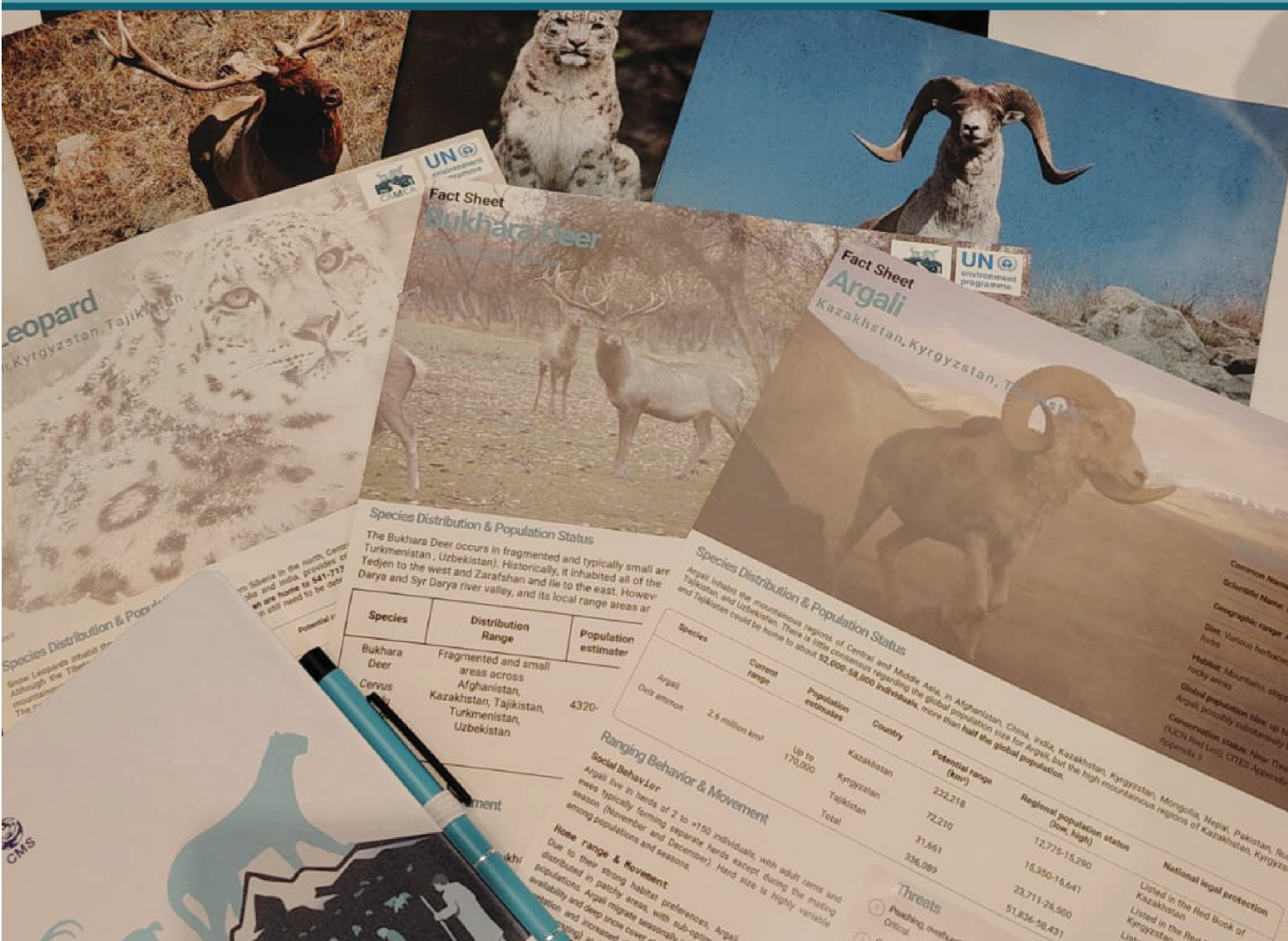


Convention on the Conservation of Migratory Species of Wild Animals

Connecting the Dots: Upscaling the Results of the Central Asian Mammals and Climate Adaptation Project in Selected National and Regional Frameworks



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This paper provides an overview of regional and national frameworks relevant to landscape management and ecosystem-based adaptation under international conventions, and identifies gaps and potential entry points for integrating Central Asian Mammals and Climate Adaptation (CAMCA) results into these frameworks. The review of international frameworks, regional initiatives and ongoing projects highlighted 14 key areas where synergies can strengthen and upscale the CAMCA project and enhance climate-responsive wildlife conservation across the region.

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1. Background

Conserving the mountain ecosystems of Central Asia is essential for both climate change mitigation and adaptation. Terrestrial ecosystems in general play a major role in sequestering carbon, capturing an estimated 34% of global emissions (IPCC, 2022). Furthermore, some scientific evidence indicates that the presence of wild animals can enhance the sequestration of carbon dioxide in terrestrial ecosystems (Schmitz et al., 2023). According to an analysis published by IFAW in 2024, the protection and restoration of key wildlife areas with ecologically relevant wildlife populations can contribute significantly to meeting two of the IPCC's top options to cut net emissions by 2030 reducing conversion of natural ecosystems and restoring ecosystems.

Both options are of particular importance for climate mitigation and for preventing further biodiversity loss in Asia, a region with the highest emissions from the forestry and land-use sector driven mostly by the conversion of natural ecosystems (UNFCCC, 2017). Central Asia's mountains still host largely intact natural ecosystems and extensive glaciers that provide vital resources for livelihoods, regional economies and biodiversity (Zholdosheva *et al.*, 2017). Often described as the region's "water towers," these mountains provide a critical supply of water millions of people. They also harbor flagship endemic wildlife and serve as seasonal habitats for hundreds of migratory bird and mammal species. Shaped by a sharply continental climate—characterized by hot, dry summers, cold winters, and regular occurrences of extreme weather events—Central Asian mountains demand a high degree of adaptability. In turn, the region's wildlife has evolved diverse survival strategies, including migrations that track seasonal patterns of weather, water, and food availability.

With climate change driving an increase in the frequency and severity of extreme weather events, preserving the ability of wildlife to move away from adverse conditions through permeable, well-connected landscapes is becoming ever more critical (Hereward *et al.*, 2023). Ecological connectivity is essential not only for species survival but also for maintaining the resilience of the ecosystems they underpin.

Central Asia's climate is warming faster than the global average, and its mountain regions are already experiencing pronounced impacts: rising temperatures, shifts in seasonal precipitation, and accelerating glacier melt and land degradation (Lioubimtseva and Henebry, 2009; Ling et al., 2023). One of the documented consequences is the upward shift of ecosystem zones such as forests and pastures, which has been observed in recent decades (UNEP, 2017). These changes affect both wildlife distributions (Lioubimtseva and Henebry, 2009) and land use patterns by local pastoralists for example.

Ghoddousi et al (2025) found that climate change can impact human-wildlife co-existence by exacerbating resource scarcity and increasing human-wildlife encounters due to an overlap in wildlife distribution and land use patterns in some cases, while in others, it may reduce human-wildlife encounters resource competition, both situations offering opportunities for developing targeted conservation measures.

