), the German Research Center for Geosciences (GFZ). Funding covers projects and activities on glaciers, water, climate change, pastures, forest use, wildlife management, socio-economic development, capacity building for state institutions, and education. The Kazakh-German University (DKU) supports students from Central Asia to study natural resource management and publishes a regional journal. There is a possibility for CEPF projects and grantees to work together with GIZ-led projects in thematic and geographic areas which are complementary, for example in the Zaravshan River basin water and cross-border ecosystems, community-based tourism in the Ferghana Valley, nature based solutions to disaster risks and others.

Switzerland is a long-time donor in Kyrgyzstan, Tajikistan, and Uzbekistan. As the GEF Council member, Switzerland leads the GEF constituency for Central Asia and Azerbaijan. In the past (1998-2000), Swiss-funded project "KYRFOR" comprehensively studied and mapped forests of Kyrgyzstan. Swiss Development and Cooperation (SDC) agency supported mountain-focused CSOs, leading to the creation of networks like CAMP in Kyrgyzstan and Tajikistan and AGOCA. Funding from SECO and SDC supports EBRD's and World Bank's water and energy projects in the hotspot. The Swiss Embassy in Tashkent issues a regular call for applications for grants to CSOs related to water, environment, and climate.

The Swiss Federal Office for the Environment (FOEN) has funded preparation of climate change, biodiversity, and waste and chemical visual atlases, contributed to preparation of the Nationally Determined Contribution (NDC) in Tajikistan and Kyrgyzstan through UNITAR, and supported CAREC in implementation of several pilot projects on Payments for Ecosystem Services (PES) in the mountains of Kyrgyzstan, Tajikistan and Kazakhstan. In northern Tajikistan, the SDC supported the development of the Syr Darya basin management plan and ground water management, and water supply projects and in central Tajikistan, projects on sustainable pasture management and pollinators, and the development of weather and climate services for farmers and rural communities. One of the ongoing projects on Climate Resilience Development in southern Tajikistan (2024-2027, Helvetas) focuses on KBA – Tigrovaya Balka Nature Reserve and wetland ecosystems, and another project in the Zarafshan River Basin in Uzbekistan (2023-2027, Caritas) focuses on water use, ecosystem and climate resilience measures. In 2025 SDC opened a humanitarian office in Afghanistan, with environmental issues being one of the priorities.

At the regional and global levels, Switzerland promotes climate adaptation and learning in mountain regions through the "Adaptation at Altitude" Initiative. In Central Asia, it supports the "CROMO Adapt" and "Pamir" projects, which focus on glacial and permafrost areas, as well as the "Blue Peace" Initiative. CEPF projects and grantees can collaborate with SDC-funded projects and organizations in certain geographic and thematic areas for greater impact, experience exchange and capacity-building.

The **UK's Darwin Initiative** funds UK organizations to work with partners on biodiversity. The Darwin Initiative has supported several projects implemented by BirdLife and Flora & Fauna in Kazakhstan, Uzbekistan, Tajikistan and Kyrgyzstan on Central Asia flyway, wild tulip conservation, Bishkek botanical garden, Kyrgyzstan fruit and nut forests, snow leopard conservation. In Tajikistan the Darwin Initiative via Flora & Fauna is funding capacity building for 3 civil society organizations: Youth Group of Environmental Protection (YGEP), Center for the Support of Specially Protected Natural Areas of Tajikistan, and Tourism of Mountain Maschoh as well as monitoring and sustainable use of agro-biodiversity (wild onions) and fruit and nut forests in Childukhtaron and Dashtijum protected areas. Both FFI and BirdLife partnered with CEPF on grant implementation in Central Asia.

Other UK-funded initiatives include the "Climate, Energy and Water Security for the Central Asian Region", with one of its components implemented jointly with GIZ that includes a Small Grants and Climate Innovation Facility for CSOs to address climate, energy, and water issues. The Illegal Wildlife Trade Challenge Fund supported a project implemented by Flora & Fauna and TRAFFIC International in response to the illegal wildlife trade in Central Asia. This support includes providing information and training to law enforcement and customs agencies, identifying illegal wildlife trade hotspots, and strengthening the capacity to intercept wildlife products. Through Panthera, the fund supported monitoring of snow leopard prey numbers, construction of predator-proof livestock corrals, and anti-trafficking measures. UK embassies in Central Asia have a Small Projects Program (2024-2027) with a total budget of £2 million, with about 10% of funding already allocated to biodiversity grants.

USAID (the US Agency for International Development) funded some biodiversity projects in the hotspot in the past, and sponsored projects on agriculture, water, food security, governance, education and health. In 2025, USAID operations were suspended globally, including in Central Asia.

The Canada Fund for Local Initiatives (CFLI), operated through the Embassy of Canada in Kazakhstan, supports small-scale, high-impact projects across the five Central Asian republics. Typical contributions range from C\$20,000 to C\$60,000, with funding of up to C\$100,000 available in exceptional cases. CFLI prioritizes five thematic areas: gender equality and the empowerment of women and girls; inclusive governance (including diversity, democracy, human rights and the rule of law); peace and security, with a focus on conflict prevention and peacebuilding; inclusive growth (including women's economic rights, decent jobs and entrepreneurship, support for the poorest and most vulnerable, and safeguarding economic gains); and environment and climate action, including adaptation and mitigation, as well as water management.

CFLI recently supported a comparative analysis of the role of small and medium enterprises (SMEs) in Kazakhstan's green transition and climate policy implementation. It also funded a project to empower rural women in Chong-Kemin National Park and the Teskei Geopark (Kyrgyzstan) through community-based ecotourism initiatives. In previous years, CFLI supported several projects in Tajikistan and Kyrgyzstan focused on introducing eco-friendly technologies and climate adaptation practices for women farmers.

Norway and Finland provide support to climate and water projects in Kyrgyzstan and Tajikistan, with participation of CSOs. In the past Norway has funded wetland conservation projects in the Amu Darya (including Tigrovaya Balka reserve in Tajikistan) and Syr Darya, and more recently, supported climate adaptation projects and integrated water resources management in Kyrgyzstan and Tajikistan. Finnish funding has enabled improvements in

hydrometeorological monitoring, staff training and expeditions, collaboration on sustainable nature resource use and prevention of conflicts in the mining sector.

Central European nations, including **Poland** and **the Czech Republic**, support research and conservation efforts in Central Asia. In 2024, the first Przewalski's horses were flown from Prague Zoo and released in the Altyn Dala Nature Reserve of Kazakhstan (outside of the hotspot) and the Kazakhstan-Czech International Aquaculture Research Center was established at Seifullin Agrarian University in Astana. Researchers from the Polish Academy of Sciences (PAS) have conducted extensive fieldwork and a modern inventory of Tajikistan's flora (2015-2020), which was used in the update of ecosystem profile.

Russia has been a long-time partner on biodiversity in Central Asia. Many Central Asia students attend universities and conduct PhD studies. Russia contributes funds via the UN and specialized organizations for cultural, educational and environmental actions (e.g. uranium mines rehabilitation). Russia and UNEP collaborated on the National Atlases of Environmental Change in Kyrgyzstan and Tajikistan, which were released in 2025. On the other hand, some conservation CSOs in Russia, such as WWF Russia, which acted as CEPF RIT during much of phase one, had to close their activities after being labeled as foreign agents.

China, through the Chinese Academy of Science, funds environmental monitoring and collaboration with Central Asia science institutions. Since 2020, the China-Kyrgyz Forestry Nursery Program is focused on joint development of tree nurseries, afforestation, and technology exchange between Kyrgyzstan and China. China plays a key role in funding of infrastructure projects in Tajikistan, including grants for roads and public buildings (schools, medical centers, offices of the government). China remains the largest trade partner and infrastructure developer in Tajikistan and Kyrgyzstan.

11.2.1. Global Snow Leopard and Ecosystem Protection Program (GSLEP)

The GSLEP is a significant regional initiative focused on snow leopard and its habitats (landscapes). Its funders include the GEF, UNDP, other donors, and implementing partners joined by the governments of all the snow leopard range countries (i.e., twelve countries overall, including all the hotspot countries other than Turkmenistan). Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan recently completed GEF-funded projects focused on snow leopards. These projects included species monitoring, creating alternative livelihoods, improving protected areas, and developing species action plans. The CAMCA project, funded by Germany, was focused on the snow leopard as one of its flagship species and supported the creation of the official snow leopard ecological corridor in central Kyrgyzstan in 2025. GSLEP is supported by donors and governments. Nonetheless, CEPF's second phase program considers the GSLEP and, in various areas, complements its approach or helps achieve its objectives.

11.2.2 Collaborative Efforts under the Conventions: Migratory Species, CITES, Ramsar

The biodiversity-related conventions under the UN Environment Program (UNEP), the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Migratory Species (CMS), and the Wetland (Ramsar) Convention — provide a global framework for the conservation and sustainable use of biodiversity.

Collaboration under the CMS in Central Asia covers:

- The Central Asian Mammals Initiative (CAMI), including Programme 2026-2032 and action plans to address threats to specific species, as well as the removal of barriers to migration, the maintenance and restoration of transboundary ecological networks and the preservation of animal migrations in the Central Asian region as one of the last global "migration hotspots".
- Memorandum of Understanding (MoU) on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MoU, 2017), which lists 93 raptors as part of an action plan to reverse population decline, protect species from unlawful killing and taking, improve scientific knowledge, enhance cooperation, increase public awareness, and address human threats.
- Other activities

Under these initiatives are single species action plans, such as for the Argali that highlight responses to threats, including minimizing impacts or disturbance from linear infrastructure. The CEPF program purposefully considers these initiatives and attempts to complement them, particularly as they highlight the role of CSOs.

The Ramsar Regional Initiative for Central Asia, established in 2016, aims to support the implementation of the Ramsar Plan for Central Asia, carry out monitoring, promote the conservation and wise use of existing and future Ramsar Sites, including inventories of important wetlands databases, and support communication, education, public awareness and capacity building.

In 2025, at the CITES CoP-20, the countries of Central Asia signed the Samarkand Declaration on Wildlife to unite against illegal wildlife trade and habitat loss, creating a common framework for harmonized laws, shared intelligence, joint task forces, and promoting sustainable use.

11.3. International Funds and Private Foundations

Re:Wild, which now includes the **Leonardo DiCaprio Foundation**, supported a project in Kyrgyzstan on the reintroduction of maral (Siberian red deer) to the Jalal-Abad region by relocating animals from Naryn. The fund also provided support for community-based snow leopard conservation efforts.

The **Global Green Grants Fund** supports grassroots efforts in Central Asia and around the world by providing small grants ranging from \$5,000 to \$15,000 with focus on environmental justice, climate actions, and biodiversity conservation.

The **Michael Succow Foundation** has worked in Kazakhstan, Turkmenistan, and Uzbekistan to improve protected areas and promote cross-border collaboration on biodiversity. The Foundation worked on the Ustyurt Plateau (outside the hotspot) and, in partnership with the CMS Secretariat and GIZ, facilitated a ministerial meeting under the Ustyurt Memorandum in 2024. In partnership with Turkmenistan's Ministry of Environmental Protection, the Foundation launched the "Nature of the Karakum" visitor center in the Bereketli Garagum Reserve (also outside the hotspot). The Foundation participates in the "One Health for Nature Conservation" program to improve the management effectiveness of protected areas. In 2023, the Foundation collaborated with CEPF on monitoring and conservation of endemic reptile species inhabiting the sands of the Ferghana Valley in Uzbekistan.

The Snow Leopard Trust (SLT) has staff and projects in Central Asia, where it works closely with the GSLEP Secretariat and with local partners like the Kyrgyz Snow Leopard Foundation. It conducts and supports research, joint publications, and community-based conservation programs ("Snow Leopard Guardians"), and education activities in and around the Sarychat-Ertash Nature Reserve and the Shamshy wildlife sanctuary. Monitoring snow leopards uses camera traps, genetic analysis, and GPS collaring to provide data on species dynamics and habitat use and inform conservation strategies. Its partners work with local herders to reduce livestock predation and retaliatory killings by improving herding practices and predator-proof corrals. SLT participates in cross-border monitoring to assess snow leopard movement and genetic connectivity across Kyrgyzstan, Kazakhstan, and Tajikistan.

The Beijing Qiaonv Foundation (BQF) established by philanthropist He Qiaonv since 2017 supports snow leopard conservation in the Chinese part of the Tien Shan Mountains through WWF and Panthera.

Panthera is devoted to the conservation of the world's wild cat species. In China it works on snow leopard conservation, partnering with BQF, Shan Shui Conservation Center and Beijing Forestry University. In Kyrgyzstan and Tajikistan, Panthera works with the Academy of Sciences and CSOs on human-wildlife conflict including improved livestock husbandry, predator-proof corrals, and community awareness campaigns. It also collaborates on anti-poaching and illegal wildlife trade, patrol training, habitat protection, and prey species monitoring and conservation such as ibex and argali. Panthera helps in population estimates and science assessments of snow leopards in the Tien Shan and Pamir.

The Rufford Foundation supports individual conservationists and groups working on Snow Leopard, Menzbir Marmot, Pallas's Cat, nurseries for endemic species, walnut forests, and IBA management in Kazakhstan, Kyrgyzstan, and Tajikistan. To date, up to 30 grant proposals ranging from £7,000 to £18,000 have been supported across Central Asia, including some within the hotspot.

Fondation Hans Wilsdorf, a CEPF global donor, is engaged in educational, social, cultural, and environmental initiatives in Geneva, Switzerland, where it is based, and abroad. At the time of the ecosystem profile update (summer 2025), the foundation was not providing grants directly in Central Asia. However, its funding is supporting civil society development through CEPF. The **Oak Foundation**, also based in Geneva, works with China on climate change, while its conservation portfolio covers mainly Africa. During the ecosystem profile update in 2025, both foundations were contacted to explore their interest and inform them about the Mountains of Central Asia and the work of CEPF there.

The Mohamed bin Zayed (MBZ) Species Conservation Fund supports species-focused conservation efforts, including the endangered tulip species in Uzbekistan and Kazakhstan, and rare butterflies in Tajikistan. The Fund collaborates with the Kazakh Electricity Grid Operating Company (KEGOC) and Masdar, Abu Dhabi's energy company, on environmental assessments and risk reduction for raptors associated with power transmission infrastructure. The Fund has supported crane conservation through the Western and Central Asia Network for Siberian Cranes.

The Christensen Fund has been active in Kyrgyzstan and Tajikistan supporting organic farming, conservation of agro-biodiversity, and traditional knowledge on crop wild relatives. It supported the "Blooming Apricot Festival" in Kyrgyzstan.

The Franklinia Foundation based in Geneva focuses on conservation of threatened trees collaborated with Missouri Botanical Garden to support conservation walnut and fruit forests

in Kyrgyzstan, including storage of threatened species and system for living collections management, research, and outreach.

While **The Aga Khan Foundation** does not currently have an explicit focus on conservation, it supports sustainable mountain development in Afghanistan, Kyrgyzstan, and Tajikistan, actions on reforestation, and disaster risk reduction. The Prince Sadruddin Aga Khan Fund for the Environment has supported projects in Tajikistan through the Aga Khan Agency for Habitat on disaster risk reduction through tree planting, wildlife conservation, and habitat management as well as production of a video documentary series "Voices from the Roof of the World". Aga Khan and its foundation is one of the founders and funders of the University of Central Asia (UCA) with campuses in Kyrgyzstan (Bishkek and Naryn), and Tajikistan (Khorog). UCA in Kyrgyzstan and Aga Khan Agency for Habitat in Tajikistan were among CEPF grant recipients, focusing on species monitoring and research. Joint WCS and Aga Khan project funded by CEPF in the Wakhan Valley was suspended in 2021.

The Volkswagen Foundation has issued calls for research proposals in the environmental and social sciences under the "Between Europe and the Orient" initiative. From 2000 to 2025, the Foundation supported 360 projects with a total budget of over \$70 million. One of the ongoing research projects (2025-2030), led by IAMO, focuses on rural resilience in Central Asia. The Foundation primarily works via German research institutions and universities, as well as the Central Asia Sustainable Innovation Bureau (CASIB), a hub created with the support of the German Ministry of Education and Research.

WWF has been active in Central Asia and China for many years. In the context of geopolitical changes and new legislation, WWF Russia, acting as CEPF RIT for the first part of phase one, was labeled a foreign agent, prompting the transformation of its Central Asia program to the WWF Central Asia (work in progress in 2025). WWF uses funding to support flagship species conservation (Persian leopards, Bukhara deer, tigers) and their habitats, as well as landscapes and ecological corridors.

11.4. Assessment of Funding Opportunities and Gaps

In terms of funding CSOs and their niche of work in the conservation domain, local and national CSOs in Central Asia typically engage in traditional activities that are accepted and endorsed by governments, such as environmental education, training, and awareness. Funding is allocated towards information campaigns and outreach. Several CSOs also engage in biodiversity monitoring, primarily of birds and mammals. Many CSOs work on rural development, as well as forest, pasture, and water management. With the surge in climate change funding from 2015 to 2025, many CSOs began to address climate adaptation, disaster risk reduction, renewable energy, energy efficiency measures.

Regarding funding for species and site conservation, as well as biodiversity goals at the national level, CSOs estimate that previous NBSAPs and biodiversity goals were fulfilled by 50% or less. Nevertheless, CSOs welcome BIOFIN's work and recommendations, as well as growing budget allocations and state programs on afforestation and climate-biodiversity actions synergy.

At regional level, there are plans, programs, MoUs and donor-funded projects related to GSLEP (Snow Leopard Programme), Central Asian Mammal Initiative (CAMI), "Green Central Asia" and "One Health" programs, including ongoing efforts targeted at flagship species such as saiga and kulan (both of which are outside the hotspot), argali, markhor, snow

leopard, and Bukhara deer. These species and programs can provide some lessons for work within the hotspot, and they are sufficiently covered by governmental and international donor funding.

Payment for Ecosystem Services (PES) has been piloted in China, Kazakhstan, Kyrgyzstan, and Tajikistan. Except for China (ecological compensation and other state-driven incentives), these pilots have been limited in terms of scope and scale. There are also examples of public-private partnerships in national park management and visitor services, as well as in the wildlife management in hunting reserves, where the private sector engages local communities. Certification and eco-labeling of sustainable forest and agricultural products remain limited in the region. Micro-finance is increasingly common, but it mainly covers energy efficiency and renewable energy measures and sometimes climate resiliency at the level of small enterprises and households.

During the 2025 consultations on ecosystem profile update, participants mentioned two new biodiversity funding mechanisms. The Global Biodiversity Framework Fund (GBFF) launched in 2023 and managed as a trust fund by the World Bank aims to scale up financing for the implementation of the Kunming-Montreal Global Biodiversity Framework. As of June 2025, a total of \$386 million has been pledged by 12 donor countries and subnational entities. Another new fund created in 2025 is the Cali Fund, a collaborative mechanism that enables companies in the fields of medicine, cosmetics, biotechnology, and other industries that use nature's genetic resources to share benefits with the countries and communities. At the time of ecosystem profile update (2025), no projects in Central Asia were funded by these funds.

12. CEPF NICHE FOR INVESTMENT

The preceding sections described the species, sites, and corridors in the greatest need of conservation; the governance constraints and limits; the socio-economic development trends; the main and indirect threats to biodiversity; the impacts of climate change and nature-based solutions; the capacity and diversity of CEPF's core constituency – civil society organizations – and an analysis of biodiversity-related funding and opportunities for synergies. Understanding these in concert allows for the definition of where CEPF fits – where it can provide funds, to whom or to what types of groups, for what types of work, where, to what end – in other words, the **niche for CEPF investment**.

For the past twenty-five years, CEPF has used a combination of participatory and science-based approach to identify, prioritize, and conserve **KBAs** — sites that significantly contribute to the global persistence of biodiversity.

In 2016, a group of leading international conservation CSOs formed the KBA Partnership and agreed to follow an updated methodology, the IUCN Global Standard for the Identification of Key Biodiversity Areas. The initial ecosystem profile for the Mountains of Central Asia prepared in 2016-2017 by Zoï Environment Network was the first to apply this new standard.

From 2019 to 2025, most CEPF grantees used KBAs in grant applications and actions. Some grantees worked on KBA popularization and mainstreaming. The 2025 ecosystem profile update process (including consultations and surveys) revealed that KBAs are still a difficult concept to understand, especially its scientific details. Despite this, KBAs are being considered in several new ongoing GEF biodiversity projects as well as in NBSAPs (2024-2026).

Considering that CEPF pioneered and continues to promote the KBA-based approach to conservation, the new phase of its work in the Mountains of Central Asia can pay more attention to systematic, cross-disciplinary efforts to improve KBA management and applications by CSOs, governments, or businesses.

The niche of working in KBAs is informed by prioritizing sites threatened by demographic and other human pressures, those stressed and facing growing risks, those allowing for climate resilience, and those allowing conservation action across productive landscapes.

Based on the experience with the first phase of CEPF investments (2019-2025) in conservation actions and civil society strengthening, a focus on Uzbekistan (CSOs), Tajikistan (science base, CSOs and central-northern regions), and Kyrgyzstan (science base, central-southern regions) is essential. Having a longer or more flexible list of priority KBAs allows for flexibility when no or weak proposals are received for priority sites. Granting funds to CSOs with complementary skills to address the conservation of the same site can be an effective approach to leveraging the skills and experience of different CSOs. In some cases, providing funding over several years is important to build on past successes and scale up good practices. Engaging young and experienced scientists, as well as supporting education, training and field experience for the new generation of conservation practitioners, is essential for long-term sustainability.

CEPF will match its grantmaking to the capacity and expertise of its civil society partners. Where feasible and appropriate, CEPF can prioritize paired KBAs that face each other across borders, as well as KBAs within a priority corridor that may stretch across countries, along

river or mountain range. This approach complements existing species-focused strategies, river basin and landscape approaches, and regional initiatives of other major international CSOs, donors, and governments.

The niche in this hotspot is also defined by the management and operational environment for making grants in each country. The situation in 2025 is quite different from that in 2017–2019 when the initial profile was released and the initial CEPF grants commenced. New geopolitical realities, ongoing changes in governance and the funding landscape among donors working with CSOs on conservation, as well as new regulations and restrictions that CSOs face, will require responsiveness and adjustments.

For CEPF to accomplish its objectives and operate smoothly, it is essential that its activities are aligned with national and regional strategies and action plans, including GSLEP and CAMI, the EU's *Larger Than Tigers* strategy, as well as revised NBSAPs, national forest programs, nationally determined contributions (NDC 3.0) on climate change, and SDGs. Several regional and national projects supported by donors focus on landscape restoration, afforestation, and species conservation. These projects need to be considered by CEPF, RIT and grantees in setting or revising priorities for grant projects.

The situation in Afghanistan and China, two countries of a biodiversity hotspot that were not covered in the previous phase, may change and allow for cross-border, site-, or species-specific collaboration. Funding and grants from China to science and governmental institutions in Central Asia are already sizable and could be a considerable force for good. Even if CEPF is not able to make grants for work directly in these two countries, there is still space for supporting participation by individuals from these countries in other events in the hotspot or via online events.

In addition to China, the niche considers the interests of other players, including Switzerland (interest in the climate resiliency of mountain areas, sound water management, and cryosphere monitoring in Central Asia), GIZ (climate change adaptation, water, forest, and wildlife management), the EU and foundations. **The niche allows for synergy with other funders.**

Economic development driven by investments in infrastructure (e.g., roads, renewable energy and dams, the extractive industries, large scale tourism) and intense grazing could place overwhelming pressure on natural resources and ecosystems. In this context, CEPF's niche is to **ensure that CSOs are capable and competent players in biodiversity safeguards, monitoring and promoters of KBAs.** For this they need systematic and cross-discipline training, collaboration and forming national working groups.

At smaller scale **conservation can accompany and support socio-economic development** through grants supporting conservation enterprises, encourage the sustainable management of productive landscapes, and guide private sector activity to minimize impacts. CEPF's niche is to promote a dialogue and common agenda between decision-makers, scientists, private sector players, and civil society.

Another niche is for CEPF to **complement public sector managers of protected areas.** In some countries, such as Tajikistan and Kyrgyzstan, state funding is low, especially for low protection categories, meaning such reserves mainly exist "on paper." There are larger donors and initiatives that support the expansion and strengthening of the protected areas network. CEPF will not pay for public sector responsibilities, but it will support CSO engagement, who have an equal stake in the better management of sites, as well as in the introduction of conservation innovations (i.e. technologies, OECMs, micro-reserves, etc).

Finally, a niche for CEPF is to **build the capacity of CSOs to engage in conservation, attract and retain talent and support civil groups engagement in the hotspot**. CSO engagement in the environment sector and conservation is not as robust as in most other hotspots where CEPF operates. There are several areas where there is scope for CSOs to become more involved as: implementers; monitors; educators; and raisers of awareness. CEPF grants will find the balance to build capacity within the political space appropriate for each country.

CEPF defines its niche by the positive actions that can be taken via grant funding. Similarly, CEPF defines its niche in terms of actions that it cannot take. In other words, as described in the preceding chapters, some threats go beyond the scope of a grant program like CEPF, which makes relatively small grants to civil society, and there are some places where civil society does not have operational capacities, access or freedom to engage with an international donor on conservation. Thus, the investment strategy only responds to the subset of opportunities and threats appropriate for CEPF. As in the previous phase, no grants are anticipated for environmental campaigns or lobbying against large-scale infrastructure because stakeholders showed no interest and advised that it could be sensitive for CEPF-funded CSOs. However, in cases where CSOs have been involved for many years and have stood up or investigated potentially very damaging developments, they should not be excluded. Similarly, while priority sites may include geographically contiguous KBAs separated by borders, CEPF will not promote grants in areas that create or exacerbate tensions or where security and border access restrictions are significant.

Theory of Change for CEPF Investment in the Mountains of Central Asia Hotspot

The fate of biodiversity and the overall environment, along with the multitude of services it provides in support of economic and social elements of livelihoods, is determined by three broad groups of stakeholders: state actors; private sector actors; and civil society. These groups include resource managers, decision makers, and interest groups, and include organizations that are likely to become CEPF grantees. The relative influence and importance of these groups varies among sites and countries across the hotspot but they are assumed to be present in some form at every site where CEPF makes grants. The overall Theory of Change for the program is based around influencing the behavior of these groups, to encourage and enable them to use their influence for the benefit of biodiversity and ecosystem sustainability. The specific changes that are hoped for in each of these groups, and the role of CEPF grantees in achieving these changes, are described below.

The state plays multiple roles, from local to international levels, but two roles are of particular importance in the context of the objectives of the CEPF program: the state as a direct manager (or owner) of ecosystems (e.g., majority of forests, protected areas, high mountains); and the state as a planner and regulator of the management of natural resources. The most direct role of the state in biodiversity conservation is as a manager of protected areas and majority of forests and Red Listed species conservation. Earlier chapters showed that many KBAs are not in protected areas and that even where protected areas have been created, there are issues with management effectiveness. Improving the management effectiveness of existing protected areas is essential, however, and the niche argues for creation of coalitions of protected areas staff and interest groups with a common agenda.

In addition to managing protected areas and forests, state agencies are responsible for management of water protection zones and water reserves, monitoring and permitting of

grazing and agricultural lands and hunting concessions. CEPF engagement should aim to work with these agencies to accommodate the needs of threatened biodiversity and ecosystems into management practices. The role of CSOs may be direct, identifying high priority locations and appropriate changes to management and then working with government staff on the ground, or indirect, for example influencing the regulations or practices that determine the way that these agencies manage the land under their control.

