ADB

Regional Flyway Initiative · Site Study

May 2026

RFI Priority Site · Tolbo Lake

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Asian Development Bank

General Site Information

Country	Mongolia				
RFI Site Name	Tolbo Lake				ID048
City/ Municipality, Province, Region	Tolbo soum, Bayan-Ölgii aimag				
Geographical coordinates	48.53º N, 90.1º E		Area		15,900 has
Key species	Six waterbird species exceeding flyways thresholds, alongside Horned Grebe and Common Pochard. Raptors. Snow Leopard				
Key habitats (biomes)	high-altitude lake, mountains, extensive steppes, inlets and peninsulas on the western side of the lake, reedbeds and tall grassy areas				
Key ecosystem services	Provisioning and regulating services				
Key drivers of change	Overgrazing and site degradation arising from tourism (waste production, and informal road networks)				
Conservation status (mark all that applies)		Protected Area		Flyway Network Site	
		Ramsar Site		Others _____	
IBA/ KBA name (and number) and other designations	Tolbo Lake				
Management Stakeholders	MECC, Bayan-Ölgii aimag, Tolbo soum government				
With management plan?					
Project concept themes	Protected area establishment and site management. Tourism management, grazing management. Biodiversity monitoring				
Length of project	5 years				
Sector/s	Tourism, waste management and agriculture. Also, fisheries.				
No. of potential beneficiaries					
Indigenous Peoples		No		Yes, Kazakh communities	
Anticipated Implementation Risks					
Estimated Project Budget (US$)	12,950,000				
Potential Source/s of Financing		Loan (to be identified)		Private Sector	
		Grant (to be identified)		Public-Private Partnership	

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Abbreviations

ADB	Asian Development Bank
AWC	Asian Waterbird Census
CAF	Central Asian Flyway
CSR	Conservation Status Review
DMC	Developing Member Country
EAAFP	East Asian-Australasian Flyway Partnership
IBA	Important Bird and Biodiversity Area
IUCN	International Union for the Conservation of Nature
KBA	Key Biodiversity Area
MECC	Ministry of Environment and Climate Change
MCST	Ministry of Culture, Sports, Tourism, and Youth
MOFALI	Ministry of Food, Agriculture, and Light Industry
NGO	Non-governmental Organization
NUM	National University of Mongolia
RBA	River Basin Authority
RFI	Regional Flyway Initiative
SPA	Strictly Protected Area
TESSA	Toolkit for Ecosystem Services Assessment
USD	United States Dollars
WMBD	World Migratory Bird Day
WSCC	Wildlife Science and Conservation Center Mongolia

Executive Summary

Tolbo Lake is a moderately sized alpine lake (15,900 ha) located at an elevation of 2,079–2,594 m asl in Tolbo soum, Bayan-Ölgii aimag, in the Mongolian Altai. Tolbo is located about 50 kilometers south of Ölgii City, the provincial capital of Bayan-Ölgii, and lies along the main road connecting Ölgii and Khovd. As a result of its geography, Tolbo Lake and the surrounding basin is well known for its stunning scenery and is popular with domestic tourists, and increasingly international visitors. Given its location in far western Mongolia, Khar-Us Lake is nestled well within the Central Asian Flyway (CAF), rather than the East Asian-Australasian Flyway although some species are shared across the two flyways. The site regularly holds six species of migratory waterbird occurring at levels >1% of the regional population, including Northern Lapwing *Vanellus vanellus* (NT) and additionally supports smaller population of four globally threatened or near threatened bird species including Steppe Eagle *Aquila nipalensis* (EN) and Pallas's Fish-eagle *Haliaeetus leucoryphus* (EN). Tolbo Lake is not currently nationally protected, but the site had been recognized as an Important Bird and Biodiversity Area (IBA) in 2009 and is a priority (non-protected) landscape for conservation interventions.

Currently, there are multiple issues affecting Tolbo Lake, and the surrounding upland landscapes, and these are primarily the result of human activities, although climate change has also had impacts, with the lake area having decreased significantly in the past few decades. Alpine grasslands at the site have been overgrazed by livestock, while vegetation on the lakeshore such as reedbeds has been overharvested and degraded as has the vegetation along the various river systems in the catchment of the lake. Tourism camps and recreational activities (fishing) and the expansion of the unpaved road network across the area have also resulted in habitat degradation.