Many CMS-listed mammals, including those inhabiting the mountains of Central Asia, are already under significant pressure from human activities. These include illegal hunting, habitat degradation and loss driven by overgrazing and unsustainable water use, as well as fragmentation caused by infrastructure development lacking adequate mitigation measures. Together, these stressors can undermine wildlife's capacity to adapt to ongoing climatic changes.

To support connectivity and adaptability of wildlife to climate change, well-connected and comprehensive protected area networks need to be in place (Hereward *et al.*, 2023). However, because the ranges of most migratory species extend far beyond protected areas, ensuring the availability of suitable habitats outside these areas and maintaining habitat in large landscapes are equally important. This can be achieved through, among other approaches, integrated land-use planning and environmental impact assessments during infrastructure development that takes wildlife movement patterns into consideration.

These measures are necessary to enable migratory species and the ecosystems they depend on to adapt to climate change.

In turn, maintaining ecologically viable populations of large mammals contributes to enhancing resilience of ecosystems through a diversity of their functional roles, such as contributing to trophic web complexity, increasing habitat heterogeneity, enhancing plant dispersal, reducing wildfire risk through grazing, etc. (Malhi *et al.*, 2022). Conserving these species and the habitats they depend on not only supports healthy, functioning ecosystems but also contributes to the adaptation potential of human communities that rely on mountain landscapes. Ecosystem-based adaptation (EbA), as defined by the Convention on Biological Diversity (CBD), is the use of biodiversity and ecosystem services as part of a broader strategy to help people adapt to the adverse effects of climate change (CBD, 2010).

In line with this approach, the Central Asian Mammals and Climate Adaptation (CAMCA) project was launched in 2021 to address anthropogenic threats to Central Asian mammals and to strengthen the adaptive capacity of both wildlife and local communities. The following focal species were selected through national consultations: three CMS-listed species—snow leopard, argali sheep, and Bukhara deer—alongside non-listed Asiatic ibex, Tien Shan maral and the Tien Shan brown bear.

The CAMCA project aims to enhance the climate resilience of the six flagship species and the ecosystems they inhabit through climate-informed, community-led conservation interventions across Kazakhstan, Kyrgyzstan, and Tajikistan. Project activities are designed to achieve the following:

- Encourage the long-term conservation of selected flagship species and their habitats, maintaining or increasing the natural capital / natural wealth of these ecosystems;
- Generate knowledge about potential impacts of climate change on existing protected area networks;
- Develop climate change-informed tools and enhance the resilience of both ecosystems and livelihoods, including to climate-related shocks; and
- Contribute to the social, political, and economic empowerment of local communities through strengthened community-based, sustainable, and climate change-informed wildlife and pasture management, and generate opportunities for more stable incomes in communities (e.g., ecotourism and sustainable hunting)
- Anchor the approaches developed in national and regional policy frameworks.

During its implementation, the project developed tools, knowledge, and policy instruments, which can be mainstreamed into local, national and regional policies (for a list of project results see Table 1).

Table 1 Results and outcomes of the CAMCA project as of 25 November 2025.

Nr.	CAMCA output	Expected completion year
1	Ak Ibirs ecological corridor in Kyrgyzstan	2025
2	Protected Area Vulnerability Assessment Tool	2026
3	Guidelines for Integrating Wildlife in Pasture Management	2025
4	Species Vulnerability Assessment	2026
5	Policy briefs for Kazakhstan , Kyrgyzstan and Tajikistan	2025
6	Work Programme for the Bukhara Deer (2025-2032)	2024
7	Action Plan for the Conservation of the Argali (2024-2032)	2024
8	Central Asian Mammals Migration and Linear Infrastructure Atlas	2025
9	Work Programme for the Central Asian Mammals Initiative (2026-2032)	2026
10	Identification of Funding Options for the Implementation of the CAMI	2025
11	Connecting the Dots: Prospects for Disseminating and Upscaling CAMCA Results (this paper)	2026

The purpose of this paper is to provide a non-exhaustive overview of existing policy frameworks and projects related to landscape management and ecosystem-based adaptation, and to identify gaps and opportunities for integrating project outcomes into regional and national policies. It focuses primarily on policy instruments related to international conventions and aims to support continuity of policies beyond the lifetime of the project.

Chapter 2 outlines management plans and policy frameworks relevant to ecosystem-based adaptation and landscape management in the target countries, corresponding to activities 4.4 and 5.1 of the CAMCA project. Chapter 3 presents a concise gap analysis to highlight areas for future work where CAMCA results could make a significant contribution, corresponding to activities 4.4.3 and 5.1 of the CAMCA Project Workplan.

2. Policy frameworks relevant to ecosystem-based adaptation and landscape management in the frame of international conventions

2.1 Instruments specifically addressing conservation of wildlife and their habitats

Convention on the Conservation of Migratory Species of Wild Animals (CMS)

CMS frameworks, such as the Argali Action Plan (AP), the Bukhara Deer Work Programme (WP), and the CAMI Work Programme (WP) provide structured programmes for wildlife conservation by addressing major threats to focal species, including habitat degradation and fragmentation, disease, climate change, human-wildlife conflict, and poaching, among others. These frameworks identify priority actions drawing on both local and international expertise, including contributions from IUCN specialist groups, and are developed in close consultation with decision-makers in the relevant national ministries.

National frameworks

Within CMS, there is no general obligation to create national action plans for implementing the convention. However, through the CMS National Legislation Programme (NLP), Parties are encouraged to submit information on their legislation to the CMS Secretariat through a special questionnaire to receive support with aligning their legislation with CMS requirements. NLP was established by the Conference of the Parties specifically to ensure long-term

compliance with Article III.4 a) and b) concerning migratory species habitats and obstacles to migration and III.5 of the Convention, concerning prohibition of take. Thus far, this process has focused on legislation related to the prohibition of take of CMS Appendix I species. Among the target species of the CAMCA project, only snow leopard and Bukhara deer are listed on CMS Appendix I. Furthermore, in general, it is expected that Parties integrate provisions of CMS resolutions and Decisions in their relevant national instruments. Some regional CMS frameworks explicitly require the creation of national action plans (e.g., Vultures Multi-species Action Plan).

Regional Plans

The most relevant regional action plans for CAMCA within CMS are international action plans concerning the conservation of Central Asian mammals, which were selected as focal species of the CAMCA project. These are: [the Work Programme for the Bukhara Deer](#) (2025-2032) (Bukhara deer WP) in the frame of the Memorandum of Understanding (MOU) concerning Conservation and Restoration of the Bukhara Deer (*Cervus elaphus bactrianus*), [the Action Plan for the Conservation of the Argali 2024-2032](#) (Argali AP) as well as a broader regional framework, the [Work Programme for the Central Asian Mammals Initiative 2026-2032](#) (CAMI WP).