The second crucial role of the state is as legislator and regulator of natural resource use, using legal, economic and institutional tools. Here, the objective of CEPF engagement should be to support governments to be effective in this role. The state's role in enacting and enforcing legislation on land-use planning, environmental impact assessment, protected species and sites could be supported and strengthened with civil society's input based on field work and site-based demonstration projects.

This is a difficult area for civil society intervention, as some of the governments in the region have traditionally been rather closed to input from civil society. One of the roles of the CEPF Regional Implementation Team is to help promote wider understanding of the positive role that CSOs can play in support of government efforts, including in formulation and implementation of national and local biodiversity strategies and fulfilment of obligations under international agreements (CBD, CITES, CMS).

In this context, CEPF can take a two-pronged approach to helping CSOs engage with state actors. The RIT can work with grantees (directly, or through mentoring arrangements involving experienced CSOs) to assist to package their work and results in a form that will attract the attention of governments. This might entail demonstrating how work at sites enhances the value of ecosystem services, addresses food security, or increases tourism revenues. At the same time, CEPF will use its regional role to identify opportunities and facilitate the engagement of local CSOs with national, regional, and international processes, including conventions and agreements, through which CSOs can increase their visibility and promote their experience and knowledge.

The private sector is a diverse group with significant impacts on resource management. Where private sector actors directly manage land and resources, then the potential role for CSOs, as with government agencies, is to identify priority sites and engage with the companies or entrepreneurs to improve the way they manage biodiversity as part of their business operations. For some companies, action may involve reducing environmental footprint (for example, through reduced water use or improved waste management), where these actions are a direct threat to a priority site, or it may involve the company providing financial or in-kind support to conservation efforts. Establishing long-term relationships of support between companies and particular sites or species has the potential to be an important way to address the problem of sustainable funding for conservation efforts. Relevant voluntary standards and schemes promoting, for instance, sustainable tourism may provide an entry point for discussion with companies. Companies that produce, buy or sell products from traditionally managed landscapes also are potential partners for grantees addressing the conservation of priority KBAs.

Civil society encompasses a diverse range of stakeholders but the most relevant for the CEPF are those who directly manage or exploit threatened biodiversity on which it depends and those who are key actors in conservation in the given context. The generic objective of CEPF engagement with these stakeholders is to minimize harmful behavior and optimize contributions to conservation. Examples might include assisting hunters to ensure sustainable populations of species, monitoring and to regulate offtake; assisting farmers to put in place more sustainable nature use systems and benefit from improved access to

markets; and working with tourism guides to minimize disturbance to rare species and enhance visitor experience. Strategies to do this will generally involve a combination of individual interest (e.g., improved income, long-term access) and mobilizing public and social opinion, exercised through formal and informal rules and norms (e.g., local regulations to maintain ecosystems which have a value as a public good). It can also involve working with other stakeholders who have an interest in sites and species, such as universities and recreational user groups. CEPF grantees may originate from these civil society groups or may have experience working with them. In addition, the role of the RIT is to assist CSOs to become more strategic and effective in their work.

13. CEPF INVESTMENT STRATEGY

Based on the analysis of conservation outcomes (Chapter 5), an assessment of the capacity of civil society actors (Chapter 6), the overview of direct and indirect threats to biodiversity (Chapter 7), a consideration of projections for climate change and biodiversity-related implications and synergies (Chapter 9) and a review of conservation investment (Chapter 11), this chapter recommends specific investment priorities grouped into broad strategic directions. These are areas where CEPF can add most value or complement existing investments in biodiversity conservation, justified in terms of the current context for conservation, past experience with grants, and opportunities to complement and build upon current conservation investment. Another core area of CEPF is supporting and strengthening civil society organizations to make them more effective environmental stewards and advocates for the conservation of globally significant biodiversity.

To maximize the contribution of CEPF grant-making to global biodiversity conservation in the Mountains of Central Asia Hotspot, it is also necessary to refine the full lists of species, site and corridors outcomes (Appendices 1, 4 and 5) into a focused set of **prioritized** outcomes for investment (priority species, sites and corridors) over a five-year period (2026-2030). The purpose of selecting priority sites and corridors is to channel grants from CEPF for conservation actions in geographic areas of the highest need and feasibility. The purpose of selecting priority species is to enable CEPF grants in species-focused conservation actions to be directed at those globally threatened species for which conservation needs cannot adequately be addressed by habitat protection (site-scale or landscape-scale) alone, and those endangered species that are not sufficiently covered by governmental, donor or private funding.

For all priority outcomes for CEPF investment, the important selection criteria are urgency for action, feasibility in the scope of CEPF funding, or unique opportunities for CEPF investments to trigger policy and public attention and additional investments. Potential priority species, sites and corridors were discussed during stakeholder consultations and suggested in surveys where current threats, if not mitigated, may cause extinction (in the case of species) or the loss of key elements of biodiversity (in the case of sites and corridors). In addition, priority species, sites and corridors were selected where there are great opportunities for CEPF and other organizations to invest in conservation actions by civil society that complement or improve targeting of investments by governments and other donors.

Note that while this document uses the word “priority” for species, sites, and corridors, the word is better understood as “prioritized,” as used above. Meaning, these priorities are not fixed for five years. By example:

- The full list of globally threatened species does not remain static – species may be added to the Red List, or hopefully, de-listed, meaning they will no longer be priorities for CEPF.
- A non-priority KBA (or corridor) may face an unforeseen threat, requiring an urgent response from CEPF. On the other hand, a priority KBA may receive significant funding from another donor, meaning it will no longer be a priority for CEPF.

On an annual basis, the CEPF Secretariat and RIT may revise the priorities in consultation with stakeholders, updating and approaches to new threats, new opportunities, and the capacity of implementing CSOs.

When translating the conservation strategy outlined in this chapter into a portfolio of grants, it will be important to consider the geographic and ecological specificities of the hotspot and political, economic and operational nuances in the individual countries within it, as outlined in the other chapters of the profile. While there are cross-cutting issues that lend themselves to a common approach, the context for conservation varies considerably among countries, particularly regarding the way civil society is organized and active. This calls for common but differentiated approaches across the hotspot.

13.1. Priority Species

National consultations and the stakeholder survey provided the basis for prioritization of the species outcomes. The list of priorities focuses on species for which CEPF is the main or only source of investment, those with rapidly declining populations, or those providing unique opportunities. Several high-profile species, such as the snow leopard (VU), have received significant attention and funding in the past five to ten years, and their situation is stable or improving. While CEPF focuses on globally threatened species, the consultations suggested some taxa in need of conservation attention that are currently not assessed as globally threatened (Appendix 3). Some are close to the criteria for globally threatened (currently NT), and some are geographically distinct populations, where national Red Books (Red List) recommend conservation actions. If any of these taxa are recognized as globally threatened on the IUCN Red List, they can be added to the list of species outcomes and will be candidates for inclusion on the list of priority species.

Table 13.1 shows 22 priority species. They include 3 mammals, 6 birds, one reptile, one amphibian, and 11 plants (most of which are valuable as genetic resources of crop wild relatives). Phase I included fish, riparian reptiles, and certain plants species on the priority list – notably Red-listed tulips – which are not included in the list below. Considering the lessons from Phase one and certain limitations (e.g., science expertise needed, accessibility of sites, conservation approaches), it is recommended that CEPF grantees focus on key habitats and KBAs as conservation targets rather than species outcomes for species not shown here. This priority species list creates opportunities for CSOs to engage in species-focused conservation actions within and beyond KBAs.

Table 13.1. Priority species for CEPF investment

Ct.	Group	Latin name	Common name	IUCN status
1	Mammals	<i>Gazella subgutturosa</i>	Goitered Gazelle	VU
2	Mammals	<i>Marmota menzbieri</i>	Menzbier's Marmot	VU
3	Mammals	<i>Panthera pardus ssp. tulliana</i>	Persian Leopard	EN
4	Birds	<i>Aquila nipalensis</i>	Steppe Eagle	EN
5	Birds	<i>Falco cherrug</i>	Saker Falcon	EN
6	Birds	<i>Leucogeranus leucogeranus</i>	Siberian Crane	CR
7	Birds	<i>Neophron percnopterus</i>	Egyptian Vulture	EN
8	Birds	<i>Otis tarda</i>	Great Bustard	EN
9	Birds	<i>Vanellus gregarius</i>	Sociable Lapwing	CR
10	Reptiles	<i>Testudo horsfieldii</i>	Central Asian tortoise	VU
11	Amphibians	<i>Ranodon sibiricus</i>	Semirechensk Salamander	EN
12	Plants	<i>Armeniaca vulgaris</i>	Wild Apricot	EN

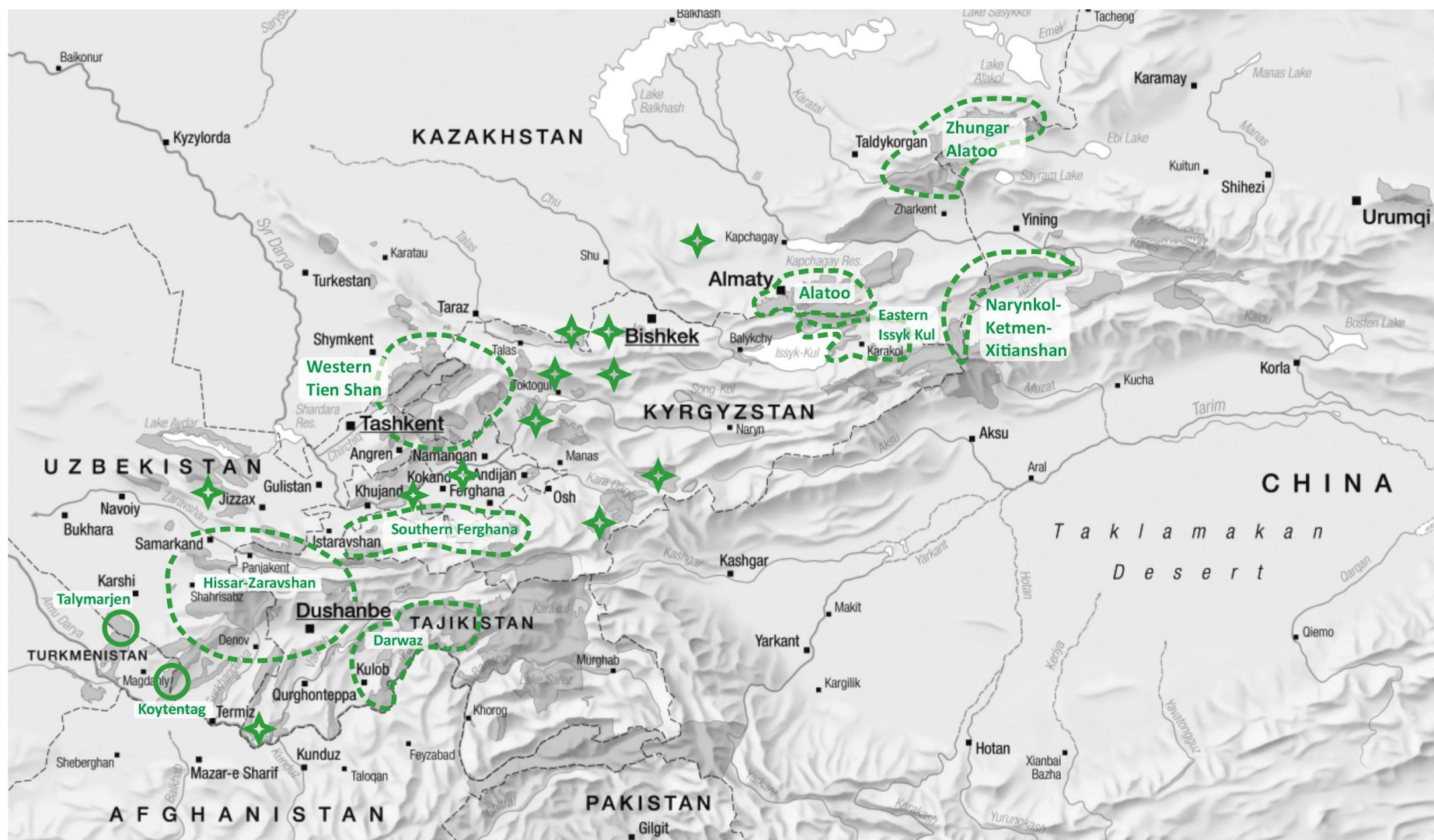
Ct.	Group	Latin name	Common name	IUCN status
13	Plants	<i>Crataegus darvasica</i>	hawthorn species	CR
14	Plants	<i>Crataegus knorringiana</i>	hawthorn species	CR
15	Plants	<i>Malus niedzwetzkyana</i>	wild apple species	EN
16	Plants	<i>Malus sieversii</i>	wild apple species	VU
17	Plants	<i>Pyrus korshinskyi</i>	wild pear species	CR
18	Plants	<i>Pyrus tadzhikistanica</i>	wild pear species	CR
19	Plants	<i>Prunus tadzhikistanica</i>	wild prune species	EN
20	Plants	<i>Ribes malvifolium</i>	currant species	CR
21	Plants	<i>Sibiraea tianschanica</i>	rose species	CR
22	Plants	<i>Swida darvasica</i>	dogwood species	CR

13.2. Priority Sites

The prioritization of KBAs was a collaborative effort involving stakeholder consultation inputs (meetings, surveys) and consideration of tangible results and the need for follow-up action from the previous grant phase. The factors considered in prioritization were biological importance of KBAs, site-level threats, opportunities for synergies with other initiatives, and the feasibility of implementation including remoteness, restrictions, availability and interest of CSOs in taking actions, intensity and focus of other related projects funded by donors.

The list of priority sites is a compromise between availability and distribution of CEPF funding allocated by strategic directions, as well as between conservation-focused and CSO capacity-building measures, given the limitation of funds (expected to be \$8 million), an investment period of 5 years, and work in up to seven countries.

Figure 13.1. Map of priority sites for CEPF investment in the Mountains of Central Asia Hotspot



The individual KBAs and KBA clusters for CEPF actions are highlighted in color.

Participants of the ecosystem profile update consultations in 2025 and desk review pre-selected and identified about 60 prioritized KBAs. Considering the anticipated scale of CEPF investment in KBAs, this number was set at 42-45 sites as a basic target.

Priority was given to:

- KBAs important for highly threatened and narrowly endemic species, unique communities and/or crop wild relatives (especially tree and shrub species that are threatened and/or endemic).
- Un-protected KBAs, or those in the buffer zones of protected areas, were preferred to strictly protected KBAs that already benefit from state-funded efforts or funding from other donors.
- Several new KBAs identified in the process of the ecosystem profile update based on new data; KBAs facing significant threats; those in the transition zone "lowlands-mountains" and edges of the hotspot; those serving as biodiversity "refuges;" those with high endemism; and those allowing for ecological connectivity.
- KBAs where Phase I grants provide the basis for relatively low-cost follow-up action and KBAs that allow for synergy with GEF and other donor-funded biodiversity projects.

As Figure 13.1 and Table 13.2 show, 42 KBAs have been prioritized [recalling that grants in Phase I improved at least parts of 55 KBAs.] This represents 3.9 million hectares – about 22 percent of the total hectares of KBA in the hotspot and about 4.5 percent of the total hotspot area. There are no prioritized KBAs in Afghanistan or China, given the current political conditions, although the CEPF Secretariat will re-assess this periodically. Turkmenistan remains with two priority KBAs, recognizing that there will be synergy with the GEF small grants program, covering the entire country, beginning in 2026.

Note that 26 of the 42 prioritized KBAs fall within eight geographic "clusters." This reflects experience from Phase I and other CEPF hotspots, where grantees, typically working with government administrative districts or within geographic areas, address multiple KBAs in the same general region. Thus, it makes sense to think of Phase II as working in 16 KBAs and 8 KBA clusters. The clusters themselves have roughly 20+ additional KBAs in them, which, while not prioritized, could see eventual grant activity.

Table 13.2. Priority sites for CEPF investment

Ct.	Cluster/Name	KBA Code	Area (HA)
Kazakhstan			
	<u>Western Tian Shan Cluster (KAZ)</u>		
1	Ugam	KAZ5	138,000
2	Tolebi	KAZ6	18,000
3	Aksu-Zhabagly	KAZ8	121,000
	<u>Alatoo Cluster</u>		
4	Aksay	KAZ12	100,000
5	Issyk	KAZ14	85,000
6	Kolsai	KAZ16	161,000
	<u>Zhungar Alatoo Cluster</u>		
7	Upper Koksu	KAZ22	266,000
8	Zhongar-Alatau	KAZ23	395,000
9	Narynkol	KAZ18	100,000
10	Merke	KAZ11	65,000
11	Chu-Ili Mountains	KAZ24	38,000

Ct.	Cluster/Name	KBA Code	Area (HA)
Kyrgyzstan			
	<u>Western Tien Shan Cluster (KGZ)</u>		
12	Besh Aral	KGZ1	124,000
13	Kassan Sai	KGZ4	83,000
14	Aflatun-Padyshata	KGZ5	68,000
15	Sumsar	KGZ13	15,000
	<u>Fergana Valley Cluster</u>		
16	Isfairam- Shakhimardan River Basins	KGZ16	271,000
17	Ravat	KGZ17	7,000
18	Eastern Issyk Kul	KGZ31	75,000
19	Torkent	KGZ11	18,000
20	Suusamyr	KGZ12	39,000
21	Kara-Suu	KGZ14	64,000
22	Bulolu-Koksuu	KGZ21	89,000
23	Kyrgyz Ala-Too	KBZ34	117,000
Tajikistan			
	<u>Western Tien Shan Cluster (TJK)</u>		
24	Upper Asht and Aktash	TJK1	15,000
25	Adrasman	TJK2	25,000
	<u>Hissar Zaravshan Cluster</u>		
26	Turkestan Mountains Southern Slope	TJK4	55,000
27	Yagnob National Park	TJK6	64,000
28	Sarikhadang and Iskanderkul Lake	TJK9	20,000
29	Shirkent	TJK11	8,000
30	Karoni	TJK12	6,000
	<u>Darwaz Cluster</u>		
31	Dashtijum	TJK23	44,000
32	Darvaz	TJK24	102,000
33	Kamarou	TJK25	18,000
34	Shokh-Kurjalakum	TJK37	11,000
Turkmenistan			
35	Koytendag	TKM1	124,000
36	Tallymerjen	TKM2	168,000
Uzbekistan			
	<u>Western Tien Shan Cluster (UZB)</u>		
37	Pskem River Basin	UZB1	283,000
38	Angren Plateau	UZB7	70,000
	<u>Hissar Cluster</u>		
39	Western Zeravshan	UZB28	128,000
40	Uzbek Babatag	UZB36	107,000
41	Northern Slope of the Turkestan Mountains	UZB20	148,000
42	Talimarjan Reservoir	UZB30	86,000
Total			3,939,000

Compared to Phase I, this list of priorities reflects, in particular, new interests in Uzbekistan, threats to KBAs in central and northern Tajikistan [and the operational and political difficulties of working in the Pamirs], and the needs in Kyrgyzstan outside the central part of the country, which have ongoing work funded by the Resiland+ , the GCF, and the GEF projects.

The above table could also consider the particular interest of stakeholders for work in:

KGZ7: Beshtash
KBZ8: Talas

KGZ10: Chychkan
 KGZ22: Alai-Kuu
 TJK3: Kairakkum
 TJK5: Zeravshan
 TJK21: Baljuvan

13.3. Priority Conservation Corridors and Landscapes

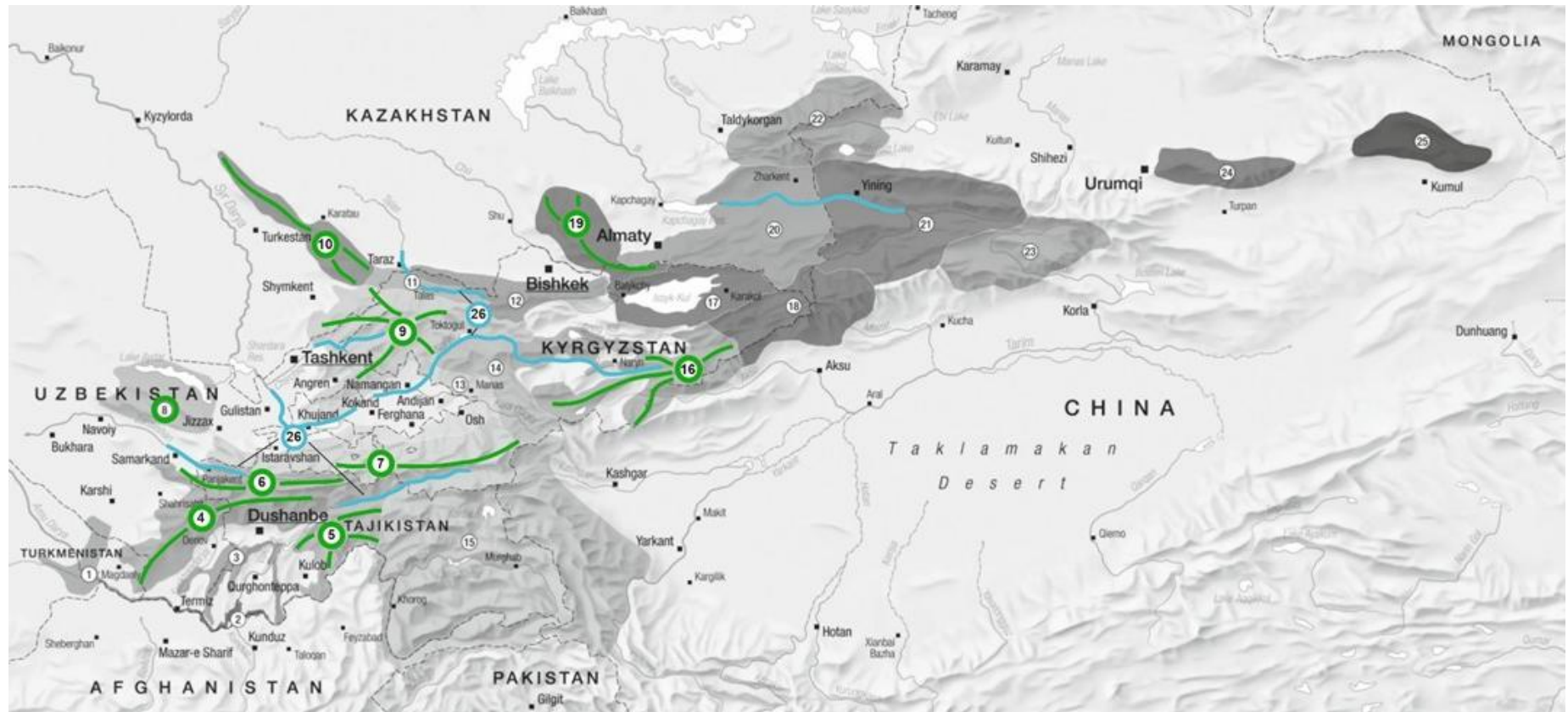
Priority conservation corridors and landscapes are relatively large areas. They are important for large migratory mammals (e.g. snow leopard, Tien Shan brown bear, ungulates) as well as migratory species of fish, birds and for ecological connectivity between KBAs and protected areas. In view of growing risks of habitat fragmentation and climate impacts, the expected level of CEPF funding and the application of additional criteria, such as synergy with investments by other funders, and opportunity to engage civil society, 10 corridors are prioritized (Table 13.3, Figure 13.2). These areas, which cover 19,200,000 hectares, are based on biological considerations and socio-economic development trends and pressures and cover both terrestrial and freshwater ecosystems. These priority corridors provide opportunities for civil society to engage in landscape-scale conservation efforts.

Table 13.3. Priority Corridors for CEPF investment

Code	Conservation corridor name	Area (ha)	Countries	Main concerns / opportunities
4	Koytendag and Hissar Mountains	2,880,000	TKM, UZB, TJK	Unsustainable tourism, infrastructure development, overgrazing, overharvesting, transboundary issues
5	Central Tajikistan	1,530,000	TJK	Overgrazing, overharvesting, community engagement
6	Upper and middle Zeravhan River Basin	480,000	TJK, UZB	Tourism and infrastructure development, transboundary issues, integration of biodiversity into river management
7	Turkestan and Alai Mountains	2,430,000	KGZ, TJK, UZB	Overgrazing, transboundary issues
8	Aidarkul Lake and Nuratau Mountains	1,800,000	UZB	Infrastructure development, monitoring, safeguards, ecological connectivity
9	Western Tien Shan	3,530,000	KAZ, UZB, KGZ, TJK	Unsustainable tourism, infrastructure development, overgrazing, overharvesting, transboundary issues
10	Kazakh Karatau Mountains	1,270,000	KAZ	Infrastructure development, overgrazing, monitoring, safeguards, connectivity

Code	Conservation corridor name	Area (ha)	Countries	Main concerns / opportunities
16	Central Tien Shan	3,370,000	KYR, CHI	Infrastructure development, overgrazing, monitoring, safeguards, connectivity
19	Chu Ili Divide	1,710,000	KAZ, KGZ	Extractive industries, overgrazing, potential large wind and solar energy, monitoring, safeguards
26	Riverine ecosystems and waterways in the Pamir and Tien Shan Mountains (Syr Darya, Zaravshan, Talas, Naryn)	200,000	KAZ, UZB, KGZ, TJK	Small hydropower, irrigation, tourism and mining in riverine zones

Figure 13.2. Map of priority corridors for CEPF investment in the Mountains of Central Asia Hotspot



The priority corridors and landscapes for CEPF actions are highlighted (green – terrestrial; blue – riparian ecosystems)

13.4. Strategic Directions and Investment Priorities

CEPF seeks to address the challenges of conservation by working through civil society organizations, which themselves often have organizational development needs. To do so, CEPF creates an investment strategic consisting of thematic “strategic directions” and subordinate “investment priorities” to further guide grants as they address globally threatened species, KBAs, and conservation corridors.

During the 2025 update process of the ecosystem profile, stakeholders reviewed the Phase I investment strategy (2017) and subsequent grant program (2019-2025) as part of in-person consultations and an online survey. With this input and further lessons from Phase I, the updated strategy presented here should be responsive to stakeholder needs while allowing for the effective deployment of funds.