Key priorities for to improve the management of Tolbo is expected to involve the recognition and designation of Tolbo Lake and its surrounding alpine grassland landscapes as a provincial-level protected area (at least), alongside the strengthening of management and zonation, both of the land and also of water resources. Further aspects will include reducing the impacts from grazing, unpaved roads and tourism through zonation and guidance on tourism activities. Especially sensitive and degraded alpine grassland habitat can be restored alongside efforts to raise awareness locally about the site, its sensitivities, and importance to biodiversity for local people. Tolbo Lake supports a known fishery for several species such as Arctic grayling and Altai Osman, and there is a need for understanding the present status of these fisheries and develop a fishery management plan to regulate harvest.

1. Background of the Regional Flyway Initiative

In July 2021, the Asian Development Bank made a commitment to develop a long-term Regional Flyway Initiative (RFI) in the East-Asian Australasian Flyway (EAAF) (Sovereign Project 55056-001) to protect and restore priority wetland ecosystems and the associated ecosystem services they provide in the EAAF, the most threatened migratory bird flyway globally. The Initiative is slated for implementation in nine ADB developing member countries (DMCs) in East, South and Southeast Asia: Mongolia, People's Republic of China (PRC), Bangladesh, Viet Nam, Cambodia, Philippines, Thailand, Malaysia and Indonesia. In 2023, the geographic scope of the RFI was further extended to two DMCs in Southeast Asia and the Pacific respectively, Lao PDR and Papua New Guinea.

The primary aim of the RFI is to enhance and expand the existing efforts in conserving and managing wetlands of the highest priority for migratory birds within the EAAF through innovative loan and grant financing, and at scale. Consultations and analyses over the development period help identify key interventions to strengthen the management of wetlands, enabling the implementation of nature-based solutions while strengthening biodiversity protection. Over time, the RFI seeks to leverage collaborative opportunities by developing partnerships among important stakeholders including national governments, civil society organizations, communities, regional organizations like the East Asian-Australasian Flyway Partnership (EAAFP), development agencies, the private sector, and other relevant entities.

Through the RFI Technical Assistance (TA) implemented over the RFI's development phase from 2021 to 2024, BirdLife International takes the lead in providing and coordinating technical support for development of the RFI. This is carried out in collaboration with the EAAFP and a consortium of international non-governmental organizations including Wetlands International and the Paulson Institute, as well as two universities, namely the University of Southampton, UK and the National University of Singapore. Over the development phase, the TA team undertook a site selection analysis to identify priority wetland sites in all 10 countries based on recent bird data benchmarked against internationally accepted criteria under the Convention on Wetlands of International Importance (or Ramsar Convention), EAAFP Flyway Network Sites and Important Bird and Biodiversity Areas (IBAs). The team further developed ecosystem services profiles for prioritized wetlands using a multi-pronged approach used the TESSA ecosystem services assessment tool, and data-driven modelling of water-based ecosystem services and stored carbon.

In Mongolia, a total of 48 wetland sites were initially assessed through published data in the Mongolia IBA Inventory (see Batbayar & Tseevenmyadag 2005), a review of the peer-reviewed literature, and consultations with technical experts. Of these, a total of (12) wetlands were ranked, defined and identified to be RFI priority sites on the basis that they support more than 1% the flyway population of at least one EAAF migratory waterbird species. Four (4) of the RFI wetland sites identified lie with the Amur-Heilongjiang Basin in eastern Mongolia, most notably a cluster of sites around Dornod and Sukhbaatar provinces, including Mongol Daguur SPA, Khurkh-Khuiten, Buir and Tashgain Tavan lakes. Two of the RFI sites, including Terkhiin Tsagaan and Ogii Lakes lie within the catchment of the Yenisey River, with outflows into the Selenge River. The remaining wetlands identified are endorheic lakes in the Altai or Gobi region. At least 48 EAAF species exceeded the 1% threshold at the site level in Mongolia, including nearly the entire breeding and staging population of the Swan Goose (Batbayar et al. 2013; Damba et al. 2021).