These instruments, updated with support from the CAMCA project, include specific activities resulting from the CAMCA project (available at the time of their adoption), thus upscaling CAMCA results to a regional level. In particular, the Bukhara Deer WP, Argali AP, and the CAMI WP all include pilot sites of the CAMCA project with defined activities through 2032, addressing the involvement of local communities in conservation, habitat connectivity, and preventing habitat degradation through more sustainable grazing practices. Several results of the CAMCA project were released after these instruments were endorsed. If necessary, the Range States and Parties to CMS can still influence the CAMI WP at their next Meeting.

Convention on Biological Diversity (CBD)

CBD is an agreement on the conservation and sustainable use of biological diversity. It has three main objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilization of genetic resources.

National Biodiversity Strategies and Action Plans (NBSAPs)

In Accordance with Article 6 of the CBD, Parties to the CBD are required to develop National Biodiversity Strategies and Action Plans (NBSAPs) for the conservation and sustainable use of biological diversity, or to adapt existing strategies, plans or programmes to this purpose, and to integrate these actions into relevant sectoral or cross-sectoral

plans, programmes and policies to the extent possible and appropriate. The Fifteenth Conference of the Parties to CBD requested Parties to submit revised or updated national biodiversity strategies and action plans (NBSAPs), including national targets, by the sixteenth meeting of the Conference of the Parties (COP 16) (CBD, 2023).

Currently, all target countries are in the process of developing updated NBSAPs, which offer a good chance for the integration of the CAMCA project results, as they become available. CAMCA project partners have already contributed to the development of the NBSAPs in Kazakhstan and Kyrgyzstan and are in touch with national authorities of Tajikistan for an opportunity to provide input.

From a global perspective, CAMCA project outcomes are relevant to CBD Workstreams on: CBD Programme of Work on Protected Areas (PoWPA), CBD Expanded Programme of Work on Dry and Sub-Humid Lands, and the CBD–CMS Joint Work Programme. The CBD COP17 planned for October 2026 presents an opportunity to promote CAMCA results.

The Global Snow Leopard and Ecosystem Protection Program (GSLEP)

Within the framework of the Global Snow Leopard and Ecosystem Protection Program (GSLEP), twelve countries (Afghanistan, Bhutan, China, India, Kazakhstan, the Kyrgyz Republic, Mongolia, Nepal, Pakistan, the Russian Federation, Tajikistan, and Uzbekistan)

collaborate to conserve the snow leopard and its habitat. Given that snow leopard range areas are both heavily affected by climate change and critical for climate change adaptation, the findings of the CAMCA project hold strong relevance for this regional initiative. The foundation of GSLEP are 12 individual National Snow Leopard and Ecosystem Priorities (NSLEP), developed individually by each of the countries based on guidance from the GSLEP Secretariat. The countries also identified 23 Snow Leopard Landscapes across the species' range, the management of which could also be informed by priority landscapes and conservation needs identified by the CAMCA project (especially in the CAMI Work Programme and Argali Action Plan).

2.2 Other instruments of relevance

United Nations Framework Convention on Climate Change (UNFCCC)

Convention instruments

The Convention addresses both climate change mitigation and adaptation. Mitigation measures aim to limit anthropogenic emissions of greenhouse gases and protect and enhance greenhouse gas sinks and reservoirs, while adaptation measures involve actions taken to adjust to actual or expected climate change and its impacts, to moderate potential damage or leverage potential benefits.

Under the Paris Agreement, Parties are required to prepare and submit nationally determined contributions (NDCs), updated every five years. NDCs outline how countries plan to reduce

their greenhouse gas emissions across multiple sectors, such as energy, transport, industry, buildings, agriculture, and forestry and land use (AFOLU/LULUCF), among others. Although NDCs primarily focus on mitigation, most Parties also include adaptation measures and highlight synergies with other multilateral environmental agreements through co-benefits, even though this is not mandatory under the Paris Agreement. Successive NDC updates are expected to demonstrate increased ambition, helping to move closer to the global goal of limiting temperature rise.

At UNFCCC COP16, Parties established the process for formulating and implementing National Adaptation Plans (NAPs). This mechanism was created to support Least Developed Countries in identifying medium- and long-term adaptation needs and in developing strategies and programmes to address them. Other Parties are also encouraged to develop NAPs and many have submitted their NAPs. Supported by international partners such as the Green Climate Fund (GCF) and the United Nations Development Programme (UNDP), the preparation of NAPs is currently ongoing in Kazakhstan, Kyrgyzstan, and Tajikistan.

Regional Climate Change Adaptation Strategy for Central Asia

The Regional Climate Change Adaptation Strategy for Central Asia was developed and endorsed by Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. Natural ecosystems and biodiversity are identified as one of the strategy's six priority areas. The CAMCA project partners may have opportunities to develop actions that integrate CAMCA results and engage with the Central Asian intergovernmental working group, supported by GIZ through its Green Central Asia initiative, which coordinates implementation.

The existing Action Plan for the Regional Strategy elaborated in 2021, includes the following provisions of relevance to the CAMCA project:

- *Regionally coordinated national conservation strategies for the creation of protected areas; joint methodology on assessing flora and fauna*
- *Discussion – coordination on transboundary protected areas in CA*

United Nations Convention to Combat Desertification (UNCCD)

UNCCD focuses on sustainable agriculture, forestry, and irrigation, promoting the use of practices that avoid, reduce, and reverse land degradation at a global scale.

G20 Global Land Initiative

The G20, or Group of Twenty, is an intergovernmental forum of the world's major developed and developing economies. It comprises 19 countries (Argentina, Australia, Brazil, Canada,

China, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, the Russian Federation, the Kingdom of Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States of America), and the European Union. The objectives of the initiative include: 1) conserving land and halting habitat loss, fragmentation, and land degradation; 2) promoting integrated, sustainable, and resilient land and landscape management; 3) restoring degraded land.

Land Degradation Neutrality (LDN)

The world's nations are committed to Sustainable Development Goal 15, "Life on Land", including target 15.3 on achieving a "land degradation-neutral world". The UNCCD defines Land Degradation Neutrality (LDN) as "a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems". Although this definition does not directly include any reference to wildlife conservation, the conceptual framework for LDN target setting is designed to be flexible, so it applies to all land uses, including:

- land managed for production (agriculture, forestry)
- land managed for conservation (protected areas)
- land occupied by human settlements and infrastructure.

The LDN objectives of the UNCCD are: 1) maintaining ecosystem services in a sustainable manner, 2) maintaining or improving land productivity to support global food security, 3) strengthening the resilience of the land and the communities that rely on it, 4) promoting synergies with other social, economic and 5) environmental goals, and supporting responsible and inclusive land governance. To achieve LDN, it is key to promote actions that address both the drivers of land degradation and biodiversity loss, enhancing their synergies and reinforcing the links between CBD and the UNCCD (FAO, 2022).

Regional Strategy for Drought Risk Management and Mitigation in Central Asia for 2021–2030

This regional strategy was adopted in 2021 in Almaty, where priority areas for the Central Asia region were identified in alignment with the main pillars proposed by the UNCCD. These include: i) improvement of drought monitoring and forecasting for a better risk assessment and building drought prevention capacities ii) mitigating drought through water-saving irrigation and promoting drought-resistant crops by providing farmers with best practices and financial resources iii) awareness raising among the rural population iv) promoting transboundary cooperation.