Table 13.4. Strategic Directions and Investment Priorities

CEPF Strategic Directions	CEPF Investment Priorities
1. Address threats to priority species	1.1. Improve enforcement and develop incentives and alternatives for nature users 1.2. Promote improved regulations for collecting, grazing, hunting, fishing and local-level conservation 1.3. Support the development and implementation of species-focused micro reserves and species conservation plans 1.4. Prevent and reduce human-wildlife conflict by addressing retaliatory killing and trapping 1.5. Maintain populations of priority species by improving and applying science and monitoring data to local conservation actions and to national and international biodiversity goals
2. Improve management of priority sites with and without official protection status	2.1. Facilitate effective collaboration among CSOs, local communities, and park management units to enhance KBAs with protected area status 2.2. Develop and implement management approaches to sustainable use in KBAs outside protected areas 2.3. Build support and develop capacity for identification, recognition and application of KBAs
3. Support sustainable management and biodiversity conservation within priority corridors	3.1. Support ecological restoration and efforts to promote connectivity of KBAs at the landscape scale 3.2. Evaluate and integrate values of biodiversity into land use and development planning 3.3. Support civil society efforts to analyze development plans and programs, evaluate their impact on biodiversity, and propose alternative scenarios and appropriate measures

CEPF Strategic Directions	CEPF Investment Priorities
4. Engage communities of interest and economic actors in the improved management of production landscapes and conservation	4.1. Engage hunting associations, tourism operators, mining companies, and the information technology sector in conservation management and in improving accessibility of biodiversity information 4.2. Promote mainstreaming of conservation into livestock and farm management practices 4.3. Engage with the government and private sector to integrate biodiversity safeguards into infrastructure development 4.4. Popularize biodiversity science and use the media to raise awareness of threatened and unique species and KBAs, and to inform public debate on conservation issues
5. Facilitate the development of a robust and resilient community of conservation civil society organizations	5.1 Ensure that CEPF grantees have the technical capacity to plan, implement and sustain effective conservation projects 5.2 Provide support to targeted conservation CSOs engaged in a process of organizational development 5.3 Enhance the collective strength and ability of conservation CSOs
6. Provide strategic leadership and effective coordination of conservation investment through a Regional Implementation Team	6.1. Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile

CEPF notes that these are thematic strategies that often will allow for common approaches/methodologies. By example, many species and sites are in remote locations – truly far or difficult to access, atop mountains and cliffs, across glaciers – or in dangerous, disaster-prone terrain, or in sensitive border zones or areas of armed conflict. Thus, across the investment priorities – to identify species locations, to monitor land use and threats – there are opportunities for remote sensing, use of drones, automated data processors, and artificial intelligence-enabled camera traps and sensors to facilitate grantee work in both an efficient and safe manner.

Similarly, multiple investment priorities will be addressed through some form of awareness raising, whether that is among community members (e.g., livestock herders with animals in special riparian zones), government representatives (e.g., economic development planners overseeing unprotected KBAs), the private sector (e.g., utility operators unaware of the impact of incidental bird strikes), or even other donors. Particularly at the community level, grants are likely to support school-based and adult education around the value of species and KBAs to human well-being.

Strategic Direction 1: Address threats to priority species

Overexploitation can devastate a species even when its habitat is protected. Species with reduced populations are at increased risk of disease, are less resilient to habitat disturbance, and are less able to compete with invasive alien species.

Some species may be able to tolerate limited offtake, and this may be an effective conservation strategy where exploitation rights can be defined, managed and policed. Where a species or product is important for local livelihoods and economies, it may be

possible to find alternatives or to incentivize changes of behavior. For many species, however, legal protection and enforcement of bans on exploitation are required. Enforcement of regulations, national red lists (Red Books), quotas and species-focused action plans may be complex and often depend on the cooperation of local stakeholders. Also, habitat needs to be protected at a viable scale.

The investment priorities here complement governmental actions on threatened species by engaging civil society to achieve national and global biodiversity targets and contribute to regional conservation initiatives under the Convention on Migratory Species and others. Further, for each of the investment priorities, there is scope for grantee-to-grantee exchange, either within countries or between countries, including with members of civil society from Afghanistan and China. This could be of particular interest in relation to migratory species that move into Afghanistan.

Investment Priority 1.1: Improve enforcement and develop incentives and alternatives for nature users

Enforcement occurs on a continuum of education – prevention – interdiction – punishment. With limited government capacity to perform all these roles, CSOs can provide support at the first two levels: they can inform the citizens why collection or hunting of a species is harmful, they can put up signs and boundary markers, conduct lectures at local communities, produce and disseminate posters in local languages, or conduct public patrols and engage communities to conduct monitoring. CSOs with specialized expertise can provide training in spatial monitoring and reporting tools and in species identification that lead to better species monitoring and enforcement in protected areas. Grants can provide funding for training, equipment, data collection, reporting, and other activities. In the first phase of CEPF investments, this investment priority was popular among CSOs and produced successful results.

People who typically collect or hunt a species may be doing so out of economic need, or species might be threatened due to seemingly benign causes, such as too many visitors in a national park. Some species, like tulips, are red listed and protected, but many people, especially rural residents who collect them for sale, are unaware of this. Grants could support CSOs to provide alternatives – *ex situ* cultivation of a species or improved pricing and benefit-sharing schemes for trophy hunting – or to conduct awareness campaigns at schools and communities to raise awareness about red listed species that grow locally and face threats from collection. Nurseries and botanical gardens could support recovery of plant endemics and wild fruit trees, where CSO can play a role. CSOs could also help national park managers with visitor control and promote best practices in visitor management. Grants can also support the participation of CSOs in improving cross-sectoral collaboration on and knowledge of red-listed and CITES-listed species to limit the illicit collection and trade of species, thereby supporting national and global conservation efforts and agreements.

Investment Priority 1.2: Promote improved regulations for collecting, grazing, hunting, fishing and local-level conservation

While the legal frameworks for species protection in the region are well-developed, and national red lists are regularly updated, implementing procedures may be lacking. Local authorities, who are often responsible for local level conservation (nature reserves of regional or local importance, or species reserves, *zakazniks*) may not have sufficient capacities or procedures in place. Sometimes targeted local or sectorial regulations such as water regimes or fencing are lacking, especially for migratory species.

Countries are expanding the use of e-governance tools in their environmental regulatory frameworks, including the allocation of quotas and permits. Local and international CSOs can support the authorities in such endeavors by co-designing tools, training users, and providing feedback on new mechanisms to help improve these.

There are also opportunities for local authorities jointly with CSOs to improve regulations for local-level conservation. CSOs could analyze regulatory and knowledge gaps, propose locally tailored solutions, inform people about their rights and responsibilities, facilitate consultations between local communities and authorities, use biodiversity research to support decision making or set reasonable quotas, use economic research to recommend prices or fees for natural resource use or collection, and provide further inputs to governments, including on traceability of illegally collected species.

For projects that seek to strengthen legal protection or regulations for species, CEPF will only award grants in countries that are amenable to such work being undertaken by civil society.

Investment Priority 1.3: Support the development and implementation of species-focused micro reserves and species conservation plans

Some priority species migrate or are found outside existing protected areas. Thanks to the support of the CEPF in the initial grant phase and the vigorous efforts of its CSO partners, the Kyrgyz Republic became the first country in Central Asia to introduce and recognize community- and locally managed micro reserves in legislation. CSOs in Uzbekistan and Tajikistan successfully initiated local-level targeted reserves in collaboration with local administrations, though more work could be done to make them well-managed and sustainable. Large state-organized species-specific reserves and nature protection zones exist across the hotspot (e.g., *zakazniks*), but in practice they are often poorly managed and funded.

Grants could support CSOs to scale up micro reserves (where they already exist, such as in Kyrgyzstan <https://mikrokoruk.leader.kg>) or participate in a regional experience exchange to create such reserves, support identification of viable sites, and twin communities within the same country to share best practices on micro and local-level reserves. Grants could also help develop action plans for conservation of specific species in the country, district or watershed. CSOs can collaborate with the responsible authorities to implement measures that enhance the management, enforcement, monitoring, or community awareness and knowledge of existing state-organized species reserves (*zakazniks*), where they see the need and opportunities to strengthen them. CSOs and reserves with limited science and monitoring expertise are encouraged to invite scientists to document conservation impacts.

Investment Priority 1.4: Prevent and reduce human-wildlife conflict and address retaliatory killing and trapping

CEPF will make grants that specifically address the issue of human-wildlife conflict by collaborating with groups that change the awareness and behavior of relevant communities. This could include grants for training on non-lethal predator control and training on predator-safe animal husbandry. Due to the ban on hunting in Uzbekistan and Turkmenistan, this priority is less relevant in these countries. To avoid duplication, grants in other countries must align with other state- or donor-supported ongoing and planned projects and programs that focus on priority species and might cover similar activities.

Investment Priority 1.5: Maintain populations of priority species by improving and applying science and monitoring data to local conservation actions and to national and international biodiversity goals

There are KBA trigger species, red listed and migratory species that are under direct threats from local anthropogenic sources. CEPF will support activities that enable a better understanding and protection of breeding grounds, species communities, migratory corridors and movements or population dynamics, especially for the areas and species that receive less attention. This includes support for biodiversity monitoring and action-oriented research, integrated with other CEPF grants, national biodiversity goals and actions on the improved management of species and KBAs (see Strategic Direction 2).

Invasive species that affect native species and ecosystems pose a significant and growing risk due to increased trade, connectivity, and encroachment. CEPF can support the engagement of CSOs with scientists, authorities, and economic actors to monitor and reduce the risk of introduction or impacts of invasive species in situations where they affect CEPF priority species and their habitats.

Based on lessons learned from the previous CEPF phase, scientific papers and science-focused grants need to be practical and useful for decision makers at the national and local levels. Scientific data and monitoring results must be made available via national sources such as academies of science and biodiversity centers, and global sources such as the Global Biodiversity Information Facility (GBIF), convention reports and journals and must be presented in popular formats for further dissemination via mass media and CSOs. New biodiversity data resulting from grants can be useful for KBA updates, environmental impact assessments, biodiversity safeguards, and other practical measures that help maintain populations of priority species. CEPF grantees are encouraged to use open digital platforms for citizen science and monitoring, such as GBIF and iNaturalist.

CSOs that participate in memorandums of understanding and species action plans, and the implementation of conventions such as the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Ramsar Convention on Wetlands can use grants to address threats to CEPF priority species and their habitats within the hotspot. They are encouraged to engage with local communities and policymakers to present science-based information in a non-scientific manner to improve their awareness of the situation.

Strategic Direction 2: Improve management of priority sites with and without official protection status

Protected areas are a critical part of the overall effort for the conservation of KBAs and are likely to become more so as pressure from land-use change and grazing increasingly affects them. Protected areas should simultaneously accommodate and respect local customary rights and resource use, although this is often not the case. Some protected areas are the subject of conflicting land use, mining exploration, tourism development, or grazing, or are poorly managed “paper” parks. CEPF will support the improved management of protected areas, which are the backbone of conservation in the hotspot.

At the same time, not all KBAs are within protected areas, nor should they be. Some KBAs are on public land with management designations that offer a degree of legal protection and control over what may and may not happen to them. For example, some lands designated for watershed protection, forestry, hunting or other uses that are not incompatible with

conservation. CEPF will support actions that maintain the conservation value of these KBAs by working with regulations, incentives and technical support to encourage stakeholders managing natural resources (communities, local forest agencies, license holders, etc.) to incorporate biodiversity concerns and KBA trigger species into their management practices.

Pressure from unsustainable local natural resource use is a threat to KBAs across the hotspot. Models of sustainable, community-based management in a variety of situations are important to convince government and local stakeholders that such approaches are possible. Likely activities include identification of links between livelihoods and resources, strengthening of local institutions for management, creating links to markets and economic opportunities that give sustainable management greater value, and building networks of support for community-based initiatives.

For projects that seek to work in or around public lands (e.g., in national parks or reserves), CEPF will only award grants in places where local and national officials are amenable to such work being undertaken by civil society. Moreover, for projects that seek to work in KBAs near to sensitive boundaries and where powerful economic interests are involved, CEPF will take special precautions, in terms of more pre-award due diligence for official endorsement of grantee activities and risk assessment, to ensure that CEPF-supported work does not create political tensions or affect other CEPF grantees.

Further, for each of the investment priorities, there is scope for grantee-to-grantee exchange, either within countries or between countries, including with members of civil society from Afghanistan and China. In particular, this includes opportunities to promote better management of KBAs on the borders of Afghanistan-Tajikistan and China-Kazakhstan and China-Kyrgyzstan. By example, experts from the Chinese Academy of Science (CAS) regularly visit the region, often for joint expeditions. CEPF grantees can work with their home-country national academies of sciences to thus engage with CAS counterparts.

Investment Priority 2.1: Facilitate effective collaboration among CSOs, local communities, and park management units to enhance KBAs with protected area status

In most protected areas, legal protection and management units reduce the threats from exploitation and development, but are not always able to prevent encroachment, unauthorized grazing, plant collection, or illegal hunting. Funding from the state is limited in relation to the size or needs of the protected area, especially in Kyrgyzstan and Tajikistan. CEPF will support actions that address these challenges, including working with communities that live around the protected areas and by collaborating with CSOs that can enhance management efficiency by coordinating with the official managers. Grants could support biodiversity monitoring activities, innovations, as well, in relation to the functioning of protected areas (e.g., by monitoring of KBA trigger species and grazing control).

CSOs can play an important role when powerful economic interests, such as infrastructure, mining, large-scale tourism and energy projects, threaten existing protected areas, migratory corridors, or high-value forests and wetlands, including KBAs. A CSO can collect data and use the results for public campaigns to communicate the importance of affected sites or species. However, CEPF may refrain from supporting campaigns where the political and other risks to other CSOs funded by CEPF in the country or area are considered high.

Several protected areas in the region are along international borders, either along high mountain ridges or rivers. Grants under this investment priority could be purposefully complementary, where CSOs on either side or a CSO capable of operating on both sides of a border through local partners can work towards more effective management, jointly with

protected area managers. Grants within this investment priority can also purposefully create a better network of separate KBAs within one country to allow for possible linkages in a corridor or along an altitudinal gradient.

Investment Priority 2.2: Develop and implement management approaches to sustainable use in KBAs outside protected areas

KBAs outside protected areas are typically threatened by a combination of licensed exploitation and unlicensed use. Interventions to protect these KBAs are complex because multiple stakeholders and rights may be involved, and because the objective of management is, in most cases, profit rather than protection. Success is likely to be the result of long-term engagement, not a single grant, and so CEPF will support initiatives in which there is a clear stakeholder, community, or company with management control and rights over the area and a commitment to conservation. Conservation actions might include promotion of improved grazing practices, promotion of alternative energy sources to reduce firewood collection, and better management of hunting or tourism operations.

Pressure from unsustainable local natural resource use is a challenge for KBAs across the hotspot. Models of sustainable, community-based management in a variety of situations are important in convincing government and local stakeholders that such approaches are possible. Likely activities include identification of links between livelihoods and resources, strengthening of local institutions for management, creating links to markets and economic opportunities that give sustainable management greater value, and building networks of support for community-based initiatives.

Projects should consider lessons from past work. CEPF may fund clusters of grants to enable multiple grantees to implement complementary work on conservation of a single site or group of sites.

Additional opportunities arise from proactive actions or support to the governments in identifying, nominating, and taking the initial steps to implement Other Effective Area-based Conservation Measures (OECMs). OECMs offer a modern and inclusive approach by recognizing and supporting conservation efforts in non-protected areas such as sacred sites, managed forests, hunting grounds, or border and buffer (i.e., water stream) zones. Where appropriate, the designation of an OECM is a useful path towards recognizing the conservation importance of the site without restricting the activities of resource users. Interested CEPF grantees pursuing work on OECMs need to check and, where necessary, coordinate with other projects, such as SPACES in Kazakhstan or the International Union for Conservation of Nature (IUCN) One Health Initiative, both of which – as of 2025 – work on OECM planning and capacity-building.

Investment Priority 2.3: Build support and develop capacity for identification, recognition and application of KBAs

CEPF anticipates grants with various objectives under this investment priority, both those that help strengthen the scientific basis for promoting recognition of sites and those that promote the KBA concept as a means for conservation. First, CEPF expects grants to promote and popularize the concept of KBAs and related tools and applications. These grants can leverage momentum from past CEPF grants and ongoing GEF and other projects and can use digital tools that are already available in local languages. Grantees will be supported to address data gaps, gather information that is critical for conservation, and communicate it in accessible formats for site managers and policymakers.

Second, CEPF will encourage grants that promote a more robust and systematic KBA approach at the national level, which involves collaboration between diverse stakeholder

groups (e.g., national working groups consisting of scientists from biology disciplines, CSOs, and government officials), and training in compilation, submission, and validation of KBAs. These efforts may include consultations, enabling experts from universities and CSOs to participate in KBA updates and provision of new data, assisting local and national level policymakers in understanding the KBA concept, or engaging champions to build support for recognition and application of KBAs.

The KBA Secretariat manages the [World Database on KBAs](#), which is not well known in Central Asia. CSOs can promote KBA information materials and the concept and approach locally, participate in training, and disseminate relevant information in local languages and in popular formats. KBAs with robust and up-to-date documentation may be uploaded into this database in coordination with the KBA Secretariat.

CEPF can support the dissemination of good practices on KBA compilation and the training necessary to assist in the broader use and dissemination of this concept among stakeholders. Surveys can help demonstrate this outcome and can provide important feedback.

The recognition of KBAs may appear in national biodiversity strategies, in the development of spatial plans, in environmental impact assessments (EIAs), and the use of KBAs in EIAs. CEPF will support efforts to encourage the use of KBAs in biodiversity targets and safeguards. This support might include studies to value ecosystem services from KBAs, good practice examples, and dissemination of information.

Strategic Direction 3: Support sustainable management and biodiversity conservation within priority corridors

Investment Priority 3.1: Support ecological restoration and efforts to promote connectivity of KBAs at the landscape scale

The priority corridors for CEPF investment include forest areas that are home to genetic resources, such as wild apple, walnut, pear, apricot, and pistachio. These areas also allow for the movement of species of conservation concern (e.g., snow leopards, ungulates). Degraded forests and productive landscapes, such as natural pastures, are being improved through larger-scale, donor- and government-funded initiatives, including RESILAND+, Green Climate Fund (GCF) projects, and GEF projects and the national green heritage initiatives. However, CSO engagement in these initiatives, including the application of experience and good practices in forest and pasture management or migratory species, is limited. CEPF will support CSOs that can smoothly integrate with larger-scale efforts to demonstrate good practices that align with CEPF work and ongoing initiatives geographically and thematically. CSOs can contribute to establishing or strengthening ecological links between KBAs as well as links for migratory species. CEPF will promote good practices, nurseries, and pilot restoration and eco-connectivity enhancement efforts where they can have an impact, both locally and at the scale of corridors, in synergy with ongoing efforts of larger donors, initiatives and governments. CEPF will support the monitoring and conservation of globally threatened and migratory species, especially those prioritized by the Convention on Migratory Species (CMS), and ecosystem services to demonstrate the value and functioning of these corridors.

Science-backed approaches at the landscape level are needed to reduce the threats posed by climate change to migratory species, cryophilic endemic plants, high-altitude pastures with permafrost, and fruit and nut forests subject to diseases, pests, and other impacts of precipitation and temperature changes. Some of these approaches have been successfully

demonstrated by the Central Asian Mammals and Climate Adaptation (CAMCA) and GEF snow leopard projects for migratory species, and by GEF agricultural biodiversity projects in Central Asia. CEPF projects in the previous phase involved research on this topic. Additionally, there is a growing global knowledge base (available via the Adaptation at Altitude portal, UNFCCC portal, and other sources) that can be applied in the Mountains of Central Asia. CSOs can explore and use science data and replicate and tailor good practices in priority corridors in collaboration with other donors, where the threat of climate change is significant. CEPF grants with climate resilience as an objective need to be aligned with National Adaptation Plans (NAPs) and demonstrate climate and biodiversity benefits.

Water and riverine ecosystem corridors damaged by mining (industrial, artisanal, or gravel extraction), small-scale hydropower, or industrial legacies (abandoned geo-exploration, production or tailing sites) or tourism (plastic and tourism waste) as well as migratory birds corridors affected by pollution are eligible for CEPF support for small-scale, targeted projects that improve the knowledge of damage to biodiversity, catalyze interest and funding, or lead to tangible solutions by local authorities, ministries of emergencies or environment, or new or former site operators. Such demonstration projects can trigger or facilitate larger-scale restoration and cleanup of disrupted water ecosystems and reduce pollution risks. The project to clean up tourist plastic waste, remove fishing nets, and restore Issyk Kul Lake in Kyrgyzstan was successful in the previous phase of CEPF investments and can be replicated.

For projects that seek to work where powerful economic interests are involved or political sensitivity and attention is high, CEPF will take precautions, in terms of pre-award due diligence for endorsement of grantee activities to ensure that CEPF-supported work does not create political tensions or affect other CEPF grantees in the country, corridor or across the hotspot. At the same time, working with sensitivity, there may be space to engage civil society from China to provide input to these efforts.

Investment Priority 3.2: Evaluate and integrate values of biodiversity into land use and development planning

The hotspot is at the center of investments related to trade, transportation, agriculture, and energy. These investments draw the engagement of the private sector, governments, and donors. Land-use and development planning usually incorporate environmental considerations, but often fail to identify and address KBAs, endemic species, and complex biodiversity threats such as invasive and alien species (in new agri-businesses or trade deals) and cumulative impacts and pressures such as mountain tourism clusters near large cities, lakes, or mountain valleys with several KBAs.

CEPF can support projects that promote evaluation and integration of biodiversity, including specialist knowledge on species and KBAs and complex threats, into planning, and to ensure that such plans take into consideration the long-term benefits of biodiversity conservation as a means to reduce poverty, improve livelihoods, achieve health and food security, and maintain ecological quality. This investment priority focuses on existing and incoming development projects in agriculture, aquaculture, livestock management, afforestation, and infrastructure, where government agencies invite and/or allow CSO presence and activities that contribute to the conservation of priority corridors.

For projects that seek to influence (local) economic development plans, CEPF will take special precautions, in terms of pre-award due diligence and requests for endorsement of grantee activities (e.g., from local government or from the managers of a private sector project), to ensure that CEPF-supported work is consonant with local development goals.

Investment Priority 3.3: Support civil society efforts to analyze development plans and programs, evaluate their impact on biodiversity, and propose alternative scenarios and appropriate measures

Building on the previous investment priority, which focuses on the local or site level, this priority focuses on the need to engage CSOs in the wider development agenda, but again in relation to priority corridors. A key objective of this investment priority is to ensure that corridor-level conservation is integrated into national or sectorial land use and development plans by providing the opportunity for civil society to engage with planning processes led by governments and donors. Civil society organizations will be supported to provide information to decision makers and the public in a useful format and to develop alliances and partnerships (CSOs working in different countries or provinces on similar objectives, species, concerns).

Funding could also support civil society participation in environmental impact assessments – on road, mining, or tourism development plans and programs, for example – and could enable CSOs to flag objective environmental concerns and propose alternatives for planned or ongoing infrastructure development. Grants could support CSO-government partnerships, CSO-CSO alliances, and citizen engagement and ecological monitoring around development projects. Grant support for training could cover such areas as strategic environmental assessments, safeguards used by international banks, Chinese banks and developers, national standards, and mainstreaming of biodiversity into landscape planning.

Strategic Direction 4: Engage communities of interest and economic actors in the improved management of production landscapes and conservation

A production landscape could be as small as an individual farm and a mining site, or as large and openly managed as a mountain grazing area, or as controlled as a private hunting estate. The water reserves created by dams and wastewater retention ponds around large cities within the hotspot – such as Almaty, Dushanbe, Tashkent, and Bishkek – are production landscapes to some extent.

This strategic direction will support activities that show that economic activities need not conflict with sustainable management and local socio-economic development. Work will take place in priority KBAs, in areas that affect priority KBAs, or in the arena of decision making about productive practice, and could include discussions of agricultural lands (pasture and crop and plantations); forested areas (non-timber forest products); concession lands (hunting, mining, tourism); lands set aside for infrastructure development (roads, irrigation canals, water reservoirs, rail, power transmission lines, pipelines, urban expansion) and even wastewater ponds, which may transform into important habitats for birds. Work will have a direct impact on priority species, sites, and corridors.

The Investment Priorities below are fairly specific – engaging specific sectors, livestock and farm management, infrastructure, public debate – but all speak to the possibility of a coordinated grant mechanism having a wider impact. CEPF will use mechanisms, like platforms where multiple parties (e.g., CSOs, government agencies, livestock operations, and water companies all involved in management of the Western Tian Shan World Heritage Site) can engage on a common purpose (e.g., better management of transboundary resources). Similar possibilities exist around incorporation of environmental safeguards into infrastructure development projects and the promotion of policies for sustainable livestock management.

Investment Priority 4.1: Engage hunting associations, tourism operators, mining companies, and the information technology sector in conservation management and in improving accessibility of biodiversity information

Hunting associations, tourism operators, and mining companies that operate in and around KBAs have the potential to become vital partners in conservation. CEPF will support CSOs with grants to engage these groups by educating them about the species and habitats that they affect, by supporting them in the design of better management schemes, and by promoting appropriate mitigation measures by individual companies, and with grants that support development of national or use of the existing international voluntary standards from the International Organization for Standardization (ISO) on biodiversity, IUCN Standards and others for certain sectors. Some industries have Environmental, Social, and Governance (ESG) and local sponsorship initiatives that CSOs can advise on to help direct resources towards biodiversity needs and to improve their performance on ESG related to biodiversity.

Kazakhstan became the first country in the region to introduce a voluntary national standard on ecotourism in 2025. CSOs, including CEPF grantees, promoted the need for such a standard. Now, with continued CEPF support, they can work with tourism companies to provide training to implement the standard in practice as well as promote biodiversity-friendly practices and standards in other sectors.

Typically, ecosystem services are not properly valued. Trophy prices, park prices, forest and pasture use fees, or mineral extraction rights are too low, leading to too much offtake or too little investment in conservation, and those values are not incorporated into decision making or pricing. Grants could assist in valuation mechanisms that lead to reduced degradation, while still allowing for profitable use. Grants could also support hunting or tourism societies or sites that directly support or lead to improved conservation outcomes, including pathways to become OECMs.

The IT industry and related services in Central Asia, particularly in China, Kazakhstan, Uzbekistan, and Kyrgyzstan, are growing rapidly. Tashkent is now a major IT hub with multimillion-dollar export volumes, and Uzbekistan is adopting many biodiversity reporting and regulatory tools in its e-governance. Kazakhstan has relatively advanced online environmental and biodiversity indicators, maps, and datasets, some of which are publicly available. Kazakhstan's largest digital marketplace, KASPI.kz, is supporting the development of visitor centers in the national parks around Almaty, and this public-private partnership practice can be explored and potentially scaled up in other areas or countries.

CSOs can support governments or create their own online tools and apps. These kinds of activities sometimes prompt government agencies to catch up by developing official applications and online maps. CSOs have vast potential and creativity for collaborating with government agencies and independently to develop, improve, and create IT tools; maintain open datasets; and connect fragmented data. These efforts could be highly useful for conservation, environmental awareness, and education, including in gaming formats. Potential partners for such projects could be local and international IT companies and associations. Some of these partners may have their own funding to contribute or scale up. On the other hand, in areas where internet access is slow or restricted, CSOs can use their IT resources to inform local stakeholders about conservation issues they cannot access through the web. By collaborating with the IT industry and experts under these and other relevant strategic directions, CSOs can explore and improve the use of digital tools, earth observations and artificial intelligence in species monitoring and analysis.

This work will have particular relevance to stakeholders from China, if appropriate opportunities at engagement arise.

Investment Priority 4.2: Promote mainstreaming of conservation into livestock and farm management

Agriculture and livestock management are integral elements of Central Asian and mountain cultures and economies. However, whether in highly cultivated areas that are expanding up slopes in the Ferghana Valley and other piedmont zones, or in open access pastureland, poor practice and overgrazing can destroy critical habitats. CEPF will support projects that work at both local levels and area-wide reforms. At the local level, CEPF will not support sustainable grazing or sustainable farming in general, because other donors support it. Rather, the purpose of this investment priority is to support CSOs that demonstrate the causal link between better practice and improved conservation outcomes. This could include projects that encourage moving herding out of forests, actions that allow for forest and grassland regeneration, and the use of crop or livestock species that are less resource intensive. At the policy and planning level, grants could include education on soil and biodiversity conservation practices, introduction of technologies for the sustainable use of water in agriculture, information exchanges, and coaching by practitioners, provided the work is targeted at CEPF priority species, sites, and corridors.

Investment Priority 4.3: Engage with the government and private sector to integrate biodiversity safeguards into infrastructure development

As the economy in the region develops, KBAs are coming under increasing threat from development projects. Environmental impact assessment legislation is in place in all the countries of the hotspot. Yet enforcement and implementation can be weak, especially for local projects (gravel extraction, small hydropower construction and similar), and there are cases of flagrant and covert disregard for public consultations, disclosure, etc. Participation of CSOs in environmental impact assessments for large local projects requires good scientific and conservation expertise and the space for independent action. CSOs can play an important role in bridging the gap between good law and bad practice. Further, civil society advocacy and alliances can support government agencies in maintaining and performing their legal mandates to protect biodiversity and ensure that environmental safeguards are applied. This is an emergent role for civil society in the hotspot, and it represents a niche for CEPF when funding is not available from other donors and when an ability to respond rapidly is frequently required. This complements, in particular, the role highlighted for civil society in international initiatives such as the CMS Central Asian Mammals Initiative in relation to linear infrastructure: fences, power lines, and roads.

Alongside national environmental impact assessment legislation and regulations, many financing institutions use one or more KBA criteria in the application of site safeguard policies to avoid, minimize, or mitigate the impacts of projects on natural habitats. These include the World Bank, the Asian Development Bank, GCF, EBRD, the International Finance Corporation, and many private sector banks that have adopted the Equator Principles and follow International Finance Corp Standards. Other tools for protecting KBAs and biodiversity in relation to various developments include existing and emerging certification and accreditation schemes. Civil society organization input can ensure that biodiversity safeguards and standards are effectively applied, and that government and industry are aware of them before they commit to investments that could be environmentally damaging.

Advocacy and technical input to environmental impact assessments, review of such assessments, independent monitoring and investigations, support for consultations with local stakeholders, the building of alliances across different interest groups, and the

development of economic alternatives are all interventions that may be supported by CEPF in response to any KBA coming under threat.

For projects that seek to engage with the private sector, CEPF will take special precautions, in terms of more pre-award due diligence and requests for external endorsement of grantee activities (e.g., from local government or from the managers of a private sector project), to ensure that CEPF-supported work is consonant local and national economic priorities.

Investment Priority 4.4: Popularize biodiversity science and use the media to raise awareness of globally threatened species and KBAs and to inform public debate on conservation issues

As demonstrated by surveys and by the process of updating the ecosystem profile, the public has a limited understanding of biodiversity threats, including poor knowledge of red listed species and existing national and international regulations. The KBA concept is known only to specialists, and many CSOs who have worked with CEPF grants have knowledge gaps on KBAs and priority species. Popularizing biodiversity science, combined with coverage of successes and species discovery or recovery stories as well as stories on threats and impacts in the mass media and in social media channels (Telegram channels, Facebook groups, Instagram blogs, etc.), is essential for the success of conservation actions and for increasing the visibility of CEPF grantees and their work among the population, especially youth, and decision makers. This is also one of the lessons from the past phase.

The hotspot has diverse media and public information centers, and governments, CSOs, and donors make provisions for public participation for improved awareness. Tajikistan has a state environmental education and public awareness program. Significant though these steps have been, they have proven insufficient to fully explain and convey the value of biodiversity and the concerns about its threats to the grassroots level or to catalyze responses and behavioral changes. Major CSOs and public information centers as well as civil society networks and services are well-placed to spread information and knowledge about KBAs and inform debate on biodiversity. There are many tested and innovative approaches such as media festivals and site- or species-focused journalist visits, international days for species (snow leopard, saiga, markhor), and days for forests, water, glaciers, Earth, and wildlife, and local festivals for tulips, honey, and autumn crops, all of which could be used for raising awareness about conservation issues and popularizing science. Past public awareness campaigns conducted by CSOs on wild apples, tulips, and charismatic species have contributed to public debate, interest, and improved knowledge. This investment priority will consolidate and amplify these and other approaches.

In certain contexts, the most appropriate grants will be for support of environmental education via CSOs, provided the activities relate to conservation of species or sites. Possible activities may include:

- In communities living in KBAs or adjacent to protected areas, supporting development of curricula and targeted lectures and information materials for schools to teach children about environmentally friendly behaviors and red listed species, and conducting regular lectures and awareness events with participation of local community leaders in jamoats and mahallas.
- Providing support for organizing creative competitions among school and university students to stimulate their interest in conservation, establish or bolster student nature clubs, and honor young conservation champions (linked to international days on wildlife, biodiversity, etc.).

- Within the framework of an existing university in the region, providing targeted training to multiple individuals in the fields of applied biodiversity science, including field work, and the use of traditional and modern methods for species monitoring.

Strategic Direction 5: Facilitate the development of a robust and resilient community of conservation civil society organizations

This strategic direction reflects a commitment by CEPF to engage more deeply in the issue of long-term sustainability of CSOs in the Mountains of Central Asia Hotspot. Investment Priority 5.1 addresses the need to ensure that all CEPF grantees have access to support for the design, management, evaluation and reporting of the projects they implement with CEPF support. Joint and peer-to-peer learning will be important in delivering this. Investment Priority 5.2 delivers on CEPF's commitment to invest in the organizational development of a smaller group of strategic partners with high potential to deliver transformative impacts. Investment Priority 5.3 focuses on the strengthening of networks and collaborative action.

The details of calls for proposals, and the selection of projects, under this strategic direction will be informed by CEPF's global strategy on organizational development, which was adopted in August 2025. The organizational development strategy balances structure with flexibility, providing a guiding framework that allows for tailored support to CSOs, communities of CSOs (including networks) and RITs. The strategy is comprehensive but flexible. It provides tools and guidelines, yet allows scope for CSO assessment and determination, recognizing that organizational development cannot be imposed from outside. Rather, CSOs must recognize the need to grow and be willing to make the necessary changes.

Table 13.5. Capacity development approaches and examples of grantmaking modalities to support them

Type of approach	Possible grant-making modality
Capacity development on shared priority topics and for peer-to-peer learning (Investment Priority 5.1)	Grant to a specialist service provider to organize events for multiple grantees
Training and mentoring for individual CSOs on specific skills (Investment Priority 5.1)	Integration of support for capacity building as a component of a larger grant for a conservation project
Assessment, planning and delivery of a program of organizational development for a strategic CSO partner (Investment Priority 5.2)	Grant to a CSO specifically for organizational development OR Grant to a specialist service provider to support the organizational development of one or more beneficiary CSOs
Support to a group of CSOs to form or strengthen a network or coalition (Investment Priority 5.3)	Grant to one or more CSOs to establish a new network/coalition or strengthen an existing one

Funding for all types of capacity building and organizational development may be awarded: to a specialist service provider, to support one or several beneficiary CSOs; directly to the beneficiary CSO as part of a larger conservation project grant; or directly to the beneficiary CSO as a dedicated capacity development grant. The decision on the most appropriate approach in each case will be influenced by the capacity development approach being supported, as summarized in table below. The RIT will have a key role in planning and coordinating the efficient and effective delivery of capacity building and organizational

development, using the range of capacity development approaches and funding modalities available. The RIT is expected to involve dedicated CSO capacity development organizations to assist them in this role, as well as in the design and delivery of appropriate support that addresses needs identified by CSOs.

Investment Priority 5.1: Ensure that CEPF grantees have the technical capacity to plan, implement and sustain effective conservation projects

Many of the local CSOs currently working or with the potential to work on conservation have missions on general environmental (awareness raising, climate adaptation, risk reduction) or socio-economic development (women, youth, education, food security) and need training to plan and implement nature-focused projects. CEPF will consider provision of core project planning and management capacity development to any local CSO that receives funding to implement a conservation project. This may include capacity building for participatory development, climate-resilient livelihoods, nature-based solutions to disaster risk reduction, and linking livelihood interventions to conservation outcomes. Needs will be identified jointly by the RIT and each grantee, either at the start of each project or during its implementation. Skills training will be delivered primarily through standardized modules, provided online or in person. Where a partner CSO needs specific, one-to-one support in particular capacity areas, this may be addressed by the RIT directly, by a specialist training provider, or by arranging for the CSO to partner with a more experienced mentor (such as an international NGO).

Activities eligible for funding under this investment priority include:

- Developing and running a training course (in-person or online) to address priority training needs identified by grantees, or participation in a course
- Participation in a skills training course being organized by a specialist provider
- Mentoring or coaching individual staff
- Providing advice to management staff on capacity building
- Learning visits and exchanges to other organizations and projects
- Mentoring and support for writing up and publishing the results and lessons from projects
- Procuring equipment and material that allow new skills to be implemented

Investment Priority 5.2: Provide support to targeted conservation CSOs engaged in a process of organizational development

CEPF intends to invest in longer-term and deeper support for the organizational development of a small number of strategically important CSOs in the region (indicatively, up to 10 organizations). This support may go beyond project-related capacity building (Investment Priority 5.1), to cover such issues as strategic communications, financial sustainability, governance, management of staff turnover and regeneration. By fostering an adaptive, learning-driven approach, support for organizational development will ensure that CSOs and their networks increase their resilience to a changing operating environment and their ability to protect biodiversity for generations to come.

Long-term support for organizational development will be prioritized for partners with:

- A track record of successful implementation of conservation projects (regardless of size of project or donor)
- Basic systems for the development and management of the organization's activities in place (e.g., staffing structure, finance and accountability mechanisms, governance)

- Clear evidence of a commitment to organizational change, including a willingness and ability to allocate staff time and resources
- A plan for sustaining organizational development, including institutionalization of changes to working culture and jobs, continuation of financial support, and ongoing contact and access to support where needed

Examples of activities eligible for funding under this investment priority could include:

- Preparatory discussions between key people in the organization and an expert facilitator, to help the organization understand and plan an organizational development process
- A workshop or retreat to plan a process of organizational development
- An external facilitator to facilitate the workshop and support the planning process
- Facilitation and organization of high-priority organizational development activities
- Delivery of an organizational development plan over 2-3 years, including workshops and mentoring visits
- Learning visits to other CSOs
- Participation in peer-learning events and exchanges
- Proposal development to raise funds for continuing organizational development and follow-up activities

Investment Priority 5.3: Enhance the collective strength and ability of conservation CSOs

CEPF recognizes that CSOs in phase one have tended to work alone or in sectoral silos, and that this limits the potential for creating change, especially at the level of wider society. CEPF also recognizes, however, that inducing CSOs to work together only to access funding does not create impactful, collaborative partnerships.

CEPF will prioritize funding for new or existing collaborative efforts and networks where:

- There is a clear purpose and clear constituency (target audience). Examples might include collaboration to conserve a specific site, addressing a particular problem, or improving awareness and the public narrative on an issue
- There is a clear mechanism for managing support received from CEPF or other sources, including mechanisms for receiving and handling funds, planning, reporting and accountability
- There is evidence of the willingness and commitment of CSOs to work together beyond the desire to collaborate to secure funding (e.g., self-funded collaboration, which can be scaled up or sustained with CEPF support)

Actual or perceived competition among CSOs is a barrier to collaboration. CEPF support to networking and collaboration should contribute to demonstrating the value of open collaboration, and the sharing of ideas and resources. CEPF support will, therefore, focus on networks and collaborative efforts that are open, and actively encourage the engagement of wider civil society. This will include providing opportunities for less experienced individuals and organizations to learn and grow through participation.

Activities eligible for funding under this investment priority include:

- Workshops and meetings to initiate or strengthen collaboration among CSOs working on a common conservation issue
- Networking meetings, events, communications and joint actions

- Linking of local and national CSOs to regional and international networks and themed alliances
- Support for participation in the meetings of international conventions (e.g., Convention on Migratory Species, CITES, RAMSAR), UNESCO world heritage site nomination processes, and the global mountain summit (to be held in Kyrgyzstan in 2027), thereby nesting the work of CSOs in these larger efforts and better engendering political support.

Subsectors within the CSO community (e.g., conservation groups, forest and land user and hunting associations, public information centers, mountain development) tend to be better at networking within their own peers than with others, and good opportunities for alliances and collaborative work may be missed as a result. There are existing alliances (e.g., Central Asia Mountain Partnership; Central Asia climate change groups) that have played roles in targeted support or in advocacy with a united voice. Linking local and national CSOs to regional and international networks may enhance collective strength, access to sources of information and funding, and thus improve the sustainability of actions. This is also relevant in the context of participation of Central Asia CSOs in IUCN-led and other working groups (specialist groups on ecosystems, red lists, KBAs), and in thematic networks such as Important Bird Areas (IBAs) and Important Plant Areas (IPAs).

Last, across this strategic direction, even as the “space” for civil society engagement in each of the seven countries might vary over time, opportunities will arise for networking, exchange, and peer-to-peer learning that allow individuals and organizations to benefit in a way that does unduly challenge host country partners.

Strategic Direction 6: Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile

CEPF Regional Implementation Teams (RITs) support comprehensive and integrated portfolios covering larger anchor projects, smaller grassroots activities, policy initiatives, governmental collaboration, relations with regionally present donors, and financing. RITs use the Ecosystem Profile to develop a cohesive portfolio of grants.

The RIT for Central Asia will consist of one or more civil society organizations active in conservation and will be selected by the CEPF Donor Council based on approved terms of reference, a competitive process, and selection criteria available at www.ceph.net. The team will operate in a transparent and open manner, consistent with the CEPF mission and all provisions of the CEPF Operational Manual. Organizations that are members of the RIT are not eligible to apply for other CEPF grants within the same hotspot. CEPF can accept grant applications from formal affiliates of the RIT organization(s), provided the applicant has an independent operating board of directors; such applications then receive additional external review.

Investment Priority 6.1: Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile

The RIT provides strategic leadership and knowledge for building a constituency of civil society groups working across institutional and political boundaries toward achieving the conservation goals described in the Ecosystem Profile. The RIT also plays a key role

supporting the consolidation of CSOs and identifying funding opportunities to leverage and complement CEPF's investment.

Major functions of the team include but are not limited to:

- Acting as an extension service to assist civil society groups in designing, implementing, and replicating successful conservation activities
- Reviewing all grant applications and managing external reviews with technical experts and advisory committees
- Awarding small grants up to \$50,000 and deciding jointly with the CEPF Secretariat on other applications
- Leading the monitoring and evaluation of individual projects using standard tools, site visits, and meetings with grantees, and assisting the CEPF Secretariat in portfolio-level monitoring
- Build the institutional capacity of grantees to ensure efficient and effective project implementation
- Widely communicating CEPF objectives, opportunities to apply for grants, lessons learned, and results

The RIT will play a critical role in ensuring the sharing of lessons between grantees and the replication of success. The expectation of CEPF is that many groups will be trying innovative approaches, either new to the place or new to them. The RIT's job is to guide these groups and make connections among them.

In the context of this investment priority, the RIT will undertake the many activities that turn the updated ecosystem profile into action, including designing calls for proposals to yield grant-funded projects. The RIT will design calls for proposals and work with applicants so that they address constraints to participation by women and other vulnerable groups, ensure gender equitable access to information, promote gender equitable distribution of resources and improve gender equity within CSO organizational structures.

Working with the CEPF Secretariat, the RIT will support the implementation of CEPF's new strategy on Social Sustainability in the hotspot. Thus, the RIT will promulgate an approach that as natural ecosystems are essential for human well-being, socially sustainable communities – through participatory governance, local knowledge, and equitable resource use – also play vital role in protected and restoring biodiversity. The RIT will embed this approach in its own work, as described for gender above, but to also include vulnerable and underrepresented groups by multiple standards, including among others, race, religion, age, and sexual orientation.

14. RESULTS FRAMEWORK

The result framework primarily uses CEPF's Global Indicators (GI) to set targets for the investment in the hotspot. Additional Portfolio Indicators (PI) are introduced to set targets and monitor specific impacts that are not covered by the global indicators.

The expectation is that the grant portfolio will comprise approximately 30 large and 50 small grants over a five-year investment period. This is based on a spending authority of US\$8 million. Using these expected resources, the anticipated results shown below are based on CEPF's experience in the hotspot during Phase I, plus CEPF's experience elsewhere around the world. Targets are purposefully conservative, recognizing that: (i) the organizations that implement projects may have low capacity; and (ii) CEPF maintains a high standard for validating results as having been achieved. Various scorecards, objective monitoring and evaluation methods, as well as other options, will be considered appropriate to the circumstances of the grantee and location.

Pillar 1: Biodiversity

Goal: Improve the status of globally significant biodiversity in critical ecosystems within hotspots.

No.	Indicator	Target	Relevant SDs/IPs	Means of verification
GI-B1	Number of globally threatened species benefiting from conservation action	22	SD1	Grantee reports
GI-B2	Number of hectares of Key Biodiversity Areas with improved management	400,000	SD2	Grantee reports
GI-B3	Number of hectares of protected areas created and/or expanded	10,000	IP1.3	Grantee reports, Official documents
GI-B4	Number of hectares of production landscapes with strengthened management of biodiversity	380,000	IP2.2, SD4	Grantee reports
GI-B5	Number of protected areas with improved management	20	IP2.1	Protected Area Management Effectiveness Tracking Tool (or similar tool)
GI-B6	Number of hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration	5,000	IP3.1	Grantee reports
PI-B1	Number of priority species with significantly improved information on population status, threats and/or effectiveness of conservation action	3	IP1.5	Grantee reports
PI-B2	Number of countries with national programs to identify and promote conservation of KBAs	1	IP2.3	Grantee reports

Pillar 2: Civil Society

Goal: Strengthen the capacity of civil society to be effective as environmental stewards and advocates for the conservation of globally significant biodiversity.

No.	Indicator	Target	Relevant SDs/IPs	Means of verification
GI-CS1	Number of CEPF grantees with improved organizational capacity	40	IP5.2	CEPF Civil Society Tracking Tool
GI-CS2	Number of CEPF grantees with improved understanding of and commitment to gender issues	40	IP5.2	CEPF Gender Tracking Tool
GI-CS3	Number of networks and partnerships that have been created and/or strengthened	10	IP5.3	Grantee reports
PI-CS1	Number of CSOs demonstrating improved communication and collaboration with communities and government agencies towards national and international conservation goals	2	IP5.1	CEPF report
PI-CS2	Number of organizations engaged in a process of organizational development	10	SD5	CEPF report
PI-CS3	Number of CEPF grantees that have made significant progress towards their own organizational development goals	5	tbd	Specific survey at mid-term and at the end of the investment phase

Pillar 3: Human Well-Being

Goal: Improve the well-being of people living in and dependent on critical ecosystems within hotspots.

No.	Indicator	Target	Relevant SDs/IPs	Means of verification
GI-HW1	Number of people receiving structured training	500 women 500 men	IP2.3, IP6.1	Grantee reports
GI-HW2	Number of people receiving non-cash benefits* other than structured training	25,000 women 25,000 men	IP1.1, IP4.2	Grantee reports
GI-HW3	Number of people receiving cash benefits**	2,500 women 2,500 men	IP1.1	Grantee reports
GI-HW4	Number of projects promoting nature-based solutions to combat climate change	10	SD4	CEPF Secretariat analysis of portfolio

Notes: * = non-cash benefits include increased access to clean water, increased food security, increased access to energy, increased access to public services, increased resilience to climate change, improved land tenure, improved recognition of traditional knowledge, improved representation and decision-making in governance forums, and improved delivery of ecosystem services; ** = cash benefits include increased income from employment, increased income from livelihood activities. Regarding indicator GI-HW5, there is no explicit focus on this, hence no target; this indicator will be monitored separately at the global level.

Pillar 4: Enabling conditions for conservation

Goal: Establish the conditions needed for the conservation of globally significant biodiversity.

No.	Indicator	Target	Relevant SDs/IPs	Means of verification
GI-EC1	Number of laws, regulations, and policies with conservation provisions that have been enacted or amended	5	IP1.2	Grantee reports, official documents
GI-EC2	Number of sustainable financing mechanisms that are delivering funds for conservation	1	IP5.4	Grantee reports; RIT analysis
GI-EC3	Number of companies that adopt biodiversity-friendly practices	4	IP4.1	Grantee reports
PI-EC1	Number of conservation corridors where biodiversity values have been evaluated and integrated into land-use and development plans	2	IP3.2	Grantee reports
PI-EC2	Number of development plans and programs for which their impacts on biodiversity have been evaluated and appropriate alternatives have been proposed	2	IP3.3	Grantee reports
PI-EC3	Number of infrastructure development projects in conservation corridors that incorporate biodiversity safeguards	2	IP4.3	Grantee reports
PI-EC4	Number of issues related to the conservation of globally threatened species and KBAs that are the subject of public debate	3	IP4.4	Grantee reports

Table 14.1. Risk Analysis

Risk	Likelihood and severity	Mitigation measures
Program objective: The evolving geopolitical situation and operational conditions for CSOs require a major revision of CEPF's engagement with CSOs and the focus areas of its investments	Likelihood: the possibility that the operational space for CSOs and their int. donor funding sources will shrink in the region is medium Severity: The impact on the CEPF program can be significant, with postponement or minimal grant disbursement. Nevertheless, the risk of problems across all or most of the eligible countries is low as is the risk of an overhaul of focus areas Political risks also include the GEF focal points being unable to give a no-objection to the program or for reasons beyond CEPF authorities may limit the scope of int. support for CSOs	Program level: Monitoring of grant-making and CSO operational conditions across all eligible countries reduces the impact of problems. Ensuring that the RIT has flexibility in timing and focus of calls for proposals and disbursement of grants allows it to respond to changing situations. Grant level: Grants in countries with a growing risk for CSO operations and foreign funding sources will be subject to review, and grant disbursement and monitoring schedules could be adjusted depending on the evolving situation. Neither grantees nor the RIT will be funded or asked to undertake activities in high-risk areas.
SD1: Political or security situation prevents engagement of CSOs at location of priority species	Likelihood: Medium Severity: Medium. Even if a particular CSO cannot engage in site-based work, there are ways to influence conservation of the species, including engagement with the government or via public awareness campaigns	Program level: Multiple priority species allow CEPF multiple opportunities for engagement Grant level: Analysis by RIT of species, location, and viable applicants prior to release of RfP
SD2: Political or security situation prevents engagement of CSOs at location of priority sites	Likelihood: Medium. Severity: Severe for some sites. Site-based engagement of civil society is fundamental to CEPF approach	Program level: Multiple priority sites allow CEPF multiple opportunities for engagement Grant level: Analysis by RIT of sites, possible interventions, and viable applicants prior to release of RfP; engagement between RIT and government authorities prior to release of RfP

Risk	Likelihood and severity	Mitigation measures
SD3: Public and private sector stakeholders decline to engage in discussions to mainstream biodiversity because political or economic demands or national development priority	Likelihood: Medium Severity: Medium for relevant sites and corridors. CSOs have limited leverage to force discussions to happen or to outweigh political or economic forces; CEPF does not operate at a financial magnitude to command or demand engagement from host-country government or private sector	Program level: RIT resourced and mandated to liaise closely with host-country governments, to ensure good alignment between CEPF investments and national priorities; grant making under this strategic direction will focus on countries with a greater opportunity to engage with and influence public and private sector actors Grant level: Grants under this strategic direction must be to CSOs with high capacity and established credibility with government, and may be greater than the average size
SD4: Conservation enterprises and biodiversity-friendly private sector practices do not generate a premium to change behavior	Likelihood: Medium Severity: Medium. While creating viable or profitable business models is difficult, actors likely to adopt better practice will not necessarily abandon it and will have positive impact	Program level: RIT understanding of opportunities by country and sector prior to release of RfP Grant level: Selection of grantees with detailed understanding of business practice and value chain
SD4: Civil society prevented from effectively engaging site safeguard practices	Likelihood: Medium Severity: High. Infrastructure development that ignores EIA procedures may have major impact on species, sites, and corridors. In high-stakes projects, such as large hydropower dams or national roads, authorities may disproportionately react to CSOs.	Program level: RIT understanding of threats and engagement of government partners throughout the CEPF investment period Grant level: Grants under this strategic direction must be to CSOs with appropriate understanding of political processes, risks and nuances

Risk	Likelihood and severity	Mitigation measures
SD5: The political situation and operational conditions in parts of the hotspot limit engagement of civil society	Likelihood: Medium Impact: Medium. The openness of governments to working with civil society varies across the hotspot, with positive and negative trends in different countries. Future trajectories are difficult to predict. The impact of a negative situation depends on its severity. With most grants expected to be focused on site-based action, immediate grant activities may not be severely affected, except where receiving funds from external sources becomes problematic.	Program level: Grant-making across eligible countries reduces the overall risk to the program. The RIT will liaise with grantees and donors (for example, World Bank offices and EU delegations) to monitor changing circumstances and develop appropriate responses. Grant level: Only a ban on receipt of funds from foreign sources would result in cancellation of grant making in a country. Other limitations might require redesign of objectives and modalities.
SD6: No suitable organizations are interested and apply to serve as the RIT for the hotspot. Or the selected RIT cannot perform well due to changing circumstances in the lead organization or in the host country.	Likelihood: Medium Impact: High. The success of the program is highly dependent on the recruitment of an effective RIT with relevant skills and networks and its ability to adjust to the changing circumstances in the region	Program level: This is a pre-condition for the commencement of the program, not an assumption for successful program delivery. CEPF will manage the process to ensure that suitable candidates are aware of the call for proposals.

This risk analysis does not cover potential CEPF work in the Chinese (Tien Shan in Xinjiang) and Afghan (the Wakhan Valley and Badakhshan) sections of the biodiversity hotspot. Each section has its own nuances and requires additional analysis.

15. SUSTAINABILITY

In the first phase of CEPF investments in the Mountains of Central Asia, numerous civil society organizations were engaged in conservation and training, diverse species and key biodiversity areas covered, and several GEF projects based on KBAs initiated. At the organizational level, CEPF capacity-building grants supported CSO capacity, and provided opportunities for experience exchange. With new global and national biodiversity targets and NBSAPs, the prospects for sustainability are promising.

Identifying and protecting sites that harbor populations of globally threatened species and their key habitats is a cornerstone of the CEPF approach. Small grants targeted at conservation of threatened species would ensure that these species receive the attention. While not all KBAs are subject to legal or other forms of protection, the visibility of KBAs may attract attention of development players and open the opportunities for conservation by a broad range of actors – from local communities to authorities, businesses and donors. Ecological corridor and hotspot-level cooperation can promote conservation at regional scale, important for species movements and to mitigate pressures and barriers transcending national boundaries, such as climate change.

Some CEPF grants may support the private sector or income generation activities by CSOs, perhaps in combination with other funding sources. Such projects may cover local honey or responsibly harvested fruits and nuts from the wild forests that spin into ongoing enterprises. Grantees may develop ecotourism and responsible hunting that support communities and become commercially viable and self-sustaining. The Regional Implementation Team can assist grantees across all activities to identify funding sources for successive phases. The RIT can also facilitate the sharing of lessons and replication of best practice between grantees.

The potential influence of CEPF extends beyond grantees. One of the strategic directions establishes the base for improved KBA identification, coordination and management. Official conservation regulations can acknowledge the presence of KBAs. This contribution could insure the sustainability of the conservation efforts in the Mountains of Central Asia. Revision of policies and regulations to meet the modern conservation approaches, tools and methods increases the chances of long-term success.

Given the young median age of the population in the biodiversity hotspot, the sustainability of conservation investments is linked to environmental awareness and education. Limited awareness of the local and global importance of nature, the means for conservation, and the alternatives may limit the effectiveness of conservation investments. Cross-cutting activities on awareness and education will deepen the sustainability prospects.