The Medium-Term Action Plan 2021-2026 associated with the strategy, includes the following provisions of relevance to CAMCA project:

- *Set up watering points for wild animals and birds on their migration routes*
- *Ensure the sustainable functioning of wetlands*
- *Set up a network of watering points in natural pastures using solar and wind energy*
- *Involve local communities (especially those residing in remote mountain areas) in climate monitoring*

Central Asia – Russia Interregional Group:

The UNCCD Interregional Group “Central Asia – Russia” (IRG) was established within the framework of the United Nations Convention to Combat Desertification (UNCCD) to facilitate cooperation in implementing the UNCCD Framework Strategy for 2018–2030. As a result of a joint agreement, six countries—the Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan - have joined efforts to strengthen regional cooperation in combating desertification, land degradation, drought and climate change. The IRG provides a platform for the development of joint initiatives, the exchange of experience in the field of desertification and land degradation, as well as the promotion of long-term efforts in sustainable development and preservation of natural heritage of the region within the framework of UNCCD.

Annex II: Regional Implementation Annex for Asia regional group

The purpose of this Annex is to provide guidelines and arrangements for the effective implementation of the Convention in the affected Parties of the Asian region in the light of its conditions. It is further subdivided into sub-regional groups: Central Asia, South Asia, West Asia, East Asia and Southeast Asia. The target countries of the project are included in the Central Asia Group, which however does not have a dedicated working group.

2.3 Regional Projects

Central Asia Resilient Landscape Restoration Project (RESILAND CA)

Recognizing that nature, landscapes, and ecosystems know no borders, RESILAND CA fosters regional collaboration across Central Asia's shared borders and ecosystems. It has supported the development of projects in Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Turkmenistan.

The program aims to contribute to improved connectivity of natural resources, greenhouse gas mitigation, and greater resilience to the impacts of climate change through establishing jointly managed transboundary protected areas and peace parks to preserve biodiversity across transboundary corridors and strengthen regional collaboration on landscape restoration.

Through this project, a new transboundary cooperation initiative involving protected areas in Tajikistan

and Uzbekistan is currently being developed with the support of the Central Asian Regional Environmental Center (CAREC). Range States have an opportunity to contribute knowledge generated within the CAMCA project to this initiative through regional meetings and project development.

One Health in Nature Conservation in Central Asia

The project aims to strengthen pandemic preparedness by building a coherent regional network of well-managed protected areas and Other Effective Area-based Conservation Measures, or OECMs. It aims to designate 500,000 ha of new OECM areas, harmonize management and governance indicators, and establish a regional IUCN Green List process in five Central Asian countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The project will integrate knowledge of habitats and migration routes of key species relevant to disease transmission. By enhancing collaboration among governments, CSOs, academia, and local communities the goal is to increase the capacity of local stakeholders in the following areas: cross-sectoral strategies on spatial planning, wildlife conservation, climate adaptation and zoonosis control, preserving migratory routes, and removing obstacles to migration. Therefore, the outcomes of CAMCA project, especially those on connectivity and land use planning, are directly relevant for the project.

Vanishing Treasures

UNEP's Vanishing Treasures Programme focuses on reducing the impacts of climate change on endangered mountain species and the communities that live alongside them. The initiative works across Bhutan, Kyrgyzstan, Tajikistan, and Uganda to strengthen ecosystem resilience by improving protected area management, restoring degraded habitats and integrating climate-risk information into conservation planning. It enhances understanding of how climate change affects key species, such as snow leopards, by mapping habitat shifts, identifying human-wildlife conflict hotspots, and promoting nature-based solutions that safeguard both biodiversity and livelihoods. Through close collaboration with governments, research institutions, civil society organizations and local communities, the programme builds capacity for climate-adapted wildlife management, community-led monitoring and sustainable land-use practices. The emphasis on ecological connectivity, climate-informed planning and cross-sectoral cooperation makes Vanishing Treasures closely aligned with and complementary to CAMCA's outcomes on landscape connectivity and integrated land-use planning.

2.4 Legislation and management of eco-corridors

One of the key results of CAMCA project is the support of the development of the Ak Ilbirs ecological corridor in Kyrgyzstan. It spans Kyrgyzstan's Issyk-Kul and Naryn regions and covers over 792,000 hectares. Named after

the Kyrgyz word for snow leopard, its primary goal is to protect and connect critical habitats for endangered mountain species, especially the snow leopard, by linking the protected areas Khan-Tengri State Nature Park, Sarychat-Ertash State Strict Nature Reserve, and Naryn State Strict Nature Reserve, without a transformation of land use status or category, but aiming to introduce certain regulations.

This is the second ecological corridor in the Kyrgyz Republic, the first of which was established in the Chatkal mountain range. At 10 times the size of this first corridor, however, Ak Ilbirs represents a substantial upscaling effort. It makes a significant contribution toward Kyrgyzstan's commitment to Target 3 of the Kunming-Montreal Global Biodiversity Framework. Moving forward, the country aims to integrate ecological corridor provisions into sectoral policies, including national pasture development plans and hunting regulations, to strengthen biodiversity conservation (CACIP, 2025).

An online exchange among project partners on 22 May 2025 addressed the legal frameworks and practical approaches for the identification and protection of ecological corridors in the three target countries. This discussion facilitated a comparative analysis of national approaches, summarised in Table 2. In general, among the three CAMCA project countries, Kyrgyzstan possesses the most comprehensive legislative foundation for the establishment and operationalization of ecological corridors, offering a potential model for Kazakhstan and Tajikistan to use in development of their national frameworks.

In Kazakhstan, several ecological corridors have been designated since 2017, providing important precedent but also revealing challenges in the implementation of protection measures.

During the Final CAMCA Project Conference, the concept of a potential transboundary ecological corridor linking Ak Ilbirs in Kyrgyzstan with existing protected areas in Kazakhstan was discussed. However, participants noted that differences in national legislation and implementation practices would

need to be addressed to advance the development of such a corridor, to align national legislation and institutional arrangements for coordinated or joint management.

In Tajikistan, no ecological corridors have been designated as of this writing. This underscores the potential for regional knowledge exchange and collaborative learning to support the establishment and effective management of ecological corridors within and across national boundaries.