The engagement of communities, the private sector, and CSOs across the region lays the groundwork for continuing support for the conservation of biodiversity. The potential for ongoing alliances fostered by CEPF grants and strategic leadership, the increased capacity and professionalism of conservation NGOs, and the adoption of the KBA designation in policies and business practices all support the prospective sustainability of the CEPF investment program in the mountains of Central Asia.

The further strengthening of CSOs as individual entities, the promotion of civil society as an equal partner with the public and private sectors as managers of natural resources, and the engagement of stakeholders in a socially sustainable manner will create lasting conditions for conservation action.

ABBREVIATIONS

ACBK	Association for the Conservation of Biodiversity of Kazakhstan
ADB	Asian Development Bank
AFD	l'Agence Française de Développement
AKF	Aga Khan Foundation
CAMI	Central Asian Mammals Initiative
CBD	Convention on Biological Diversity
CEPF	Critical Ecosystem Partnership Fund
CITES	Convention on International Trade in Endangered Species
CMS	Convention on Migratory Species
CR	Critically Endangered (IUCN Red List status)
CSO	Civil Society Organization
EBRD	European Bank for Reconstruction and Development
EN	Endangered (IUCN Red List category)
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
G200	Global 200 Eco-regions
GDP	Gross Domestic Product
GCF	Green Climate Fund
GEF	Global Environmental Facility
GHG	Greenhouse gases
GIZ	German Agency for International Cooperation
GSLEP	Global Snow Leopard and Ecosystem Protection Program
IBA	Important Bird and Biodiversity Area
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
JICA	Japan International Cooperation Agency
KBA	Key Biodiversity Area
MEA	Multilateral Environmental Agreement
MoU	Memorandum of Understanding
MSRI	Mountain Societies Research Institute of the University of Central Asia (UCA)
NABU	Naturschutzbund Deutschland (German Nature Conservation Union)
NBSAP	National Biodiversity Strategy and Action Plan
NDC	(Intended) Nationally Determined Contribution
NGO	Non-Governmental Organization
PA	Protected Area
PES	Payment for Ecosystem Services
REC CA	Regional Environment Centre for Central Asia
RIT	Regional Implementation Team (CEPF)
RSPB	Royal Society for the Protection of Birds
SLF	Snow Leopard Foundation
SLT	Snow Leopard Trust
UK	United Kingdom
UCA	University of Central Asia
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme / UN Environment since 2017
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change

VU	Vulnerable (IUCN Red List status)
WCS	Wildlife Conservation Society
WCR	Wild crop relative, also applicable to fruits and nuts
WHC	World Heritage Convention
WWF	World Wide Fund for Nature

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APPENDICES

Appendix 1. Species Outcomes

No.	Scientific Name	Common Name	Global Threat Status			Distribution by Country						
			Critically Endangered	Endangered	Vulnerable	Afghanistan	China	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenista	Uzbekistan
MAMMALS			0	3	5							
1	Equus ferus	Przewalski Horse		EN			+	+				
2	Gazella subgutturosa	Goitered Gazelle			VU	+		+	+	+	+	+
3	Marmota menzbieri	Menzbier’s Marmot			VU			+	+	+		+
4	Ochotona iliensis	Ili Pika		EN			+					
5	Ovis vignei	Urial			VU	+		+	+	+	+	+
6	Panthera pardus ssp. tulliana	Persian Leopard		EN		+		+		+	+	+
7	Panthera uncia	Snow Leopard			VU	+	+	+	+	+		+
8	Vormela peregusna	Marbled Polecat			VU	+		+	+	+	+	+
BIRDS			2	6	14							
1	Anser erythropus	Lesser White-fronted Goose			VU	+		+			+	+
2	Aquila heliaca	Eastern Imperial Eagle			VU	+	+	+	+	+	+	+
3	Aquila nipalensis	Steppe Eagle		EN		+	+	+	+	+	+	+
4	Aythya ferina	Common Pochard			VU	+	+	+	+	+	+	+
5	Branta ruficollis	Red-breasted Goose			VU			+		+	+	+
6	Calidris falcinellus	Broad-billed Sandpiper			VU	+		+	+		+	+
7	Calidris ferruginea	Curlew Sandpiper			VU	+		+		+	+	+
8	Chlamydotis macqueenii	Asian Houbara			VU	+	+	+	+	+	+	+
9	Clanga clanga	Greater Spotted Eagle			VU	+	+	+	+	+	+	+
10	Columba eversmanni	Yellow-eyed Pigeon			VU	+	+	+	+	+	+	+
11	Emberiza rustica	Rustic Bunting			VU	+		+	+	+	+	+
12	Falco cherrug	Saker Falcon		EN		+	+	+	+	+	+	+
13	Haliaeetus leucoryphus	Pallas’s Fish Eagle		EN		+	+	+	+	+	+	+
14	Larus relictus	Relict Gull			VU		+	+				
15	Leucogeranus leucogeranus	Siberian Crane	CR			+		+			+	+

No.	Scientific Name	Common Name	Global Threat Status			Distribution by Country						
			Critically Endangered	Endangered	Vulnerable	Afghanistan	China	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
16	Melanitta fusca	Velvet Scoter			VU			+	+	+	+	+
17	Neophron percnopterus	Egyptian Vulture		EN		+	+	+	+	+	+	+
18	Otis tarda	Great Bustard		EN		+	+	+	+	+	+	+
19	Oxyura leucocephala	White-headed Duck		EN		+	+	+	+	+	+	+
20	Podiceps auritus	Horned Grebe			VU	+	+	+	+	+	+	+
21	Streptopelia turtur	European Turtle-dove			VU	+	+	+	+	+	+	+
22	Vanellus gregarius	Sociable Lapwing	CR			+		+	+	+	+	+
REPTILES			2	1	4							
1	Alsophylax ferganensis	Fergana Even-toed Gecko	CR									+
2	Alsophylax loricatus	Strauch's Even-fingered Gecko			VU				+			+
3	Alsophylax tadjikiensis	Tadjikistan Even-fingered Gecko	CR							+		
4	Phrynocephalus saidalievi	Fergana toad-headed agama			VU				+	+		+
5	Phrynocephalus strauchi	Strauch's Toad Agama			VU					+		+
6	Testudo horsfieldii	Central Asian tortoise			VU	+	+	+	+	+	+	+
7	Teratoscincus rustamowi	Rustamov's Gecko		EN					+	+		+
AMPHIBIANS			0	1	1							
1	Rana asiatica	Asian Frog			VU		+	+	+			
2	Ranodon sibiricus	Semirechensk Salamander		EN			+	+				
FISHES			3	5	11							
1	Acipenser nudiventris	Ship Sturgeon	CR				+	+				
2	Aspiolucius esocinus	Pike Asp		EN		+		+	+	+	+	+
3	Cyprinus carpio	Eurasian Carp			VU	+	+	+	+	+	+	+
4	Leuciscus bergi	Issyk-Kul Dace			VU				+			
5	Leuciscus lindbergi	Talas Dace		EN				+	+			
6	Leuciscus schmidtii	Schmidt's Dace			VU				+			
7	Luciobarbus brachycephalus	Aral Barbel		EN		+		+	+	+	+	+
8	Luciobarbus capito	Bulatmai Barbel			VU	+		+	+	+	+	+

No.	Scientific Name	Common Name	Global Threat Status			Distribution by Country						
			Critically Endangered	Endangered	Vulnerable	Afghanistan	China	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
9	Phoxinus brachyurus	Seven River's Minnow			VU			+	+			
10	Pseudoscaphirhynchus hermanni	Small Amu-Darya Shovelnose Sturgeon	CR			+				+	+	+
11	Pseudoscaphirhynchus kaufmanni	Amu Darya Shovelnose Sturgeon	CR			+				+	+	+
12	Schizothorax argentatus	Balkhash marinka			VU		+	+				
13	Schizothorax plagiosomus	Snow Trout			VU	+				+		+
14	Schizothorax pseudoaksaiensis	Ili marinka			VU			+	+			
15	Triplophysa coniptera	Tersky Loach		EN				+	+			
16	Triplophysa labiata	Plain Thicklip Loach			VU		+	+	+			
17	Triplophysa paradoxa	Talas Loach		EN				+	+			
18	Triplophysa sewerzowi	Severtsov's Loach			VU			+	+			
19	Troglocobitis starostini	Starostin's loach			VU						+	
INVERTEBRATES			0	0	7							
1	Chalepoxenus tarbinskii	Ant			VU				+			
2	Chalepoxenus zabelini	Ant			VU						+	
3	Onychogomphus flexuosus	Waved Pincertail			VU	+				+	+	+
4	Parnassius apollo	Apollo			VU			+	+	+	+	+
5	Parnassius autocrator	Pamir Parnassius			VU	+				+		
6	Saga pedo	Common Predatory Bush-cricket			VU			+	+	+	+	+
7	Strongylognathus minutus	Ant			VU						+	
PLANTS			22	20	19							
1	Aldrovanda vesiculosa	Bladderwort		EN				+				+
2	Ammopiptanthus nanus	Ammopiptanthus nanus	CR				+		+			
3	Amygdalus bucharica	Wild Almond			VU				+	+		+
4	Armeniaca vulgaris	Wild Apricot		EN			+	+	+			+
5	Astragalus bobrovii	milkvetch species		EN							+	+
6	Atraphaxis muschketowi	Shrubby Buckwheat		EN				+	+			

No.	Scientific Name	Common Name	Global Threat Status			Distribution by Country						
			Critically Endangered	Endangered	Vulnerable	Afghanistan	China	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
7	<i>Berberis iliensis</i>	barberry species			VU		+	+				
8	<i>Betula talassica</i>	Downy Birch		EN				+				
9	<i>Betula tianschanica</i>	birch species		EN			+	+	+			+
10	<i>Calligonum calcareum</i>	smartweed species	CR						+			+
11	<i>Calligonum elegans</i>	smartweed species		EN								+
12	<i>Cornus darvasica</i>	Cornus darvasica	CR							+		
13	<i>Cousinia knorringiae</i>	Cousinia knorringiae		EN					+			+
14	<i>Crataegus darvasica</i>	hawthorn species	CR							+		
15	<i>Crataegus knorringiana</i>	hawthorn species	CR						+			
16	<i>Crataegus necopinata</i>	hawthorn species	CR							+		
17	<i>Damasonium alisma</i>	Starfruit			VU			+				
18	<i>Incarvillea semiretschenskia</i>	Incarvillea semiretschenskia		EN				+				
19	<i>Lonicera karataviensis</i>	honeysuckle species	CR					+				
20	<i>Lonicera paradoxa</i>	honeysuckle species		EN					+	+		+
21	<i>Malus niedzwetzkyana</i>	wild apple species		EN				+	+	+		+
22	<i>Malus sieversii</i>	wild apple species			VU		+	+	+	+		+
23	<i>Moluccella bucharica</i>	Otostegia Bukharskaya	CR									+
24	<i>Polygonum toktoquicum</i>	smartweed species	CR						+			
25	<i>Populus berkarensis</i>	poplar species	CR					+				
26	<i>Pyrus cajon</i>	wild pear species		EN						+		
27	<i>Pyrus korshinskyi</i>	wild pear species	CR						+	+		+
28	<i>Pyrus tadshikistanica</i>	wild pear species	CR							+		
29	<i>Prunus tadzhikistanica</i>	wild prune species		EN						+		
30	<i>Ribes malvifolium</i>	currant species	CR									+
31	<i>Salvia korolkowii</i>	salvia species			VU				+			+
32	<i>Sibiraea tianschanica</i>	rose species	CR					+	+			
33	<i>Spiraeanthus schrenkianus</i>	rose species		EN				+	+			
34	<i>Swida darvasica</i>	dogwood species	CR							+		

No.	Scientific Name	Common Name	Global Threat Status			Distribution by Country						
			Critically Endangered	Endangered	Vulnerable	Afghanistan	China	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
35	<i>Tulipa affinis</i>	tulip species			VU					+		+
36	<i>Tulipa anadroma</i>	tulip species			VU				+			
37	<i>Tulipa anisophylla</i>	tulip species			VU	+				+		+
38	<i>Tulipa bactriana</i>	tulip species	CR									+
39	<i>Tulipa boettgeri</i>	tulip species	CR							+		+
40	<i>Tulipa butkovii</i>	tulip species			VU							+
41	<i>Tulipa carinata</i>	tulip species			VU						+	+
42	<i>Tulipa dianaeverettiae</i>	tulip species	CR					+				
43	<i>Tulipa fosteriana</i>	tulip species			VU							+
44	<i>Tulipa ivasczenkoae</i>	tulip species	CR					+				
45	<i>Tulipa jacquesii</i>	tulip species			VU				+			
46	<i>Tulipa lemmersii</i>	tulip species			VU			+				
47	<i>Tulipa micheliana</i>	tulip species			VU					+	+	+
48	<i>Tulipa neustruevae</i>	tulip species		EN					+			
49	<i>Tulipa orithyioides</i>	tulip species		EN								+
50	<i>Tulipa orthopoda</i>	tulip species			VU			+				
51	<i>Tulipa platystemon</i>	tulip species			VU				+			
52	<i>Tulipa praestans</i>	tulip species			VU					+		
53	<i>Tulipa regelii</i>	tulip species		EN				+				
54	<i>Tulipa scharipovii</i>	tulip species		EN								+
55	<i>Tulipa subquinquefolia</i>	tulip species			VU	+				+		
56	<i>Tulipa talassica</i>	tulip species		EN					+			
57	<i>Tulipa toktoqulica</i>	tulip species		EN					+			
58	<i>Tulipa uzbekistanica</i>	tulip species	CR									+
59	<i>Tulipa zenaïda</i>	tulip species			VU			+	+			
60	<i>Tulipa zonneveldii</i>	tulip species			VU				+	+		
61	<i>Zygophyllum bucharicum</i>	caltrop species	CR			+				+		+
62	<i>Zygophyllum darvasicum</i>	caltrop species	CR							+		

Note: **Bold/shade** denotes priority species for CEPF investment

Appendix 2. Globally Threatened Species No Longer Present in the Hotspot

No.	Scientific name	Common name	Global threat status
1	<i>Panthera tigris virgata</i>	Caspian Tiger	EN (EX)
2	<i>Cuon alpinus</i>	Dhole	EN
3	<i>Pseudoscaphirhynchus fedtschenkoi</i>	Syr-Darya Shovelnose Sturgeon	CR
4	<i>Pseudoscaphirhynchus hermanni</i>	Dwarf Sturgeon	CR

Note that the Year of Last Occurrence for each species is not included here because it varies by country and is typically a disputed figure.

Appendix 3. Candidate Species Outcomes

Selected species of interest with IUCN NT status and other species that could be covered by conservation efforts within priority KBAs

No.	Scientific name and status	Common name	AFG	CHI	KAZ	KRG	TJK	TKM	UZB
MAMMALS									
1	<i>Allactaga vinogradovi</i> , NT	Vinogradov's Jerboa			+	+	+		+
2	<i>Capra falconeri heptneri</i> , NT	Markhor	+				+	+	+
3	<i>Cervus elaphus bactrianus</i> , LC	Bukhara deer	+	+	+		+	+	+
4	<i>Hyaena hyaena</i>, NT	Striped Hyaena	+				+	+	+
5	<i>Lutra lutra seistanica</i> , NT	Eurasian Otter	+	+	+	+	+	+	+
6	<i>Myotis bucharensis</i> , DD **	Bukhara Whiskered Bat					+		+
7	<i>Otocolobus manul</i>, NT	Pallas's Cat		+	+	+			
8	<i>Ovis ammon karelini</i> , NT	Tien-Shan Argali		+	+	+			+
9	<i>Ovis ammon polii</i> , NT	Marco Polo Sheep	+	+		+	+		
10	<i>Ovis ammon severtzovi</i>, NT	Severtzov's Sheep							+
11	<i>Ovis ammon nigrimontana</i>, NT	Karatau Sheep			+				
12	<i>Ursus arctos ssp isabellinus</i> , LC	Tien Shan Brown Bear		+	+	+	+	+	+
BIRDS									
1	<i>Acrocephalus orinus</i> , DD	Large-billed Reed Warbler	+				+		
2	<i>Aegypius monachus</i>, NT	Cinereous Vulture	+	+	+	+	+	+	+
3	<i>Gypaetus barbatus</i>, NT	Bearded Vulture	+	+	+	+	+		+
4	<i>Gyps himalayensis</i> , NT	Himalayan Griffon	+	+	+	+	+		+
5	<i>Pelecanus crispus</i> , NT	Dalmatian Pelican	+	+	+	+	+	+	+
6	<i>Pluvialis squatarola</i> , NT/EN	Grey Plover	+	+	+	+	+	+	+
FISHES									
1	<i>Alburnoides oblongus</i> **	Tashkent riffle bleak			+				+
2	<i>Cottus jaxartensis</i> **	Chatkal Sculpin			+	+			+
3	<i>Cottus spinulosus</i> **	Turkestan Sculpin			+	+			+
4	<i>Glyptosternum reticulatum</i> **	Turkestan Catfish				+			+
PLANTS									
1	<i>Abies sibirica semenovii</i> , LC***	Tien Shan Fir		+	+	+			
2	<i>Astragalus abolinii</i>	milkvetch species							+
3	<i>Astragalus butkovii</i>	milkvetch species							+

No.	Scientific name and status	Common name	AFG	CHI	KAZ	KRG	TJK	TKM	UZB
4	<i>Astragalus lasiocalyx</i>	milkvetch species							+
5	<i>Astragalus rubrivenosus</i>	milkvetch species							+
6	<i>Ferula tadshikorum</i> ****	Ferula species				+	+		+
7	<i>Picea schrenkiana</i> , LC***	Schrenk's Spruce		+	+	+			
8	<i>Pistacia vera</i> , NT	Pistachio (wild)	+		+	+	+	+	+
9	<i>Saussurea involucrate</i> ****	Snow Lotus species		+		+			
10	<i>Tulipa ingens</i> , NT	tulip species							+
11	<i>Tulipa intermedia</i> , NT	tulip species							+
12	<i>Tulipa lanata</i> , NT	tulip species							+
13	<i>Tulipa mogoltavica</i> **	tulip species					+		+
14	<i>Tulipa tubergeniana</i> , NT	tulip species							+
15	<i>Tulipa vvedenskyi</i> , NT	tulip species							+

Notes: ** = narrow endemic; *** = regional endemic, iconic and culturally important; **** = endemic, high-value medical plant, assessed as threatened and declining due to overharvesting **Bold/shade** denotes candidates for priority action and potential CEPF investment (as part of KBA or corridor-scale grants)

According to the CMS MoU on the Bukhara deer, this species is defined as *Cervus elaphus bactrianus* and is listed by IUCN as least concern (LC). At the same time, a related species *Cervus hanglu* has a CR status.

Appendix 4. Globally Threatened Tree Species in the Hotspot

Family	Taxon	Endemic	Red List	Protected in situ	Protected ex situ	KG	KZ	TJ	TM	UZ
Fabaceae	Ammopiptanthus nanus	No	CR	No	Yes	x				
Rosaceae	Crataegus knorringiana	Yes	CR	No	Yes	x				
Rosaceae	Crataegus necopinata	No	CR	No	No	x		x		
Rosaceae	Malus niedzwetzkyana	No	EN	Yes	Yes	x	x			x
Rosaceae	Malus sieversii	No	VU	Yes	Yes	x	x	x		x
Rosaceae	Prunus bucharica	No	VU	No	No	x		x	x	x
Rosaceae	Pyrus korshinskyi	No	CR	Yes	Yes	x		x		x
Rosaceae	Prunus tadzhikistanica	Yes	EN	No	No			x		
Rosaceae	Pyrus cajon	Yes	EN	No	Yes			x		
Rosaceae	Pyrus tadshikistanica	Yes	CR	No	Yes			x		
Grossulariaceae	Ribes malvifolium	Yes	CR	No	No					x
Rosaceae	Prunus ledebouriana	Yes	EN	No	No		x			

Data per Botanic Gardens Conservation International [Global Tree Portal](#).

Appendix 5. Site Outcomes

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
AFGHANISTAN													
AFG 1	Wakhan National Park	1,090,000	A1, B1	+	+	+		+			Y	Y	<i>Acrocephalus orinus</i> , <i>Epilobium thermophilum</i> , <i>Astragalus bahrakianus</i> , <i>Echinops wakhanicus</i> , <i>Acantholimon diapensioides</i> , <i>Holosteum kobresietorum</i> , <i>Artemisia leucotricha</i> , <i>Nepeta subincisa</i> , <i>Allium pamiricum</i> , <i>Hymenolaena badachshanica</i> , <i>Cousinia takharensis</i> <i>Panthera uncia</i> , <i>Parnassius autocrator</i> , [<i>Ovis orientalis</i>], [<i>Falco cherrug</i>]
CHINA													
CHI 1	Pamir Plateau Nature Reserve	670,000	A1, B1	+	+						Y		<i>Ammopiptanthus nanus</i> , <i>Myricaria pulcherrima</i> <i>Panthera uncia</i>
CHI 2	Tuomuer Nature Reserve	630,000	A1, B1	+	+						Y	Y	<i>Picea schrenkiana</i> , <i>Saussurea involucre</i> <i>Panthera uncia</i> , [<i>Aquila heliaca</i>], [<i>Clanga clanga</i>], [<i>Otis tarda</i>], [<i>Columba eversmanni</i>]
CHI 3	Bayanbuluk and Kaidu River Valleys	240,000	A1, B1, D1			+			+		Y	Y	<i>Aspiorhynchus laticeps</i> , <i>Haliaeetus leucoryphus</i> , <i>Podiceps auritus</i> , <i>Cygnus cygnus</i> , [<i>Aquila heliaca</i>], [<i>Falco cherrug</i>], [<i>Anthropoides virgo</i>], [<i>Grus grus</i>]
CHI 4	Kunes Forest	90,000	B1	+								Y	<i>Picea schrenkiana</i> , <i>Fritillaria walujewii</i> [<i>Aquila heliaca</i>], [<i>Clanga clanga</i>], [<i>Columba eversmanni</i>], [<i>Haliaeetus leucoryphus</i>]
CHI 5	Nalati Prairie Nature Reserve	280,000	A1, B1		+						Y		<i>Ochotona iliensis</i>
CHI 6	Tangbula Forest	200,000	B1	+	+								<i>Picea schrenkiana</i>
CHI 7	Gongliu Wild Fruit Forest Nature Reserve (Kalajun-Kuerdening forests and grasslands)	220,000	B1	+							Y	Y	<i>Picea schrenkiana</i> , <i>Iljinia regelii</i> , [<i>Juglans cathayensis</i>] [<i>Aquila heliaca</i>], [<i>Clanga clanga</i>], [<i>Columba eversmanni</i>], [<i>Otis tarda</i>], [<i>Malus sieversii</i>]
CHI 8	Ili River Basin	25,000	[A1], B1	+							Y	Y	<i>Betula tianschanica</i> , [<i>Malus sieversii</i>] [<i>Aythya baeri</i>], [<i>Aquila heliaca</i>], [<i>Clanga clanga</i>], [<i>Falco cherrug</i>], [<i>Haliaeetus leucoryphus</i>], [<i>Otis tarda</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
CHI 9	Yining Xiaoyebaila Nature Reserve	14,000	B1	+							Y		<i>Fraxinus Sogdiana</i>
CHI 10	Xitianshan Nature Reserve	215,000	A1, B1	+	+						Y		<i>Picea schrenkiana</i> <i>Ochotona iliensis</i> , <i>Panthera uncia</i> , [<i>Haliaeetus leucoryphus</i>]
CHI 11	Wenquan Nature Reserve and River Basin	80,000	A1, B1	+						+	Y		<i>Ranodon sibiricus</i> , <i>Saxicola insignis</i>
CHI 12	Xiaerxili Nature Reserve	28,000	B1	+		+					Y		<i>Picea schrenkiana</i> , <i>Gymnocarpus przewalskii</i> , <i>Saussurea involucre</i> [<i>Falco cherrug</i>], [<i>Otis tarda</i>], [<i>Haliaeetus leucoryphus</i>]
CHI 13	Tianshan Tien Chi Lake (Bogdashaan) Nature Reserve	150,000	A1, B1	+	+		+				Y	Y	<i>Picea schrenkiana</i> <i>Ochotona iliensis</i> , <i>Teratoscincus roborowskii</i> , [<i>Aquila heliaca</i>], [<i>Clanga clanga</i>], [<i>Haliaeetus leucoryphus</i>]
CHI 14	Jiangbulake Forest	60,000	B1	+									<i>Picea schrenkiana</i> [<i>Oxyura leucocephala</i>], [<i>Clanga clanga</i>], [<i>Aquila heliaca</i>]
KAZAKHSTAN													
KAZ 1	Karatau	60,000	B1	+		+					Y	Y	<i>Acantholimon linczevskii</i> , <i>Adonis vernalis</i> , <i>Allium kujukense</i> , <i>Aquilegia karatavica</i> , <i>Arabis mindshilkensis</i> , <i>Arum korolkowii</i> , <i>Astragalus cytisoides</i> , <i>Astragalus lipschitzii</i> , <i>Astragalus sisyrodytes</i> , <i>Cousinia mindshelkensis</i> , <i>Dracocephalum karataviense</i> , <i>Dryopteris mindshelkensis</i> , <i>Eremogone turlanica</i> , <i>Eryngium karatavicum</i> , <i>Hedysarum karataviense</i> , <i>Hedysarum mindshilkense</i> , <i>Iris orchoides</i> , <i>Karatavia kultiasovii</i> , <i>Lagochilus longidentatus</i> , <i>Lepidium pavlovii</i> , <i>Oxytropis echidna</i> , <i>Parrya papillosa</i> , <i>Parrya pazijae</i> , <i>Phlomis pectinata</i> , <i>Populus berkarensis</i> , <i>Prangos equisetoides</i> , <i>Pseudoeremostachys sewerzowii</i> , <i>Rhaponticum karatavicum</i> , <i>Rhaponticum carthamoides</i> , <i>Rubia pavlovii</i> , <i>Salvia trautvetteri</i> , <i>Saussurea mikeschinskii</i> , <i>Schrenkia kultiasovii</i> , <i>Spiraeanthus schrenkianus</i> , <i>Stroganowia robusta</i> , <i>Tanacetopsis pjataevae</i> , <i>Tulipa alberti</i> , <i>Tulipa greigii</i> , <i>Valeriana chionophila</i> [<i>Vormela peregusna</i>], [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>], [<i>Neophron percnopterus</i>], [<i>Falco cherrug</i>], [<i>Otis tarda</i>], [<i>Columba eversmanni</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ2	Kyzylkol	4,000	A1, D1			+		+				Y	<i>Allium lehmannianum</i> , <i>Astragalus jaxarticus</i> , <i>Astragalus lipschitzii</i> , <i>Haplophyllum eugenii-korovinii</i> , <i>Jurinea cephalopoda</i> , <i>Nanophyton erinaceum</i> , <i>Tulipa borszczowii</i> , <i>Zygophyllum karatavicum</i> <i>Aythya ferina</i> , <i>Oxyura leucocephala</i> , <i>Pelecanus crispus</i> , <i>Tadorna ferruginea</i> , [<i>Streptopelia turtur</i>], [<i>Saga pedo</i>]
KAZ 3	Arystandy	16,000	A1, D1			+						Y	<i>Otis tarda</i> , [<i>Aquila heliaca</i>], [<i>Streptopelia turtur</i>], [<i>Vormela peregusna</i>]
KAZ 4	Turkestan	72,000	B1	+							Y		<i>Acanthophyllum gypsophiloides</i> , <i>Allium kujukense</i> , <i>Allium oreoprasoides</i> , <i>Arctium grandifolium</i> , <i>Arum korolkowii</i> , <i>Astragalus cytisoides</i> , <i>Botschantzevia karatavica</i> , <i>Celtis caucasica</i> , <i>Cotoneaster karatavicus</i> , <i>Cousinia grandifolia</i> , <i>Eminium lehmannii</i> , <i>Epipactis palustris</i> , <i>Ferula leucographa</i> , <i>Fraxinus sogdiana</i> , <i>Lepidolopha karatavica</i> , <i>Malus sieversii</i> , <i>Oxytropis karataviensis</i> , <i>Parrya vvedenskyi</i> , <i>Phlomis boraldaiica</i> , <i>Prangos equisetoides</i> , <i>Pseudosedum karatavicum</i> , <i>Rhaphidophyton regelii</i> , <i>Rhaponticum carthamoides</i> , <i>Scutellaria karatavica</i> , <i>Scutellaria subcaespitosa</i> , <i>Sphaenolobium korovinii</i> , <i>Spiraeanthus schrenkianus</i> , <i>Stipa karataviensis</i> , <i>Stroganowia robusta</i> , <i>Thesium minkwitzianum</i> , <i>Tulipa greigii</i> , <i>Tulipa kaufmanniana</i> , <i>Ungernia sewerzowii</i> , <i>Valeriana chionophila</i> [<i>Aquila heliaca</i>], [<i>Columba eversmanni</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Testudo horsfieldii</i>], [<i>Saga pedo</i>], [<i>Malus sieversii</i>]
KAZ 5	Ugam	138,000	A1, B1	+	+						Y		<i>Aconitum talassicum</i>, <i>Allium lutescens</i>, <i>Anaphalis racemifera</i>, <i>Arabis popovii</i>, <i>Bergenia ugamica</i>, <i>Betula talassica</i>, <i>Colchicum luteum</i>, <i>Iris albomarginata</i>, <i>Iris orchoides</i>, <i>Lepidolopha karatavica</i>, <i>Oxytropis ugamica</i>, <i>Rhaphidophyton regelii</i>, <i>Schrenkia congesta</i>, <i>Tulipa kaufmanniana</i> <i>Marmota menzbieri</i>, [<i>Panthera uncia</i>], [<i>Neophron percnopterus</i>], [<i>Falco cherrug</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ 6	Tolebi	18,000	A1, B1	+	+						Y		<i>Acantholimon pavlovii</i>, <i>Centaurea turkestanica</i>, <i>Dianthus karataviensis</i>, <i>Karatavia kultiassovii</i>, <i>Ligularia pavlovii</i>, <i>Phlomis sewerzovii</i>, <i>Rhaphidophyton regelii</i>, <i>Salvia trautvetteri</i>, <i>Schrenkia kultiassovii</i>, <i>Scorzonera franchetii</i>, <i>Sergia sewerzowii</i>, <i>Stipa karataviensis</i>, <i>Stroganowia robusta</i> <i>Marmota menzbieri</i>, [<i>Neophron percnopterus</i>], [<i>Falco cherrug</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]
KAZ 7	Boraldai	11,000	B1	+							Y		<i>Allium lutescens</i>, <i>Anaphalis racemifera</i>, <i>Bergenia ugamica</i>, <i>Betula talassica</i>, <i>Cotoneaster karatavicus</i>, <i>Cousinia grandifolia</i>, <i>Dracocephalum karataviense</i>, <i>Ferula leucographa</i>, <i>Fraxinus sogdiana</i>, <i>Karatavia kultiassovii</i>, <i>Lepidolopha karatavica</i>, <i>Ligularia pavlovii</i>, <i>Malus sieversii</i>, <i>Oxytropis talassica</i>, <i>Pseudoeremostachus sewerzowii</i>, <i>Pseudosedum karatavicum</i>, <i>Rhaphidophyton regelii</i>, <i>Rhaponticum carthamoides</i>, <i>Rubia pavlovii</i>, <i>Schrenkia kultiassovii</i>, <i>Scrophularia nuraniae</i>, <i>Stroganowia robusta</i> [<i>Vormela peregusna</i>], [<i>Aquila heliaca</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Saga pedo</i>], [<i>Malus sieversii</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ 8	Aksu-Zhabagly	121,000	A1, B1	+							Y	Y	<i>Acanthophyllum gypsophiloides</i>, <i>Aconitum talassicum</i>, <i>Allium pskemense</i>, <i>Anaphalis racemifera</i>, <i>Betula talassica</i>, <i>Betula tianschanica</i>, <i>Celtis caucasica</i>, <i>Centaurea turkestanica</i>, <i>Cotoneaster alatavicus</i>, <i>Cousinia grandifolia</i>, <i>Crocus alatavicus</i>, <i>Dianthus karataviensis</i>, <i>Dryopteris mindshelkensis</i>, <i>Iris alberti</i>, <i>Iris kolpakowskiana</i>, <i>Iris kuschakewiczii</i>, <i>Iris orchioides</i>, <i>Juniperus seravschanica</i>, <i>Karatavia kultiassovii</i>, <i>Lactuca mira</i>, <i>Lepidolopha karatavica</i>, <i>Malus niedzwetzkyana</i>, <i>Malus sieversii</i>, <i>Mediasia macrophylla</i>, <i>Medicago tianschanica</i>, <i>Morina kokanica</i>, <i>Oxytropis talassica</i>, <i>Primula minkwitziae</i>, <i>Rhaphidophyton regelii</i>, <i>Schrenkia congesta</i>, <i>Schrenkia kultiassovii</i>, <i>Sergia sewerzowii</i>, <i>Stipa karataviensis</i>, <i>Trichanthemis aulieatensis</i>, <i>Tulipa alberti</i>, <i>Tulipa greigii</i>, <i>Tulipa kaufmanniana</i>, <i>Ungernia sewerzowii</i>, <i>Veronica macrostemon</i> [<i>Panthera uncia</i>], [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>], [<i>Neophron percnopterus</i>], [<i>Falco cherrug</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>], [<i>Malus sieversii</i>], [<i>Columba eversmanni</i>]
KAZ 9	Chakpak Pass and Ters-Ashchibulak Reservoir	13,000	A1, B1, D1	+		+						Y	<i>Crocus alatavicus</i>, <i>Iris kolpakowskiana</i>, <i>Ungernia sewerzowii</i> <i>Aquila nipalensis</i>, <i>Anthropoides virgo</i>, <i>Columba eversmanni</i>, <i>Tadorna ferruginea</i>, <i>Tetrax tetrax</i>, [<i>Neophron percnopterus</i>], [<i>Falco cherrug</i>], [<i>Otis tarda</i>], [<i>Streptopelia turtur</i>]
KAZ 10	Berikkara	17,000	A1, B1	+							Y		<i>Acantholimon squarrosum</i>, <i>Acanthophyllum gypsophiloides</i>, <i>Adonis vernalis</i>, <i>Allium kujukense</i>, <i>Arctium alberti</i>, <i>Arum korolkowii</i>, <i>Celtis caucasica</i>, <i>Dianthus karataviensis</i>, <i>Fraxinus sogdiana</i>, <i>Klasea marginata</i>, <i>Lepidium robustum</i>, <i>Lepidolopha karatavica</i>, <i>Lonicera karataviensis</i>, <i>Malus sieversii</i>, <i>Morina kokanica</i>, <i>Parrya pazijae</i>, <i>Phlomoidea sewerzovii</i>, <i>Populus berkarensis</i>, <i>Rhaponticoides phyllopoda</i>, <i>Schtschurowskia margaritae</i>, <i>Scutellaria karatavica</i>, <i>Scutellaria subcaespitosa</i>, <i>Sergia sewerzowii</i>, <i>Stipa karataviensis</i>, <i>Taraxacum karatavicum</i>, <i>Tulipa greigii</i>, <i>Tulipa kaufmanniana</i>, <i>Tulipa orthopoda</i> [<i>Aquila heliaca</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ 11	Merke	65,000	B1	+							Y		<i>Bupleurum rosulare</i> , <i>Malus niedzwetzkyana</i> , <i>Malus sieversii</i> , <i>Tulipa zenaidae</i> , <i>Zabelia corymbosa</i> [<i>Panthera uncia</i>], [<i>Aquila heliaca</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Malus sieversii</i>]
KAZ 12	Aksay	100,000	B1	+							Y	Y	<i>Adonis chrysocyathus</i> , <i>Arctium nidulans</i> , <i>Armeniaca vulgaris</i> , <i>Atraphaxis muschketowii</i> , <i>Betula tianschanica</i> , <i>Crocus alatavicus</i> , <i>Erysimum croceum</i> , <i>Euphorbia jaroslavii</i> , <i>Gagea neo-popovii</i> , <i>Gymnospermium altaicum</i> , <i>Iris alberti</i> , <i>Iris kolpakowskiana</i> , <i>Klasea marginata</i> , <i>Malus niedzwetzkyana</i> , <i>Malus sieversii</i> , <i>Oxytropis almaatensis</i> , <i>Pastinacopsis glacialis</i> , <i>Pilosella kumbelica</i> , <i>Rheum wittrockii</i> , <i>Tulipa kolpakowskiana</i> , <i>Tulipa ostrowskiana</i> [<i>Aquila heliaca</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]
KAZ 13	Almaty Nature Reserve	72,000	A1, B1	+							Y	Y	<i>Arctium nidulans</i> , <i>Armeniaca vulgaris</i> , <i>Atraphaxis muschketowii</i> , <i>Betula tianschanica</i> , <i>Crocus alatavicus</i> , <i>Erysimum croceum</i> , <i>Eutrema pseudocordifolium</i> , <i>Iris alberti</i> , <i>Jurinea almaatensis</i> , <i>Limonium michelsonii</i> , <i>Malus niedzwetzkyana</i> , <i>Malus sieversii</i> , <i>Oxytropis almaatensis</i> , <i>Pastinacopsis glacialis</i> , <i>Pilosella kumbelica</i> , <i>Rheum wittrockii</i> , <i>Sibiraea tianschanica</i> , <i>Tulipa kolpakowskiana</i> , <i>Tulipa ostrowskiana</i> [<i>Panthera uncia</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]
KAZ 14	Issyk	85,000	A1, B1	+							Y		<i>Arctium nidulans</i> , <i>Armeniaca vulgaris</i> , <i>Atraphaxis muschketowii</i> , <i>Betula tianschanica</i> , <i>Crocus alatavicus</i> , <i>Draba microcarpella</i> , <i>Eutrema pseudocordifolium</i> , <i>Gymnospermium altaicum</i> , <i>Ikonnikovia kaufmanniana</i> , <i>Jurinea almaatensis</i> , <i>Malus niedzwetzkyana</i> , <i>Malus sieversii</i> , <i>Nepeta transiliensis</i> , <i>Oxytropis almaatensis</i> , <i>Pastinacopsis glacialis</i> , <i>Pilosella kumbelica</i> , <i>Rheum wittrockii</i> , <i>Sibiraea tianschanica</i> , <i>Tulipa ostrowskiana</i> [<i>Panthera uncia</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ 15	Assy Plateau	37,000	B1	+							Y	Y	<i>Arctium nidulans</i> , <i>Betula tianschanica</i> , <i>Jurinea almaatensis</i> , <i>Oxytropis almaatensis</i> , <i>Phlomis czuiliensis</i> , <i>Rheum wittrockii</i> , <i>Sibiraea tianschanica</i> [<i>Aquila heliaca</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]
KAZ 16	Kolsai	161,000	B1	+							Y		<i>Arctium nidulans</i>, <i>Betula tianschanica</i>, <i>Crocus alatavicus</i>, <i>Erysimum croceum</i>, <i>Jurinea almaatensis</i>, <i>Picea schrenkiana</i>, <i>Pilosella kumbelica</i>, <i>Rheum wittrockii</i>, <i>Stelleropsis tianschanica</i>, <i>Stipa kungeica</i> [<i>Panthera uncia</i>], [<i>Streptopelia turtur</i>], [<i>Neophron percnopterus</i>], [<i>Parnassius apollo</i>], [<i>Aquila heliaca</i>]
KAZ 17	Toraigyr	150,000	B1	+								Y	<i>Arthropodium iliense</i> , <i>Berberis iliensis</i> , <i>Crocus alatavicus</i> , <i>Ferula iliensis</i> , <i>Galatella saxatilis</i> , <i>Ikonnikovia kaufmanniana</i> , <i>Iris kolpakowskiana</i> , <i>Iris kuschakewiczii</i> , <i>Jurinea robusta</i> , <i>Kaufmannia semenovii</i> , <i>Limonium michelsonii</i> , <i>Nanophyton erinaceum</i> , <i>Oxytropis niedzweckiana</i> , <i>Plagiobasis centauroides</i> , <i>Schrenkia involucrata</i> , <i>Silene tianschanica</i> , <i>Tulipa biflora</i> , <i>Tulipa kolpakowskiana</i> [<i>Gazella subgutturosa</i>], [<i>Vormela peregusna</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Aquila nipalensis</i>], [<i>Falco naumanni</i>]
KAZ 18	Narynkol	100,000	B1	+									<i>Betula jarmolenkoana</i>, <i>Betula tianschanica</i>, <i>Crocus alatavicus</i>, <i>Rheum wittrockii</i>, <i>Sibiraea tianschanica</i>, <i>Stipa kungeica</i> [<i>Panthera uncia</i>], [<i>Aquila heliaca</i>], [<i>Streptopelia turtur</i>]
KAZ 19	Tuzkol	3,000	B1, D1			+						Y	<i>Taraxacum kok-saghyz</i> <i>Tadorna ferruginea</i> , [<i>Falco cherrug</i>], [<i>Streptopelia turtur</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ 20	Charyn Park	93,000	A1, B1	+							Y		<i>Arthropytum balchaschense</i>, <i>Arthropytum iliense</i>, <i>Berberis iliensis</i>, <i>Ferula iliensis</i>, <i>Ferula sugatensis</i>, <i>Fraxinus sogdiana</i>, <i>Galatella saxatilis</i>, <i>Heliotropium parvulum</i>, <i>Ikonnikovia kaufmanniana</i>, <i>Jurinea robusta</i>, <i>Lepechiniella saurica</i>, <i>Limonium michelsonii</i>, <i>Oxytropis niedzweckiana</i>, <i>Phlomoides zenaidae</i>, <i>Silene tianschanica</i>, <i>Tanacetopsis goloskokovii</i>, <i>Tulipa kolpakowskiana</i>, <i>Tulipa ostrowskiana</i>, <i>Valeriana chionophila</i> <i>Gazella subgutturosa</i>, [<i>Vormela peregusna</i>], [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Falco cherrug</i>]
KAZ 21	Altyn-Emel	520,000	A1, B1	+	+						Y		<i>Aquilegia vitalii</i>, <i>Arthropytum balchaschense</i>, <i>Arthropytum iliense</i>, <i>Asterothamnus fruticosus</i>, <i>Astragalus arganaticus</i>, <i>Astragalus sarchanensis</i>, <i>Astragalus semenovii</i>, <i>Atraphaxis muschketowii</i>, <i>Berberis iliensis</i>, <i>Betula tianschanica</i>, <i>Celtis caucasica</i>, <i>Chesneya dshungarica</i>, <i>Chimaphila umbellata</i>, <i>Crocus alatavicus</i>, <i>Ferula iliensis</i>, <i>Fraxinus sogdiana</i>, <i>Fritillaria pallidiflora</i>, <i>Gentiana dshungarica</i>, <i>Haplophyllum multicaule</i>, <i>Lepechiniella michaelis</i>, <i>Lonicera iliensis</i>, <i>Paeonia hybrida</i>, <i>Phlomoides gymnocalyx</i>, <i>Phlomoides iliensis</i>, <i>Populus pruinosa</i>, <i>Prangos herderi</i>, <i>Schrenkia involucrata</i>, <i>Tschulaktavia saxatilis</i>, <i>Tulipa alberti</i>, <i>Tulipa biflora</i>, <i>Tulipa brachystemon</i> <i>Equus ferus</i>, <i>Gazella subgutturosa</i>, [<i>Equus hemionus</i>], [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>], [<i>Neophron percnopterus</i>], [<i>Pelecanus crispus</i>], [<i>Aythya ferina</i>], [<i>Oxyura leucocephala</i>], [<i>Chlamydotis macqueenii</i>], [<i>Otis tarda</i>], [<i>Columba eversmanni</i>], [<i>Streptopelia turtur</i>]
KAZ 22	Upper Koksuz	266,000	A1, B1	+						+	Y		<i>Allium toksanbaicum</i>, <i>Aquilegia vitalii</i>, <i>Betula tianschanica</i>, <i>Convallaria majalis</i>, <i>Gentiana dshungarica</i>, <i>Malus sieversii</i>, <i>Oxytropis heteropoda</i>, <i>Rhaponticum carthamoides</i>, <i>Rheum wittrockii</i> <i>Ranodon sibiricus</i>, [<i>Panthera uncia</i>], [<i>Aquila heliaca</i>], [<i>Falco cherrug</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KAZ 23	Zhongar-Alatau	395,000	A1, B1	+						+	Y		<i>Aquilegia vitalii</i> , <i>Fritillaria pallidiflora</i> , <i>Gentiana dshungarica</i> , <i>Lilium martagon</i> , <i>Malus niedzwetzkyana</i> , <i>Malus sieversii</i> , <i>Paeonia hybrida</i> , <i>Phlomoides iliensis</i> , <i>Rheum wittrockii</i> , <i>Rhodiola rosea</i> , <i>Rosa schrenkiana</i> , <i>Stelleropsis tianschanica</i> , <i>Stipa pennata</i> , <i>Tephroses pyroglossa</i> , <i>Tulipa alberti</i> <i>Ranodon sibiricus</i> , <i>Panthera uncia</i> , [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>], [<i>Parnassius apollo</i>], [<i>Saga pedo</i>]
KAZ 24	Chu-Ili Mountains	38,000	A1, B1	+							Y		<i>Incarvillea semiretschenskia</i> , <i>Tulipa regelii</i> , <i>Astragalus pseudocytisoides</i> , <i>Phlomoides septentrionalis</i> , <i>Scutellaria titovii</i> , <i>Schrenkia involucreta</i> , <i>Tulipa alberti</i> , <i>Tulipa kolpakowskiana</i> , <i>Tulipa biflora</i> , <i>Iris kuschakewiczii</i> [<i>Vipera renardi</i>], [<i>Aquila nipalensis</i>], [<i>Falco cherrug</i>], [<i>Aquila heliaca</i>], [<i>Aegypius monachus</i>], [<i>Gyps himalayensis</i>], [<i>Circaetus gallicus</i>], [<i>Aquila chrysaetos</i>], [<i>Pterocles orientalis</i>]
KYRGYZSTAN													
KGZ 1	Besh Aral	124,000	A1, B1	+	+						Y		<i>Sorbus persica</i> , <i>Tulipa kaufmanniana</i> , <i>Salvia korolkovii</i> , <i>Tulipa greigii</i> , <i>Pyrus asiae-mediae</i> , <i>Lepidolopha komarowii</i> , <i>Potentilla kamelinii</i> , <i>Thesium minkwitzianum</i> <i>Marmota menzbieri</i> , [<i>Neophron percnopterus</i>], [<i>Aquila heliaca</i>], [<i>Panthera uncia</i>]
KGZ 2	Chandalash	15,000	B1	+							Y		<i>Tulipa kaufmanniana</i> , <i>Astragalus sandalaschensis</i> , <i>Calophaca pskemica</i> [<i>Falco cherrug</i>]
KGZ 3	Chatkal	43,000	B1	+									<i>Crataegus korolkowii</i> , <i>Tulipa kaufmanniana</i> , <i>Schrenkia pulverulenta</i> , <i>Seseli tenellum</i> , <i>Thesium minkwitzianum</i> , <i>Pyrus asiae-mediae</i> , [<i>Malus sieversii</i>] [<i>Falco cherrug</i>], [<i>Aquila heliaca</i>], [<i>Otis tarda</i>], [<i>Vormela peregusna</i>], [<i>Marmota menzbieri</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KGZ 4	Kassan Sai	83,000	B1	+									<i>Tulipa kaufmanniana</i> , <i>Cousinia echinocephala</i> , <i>Seseli giganthum</i> , <i>Saussurea gorbunovae</i> , <i>Juno orchioides</i> , [<i>Betula tianschanica</i>], [<i>Malus sieversii</i>] [<i>Neophron percnopterus</i>], [<i>Vormela peregusna</i>]
KGZ 5	Aflatun Padyshata	68,000	B1	+							Y		<i>Abies semenovii</i> , <i>Primula eugeniae</i> , <i>Malus niedzwetzkyana</i> , <i>Corydalis subverticillata</i> , <i>Bunium sary cheleki</i> , <i>Aflatunia ulmifolia</i> [<i>Gypaetus barbatus</i>]
KGZ 6	Sary Chelek	24,000	B1	+							Y		<i>Abies semenovii</i> , <i>Elisanthe fedtschenkoana</i> , <i>Primula eugeniae</i> , <i>Leibnitzia knorringiana</i> , <i>Jurinea poacea</i> , <i>Cousinia waldheimiana</i> , <i>Scutellaria knorringiae</i> , <i>Onosma brevopilosa</i> , <i>Androsace aflatunensis</i> , <i>Elaeosticta knorringiana</i> , <i>Lathyrus dominianus</i> , <i>Elisanthe fedtschenkoana</i> , <i>Hedysarum chaitocarpum</i> , <i>Ungernia ferganica</i> , <i>Oxytropis fedtschenkoana</i> , <i>Ferula inciso serrata</i> , <i>Bupleurum ferganense</i> , <i>Seseli giganthum</i> , <i>Corydalis subverticillata</i> , <i>Bunium sary-cheleki</i> , <i>Juno graeberiana</i> , <i>Gagea spaelea</i> , <i>Exochorda tianschanica</i> , <i>Saxifraga vvedenskyi</i> , <i>Phlomoides urodonta</i> , <i>Tulipa pseudoferganica</i> , <i>Tulipa neustruevae</i> , <i>Tulipa zonneveldii</i> , <i>Tulipa anadroma</i> , <i>Allium viridiflorum</i> , <i>Allium spathulatum</i> , <i>Allium dodecadontum</i> , <i>Allium arkitense</i> , <i>Allium sarychelekense</i> , <i>Cerasus hodshaatensis</i> , <i>Prunus ferganica</i> , <i>Silene fetissovi</i> , [<i>Malus sieversii</i>], [<i>Malus niedzwetzkyana</i>] [<i>Gypaetus barbatus</i>], [<i>Panthera uncia</i>]
KGZ 7	Besh Tash	59,000	B1	+							Y		<i>Abies semenovii</i> , <i>Juno orchioides</i> , <i>Iridodictyum kolpakowskianum</i> , <i>Cousinia margaritae</i> , <i>Pyrethrum sovetkinae</i> , <i>Tulipa ostrowskiana</i> , <i>Tulipa lazkovii</i> [<i>Panthera uncia</i>]
KGZ 8	Talas River	5,000	A1, B1						+				<i>Leuciscus lindbergi</i> , <i>Dzihunia turdakovi</i> , <i>Triplophysa coniptera</i> , <i>Triplophysa paradoxa</i>
KGZ 9	Nyldy	18,000	B1	+									<i>Tulipa talassica</i> , <i>Sorbus persica</i> , <i>Iridodictyum kolpakowskianum</i> , <i>Kosopoljanskia turkestanica</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KGZ 10	Chychkan	35,000	B1	+									<i>Abies semenovii</i> , <i>Crataegus knorringiana</i> , <i>Malus sieversii</i> , <i>Aflautunia ulmifolia</i> , <i>Seseli korshinskyi</i> , <i>Silene sussamyrica</i> , <i>Celtis caucasica</i> [<i>Aquila heliaca</i>]
KGZ 11	Torkent	18,000	A1, B1	+									<i>Silene sussamyrica</i>, <i>Iridodictyum kolpakowskianum</i>, <i>Tulipa tetraphylla</i>, <i>Tulipa toktogolica</i>, <i>Atraphaxis toktogolica</i>, <i>Juno graeberiana</i>, <i>Chesnaya nikitinae</i>, <i>Scutellaria botbaevae</i>, <i>Salvia vvedenskyi</i> [<i>Anthropoides virgo</i>], [<i>Panthera uncia</i>], [<i>Columba eversmanni</i>], [<i>Vanellus gregarius</i>], [<i>Tetrax tetrax</i>], [<i>Vipera ursinii</i>]
KGZ 12	Suusamyr	39,000	B1	+									<i>Iridodictyum kolpakowskianum</i>, <i>Tulipa tetraphylla</i>, <i>Populus pruinosa</i> [<i>Anthropoides virgo</i>], [<i>Panthera uncia</i>], [<i>Columba eversmanni</i>], [<i>Vanellus gregarius</i>], [<i>Tetrax tetrax</i>], [<i>Agrionemys horsfieldii</i>], [<i>Vipera ursinii</i>]
KGZ 13	Sumsar	15,000	B1	+									<i>Stipa narynica</i>, <i>Acantholimon karabaeiorum</i>, <i>Ferula pimenovii</i>, <i>Tulipa korolkowii</i>, <i>Lamyropappus schakaptaricus</i> [<i>Neophron percnopterus</i>]
KGZ 14	Kara-Suu	64,000	B1	+									<i>Allium bekeczalicum</i>, <i>Festuca tzveleviana</i>, <i>Phlomoides kurpsaica</i>, <i>Malus sieversii</i>, <i>Crataegus knorringiana</i>, <i>Sophora korolkovii</i>, <i>Tulipa jacquesii</i>, <i>Jurinea narynensis</i>, <i>Delphinium knorringianum</i>, <i>Lepidolopha komarowii</i>, <i>Scutellaria andrachnoides</i>, <i>Phlomoides hypoviridis</i>, <i>Cousinia omissa</i>, <i>Vitis usunschmatica</i>, <i>Cousinia abolinii</i>, <i>Tanacetopsis korovinii</i>, <i>Dorema microcarpum</i>, <i>Pyrethrum brachanthemoides</i>, <i>Phlomoides milkoi</i>, <i>Phlomoides adylovii</i>, <i>Seseli galioides</i>, <i>Seseli korshinskyi</i>
KGZ 15	Dashman	127,000	B1	+							Y		<i>Sorbus persica</i> , <i>Malus niedzwetzkyana</i> , <i>Elisanthe fedtschenkoana</i> , <i>Allium cisferganense</i> , <i>Ungernia ferganica</i> , <i>Allium pseudowinclerianum</i> , <i>Hedysarum chaitocarpum</i> , <i>Eminium regelii</i> , <i>Phlomoides cordifolia</i> , [world's largest natural walnut forests – <i>Juglans regia</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KGZ 16	Isfairam Sai	271,000	B1	+							Y		<i>Colutea brachyptera</i> , <i>Fumariola turkestanica</i> , <i>Nathaliella alaica</i> , <i>Semenovia alaica</i> , <i>Seseli alaicum</i> , <i>Seseli korshinskyi</i> , <i>Chesneya ferganensis</i> , <i>Physochlaina alaica</i> , <i>Sorbus persica</i> , <i>Delphinium knorringianum</i> , <i>Scutellaria nepetoides</i> , <i>Haplophyllum monadelphum</i> , <i>Incarvillea olgae</i> , <i>Trichanthemis aurea</i> , <i>Allium sochense</i> , <i>Lonicera paradoxa</i> <i>[Falco cherrug]</i>
KGZ 17	Ravat	7,000	A1, B1	+			+						<i>Tulipa rosea</i> , <i>Acantholimon compactum</i> <i>Phrynocephalus saidalievi</i> , <i>[Neophron percnopterus]</i>
KGZ 18	Shiretki-Ortontuz	8,000	B1	+									<i>Delphinium knorringianum</i> , <i>Tulipa rosea</i> , <i>Tulipa affinis</i> , <i>Ligularia phylantrax</i> , <i>Phlomoides ajdarovae</i> , <i>Acantholimon strictiforme</i> , <i>Stubendorffia botschantzevii</i> , <i>Ferula alaica</i>
KGZ 19	Leilek	80,000	B1	+							Y		<i>Fritillaria eduardii</i> , <i>Tulipa affinis</i> , <i>Tulipa korolkowii</i> <i>[Neophron percnopterus]</i>
KGZ 20	Alai	361,000	A1, B1	+	+								<i>Iskandera alaica</i> , <i>Hedysarum daraut-kurganicum</i> , <i>Alajja anomala</i> , <i>Pulsatilla kostyczewii</i> , <i>Littledalea alaica</i> , <i>Rindera alaica</i> <i>Panthera uncia</i> , <i>[Falco cherrug]</i>
KGZ 21	Bulolu-Koksuu	89,000	B1	+									<i>Corydalis pseudoalun</i> , <i>Rhodiola litwinowii</i> , <i>Centaurea alaica</i> <i>[Aegypius monachus]</i> , <i>[Panthera uncia]</i>
KGZ 22	Alai Kuu	183,000	B1	+							Y		<i>Sorbus persica</i> , <i>Tulipa platystemon</i> , <i>Phlomoides cordifolia</i> , <i>Acantholimon karadarjense</i> , <i>Helichrysum ferganicum</i> , <i>Acanthophyllum coloratum</i> , <i>Centaurea alaica</i> <i>[Panthera uncia]</i> , <i>[Neophron percnopterus]</i>
KGZ 23	Aksai-Arpa	158,000	B1	+									<i>Taraxacum syrtorum</i> <i>[Anthropoides virgo]</i> , <i>[Gypaetus barbatus]</i> , <i>[Gyps himalayensis]</i> , <i>[Panthera uncia]</i>
KGZ 24	Chatyr Kul lake	25,000	D1			+					Y	Y	<i>Tadorna ferruginea</i> , <i>[Anser indicus]</i> , <i>[Falco cherrug]</i>
KGZ 25	Son Kul lake	35,000	D1			+					Y	Y	<i>Tadorna ferruginea</i> , <i>[Podiceps auritus]</i> , <i>[Aythya ferina]</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
KGZ 26	Ara Bel	55,000	B1	+									<i>Taraxacum syrtorum</i> <i>[Gyps himalayensis]</i> , <i>[Gypaetus barbatus]</i> , <i>[Falco cherrug]</i> , <i>[Panthera uncia]</i>
KGZ 27	Kumtor, Sarychat Ertash	148,000	A1, B1	+	+	+					Y		<i>Berberis kaschgarica</i> , <i>Zygophyllum kascharicum</i> , <i>Taraxacum syrtorum</i> , <i>Saussurea involucrata</i> , <i>Poa lebedevae</i> <i>Panthera uncia</i> , <i>[Gyps himalayensis]</i> , <i>[Gypaetus barbatus]</i> , <i>[Falco cherrug]</i>
KGZ 28	Altyn Arashan	22,000	B1	+									<i>Saussurea involucrata</i> <i>[Gypaetus barbatus]</i> , <i>[Panthera uncia]</i>
KGZ 29	Karkyra	74,000	A1, D1	+		+						Y	<i>Tulipa tetraphylla</i> <i>Grus virgo</i>, <i>[Anthropoides virgo]</i>, <i>[Neomys fodiens]</i>, <i>[Panthera uncia]</i>
KGZ 30	Sary Djaz, Khan Tengri	379,000	A1, B1	+	+	+					Y		<i>Taraxacum syrtorum</i> , <i>Saussurea involucrata</i> , <i>Allium semenovii</i> , <i>Saussurea kara-artscha</i> , <i>Oxytropis piceetorum</i> , <i>Oxytropis chantengriensis</i> <i>Panthera uncia</i> , <i>[Gyps himalayensis]</i> , <i>[Gypaetus barbatus]</i>
KGZ 31	Eastern Issyk Kul	75,000	B1, D1			+			+		Y	Y	<i>Leuciscus bergi</i>, <i>Tadorna ferruginea</i>, <i>Grus virgo</i>, <i>[Chlamydotis undulata]</i>, <i>[Anthropoides virgo]</i>, <i>[Oxyura leucocephala]</i>, <i>[Otis tarda]</i>, <i>[Neomys fodiens]</i>
KGZ 32	Western Issyk Kul	54,000	B1, [D1]			+			+		Y	Y	<i>Leuciscus bergi</i> , <i>[Gavia arctica]</i> , <i>[Vanellus gregarius]</i> , <i>[Oxyura leucocephala]</i> , <i>[Syrrhaptes paradoxus]</i> , <i>[Aythya ferina]</i>
KGZ 33	Chon Aksu	13,000	B1	+									<i>Tulipa tetraphylla</i> , <i>Saussurea involucrata</i> , <i>Kaufmannia semenovii</i>
KGZ 34	Kyrgyz Ala-Too	117,000	B1	+									<i>Eremurus zoeae</i> , <i>Tulipa zenaidae</i> , <i>Juno orchioides</i> , <i>Tulipa ostrowskiana</i>
KGZ 35	Tulek Valley	12,500	B1, D1			+						Y	<i>Grus virgo</i>
TAJIKISTAN													
TJK 1	Upper Asht and Aktash	15,000	B1	+							Y	Y	<i>Cercis griffithii</i> , <i>Malus sieversii</i> , <i>Tulipa bifloriformis</i> , <i>Tulipa dubia</i> , <i>Tulipa turkestanica</i> , <i>Paeonia intermedia</i> , <i>Prunus petunnikowii</i>
TJK 2	Adrasman	25,000	B1	+			+						<i>Ferula mogoltavica</i> , <i>Allium kuramense</i> , <i>Allium suworowii</i> , <i>Eremurus robustus</i> , <i>Astragalus pseudonobilis</i> , <i>Astragalus nucleosus</i> <i>Phrynocephalus strauchi</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
TJK 3	Kayrakkum (Bakhri Tojik) and the right bank of the Syr Darya river	106,000	A1, B1	+		+						Y	<i>Tulipa lehmanniana</i> , <i>Tulipa turkestanica</i> , <i>Allium ferganicum</i> , <i>Mogoltavia sewerzowii</i> , <i>Asparagus ferganensis</i> , <i>Jurinea winkleri</i> , <i>Astragalus brachyrhachis</i> , <i>Astragalus chodshenticus</i> , <i>Echinops knorringianus</i> , <i>Astragalus spinescens</i> <i>Columba eversmanni</i> , [<i>Grus grus</i>]
TJK 4	Turkestan Mountains Southern Slope	55,000	A1, B1	+									<i>Amygdalus vavilovii</i>, <i>Cryptocodon monocephalus</i>, <i>Ferula sumbul</i>, <i>Lonicera paradoxa</i> <i>Neophron percnopterus</i>, [<i>Falco cherrug</i>]
TJK 5	Upper Zeravshan	36,000	B1	+									<i>Berberis heteropoda</i> , <i>Cousinia darwasica</i> , <i>Lonicera paradoxa</i> , <i>Astragalus leptophysus</i> , <i>Cicer chorassanicum</i> , <i>Stipa richteriana</i> [<i>Panthera uncia</i>]
TJK 6	Yagnob National Park	64,000	B1	+							Y		<i>Stipa richteriana</i>, <i>Iris hoogiana</i>, <i>Allium glaciale</i>, <i>Cicer chorassanicum</i>, <i>Iskandera hissarica</i>, <i>Dracocephalum formosum</i>, <i>Aconitum seravschanicum</i> [<i>Panthera uncia</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Streptopelia turtur</i>]
TJK 7	Sarazm	4,000	A1			+							<i>Columba eversmanni</i>
TJK 8	Romit	73,000	B1	+							Y		<i>Eremurus tadshikorum</i> , <i>Iris hoogiana</i> , <i>Polygonum baldshuanicum</i> , <i>Kafirnigania hissarica</i> [<i>Panthera uncia</i>]
TJK 9	Sarikhadang and Iskanderkul Lake	20,000	A1, B1	+							Y		<i>Iskandera hissarica</i>, <i>Cousinia splendida</i>, <i>Stipa zeravshanica</i>, <i>Betula seravschanica</i>, <i>Phlomoides seravschanica</i>, <i>Anemone seravschanica</i>, <i>Aconitum talassicum</i> <i>Panthera uncia</i>, [<i>Falco cherrug</i>], [<i>Aquila nipalensis</i>]
TJK 10	Kondara	1,000	B1	+									<i>Allium flavellum</i> , <i>Allium lipskianum</i> , <i>Dracocephalum formosum</i> , <i>Stubendorffia aptera</i> , <i>Tulipa praestans</i> , <i>Ostrowskia magnifica</i>
TJK 11	Shirkent	8,000	B1	+							Y		<i>Iskandera hissarica</i>, <i>Tulipa praestans</i>, <i>Allium lipskianum</i>, <i>Allium stipitatum</i>, <i>Astragalus taschkutanus</i>, <i>Astragalus artemisiformis</i> [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
TJK 12	Karoni	6,000	B1	+									<i>Astragalus tashkutanus</i> , <i>Astragalus artemisiformis</i> , <i>Zeravschania regeliana</i> , <i>Eremurus tadshikorum</i> , <i>Iskandera hissarica</i> , <i>Phlomoidea hissarica</i> , <i>Scutellaria hissarica</i> , <i>Tulipa hissarica</i> , <i>Scutellaria leptosiphon</i> [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>]
TJK 13	Tajik Babatag	94,000	B1	+									<i>Gypsophila tadshikistanica</i> , <i>Gypsophila vedenevae</i> , <i>Astragalus babatagii</i> [<i>Testudo horsfieldii</i>], [<i>Neophron percnopterus</i>]
TJK 14	Gazimalik	78,000	B1	+									<i>Tulipa tubergeniana</i> , <i>Allium gypsodictyum</i> , <i>Chaetolimon sogdianum</i> , <i>Otostegia olgae</i> , <i>Anemone bucharica</i>
TJK 15	Sarsaryak	21,000	B1	+									<i>Salvia baldshuanica</i> , <i>Tulipa maximowiczii</i> , <i>Tulipa subpraestans</i> , <i>Fritillaria eduardii</i> , <i>Iris darwasica</i> [<i>Testudo horsfieldii</i>], [<i>Haliaeetus leucoryphus</i>], [<i>Capra falconeri</i>]
TJK 16	Ayvaj-Upper Amu Darya	18,000	A1, B1	+			+		+				<i>Allium gypsodictyum</i> ; <i>Astragalus oldenburgii</i> , <i>Eminium albertii</i> , <i>Ferula botschantzevii</i> , <i>Allium bucharicum</i> , <i>Calligonum griseum</i> , <i>Cleome lipskyi</i> , <i>Tulipa lanata</i> <i>Alsophylax tadjikensis</i> , <i>Pseudoscaphirhynchus kaufmanni</i> , [<i>Aspiolucius esocinus</i>], [<i>Chlamydotis macqueenii</i>]
TJK 17	Tigrovaya Balka Reserve	59,000	B1	+							Y	Y	<i>Tulipa tubergeniana</i> , <i>Haloxylon aphyllum</i> , <i>Allium bucharicum</i> , <i>Allium giganteum</i> , <i>Allium gypsodictyum</i> , <i>Allium ophiophyllum</i> , <i>Cousinia agelocephala</i> , <i>Catenularia hedysaroides</i> , <i>Capparis rosanoviana</i> , <i>Halocharis gossypina</i> , <i>Zygophyllum bucharicum</i> , <i>Zoegea baldschuanica</i> , <i>Frankenia bucharica</i> [<i>Netta rufina</i>], [<i>Pseudoscaphirhynchus kaufmanni</i>], [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>], [<i>Aspiolucius esocinus</i>]
TJK 18	Tajik Karatau	66,000	B1	+							Y		<i>Anemone bucharica</i> , <i>Ferula decurrens</i> , <i>Tulipa maximowiczii</i> , <i>Tulipa rosea</i> , <i>Tulipa tubergeniana</i> , <i>Eremurus albertii</i> , <i>Eremurus suworowii</i> [<i>Testudo horsfieldii</i>]
TJK 19	Khojamumin	3,000	B1	+									<i>Crocus korolkowii</i> , <i>Amygdalus bucharica</i> , <i>Olgaea chodshamuminensis</i> , <i>Cephalorhizum popovii</i> , <i>Pentanema chodzhakasiani</i> , <i>Echinops chodzha-mumini</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
TJK 20	Kushvoristan	92,000	B1	+							Y	Y	<i>Amygdalus bucharica</i> , <i>Amygdalus vavilovii</i> , <i>Crataegus darvasica</i> , <i>Ostrowskia magnifica</i> , <i>Calophaca grandiflora</i> , <i>Cotoneaster hissaricus</i> [<i>Capra falconeri</i>]
TJK 21	Baljuvan	103,000	B1	+									<i>Crataegus necopinata</i>, <i>Iris hoogiana</i>, <i>Ranunculus baldshuanicus</i>, <i>Pyrus korshinskyi</i>, <i>Pyrus tadshikistanica</i>, <i>Salvia baldshuanica</i>, <i>Tulipa praestans</i>, <i>Malus sieversii</i>, <i>Primula baldshuanica</i>
TJK 22	Muminabad	51,000	B1	+							Y		<i>Arabidopsis bactriana</i> , <i>Crataegus necopinata</i> , <i>Malus sieversii</i> , <i>Ostrowskia magnifica</i> , <i>Pyrus tadshikistanica</i> , <i>Pyrus korshinskyi</i>
TJK 23	Dashtijum	44,000	B1	+							Y		<i>Amygdalus bucharica</i>, <i>Amygdalus vavilovii</i>, <i>Arabidopsis bactriana</i>, <i>Ostrowskia magnifica</i>, <i>Swida darvasica</i>, <i>Pyrus korshinskyi</i>, <i>Fallopia baldshuanica</i> [<i>Capra falconeri</i>], [<i>Falco cherrug</i>]
TJK 24	Darvaz	102,000	A1, B1	+							Y		<i>Crataegus darvasica</i>, <i>Crataegus necopinata</i>, <i>Diospyros lotus</i>, <i>Iris darvasica</i>, <i>Kudrjaschevia korshinskyi</i>, <i>Pyrus tadshikistanica</i>, <i>Zygophyllum darvasicum</i>, <i>Tulipa anisophylla</i>, <i>Tulipa linifolia</i>, <i>Tulipa anisophylla</i>, <i>Hippolytia darvasica</i> [<i>Capra falconeri</i>], [<i>Falco cherrug</i>]
TJK 25	Kamarou	18,000	B1	+							Y		<i>Iris darvasica</i> , <i>Iris hoogiana</i> , <i>Tulipa praestans</i> , <i>Allium stipitatum</i> , <i>Fritillaria eduardii</i> , <i>Lonicera paradoxa</i> , <i>Pyrus korshinskyi</i>
TJK 26	Tavildara	335,000	A1, B1	+	+								<i>Iris darvasica</i> , <i>Iris hoogiana</i> , <i>Juno tadshikorum</i> , <i>Juno popovii</i> , <i>Rosa longisepala</i> , <i>Pyrus Korshinskyi</i> <i>Panthera uncia</i> , [<i>Gypaetus barbatus</i>]
TJK 27	Vanj	8,000	B1	+				+					<i>Nepeta badachschanica</i> , <i>Cousinia hilariae</i> , <i>Cephalopodium badachschanicum</i> <i>Parnassius autocrator</i>
TJK 28	Rushan	5,000	B1	+									<i>Cephalopodium badachshanicum</i> , <i>Scutellaria schugnanica</i> , <i>Sorbus persica</i> [<i>Gypaetus barbatus</i>]
TJK 29	Shakh dara	3,000	A1, B1	+									<i>Myrtama elegans</i> , <i>Pyrus korshinskyi</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
TJK 30	Kudara	34,000	B1	+									<i>Artemisia kuschakewiczii</i> , <i>Cephalopodium badachschanicum</i> , <i>Lonicera pamirica</i> , <i>Taraxacum murgabicum</i> , <i>Taraxacum tzvelevii</i> [<i>Falco cherrug</i>], [<i>Gypaetus barbatus</i>]
TJK 31	Ishkashim	4,000	B1	+									<i>Cicer garanicum</i> , <i>Nepeta floccosa</i> , <i>Nepeta bracteata</i> [WCR: <i>Hordeum brevisubulatum</i> , <i>Hordeum turkestanicum</i> , <i>Triticum aestivum</i>]
TJK 32	Alichur Valley	7,000	B1	+									<i>Desideria pamirica</i> , <i>Myrtama elegans</i> , <i>Taraxacum jaschilkuliense</i> , <i>Allium tianshanicum</i> , <i>Nepeta pamiriensis</i> , <i>Clematis tangutica</i> , <i>Braya pamirica</i> , <i>Braya humilis</i> , <i>Astragalus pamiriensis</i> [<i>Gyps himalayensis</i>]
TJK 33	Zorkul Mountains	111,000	A1, B1, D1	+		+					Y	Y	<i>Desideria pamirica</i> , <i>Acantholimon alexeenkoanum</i> , <i>Acantholimon varivtzevae</i> , <i>Artemisia kuschakewiczii</i> , <i>Astragalus alexeenkoi</i> , <i>Taraxacum murgabicum</i> , <i>Taraxacum tzvelevii</i> <i>Vanellus gregarius</i> , [<i>Anser indicus</i>], [<i>Panthera uncia</i>], [<i>Marco Polo Sheep</i>], [<i>Gyps himalayensis</i>], [<i>Tetraogallus tibetanus</i>]
TJK 34	Shorkul Lake	70,000	D1	+		+						Y	<i>Desideria pamirica</i> , <i>Taraxacum jaschilkuliense</i> , <i>Allium tianshanicum</i> , <i>Nepeta pamiriensis</i> , <i>Clematis tangutica</i> , <i>Braya pamirica</i> , <i>Braya humilis</i> , <i>Astragalus pamiriensis</i> [<i>Tadorna ferruginea</i>], [<i>Anser indicus</i>], [<i>Charadrius mongolus</i>]
TJK 35	Tajik National Park	2537,000	A1, B1, D1	+	+	+					Y	Y	<i>Arabidopsis ovczinnikovii</i> , <i>Astragalus alexeenkoi</i> , <i>Clematis hilariae</i> , <i>Desideria pamirica</i> , <i>Piptatherum purpurascens</i> , <i>Potentilla borissi</i> , <i>Pulsatilla kostyczewii</i> , <i>Stipa tianschanica</i> , <i>Melilotoides pamirica</i> , <i>Poa tianschanica</i> , <i>Populus pamirica</i> , <i>Primula pamirica</i> , <i>Semenovia pamirica</i> , <i>Stipa badachschanica</i> <i>Panthera uncia</i> , <i>Tadorna ferruginea</i> , [<i>Clanga clanga</i>], [<i>Falco cherrug</i>], [<i>Anser indicus</i>], [<i>Aquila heliaca</i>]
TJK 36	Mogoltau	26,000	B1	+									<i>Allium confragosum</i> , <i>Allium ferganicum</i> , <i>Allium gracillimum</i> , <i>Allium isakulii</i> , <i>Fergania polyantha</i> , <i>Ferula latiloba</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
TJK 37	Shokh-Kurjalakum	11,000	B1	+									<i>Cleome lipskyi</i> , <i>Artemisia baldshuanica</i> , <i>Astragalus bucharicus</i> , <i>Astragalus oldenburgii</i> , <i>Bolbosaponiaria fedtschenkoana</i> , <i>Calligonum griseum</i> , <i>Dionysia gandzhinae</i> , <i>Echinops babatagensis</i> , <i>Eminium albertii</i> , <i>Otostegia fedtschenkoana</i> , <i>Scutellaria chodshakasiani</i> , <i>Sedum bucharicum</i> , <i>Tetracmidion bucharicum</i> , <i>Ungernia tadshicorum</i> [<i>Gazella subgutturosa</i>]
TURKMENISTAN													
TKM 1	Koytendag	150,000	B1	+					+		Y	Y	<i>Astragalus aemulans</i> , <i>Astragalus kahiricus</i> , <i>Astragalus kelifi</i> , <i>Astragalus kuhitangi</i> , <i>Astragalus leiosemius</i> , <i>Astragalus plumbeus</i> , <i>Astragalus rubrigalli</i> , <i>Astragalus willisii</i> , <i>Artemisia tenuisecta</i> , <i>Bunium kuhitangi</i> , <i>Carabus fedtschenkoi</i> , <i>Chesneya tribuloides</i> , <i>Cleome gordjagii</i> , <i>Cousinia bobrovii</i> , <i>Cousinia dimoana</i> , <i>Cousinia glabriseta</i> , <i>Echinops multicaulis</i> , <i>Echinops praetermissus</i> , <i>Haplophyllum vvedenskyi</i> , <i>Hedysarum plumosum</i> , <i>Hymenocrater incisodentatus</i> , <i>Jurinea tapetodes</i> , <i>Lagochilis nevskii</i> , <i>Lepidolopha fedtschenkoana</i> , <i>Melanoides kainarensis</i> , <i>Melanotus dolini</i> , <i>Onobrychis nikitinii</i> , <i>Oxytropis megalorrhyncha</i> , <i>Pentanema parietarioides</i> , <i>Phlomis spinidens</i> , <i>Rosa bellicosa</i> , <i>Scutellaria heterotricha</i> , <i>Scutellaria leptosiphon</i> , <i>Scutellaria nevskii</i> , <i>Scutellaria squarrosa</i> , <i>Silene nevskii</i> , <i>Tanacetopsis kraschenninikovii</i> , <i>Xylanthemum rupestre</i> <i>Troglocobitis starostini</i> , [<i>Falco cherrug</i>], [<i>Clanga clanga</i>], [<i>Streptopelia turtur</i>], [<i>Neophron percnepterus</i>]
TKM 2	Tallymerjen	150,000	D1			+						Y	<i>Grus grus</i> , <i>Tadorna ferruginea</i> , <i>Vanellus gregarius</i> , [<i>Falco cherrug</i>], [<i>Clanga clanga</i>], [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>], [<i>Anser anser</i>]
TKM 3	Zeyid Reservoir and Kelif Lakes	78,000	D1			+					Y	Y	<i>Grus grus</i> , <i>Netta rufina</i> , <i>Anas platyrhynchos</i> , <i>Pelecanus onocrotalus</i> , <i>Pelecanus crispus</i> , <i>Aythya ferina</i> , [<i>Leucogeranus leucogeranus</i>] [<i>Clanga clanga</i>], [<i>Aquila nipalensis</i>], [<i>Aquila heliaca</i>]
UZBEKISTAN													