Table 2 Legislation on ecological corridors in project countries

Category	Kazakhstan	Kyrgyz Republic	Tajikistan
Governing Law	Law on Specially Protected Natural Areas (2017)	The Law of the Kyrgyz Republic 'On Specially Protected Natural Areas' (No. 18 of 2 May 2011), amended by Law of the Kyrgyz Republic No. 58 of 2 June 2018 'On Amendments to the Law of the Kyrgyz Republic 'On Specially Protected Natural Areas' defines the term 'ecological corridors' in Article 4-1 and includes it in the list of categories of specially protected natural areas. The Government Decree No. 127 (2021) enacts and Annex which operationalizes establishment and management of the eco-corridors.	Law on Specially Protected Natural Areas (2023)
Is it a type of Specially Protected Area (SPA)?	Not explicitly described as such	Yes (However, the creation of an ecological corridor does not deprive individuals or legal entities of ownership or use rights of the relevant land plots (water bodies), nor does it convert land into the category of "lands of specially protected natural areas (SPA)")	Not explicitly described as such

Category	Kazakhstan	Kyrgyz Republic	Tajikistan
Article of the Governing Law	Article 81 “Ecological Corridors”	–	Article 15 “Ecological Corridors”
Initiating Body	The decision to create an ecological corridor is made by local executive bodies of regions, cities of republican significance, and the capital, based on a proposal from the authorized body	Authorized body, National Academy of Sciences of the Kyrgyz Republic (NAS KR) and/or its specialized scientific bodies (institutes), environmental NGOs, local self-government bodies (LSGB)	–
Documentation Required for Consideration	Scientific and natural-scientific justification	Assessment of the conservation value and ecological features of the territory, determination of landscape-geographical location, presence of unique complexes, biodiversity, historical and cultural heritage sites, collection of data on settlements, pastures, lands, and roads, analysis of economic activities and the need for restrictions, sociological survey of local population, coordination with the subsoil use authority, description of boundaries and land explanation, preparation of cartographic and land management materials, scientific, ecological, and economic justification of the proposed corridor, coordination with local self-government bodies (by territory boundaries), coordination with the state body for historical and cultural heritage protection (if such sites exist), ecological passport of the corridor (location, area, boundaries, legal status of lands, operating regime, other information)	–

Category	Kazakhstan	Kyrgyz Republic	Tajikistan
Details of Creation Procedure	–	Specified in the appendix to the resolution	–
Purpose of Creating Eco-Corridors	Ensure spatial connectivity between SPAs and other elements of the ecological network, conserve objects of the state natural reserve fund, preserve biodiversity, protect and maintain natural animal migration routes and plant dispersal paths	Ensure spatial-genetic unity and population integrity, conserve natural complexes and their biodiversity, reproduce economically valuable, rare, and endangered species, ensure natural animal migration routes and plant dispersal paths	Ensure spatial connectivity between protected areas, conserve natural reserve fund, preserve biodiversity, protect natural animal migration routes and plant dispersal paths
Protection Regime	The specifics of the ecological corridor regime are determined by the SPA passport	A list of generally allowed and prohibited activities, allowing restricted use of land and biodiversity on this territory is provided in the Decree Annex, but more specific regimes, if needed of a particular corridor are determined when the corridor is created. The regime of economic activities cannot be stricter than the requirements for activities in the SPAs connected by the corridor.	Boundaries, area, and protection regime are determined by local authorities together with the authorized national body
Responsibility for Compliance	Protection and management of	Management, monitoring, and coordination — by the authorized	–

Category	Kazakhstan	Kyrgyz Republic	Tajikistan
	ecological corridors are carried out by state conservation institutions and specialized wildlife protection organizations; corridors are designated by a decision of the national authorized body	state body together with other state bodies which oversee compliance in their specific areas (e.g. land use, hunting, construction, etc.) and LSGBs; public oversight is possible from local communities, associations, NGOs, and public inspectors	
Construction within Eco-Corridors	The master plan, territorial development plans, and other urban planning documentation affecting ecological corridor territories must be approved by the authorized national body	Capital (major) construction, including linear facilities, is prohibited without considering the regime of the respective ecological corridor	–

3. Analysis of gaps and opportunities

3.1 Stronger implementation of existing commitments under CMS is necessary

Recent assessments (including the Overview Report on CAMI Implementation 2020–2026, the Overview Report on the Conservation Status and Implementation of the Bukhara Deer MOU, and the Overview Report on the Implementation of the International Single Species Action Plan for the Conservation of the Argali [2014–2024]), indicate that implementation of CMS frameworks remains incomplete and, in some cases, weak.

Key challenges are related to the extensive ranges and transboundary habitats of CMS-listed species, which almost always extend far beyond protected areas. Effective conservation therefore requires the integration of CMS provisions across multiple sectors. However, cross-sectoral cooperation remains difficult due to competing national priorities. Despite these constraints, sustained efforts towards national and regional policy coherence are essential to address these challenges and to develop practical solutions that prevent further habitat degradation and the decline or potential extinction of vulnerable populations and species.

Recommendation 1 Range States should integrate provisions of [the Work Programme for the Bukhara Deer \(2025-2032\)](#), [the Action Plan for the Conservation of the Argali \(2024-2032\)](#) and the [Work Programme for the Central Asian Mammals Initiative \(2026-2032\)](#), into national legislation and relevant national strategies, including NBSAPs, and across relevant sectors, such as biodiversity conservation, land use, infrastructure planning, one health, climate change mitigation and adaptation, and use these frameworks to conclude transboundary agreements to conserve shared populations of wildlife.

In cases where Parties encounter challenges and are consequently unable to align their national activities with the commitments under the CMS outlined in these instruments, they or qualified organizations may submit a case to the CMS Review Mechanism. The Conference of the Parties at its Twelfth meeting (Manila, 2017) adopted [Resolution 12.9](#) and [Decisions 12.6-12.9](#) on the establishment of a Review Mechanism to ensure long-term compliance with Articles III.4, III.5, III.7, and VI.2 of the Convention. This process operates by reviewing specific implementation matters of Parties through a supportive, problem-solving, non-adversarial, and facilitative approach, and it aims to create a constructive system that encourages Parties to identify and address their challenges in protecting migratory species.

Recommendation 2 Cases of non-compliance with CMS Article III concerning conservation of Appendix I listed species and their habitats can be submitted to the Secretariat for a Review Mechanism, a non-adversarial process during which the Parties are supported to find solutions and to avoid such violations.

3.2 Ecological corridors can help harmonize policies across sectors within and beyond protected areas

Legislation on ecological corridors exists in all three project countries. While Kyrgyzstan has developed the most detailed regulatory framework, Kazakhstan was the first to formally designate ecological corridors. Tajikistan, by contrast, has not yet established any ecological corridors.

The identification of ecological corridors and the establishment of appropriate protection regimes through a consultative process that respects existing land rights and land users offers a significant opportunity to safeguard migratory routes. Such processes can help harmonize policies related to pasture management, hunting, infrastructure development, and other land-use practices, thereby contributing to the conservation of migratory species.

All three countries face challenges in implementing and operationalizing ecological corridors to some extent (see Table 2), including the development of adequate legislation and bylaws, delineation of corridor boundaries, definition of protection regimes, and their effective implementation. There is therefore considerable potential for mutual learning, both among the project countries and from other States with more

advanced frameworks for ecological corridor designation and management.

Within the CAMCA project, transboundary areas of importance for CMS-listed mammals have been identified in the mountainous regions along the Kyrgyzstan–Tajikistan and Kyrgyzstan–Kazakhstan borders. These countries have formally committed to conserving these mixed-use landscapes through their endorsement of area-based conservation actions under the CAMI Work Programme (2026–2032) and the Argali Action Plan (2024–2032). One key region within CAMCA area of interest is the Northern and Inner Tien Shan, shared by Kazakhstan, Kyrgyzstan, and China, where migratory movements of argali and snow leopards occur. These migration routes could potentially form the basis for a future transboundary ecological corridor between Kazakhstan and Kyrgyzstan and extend the Ak Ilbirs corridor beyond national borders.