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
UZB 1	Pskem River Basin	255,000	A1, B1, B2	+					+		Y	Y	<i>Acantholimon ekatherinae</i> , <i>Acantholimon pskemense</i> , <i>Allium marmoratum</i> , <i>Allium pskemense</i> , <i>Arctium dolichophyllum</i> , <i>Arctium pterolepidum</i> , <i>Astragalus abolinii</i> , <i>Astragalus lasiocalyx</i> , <i>Astragalus michaelis</i> , <i>Astragalus pskemensis</i> , <i>Aulacospermum popovii</i> , <i>Bergenia ugamica</i> , <i>Dracocephalum adylovii</i> , <i>Dracocephalum spinulosum</i> , <i>Erysimum aksaricum</i> , <i>Iris pseudocapnoides</i> , <i>Iris pskemensis</i> , <i>Jurinea mariae</i> , <i>Oxytropis maidantalensis</i> , <i>Pseudoglossanthus simulans</i> , <i>Rindera fornicata</i> , <i>Salvia korolkowii</i> , <i>Sphaenolobium tenuisectum</i> , <i>Tulipa dubia</i> , <i>Tulipa kaufmanniana</i> <i>Cottus jaxartensis</i> , <i>Glyptosternum reticulatum</i> , [<i>Panthera uncia</i>], [<i>Falco cherrug</i>]
UZB 2	Karzhantau Ridge	15,000	A1, B1, B2	+							Y		<i>Arctium dolichophyllum</i> (<i>Cousinia dolichophylla</i>), <i>Hedysarum drobovii</i> , <i>Salvia korolkowii</i> , <i>Tulipa dubia</i> , <i>Tulipa kaufmanniana</i> [<i>Marmota menzbieri</i>]
UZB 3	Chimgan	20,000	A1, B1, B2	+							Y		<i>Acantholimon ekatherinae</i> , <i>Allium marmoratum</i> , <i>Astragalus abolinii</i> , <i>Astragalus baranovii</i> , <i>Astragalus rubrivenosus</i> , <i>Aulacospermum popovii</i> , <i>Dracocephalum spinulosum</i> , <i>Hedysarum drobovii</i> , <i>Iris pseudocapnoides</i> , <i>Nanophyton botschantzevii</i> , <i>Oxytropis fedtschenkoi</i> , <i>Parrya tojibaevii</i> , <i>Parrya tschimgamica</i> , <i>Phlomisoides tschimganica</i> , <i>Salvia korolkowii</i> , <i>Tulipa butkovii</i> , <i>Tulipa dubia</i> , <i>Tulipa kaufmanniana</i>
UZB 4	Akbulak River Basin	65,000	A1, B1, B2	+	+				+		Y	Y	<i>Allium dodecadontum</i> , <i>Allium marmoratum</i> , <i>Allium pskemense</i> , <i>Astragalus abolinii</i> , <i>Astragalus rubrivenosus</i> , <i>Dracocephalum spinulosum</i> , <i>Iris pseudocapnoides</i> , <i>Rubia laevissima</i> , <i>Salvia korolkowii</i> , <i>Tulipa butkovii</i> , <i>Tulipa dubi</i> <i>Marmota menzbieri</i> , <i>Cottus jaxartensis</i>

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UZB 5	Bashkizylsay River Basin	16,000	B1, B2	+							Y	Y	<i>Allium pskemense</i> , <i>Astragalus nucleosus</i> , <i>Astragalus pseudoamygdalinus</i> , <i>Astragalus rubrivenosus</i> , <i>Elwendia angreni</i> (<i>Bunium angreni</i>), <i>Euphorbia mucronulata</i> , <i>Oxytropis fedtschenkoana</i> , <i>Oxytropis fedtschenkoi</i> , <i>Rindera fornicata</i> , <i>Salvia tianschanica</i> , <i>Thesium minkvitzianum</i> , <i>Tulipa dubia</i> , <i>Tulipa kaufmanniana</i> [<i>Neophron percnopterus</i>], [<i>Falco cherrug</i>], [<i>Clanga clanga</i>], [<i>Panthera uncia</i>]
UZB 6	Karabau and Dukentsay River Basins	32,000	B1, B2	+							Y		<i>Allium pskemense</i> , <i>Euphorbia mucronulata</i> , <i>Fritillaria rugilosa</i> , <i>Iris capnoides</i> , <i>Kamelinia tianschanica</i> , <i>Tulipa vvedenskyi</i>
UZB 7	Angren Plateau	70,000	A1, B1, B2, D1	+	+							Y	<i>Elwendia angreni</i> , <i>Hedysarum popovii</i> , <i>Oxytropis fedtschenkoana</i> , <i>Parrya saxifraga</i> , <i>Scutellaria angrenica</i> , <i>Tulipa dubia</i> , <i>Tulipa vvedenskyi</i> , <i>Ugamia angrenica</i> <i>Marmota menzbieri</i> , <i>Clanga clanga</i> , <i>Circus macrourus</i> , <i>Falco naumanni</i> , [<i>Vormela peregusna</i>]
UZB 8	Northern Slope of the Kuramin Ridge	68,000	B1, B2	+								Y	<i>Acantholimon margaritae</i> , <i>Allium pskemense</i> , <i>Astragalus dolonus</i> , <i>Astragalus nucleosus</i> , <i>Astragalus pseudoamygdalinus</i> , <i>Cicer mogoltavicum</i> , <i>Elwendia angreni</i> , <i>Eremurus korovinii</i> , <i>Fritillaria rugilosa</i> , <i>Parrya kuramensis</i> , <i>Rindera fornicata</i> , <i>Salvia tianschanica</i> , <i>Tulipa kaufmanniana</i> , <i>Tulipa vvedenskyi</i> [<i>Falco cherrug</i>]
UZB 9	Upper Reaches of Chadak and Chorkesar Rivers	53,000	B1, B2	+									<i>Acantholimon margaritae</i> , <i>Aulacospermum multicaule</i> , <i>Dracocephalum komarovii</i> , <i>Euphorbia mucronulata</i> , <i>Kuramosciadum corydaliifolium</i> , <i>Tulipa dubia</i> , <i>Tulipa vvedenskyi</i> , <i>Ugamia angrenica</i>
UZB 10	Pap Foothills	24,000	A1, B1, B2	+									<i>Acantholimon nabievii</i> , <i>Allium haneltii</i> , <i>Allium isakulii</i> , <i>Allium kuramense</i> , <i>Allium michaelis</i> , <i>Anthochlamys tianschanica</i> , <i>Asparagus ferganensis</i> , <i>Astragalus austroferganicus</i> , <i>Astragalus ferganensis</i> , <i>Astragalus pseudodanthus</i> , <i>Dorema microcarpum</i> , <i>Echinops knorringianus</i> , <i>Ferula lipskyi</i> , <i>Fritillaria rugilosa</i> , <i>Halimocnemis ferganica</i> , <i>Halimocnemis lasiantha</i> , <i>Iris rodionenkoi</i> , <i>Jurinea winkleri</i> , <i>Lagochilus pubescens</i> , <i>Mogoltavia sewerzowii</i> , <i>Oreosalsola drobovii</i> , <i>Plocama vassilczenkoi</i> , <i>Tanacetopsis santoana</i> , <i>Tulipa scharipovii</i> <i>Alsophylax ferganensis</i> , <i>Phrynocephalus saidalievi</i>

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UZB 11	Karatag	4,000	B1, B2	+									<i>Acantholimon nabievii</i> , <i>Allium filidentiforme</i> , <i>Allium michaelis</i> , <i>Mogoltavia sewerzowii</i>
UZB 12	Ungor Tepa	2,000	B1, B2	+									<i>Allium filidentiforme</i> , <i>Allium tatyanae</i> , <i>Allium viridiflorum</i> , <i>Iris austrotschatkalica</i> , <i>Tulipa ferganica</i>
UZB 13	Chartak Foothills	3,000	B1	+									<i>Acantholimon nabievii</i> , <i>Allium tatyanae</i> , <i>Anabasis ferganica</i> , <i>Halimocnemis ferganica</i> , <i>Hedysarum gypsaceum</i> , <i>Jurinea winkleri</i> , <i>Lamyropappus schakaptaricus</i> , <i>Mogoltavia sewerzowii</i> , <i>Phlomoides kirghisorum</i>
UZB 14	Akkum Sands	11,000	A1, B1, B2	+			+				Y		<i>Astragalus rubellus</i> , <i>Astragalus subauriculatus</i> , <i>Calligonum elegans</i> <i>Phrynocephalus strauchi</i> , <i>Teratoscincus rustamowi</i>
UZB 15	Syr Darya Upstream	4,000	B1						+				<i>Cottus spinulosus</i>
UZB 16	Teshiktash Foothills	27,000	B1	+									<i>Anabasis ferganica</i> , <i>Halimocnemis ferganica</i> , <i>Oreosalsola drobovii</i> , <i>Tulipa ferganica</i>
UZB 17	Chilustun and Kyrtahtau Mountains	6,000	B1	+									<i>Allium alaicum</i> , <i>Astragalus rhacodes</i> , <i>Ferula vicaria</i> , <i>Fritillaria rugilosa</i> , <i>Oreosalsola drobovii</i> , <i>Phlomoides kirghisorum</i> , <i>Tulipa ferganica</i>
UZB 18	Shakhimardan	4,000	A1, B1, B2	+					+				<i>Acantholimon katrantavicum</i> , <i>Acantholimon muchamedshanovii</i> , <i>Acantholimon schachimardanicum</i> , <i>Allium isakulii</i> , <i>Allium schachimardanicum</i> , <i>Astragalus auratus</i> , <i>Astragalus borissianus</i> , <i>Astragalus dianthoides</i> , <i>Astragalus rhacodes</i> , <i>Fergania polyantha</i> , <i>Fumariola turkestanica</i> , <i>Iskandera alaica</i> , <i>Lagochilus pubescens</i> , <i>Lepidium curvinervium</i> , <i>Lonicera paradoxa</i> , <i>Oreosalsola drobovii</i> , <i>Salvia margaritae</i> , <i>Tulipa ferganica</i> <i>Triplophysa ferganaensis</i>
UZB 19	Sokh	20,000	A1, B1, B2	+									<i>Astragalus auratus</i> , <i>Astragalus dianthoides</i> , <i>Calligonum calcareum</i> , <i>Calligonum elegans</i> , <i>Ferula lipskyi</i> , <i>Ferula vicaria</i> , <i>Lagochilus pubescens</i> , <i>Tulipa ferganica</i>
UZB 20	Northern Slope of the Turkestan Mountains	135,000	A1, B1, B2	+							Y	Y	<i>Allium clausum</i>, <i>Arctium haesitabundum</i> (<i>Cousinia haesitabunda</i>), <i>Astragalus belolipovii</i>, <i>Astragalus knorringianus</i>, <i>Eremurus chloranthus</i>, <i>Ferula fedtschenkoana</i>, <i>Ferula sumbul</i>, <i>Lonicera paradoxa</i>, <i>Oxytropis kamelinii</i>, <i>Parrya olgae</i>, <i>Phlomoides ambigua</i>, <i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>), <i>Silene paranadena</i>, <i>Tulipa affinis</i>, <i>Tulipa micheliana</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
UZB 21	Northern Aydarkul	140,000	D1			+						Y	<i>Pelecanus crispus</i> , <i>Fulica atra</i> , <i>Microcarbo pygmaeus</i> , <i>[Haliaeetus leucoryphus]</i> , <i>[Aquila heliaca]</i> , <i>[Aquila nipalensis]</i> , <i>[Chlamydotis macqueniei]</i> , <i>[Oxyura leucocephala]</i> , <i>[Phalacrocorax carbo]</i> , <i>[Testudo horsfieldii]</i> , <i>[Gazella subgutturosa]</i>
UZB 22	Tuzkan Lake	93,000	D1			+						Y	<i>Pelecanus crispus</i> , <i>Tadorna ferruginea</i> , <i>[Haliaeetus leucoryphus]</i> , <i>[Aquila heliaca]</i> , <i>[Aquila nipalensis]</i> , <i>[Chlamydotis macqueniei]</i> , <i>[Otis tarda]</i> , <i>[Aythya ferina]</i> , <i>[Anser erythropus]</i> , <i>[Branta ruficollis]</i> , <i>[Aythya nyroca]</i> , <i>[Calidris ferruginea]</i> , <i>[Calidris falcinellus]</i>
UZB 23	Northern Piedmont Plain of Nuratau Ridge	270,000	A1, B1	+	+								<i>Astragalus kelleri</i> , <i>Tulipa micheliana</i> <i>Anthropoides virgo</i> , <i>Grus grus</i> , <i>[Allactaga vinogradovi]</i> , <i>[Testudo horsfieldii]</i> , <i>[Chlamydotis macqueniei]</i> , <i>[Aquila nipalensis]</i> , <i>[Neophron percnopterus]</i> , <i>[Falco cherrug]</i> , <i>[Otis tarda]</i>
UZB 24	Nuratau Ridge	96,000	A1, B1, B2	+							Y	Y	<i>Acantholimon nuratavicum</i> , <i>Acantholimon subavenaceum</i> , <i>Acantholimon zakirovii</i> , <i>Allium isakulii</i> , <i>Allium praemixtum</i> , <i>Allium svetlanae</i> , <i>Arctium pallidivirens</i> (<i>Anura pallidivirens</i>), <i>Astragalus kelleri</i> , <i>Astragalus knorringianus</i> , <i>Astragalus leptophysus</i> , <i>Cicer grande</i> , <i>Cousinia botschantzevii</i> , <i>Cousinia dshisakensis</i> , <i>Dianthus helenae</i> , <i>Dracocephalum nuratavicum</i> , <i>Eremurus nuratavicus</i> , <i>Ferula sumbul</i> , <i>Helichrysum nuratavicum</i> , <i>Jurinea zakirovii</i> , <i>Lagochilus olgae</i> , <i>Lagochilus proskorjakovii</i> , <i>Lappula nuratavica</i> , <i>Lepidium olgae</i> , <i>Lepidolopha nuratavica</i> , <i>Nanophyton saxatile</i> , <i>Oxytropis pseudorosea</i> , <i>Parrya olgae</i> , <i>Parrya sarawschanica</i> , <i>Phlomis nubilans</i> , <i>Phlomis anisochila</i> , <i>Phlomis ambigua</i> , <i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>), <i>Salvia submutica</i> , <i>Silene paranadena</i> , <i>Thymus subnervosus</i> , <i>Tulipa affinis</i> , <i>Tulipa micheliana</i> <i>[Falco cherrug]</i> , <i>[Neophron percnopterus]</i> , <i>[Ovis ammon severtzovii]</i> , <i>[Aegipius monachus]</i> , <i>[Gypaetus barbatus]</i> , <i>[Aquila nipalensis]</i>
UZB 25	Koytash Ridge	18,000	A1, B1, B2	+									<i>Acantholimon nuratavicum</i> , <i>Arctium pallidivirens</i> (<i>Anura pallidivirens</i>), <i>Astragalus kelleri</i> , <i>Astragalus knorringianus</i> , <i>Cousinia botschantzevii</i> , <i>Cousinia dshisakensis</i> , <i>Dianthus helenae</i> , <i>Dracocephalum nuratavicum</i> , <i>Helichrysum nuratavicum</i> , <i>Oxytropis pseudorosea</i> , <i>Phlomis nubilans</i> , <i>Salvia submutica</i> , <i>Tulipa affinis</i> , <i>[Prunus bucharica (Amygdalus bucharica)]</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
UZB 26	Aktau Ridge	36,000	A1, B1, B2	+							Y		<i>Allium eremoprasum</i> , <i>Allium isakulii</i> , <i>Allium praemixtum</i> , <i>Arctium pallidivirens</i> (<i>Anura pallidivirens</i>), <i>Astragalus kelleri</i> , <i>Astragalus nuratensis</i> , <i>Cicer grande</i> , <i>Cousinia botschantzevii</i> , <i>Cousinia pseudolanata</i> , <i>Dianthus helenae</i> , <i>Ferula nuratavica</i> , <i>Helichrysum nuratavicum</i> , <i>Jurinea zakirovii</i> , <i>Lepidolopha nuratavica</i> , <i>Nanophyton saxatile</i> , <i>Oxytropis pseudorosea</i> , <i>Parrya sarawschanica</i> , <i>Phlomis nubilans</i> , <i>Thymus subnervosus</i> , <i>Tulipa micheliana</i> , <i>Vicoa krascheninnikovii</i> , [<i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>)] [<i>Neophron percnopterus</i>], [<i>Aegipius monachus</i>], [<i>Gazella subguturosa</i>], [<i>Vormela peregusna</i>], [<i>Testudo horsfieldii</i>]
UZB 27	Kattakurgan Reservoir	13,000	D1			+						Y	<i>Anthropoides virgo</i> , [<i>Grus leucogeranus</i>], [<i>Chlamydotis macqueniei</i>], [<i>Aythya ferina</i>]
UZB 28	Western Zeravshan	115,000	A1, B1, B2	+							Y		<i>Allium clausum</i>, <i>Allium majus</i>, <i>Astragalus chrysomallus</i>, <i>Cerastium borisii</i>, <i>Cousinia adenophora</i>, <i>Cousinia butkovii</i>, <i>Cousinia dshisakensis</i>, <i>Dianthus uzbekistanicus</i>, <i>Ferula sumbul</i>, <i>Hedysarum amankutanicum</i>, <i>Iris magnifica</i>, <i>Iris svetlanae</i>, <i>Jurinea asperifolia</i>, <i>Komarovia angiosperma</i>, <i>Lepidium minor</i>, <i>Oxytropis lipskyi</i>, <i>Parrya olgae</i>, <i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>), <i>Salvia drobowii</i>, <i>Serratula lancifolia</i>, <i>Silene oreina</i>, <i>Silene popovii</i>, <i>Tulipa fosteriana</i>, <i>Tulipa ingens</i>
UZB 29	Chimkurgan Reservoir	4,000	D1			+						Y	<i>Anser anser</i> , <i>Tadorna ferruginea</i> , <i>Grus grus</i> , <i>Anthropoides virgo</i> [<i>Anser erythropus</i>], [<i>Testudo horsfieldii</i>]
UZB 30	Talimarjan Reservoir	78,000	A1, D1			+						Y	<i>Vanellus gregarious</i>, <i>Anser anser</i>, [<i>Anser erythropus</i>], [<i>Oxyura leucocephala</i>], [<i>Chlamydotis macqueniei</i>]

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
UZB 31	Western Hissar	500,000	A1, B1, B2	+	+						Y	Y	<i>Acantholimon annae</i>, <i>Acantholimon butkovii</i>, <i>Acantholimon gontscharovii</i>, <i>Acantholimon hissaricum</i>, <i>Acantholimon taschkurganicum</i>, <i>Acantholimon vvedenskyi</i>, <i>Allium brevidentiforme</i>, <i>Allium clausum</i>, <i>Allium dolichomischum</i>, <i>Allium hexaceras</i>, <i>Allium majus</i>, <i>Allium tyttanthum</i>, <i>Astomatopsis galiocarpa</i>, <i>Astragalus bobrovii</i>, <i>Astragalus butkovii</i>, <i>Astragalus komarovii</i>, <i>Astragalus massagetowii</i>, <i>Astragalus pseudanthyllioides</i>, <i>Astragalus schutensis</i>, <i>Astragalus terrae-rubrae</i>, <i>Astragalus tupalangi</i>, <i>Bergenia hissarica</i>, <i>Cephalopodium hissaricum</i>, <i>Cicer incanum</i>, <i>Corydalis pseudostricta</i>, <i>Corydalis sangardanica</i>. <i>Cousinia allolepis</i>, <i>Cousinia campyloraphis</i>, <i>Cousinia praestans</i>, <i>Cousinia subcandicans</i>, <i>Cousinia vvedenskyi</i>, <i>Dianthus uzbekistanicus</i>, <i>Dionysia hissarica</i>, <i>Dracocephalum formosum</i>, <i>Eremurus iae</i>, <i>Eremurus pubescens</i>, <i>Erysimum nabijevii</i>, <i>Euphorbia kudrjashevii</i>, <i>Ferula fedtschenkoana</i>, <i>Ferula pratovii</i>, <i>Ferula sumbul</i>, <i>Ferula tadshikorum</i>, <i>Hedysarum bucharicum</i>, <i>Hedysarum kudrjashevii</i>, <i>Hedysarum magnificum</i>, <i>Iris svetlanae</i>, <i>Iskandera hissarica</i>, <i>Jurinea asperifolia</i>, <i>Jurinea pjataevae</i>, <i>Jurinea sangardensis</i>, <i>Lepidium minor</i>, <i>Ostrowskia magnifica</i>, <i>Oxytropis lasiocarpa</i>, <i>Oxytropis microcarpa</i>, <i>Oxytropis tyttantha</i>, <i>Parrya pjataevae</i>, <i>Pedicularis grandis</i>, <i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>), <i>Pyrus korshinskyi</i>, <i>Ribes malvifolium</i>, <i>Saponaria gypsacea</i>, <i>Scutellaria guttata</i>, <i>Scutellaria holosericea</i>, <i>Scutellaria villosissima</i>, <i>Seseli merkulowiczii</i>, <i>Silene michelsonii</i>, <i>Sphaerosciadium denaense</i>, <i>Tanacetopsis botschantzevii</i>, <i>Thesium ramosissimum</i>, <i>Tulipa carinata</i>, <i>Tulipa ingens</i>, <i>Tulipa orythioides</i>, <i>Tulipa tubergeniana</i>, <i>Ungernia victoris</i>, <i>Vvedenskia pinnatifolia</i>, <i>Zeravschania regeliana</i> <i>Panthera uncia</i>, [<i>Falco cherrug</i>], [<i>Neophron percnopterus</i>]
UZB 32	Tarkapchigay River Basin	70,000	A1, B1, B2	+									<i>Acantholimon butkovii</i>, <i>Acantholimon majewianum</i>, <i>Allium botschantzevii</i>, <i>Allium ophiophyllum</i>, <i>Crambe gordjagini</i>, <i>Eremurus suworowii</i>, <i>Eversmannia botschantzevii</i>, <i>Ferula tadshikorum</i>, <i>Hedysarum bucharicum</i>, <i>Hedysarum magnificum</i>, <i>Heliotropium bucharicum</i>, <i>Iris svetlanae</i>, <i>Jurinea gracilis</i>, <i>Phlomoides gypsacea</i>, <i>Salsola lipschitzii</i>, <i>Salvia lilacinocaerulea</i>, <i>Scutellaria colpodea</i>, <i>Triaenophora bucharica</i> (<i>Spirostegia bucharica</i>), <i>Tulipa uzbekistanica</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
UZB 33	Kugitang and Baysantau Ridges	180,000	A1, B1, B2	+							Y		<i>Acantholimon butkovii</i> , <i>Acantholimon majewianum</i> , <i>Allium clausum</i> , <i>Allium decoratum</i> , <i>Allium dolichomischum</i> , <i>Allium majus</i> , <i>Allium tyttanthum</i> , <i>Astragalus bobrovii</i> , <i>Astragalus bucharicus</i> , <i>Astragalus juniperetorum</i> , <i>Astragalus plumbeus</i> , <i>Astragalus pseudanthylloides</i> , <i>Astragalus rotundus</i> , <i>Astragalus subschachimardanus</i> , <i>Astragalus terrae-rubrae</i> , <i>Astragalus willisii</i> , <i>Calispepla aegacanthoides</i> , <i>Calophaca reticulata</i> , <i>Cicer grande</i> , <i>Cleome tomentella</i> , <i>Cousinia glabriseta</i> , <i>Cousinia glaphyrocephala</i> , <i>Cousinia gnezdilloi</i> , <i>Cousinia haplophilla</i> , <i>Cousinia leptocladoides</i> , <i>Cousinia platystegia</i> , <i>Cousinia rhodantha</i> , <i>Cousinia vvedenskyi</i> , <i>Dionysia hissarica</i> , <i>Dracocephalum formosum</i> , <i>Eremurus alberti</i> , <i>Eremurus baissunensis</i> , <i>Eremurus iae</i> , <i>Eremurus pubescens</i> , <i>Eremurus suworowii</i> , <i>Euphorbia densiuscula</i> , <i>Ferula tadshikorum</i> , <i>Ferula tuberifera</i> , <i>Fritillaria baisunensis</i> , <i>Halothamnus schurobi</i> , <i>Hedysarum bucharicum</i> , <i>Hedysarum magnificum</i> , <i>Heliotropium bucharicum</i> , <i>Iris anvarbekii</i> , <i>Iris khassanovii</i> , <i>Iris svetlanae</i> , <i>Iris victoris</i> , <i>Jurinea gracilis</i> , <i>Jurinea sangardensis</i> , <i>Lepidium minor</i> , <i>Lepidolopha fedtschenkoana</i> , <i>Moluccella bucharica</i> , <i>Oxytropis chesneyoides</i> , <i>Oxytropis megalorrhyncha</i> , <i>Oxytropis pseudoleptophysa</i> , <i>Oxytropis tyttantha</i> , <i>Oxytropis vvedenskyi</i> , <i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>), <i>Pyrus korshinskyi</i> , <i>Ranunculus tojibaevii</i> , <i>Ribes malvifolium</i> , <i>Salvia lilacinocaerulea</i> , <i>Scutellaria colpodea</i> , <i>Scutellaria fedtschenkoi</i> , <i>Seseli nevskii</i> , <i>Silene nataliae</i> , <i>Triaenophora bucharica</i> (<i>Spirostegia bucharica</i>), <i>Tulipa bactriana</i> , <i>Tulipa carinata</i> , <i>Tulipa ingens</i> , <i>Tulipa orythioides</i> , <i>Tulipa tubergeniana</i> , [<i>Malus sieversii</i>] <i>[Glyptosternum reticulatum]</i> , [<i>Neophron percnopterus</i>], [<i>Ovis orientalis</i>]
UZB 34	Kelif-Sherabad Range	95,000	B1	+								Y	<i>Allium margaritiferum</i> , <i>Allium ophiophyllum</i> , <i>Allium rhodanthum</i> , <i>Astragalus alexeji</i> , <i>Astragalus rubrigalli</i> , <i>Chesneya tribuloides</i> , <i>Cleome gordjagini</i> , <i>Cleome tomentella</i> , <i>Cousinia platystegia</i> , <i>Eremurus alberti</i> , <i>Eremurus baissunensis</i> , <i>Euphorbia densiuscula</i> , <i>Hammada eriantha</i> , <i>Heliotropium bucharicum</i> , <i>Iris victoris</i> , <i>Phlomis baburii</i> , <i>Plocama botschantzevii</i> , <i>Triaenophora bucharica</i> (<i>Spirostegia bucharica</i>), <i>Tulipa bactriana</i> , <i>Tulipa tubergeniana</i> , <i>Zygophyllum bucharicum</i>
UZB 35	Khaudakta	44,000	B1	+									<i>Allium ophiophyllum</i> , <i>Allium rhodanthum</i> , <i>Climacoptera oxyphylla</i> , <i>Dipcadi turkestanicum</i> , <i>Euphorbia triodonta</i>

Code	KBA name	Hectares	Global KBA criteria met	Plants	Mammals	Birds	Reptiles	Insects	Fish	Amphibian	Protected area	IBA overlap	KBA trigger species
UZB 36	Uzbek Babatag	98,000	B1	+									<i>Allium gypsodictyum</i> , <i>Allium margaritiferum</i> , <i>Allium sulphureum</i> , <i>Allium sunhangii</i> , <i>Astragalus bucharicus</i> , <i>Astragalus pseudoeremophysa</i> , <i>Astragalus pseudorhacodes</i> , <i>Cousinia candicans</i> , <i>Cousinia stricta</i> , <i>Echinops babatagensis</i> , <i>Echinops brevipenicillatus</i> , <i>Eremurus alberti</i> , <i>Ferula tadshikorum</i> , <i>Fritillaria yakutiae</i> , <i>Halothamnus babatagi</i> , <i>Hedysarum sunhangii</i> , <i>Lagochilus botschantzevii</i> , <i>Oxytropis babatagi</i> , <i>Prunus bucharica</i> (<i>Amygdalus bucharica</i>), <i>Reaumuria babataghi</i> , <i>Salvia insignis</i> , <i>Scutellaria colpodea</i> , <i>Tulipa tubergeniana</i> <i>Neophron percnopterus</i> , [<i>Panthera pardus</i>]
UZB 37	Amu Darya floodlands	45,000	A1, D1			+							<i>Grus grus</i> , <i>Anser erythropus</i> , <i>Anser anser</i>
UZB 38	Karatau Ridge	59,000	B1	+									<i>Allium isakulii</i> , <i>Autumnalia innopinata</i> , <i>Iris hippolyti</i> , <i>Tulipa micheliana</i>
UZB 39	Forish and Gallyaral	148,000	A1, D1			+							<i>Otis tarda</i>
UZB 40	Shorsuv	47,000	A1, B1, B2	+									<i>Acantholimon nabievii</i> , <i>Allium isakulii</i> , <i>Allium michaelis</i> , <i>Anabasis ferganica</i> , <i>Astragalus brachyrhachis</i> , <i>Astragalus ferganensis</i> , <i>Calligonum calcareum</i> , <i>Echinops knorringianus</i> , <i>Fergania polyantha</i> , <i>Ferula lipskyi</i> , <i>Halimocnemis ferganica</i> , <i>Halimocnemis lasiantha</i> , <i>Jurinea winkleri</i> , <i>Lagochilus pubescens</i> , <i>Linaria kokanica</i> , <i>Mogoltavia sewerzowii</i> , <i>Nepeta santoana</i> , <i>Plocama vassilczenkoi</i> , <i>Sisymbrium isfarensense</i> , <i>Stipa magnifica</i> , <i>Tanacetopsis santoana</i>

Notes on Column 2 (KBA name): bold/shade denotes priority sites for CEPF investment.

Notes on Column 14 (KBA trigger species): bold denotes priority species for CEPF investment; brackets denote globally threatened species that are not confirmed to meet the threshold for global KBA criterion; however, they are considered important for conservation.

Appendix 6. Corridor Outcomes

Code	Conservation corridor name	Area (km ²)	No. of KBAs	Countries
1	Kelif-Talimarjan-Termez wetlands	6,800	3	TKM, UZB
2	Upper Amudarya and Panj River	1,600	3	UZB, AFG, TJK
3	Babatag and Karatau Mountains	6,800	6	UZB, TJK
4	Koytendag and Hissar Mountains	28,800	10	TKM, UZB, TJK
5	Central Tajikistan	15,300	8	TJK
6	Upper and middle Zeravhan River Basin	4,800	2	TJK, UZB
7	Turkestan and Alai Mountains	24,300	12	KGZ, TJK, UZB
8	Aidarkul Lake and Nuratau Mountains	18,000	8	UZB
9	Western Tien Shan	35,300	22	KAZ, UZB, KGZ, TJK
10	Kazakh Karatau Mountains	12,700	5	KAZ
11	Upper Talas River Basin	5,400	2	KGZ, KAZ
12	Kyrgyz Mountains	12,100	3	KGZ, KAZ
13	Ferghana Valley Periphery (including KBAs inside the Ferghana Valley)	17,600	8	UZB, TJK, KGZ
14	Ferghana Mountains	14,200	3	KGZ
15	Pamir-Alai and Wakhan Mountains	123,500	12	KGZ, TJK, AFG, CHI
16	Central Tien Shan	33,700	4	KYR, CHI
17	Issyk-Kul Lake Basin	20,500	5	KGZ
18	Khan-Tengri and Tomur Mountains	24,900	5	KGZ, KAZ, CHI
19	Chu Ili Divide	17,100	1	KAZ, KGZ
20	Middle Ili River Basin	38,800	8	KAZ
21	Upper Ili River Basin	48,500	6	CHI
22	Dzungaria	29,500	4	KAZ, CHI
23	Bayanbuluke and Kaidu River Basin	23,200	1	CHI
24	Bogdashan Mountains	11,100	2	CHI
25	Barkolshan Mountains	13,200	1	CHI
26	Riverine ecosystems and waterways in the Pamir and Tien Shan Mountains	2,000	4	KAZ, UZB, KGZ, TJK

Note: bold/shade denotes priority corridors for CEPF investment.