Another important landscape for snow leopard and argali connectivity lies in the Pamir–Alai region between Tajikistan and Kyrgyzstan, identified in both the Argali Action Plan and the CAMI Work Programme (within the greater Pamir–Hindu Kush–Karakoram region). Here, coordinated surveys and monitoring activities have been agreed upon, strengthening the evidence base for future collaboration and the possible establishment of an ecological corridor, should both countries choose to pursue this option.

Recommendation 3: Consider opportunities to organize exchange of experiences on establishing ecological corridors between Kazakhstan, Kyrgyzstan and Tajikistan and also between these and other countries to advance ecological corridor legislation and operationalization.

Recommendation 4: Use priority areas identified within the CAMCA project, such as Priority Transboundary Conservation Regions for the Central Asian Mammals Initiative, Conservation Units for Arali and best available science to identify potential ecological corridors within and between countries.

3.3 Integrate Wildlife Conservation into Climate Mitigation and Adaptation Policy

Recognizing the significance of including migratory species considerations in various national strategies, the CMS Samarkand Strategic Plan for Migratory Species adopted by CMS COP14 in Samarkand, Uzbekistan, includes Target 5.4, which identifies not only NBSAPs as an instrument clearly focused on biodiversity conservation, but also NDCs as a national strategy relevant for inclusion of CMS provisions.

Measures for the conservation of migratory species related to climate change, as identified by UNEP WCMC (2024), are: ensuring that there is sufficient connectivity between sites to facilitate dispersal and range shifts; improve habitat quality and connectivity and reduce the impact of extreme weather events, such as drought and thermal stress, by facilitating dispersal and range shifts; identify and implement dynamic management measures that address changing migration pathways and patterns resulting from climate change; and ensure renewable energy infrastructure expansion is planned and developed in a way that avoids harm to migratory species.

In 2025, Parties to the UNFCCC were required to submit updated NDCs (so-called “NDC 3.0”), outlining their revised plans for tackling the growing crisis of climate change. Biodiversity loss and climate change mitigation and adaptation to climate change are often viewed as separate challenges and are addressed by policies developed independently of each other. In the sense of CMS, the goal of conservation of migratory species and their habitats is to ensure that migratory species maintain themselves on a long-term basis as viable component of their ecosystems, thus fulfilling its ecological functions, including those that contribute to enhancing carbon sequestration and ecosystem resilience underpinning adaptation to climate change (see background section).

However, an analysis of existing NDCs shows that most countries don’t mention or recognize the contribution of conserving wildlife to mitigating climate change or adaptation to climate change (IFAW, 2024). This gap also exists in the Central Asian region. For example, an analysis of NDCs submitted to the UNFCCC Secretariat by Kazakhstan, Kyrgyzstan, and Tajikistan showed that wildlife conservation (as a contributor to climate mitigation or adaptation) is not mentioned by any of the three countries.

Recommendation 5: Range States integrate the role of conserving wildlife and their habitats in climate change mitigation and adaptation strategies in the next update of the NDCs and in their NAPs and engage with the NDC Partnership support unit and UNFCCC Secretariat to receive capacity building and financial support for implementation, where needed.

In the section on vulnerable sectors and adaptation measures, only Kyrgyzstan mentions the necessity of biodiversity and wildlife conservation specifically, while Tajikistan and Kazakhstan both refer to co-benefits of planned adaptation measures in agriculture and forestry as having a positive effect on biodiversity in general.

Although this is a good start, closer involvement of the wildlife conservation sector in formulating NDCs is needed. This is a gap that could be addressed with the next revision of the NDC. Kazakhstan submitted its latest NDC in 2023, Kyrgyzstan in 2021 and Tajikistan likewise in 2021. All three countries aim to submit updated NDCs by 2026. CAMCA project outputs, such as CAMI Work Programme, Argali Action Plan, and Bukhara Deer Work Programme could be considered in the process of determining the actions each country will take to deliver wildlife and climate targets in the process of formulating the NDC.

The NDC Partnership supports Governments in implementing their NDC priorities. The Governments identify their NDC implementation priorities and the type of support that is needed to translate them into actionable policies and programs. Based on these requests, NDC partnership offers a tailored

package of expertise, technical assistance, and funding. This collaborative response provides developing countries with efficient access to a wide range of resources to adapt to and mitigate climate change and foster more equitable and sustainable development.

In addition to NDCs, CAMCA outcomes are of relevance for the NAPs, because of two reasons: 1) contribution of wildlife conservation measures to adaptation and 2) the need for adaptation measures in the wildlife conservation sector. To enable adaptation of migratory species to Climate Change, maintaining connectivity of habitats is of paramount importance. Therefore, this aspect should be included in the national strategies and into the Regional Climate Change Adaptation Strategy for Central Asia.

Transboundary cooperation is already referenced in the current Action Plan for the Regional Adaptation Strategy (see section 2.2), but could benefit from further elaboration by drawing on priority conservation areas for CMS-listed species identified through the CAMI Work Programme, the Argali Action Plan, and the Bukhara Deer Work Programme. These priority areas are essential for conserving national and transboundary populations of CMS-listed mammals and provide a foundation for identifying

critical zones that support connected ecosystems across borders. In addition, the CAMI Atlas identifies conflict areas where linear infrastructure obstructs the movements of snow leopards, argali, and six other CMS-listed mammals; this tool could help guide actions to mitigate migration barriers and strengthen habitat connectivity. To support policy harmonization across borders and sectors to conserve wildlife and their habitats, ecological corridors could be implemented through multi-stakeholder consultations to determine and implement regulations within such corridors and managed with the involvement of local communities.

Furthermore, assessing the degree to which protected and conserved area management plans integrate climate change considerations—including adaptation measures—and evaluating the extent of their implementation would be highly beneficial for designing targeted adaptation interventions. The protected area vulnerability assessment (PAVA) tool developed and pilot tested under CAMCA could be used to support and inform such assessments.

Recommendation 6: Consider incorporating conservation of habitat connectivity at a regional level into the Regional Climate Change Adaptation Strategy for Central Asia, its Action Plan, and its implementation based on identified transboundary priority areas for conservation, and utilizing the approach of ecological corridors both within and across national borders.

3.4 Integrate Wildlife Needs into Land Use Planning

Land degradation can place both human livelihoods and wildlife existence at risk. Kazakhstan and Kyrgyzstan may review their targets by next UNCCD COP in 2026, providing an opportunity of upscaling CAMCA- outputs related to sustainable use of pasture and wildlife conservation.

Gaps and opportunities for better accommodation of wildlife conservation needs in agricultural land use planning exist in all CAMCA project countries, as a significant percentage of pastures are natural pastures which overlap with habitats of CMS-listed species and other mountain wildlife. In Tajikistan, for example, 80% of pastures used are natural pastures, where also species like argali, lynx and snow leopards may occur, illustrating the importance of linking wildlife conservation and pasture management.

Land Degradation Neutrality (LDN) targets include restoring degraded pasturelands and improving grazing practices to ensure their long-term sustainability. If measures that take wildlife needs into account are included, well-managed pasture use can benefit both livestock and wild grazers and their predators, ensuring forage availability and preventing or mitigating conflicts. LDN revision presents an opportunity to include activities that would more explicitly take wildlife conservation goals into consideration when formulating

LDNs. Many wildlife species (e.g., wild ungulates in Central Asia such as argali, saiga, wild ass, and goitered gazelles) depend on the same rangelands as livestock at least in parts of their ranges.

To achieve conservation objectives in shared pastures used by both wildlife and livestock, it is essential to ensure that sufficient biomass remains available for wild grazers during fall, winter, and early spring. In this regard, the Guidelines for Integrating Wildlife in Pasture Management developed within CAMCA provide a useful framework for regulating grazing pressure in a manner that accommodates wildlife needs.

Pasture use is also closely linked to access to water points, which are frequently shared between livestock and wildlife. This shared use can lead to competition for limited water resources, particularly in areas where wildlife populations remain relatively abundant. Moreover, in landscapes where wild predators are present, measures to protect livestock—along with effective compensation schemes to offset losses—are critical to preventing human–wildlife conflict and the retaliatory illegal killing of wildlife. Abundant wild prey species may reduce the risk of livestock depredation by carnivores.

Carcasses of livestock and wild ungulates also provide an important resource for scavengers, such as vultures, listed on CMS. In this context it is of utmost importance to prevent, through legal and advisory measures, the application of veterinary drugs such as Diclofenac on livestock that have lethal effects on scavenging birds (e.g. Oaks et al., 2004).

Accordingly, careful and balanced management of pasture resources is required to reconcile the objectives of wildlife conservation, local livelihoods, and food production. Relevant CMS instruments, including the Argali Action Plan and the CAMI Work Programme, contain provisions for managing shared pastures and ensuring the long-term survival of wildlife species. These instruments could be drawn upon in the development of sustainable land management (SLM) practices to strengthen linkages between agricultural land use and wildlife conservation needs and to promote sustained cooperation between the conservation and agricultural sectors.

In the regional context of UNCCD, several Party groups regularly meet to discuss common approaches and strategies. For Kazakhstan, Kyrgyzstan and Tajikistan the relevant groups are: Annex II: Regional Implementation Annex for Asia regional group and the Interregional Group

Recommendation 7: Ensure integration of wildlife conservation needs into pasture use planning and formalize them in LDN targets and other national strategies for pasture use building on the Guidelines for Integrating Wildlife in Pasture Management and building on existing commitments under CMS' CAMI.

Recommendation 8: Explore possibilities to include linkages to wildlife conservation needs by consulting wildlife conservation experts in the process of elaborating the Regional Strategy for Drought Risk Management and Mitigation in Central Asia. Include such experts in relevant meetings of the UNCCD regional groups of the Annex for Asia, including the Russia- Central Asia interregional group and particularly in the run-up to UNCCD COP17 in Mongolia.

Central Asia-Russia. Participation of specialists with expertise in wildlife conservation and pasture management in these groups as advisors or observers would be beneficial and could potentially lead to better inclusion of wildlife needs into regional and global strategies.

One relevant example is the Regional Strategy for Drought Risk Management and Mitigation in Central Asia. The forthcoming revision of its Medium-Term Action Plan in 2026 presents an opportunity for UNCCD Parties to integrate perspectives from the CAMCA project, thereby mainstreaming wildlife considerations into regional drought management policy.

Ensuring that wildlife can adapt to intensifying drought conditions requires continued availability and accessibility of water and pasture resources throughout dry periods. Key measures include the conservation of critical wildlife habitats—such as pastures and watering points—and the maintenance of ecological connectivity to allow species to move to more suitable areas when conditions deteriorate.

Adaptation to drought also necessitates temporary adjustments to livestock grazing practices to avoid degradation of pastures and to reduce negative impacts on both pastoralist communities and

wildlife. For example, delayed grazing can facilitate pasture recovery and earlier removal of livestock from summer pastures can save critical winter forage for wild ungulates. The provision of additional water sources may help reduce competition between livestock and wildlife—not only for water but also for forage, as pastures lacking accessible watering points are unusable, especially during droughts.

At present, the regional strategy's action plan includes only the creation of water points for wildlife. The next revision could therefore benefit from a more comprehensive analysis of wildlife needs during drought conditions and the inclusion of a broader set of measures to support wildlife adaptation and reduce the probability of human-wildlife conflict exacerbated by drought.

In the global context, the G20 initiative of the UNCCD is also potentially relevant for dissemination of CAMCA results. In particular, the first and the second objective of G20. The first objective is to conserve land and halt habitat loss, fragmentation, and land degradation, achieved through sharing knowledge and best practices on conservation incentives and implementation of other policies and best practices. For this objective in particular, the establishment of the Ak-Ilbirs ecological corridor, as well as

Recommendation 9: Explore options to support implementation of UNCCD's initiatives, e.g., G20 initiative, through implementing CMS mandates related to land and using the Guidelines for Integrating Wildlife in Pasture Management and the Protected Area Vulnerability Assessment Tool.

Guidelines for Integrating Wildlife in Pasture Management and Protected Area Vulnerability Assessment Tool could be relevant practices to be shared with UNCCD Parties in the region and beyond.

The second objective of promoting integrated, sustainable, and resilient land and landscape management is to be achieved through: nature-based solutions or ecosystem-based approaches, as well as supporting sustainable land and water management policies and sustainable agricultural practices, including traditional practices, in order to maintain and enhance ecosystem functionality. Lessons learned from the CAMCA project, and its tools could help to achieve this objective, explicitly with a focus on conserving wildlife in mixed-use landscapes through connectivity and adjusted grazing practices.

3.5 Utilize Existing Synergies Among Regional Wildlife Conservation Strategies

Argali is a key prey species for snow leopards, particularly in areas where argali populations are abundant. Greater alignment between CMS frameworks and the Global Snow Leopard & Ecosystem Protection Program (GSLEP) is recommended, given the complementary mandates and objectives of GSLEP and CMS's CAMI, as well as the specific linkages between GSLEP and the Argali Action Plan. While both the CAMI Work

Plan and the Argali Action Plan reference GSLEP, GSLEP does not reference either initiative. To date, the alignment of the two initiatives with GSLEP is rather weak, at least formally. This represents a gap in regional policy and highlights an opportunity to leverage existing synergies to strengthen conservation outcomes for both argali and snow leopards. Since the revised Argali Action Plan is an output of the CAMCA project, its integration into National Snow Leopard Ecosystem Protection Plans (NSLEPs) is a great opportunity to upscale CAMCA results.

Yearly GSLEP Steering Committee Meetings, where resolutions and policy briefs are endorsed, and the ongoing process to update NSLEPs represent further chances for Range States to integrate CAMCA outputs into this policy framework for snow leopards and their prey, for example to strengthen work on connectivity of snow leopard habitat, prevention of overgrazing and enhancing involvement of local communities in all snow leopard and argali Range States. Both pathways (endorsement and NSLEP updates), offer opportunities for CAMCA result integration, including CAMI Work Programme, Argali Action Plan, as well as all guidance documents listed in Table 1.

Recommendation 10. GSLEP Range States that are also Range States of argali are encouraged to integrate elements of [the Action Plan for the Conservation of the Argali \(2024-2032\)](#) and [Work Programme for the Central Asian Mammals Initiative \(2026-2032\)](#) into their NSLEPs. To support the process, the GSLEP Secretariat in cooperation with CAMCA partners, is recommended to include relevant CAMCA outcomes in guidance for NSLEP development and include links to CAMCA outputs on its website.

3.6 Join forces for transboundary collaboration

The habitats of CMS-listed species almost always extend across national boundaries, underscoring the importance of transboundary cooperation for conservation. The loss of connectivity caused by barriers is particularly visible in these transboundary ecosystems where a lack of international cooperation makes it challenging to preserve intact and unfragmented habitats (UNEP-WCMC, 2024). To assist Range States in advancing transboundary cooperation, priority regions for conservation of the focal species were identified in the abovementioned frameworks, and activities necessary to jointly advance their conservation were outlined.

Transboundary collaboration is also on the agenda of other conventions, such as the CBD and the UNCCD. In particular, the Convention on Biological Diversity's Programme of Work on Protected Areas (CBD PoWPA) recommends its Parties collaborate with each other and relevant partners to establish effective regional networks of protected areas, particularly in areas identified as common conservation priorities, including mountain ecosystems. The UNCCD's

Peace Forest Initiative (PFI) brings together stakeholders to catalyse transboundary cooperation on ecosystem restoration and unites communities across national borders to co-manage shared land resources and ecosystems for a peaceful future. This is complementary to the CMS approach to involving local communities in both managing and conserving migratory species across national boundaries (Zuther et al., 2024).

Transboundary regions of importance for conservation of CAMCA focal species within and beyond CAMCA countries can be further promoted to enhance conservation of these regions in cooperation with other conventions. With all three aforementioned conventions (CBD, CMS and UNCCD) hosting COPs in 2026, it is an opportunity to promote conservation of transboundary landscapes as identified within CAMCA project, e.g. through promotion of conservation of transboundary areas of importance for CAMCA focal species and possibly ecological corridors within and across borders.

Recommendation 11 Utilize synergies between CMS, CBD and UNCCD's transboundary conservation initiatives to promote conservation of key transboundary areas of importance identified within the CAMCA project and utilize relevant CAMCA tools, such as the Central Asian Mammal Migration and Linear Infrastructure Atlas, Guidelines for Integrating Wildlife in Pasture Management, Protected Area Vulnerability Assessment Tool, and [Identification of Funding Options for the Implementation of the CAMI](#) to support conservation, where appropriate.

3.7 Inform Ongoing and Planned Regional Projects and Integrate Tools into Relevant Databases

Several ongoing regional initiatives address similar themes, including the *One Health in Nature Conservation in Central Asia*, *RESILAND (CA) projects*, and the *Vanishing Treasures Programme*. To maximise synergies and avoid duplication of efforts, CAMCA project partners should ensure that CAMCA findings and outputs are shared with the leads of these initiatives, thereby supporting wider dissemination and uptake of available knowledge.

World Overview of Conservation Approaches and Technologies (WOCAT)

WOCAT is officially recognized by the UNCCD as the primary recommended Global Sustainable Land Management (SLM) Database for best practices, which currently has nearly 2,000 SLM practices (including 284 from Europe and Central Asia).

This information comprises a key knowledge base for the expansion of SLM in the Central Asian region (FAO, 2023), where unsustainable agricultural practices, such as excessive irrigation, monocropping, tillage on steep slopes,

overgrazing of pastures, and deforestation, remain problematic. There is scope for integrating CAMCA results relating to sustainable pasture management and wildlife conservation into this tool. Submissions can be made by all stakeholders working on SLM and undergo a quality check by the WOCAT Secretariat based at the University of Bern, Switzerland. The Guidelines for Integrating Wildlife in Pasture Management, piloted in Kyrgyzstan, could be integrated into UNCCD's WOCAT database, increasing its visibility and enabling access for a broader range of stakeholders and countries beyond the CAMCA region.

The Integrated Biodiversity Assessment Tool (IBAT)

The Integrated Biodiversity Assessment Tool (IBAT) is a biodiversity data provider licensing commercial access to global biodiversity datasets and derived data layers consisting of the IUCN Red List of Threatened Species™, the World Database on Protected Areas (WDPA), and the World Database of Key Biodiversity Areas (WDKBA). IBAT also provides access to biodiversity reports that offer fast, easy, and web-based methods of querying these global datasets to gain site-specific insights on

biodiversity risk and opportunities. To enhance the visibility and reach of the CAMI Atlas, it could be incorporated into the IBAT system (partial open access) and showcased to regional development banks through a dedicated webinar.

Recommendation 14: For greater awareness of CAMCA project results consider presenting relevant tools to other regional projects and initiatives and integrating them into global platforms (e.g. the CAMI Atlas into the IBAT database and Guidelines for Integrating Wildlife in Pasture Management into the WOCAT database).

4. Conclusion

Central Asia is highly vulnerable to climate change, land degradation, and biodiversity loss, which threatens the livelihoods of local communities, wildlife populations, their habitats, and ecosystem services. However, policy development and implementation to address climate change, land use, and biodiversity conservation are currently insufficiently linked. Nevertheless, points of complementarity among national and regional policy frameworks under UNFCCC, UNCCD, CBD, and CMS were identified, which could be leveraged to increase outcomes through implementing a set of 12 targeted recommendations identified in this paper.

In large multi-use landscapes inhabited by migratory species, one of the main challenges is poor coordination across sectors and conflicting priorities. Identified synergies among the mandates of the UNFCCC, UNCCD, CBD, and CMS provide opportunities to promote cross-sectoral collaboration at national, regional, and global levels. This paper indicates that even within the field of regional biodiversity frameworks and projects in Central Asia, gaps in terms of mutual awareness and coherence exist,

calling for a greater outreach and communication among regional entities and projects working on similar topics.

The analysis further gives examples of where the tools developed within the CAMCA project can be applied to strengthen transboundary and regional collaboration, leverage funds, ensure integration of wildlife conservation into land use and infrastructure planning, aiming to ensure coordinated, science-based, Party-driven, and climate-responsive conservation of transboundary wildlife and their habitats across Central Asia, while facilitating the propagation of CAMCA outcomes.

In the future, this analysis could include a national or sub-national perspective, incorporating lessons learned from on-the-ground interventions carried out under the CAMCA project, as well as insights from relevant national laws submitted by the project's national partners. Overall, CAMCA has produced a suite of regional tools with strong potential for replication in other contexts and for more rigorous testing to enhance climate change adaptation in the region and beyond. Future projects could focus on piloting, testing, and practically applying these tools to maximize their impact.

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