2. Site profile of Tolbo Lake

Location: Tolbo Lake is a freshwater wetland in Tolbo soum in Bayan-Ölgii aimag, in western Mongolia. It is located about 50 kilometers south of Ölgii City, the provincial capital of Bayan-Ölgii, on the main road connecting Ölgii and Khovd.

Area: 15,900 ha

Altitude: 2,079–2,594 m asl.

Geographical coordinates: 48.53º N, 90.1º E

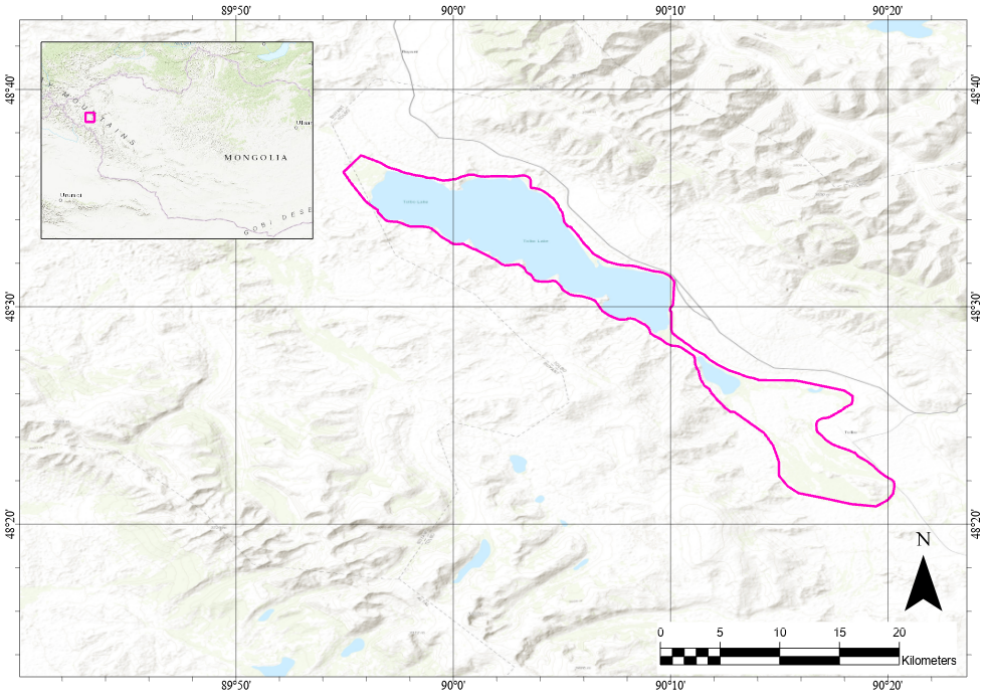

Figure 1. Map of Tolbo Lake, showing its location in westernmost Mongolia (Map: Evelyn Pina Covarrubias).

Description of site: Tolbo Lake is a pristine, high-altitude lake in the Mongolian Altai known for its crystal-clear waters and stunning natural scenery, as it is surrounded by dramatic mountains and extensive steppes. The lake covers 185 square kilometers, although many years of drought have resulted in a decrease in the water level. There are numerous inlets and peninsulas on the western side of the lake. There are reedbeds and tall grassy areas, but these have become degraded by overgrazing.

Site administration, management and land tenure: Tolbo Lake is not nationally protected, but the site was designated as an IBA in 2009.

Social and economic values: Tolbo Lake is popular with tourists from June to September, when the weather is mild and the lake is most accessible and the impacts have been raised as a concern (Purevdori et al. 2019). The shoreline is treeless with few mosquitoes, and many visitors camp there in the summer. The lake is pristine with crystal-clear waters, and it is surrounded by scenic mountains and steppes, making it a popular destination for wildlife watching, photography and hiking and trekking. Visitors also go boating and fishing on the lake, but uncontrolled tourism activities is reported to have contributed to water pollution.

Tolbo Lake supports several fisheries, including for Mongolian grayling (*Thymallus brevirostris*) (Dulmaa 1999), with an estimated (overall, all species, including Altai Osman *Oreoleuciscus warpachowskii* and Arctic grayling *T. arcticus*) take of 10-20 tonnes/year. A warming climate and years of drought have resulted in a decrease in the water level, and there is some illegal hunting in the surrounding areas.

3. Biodiversity value of Tolbo Lake

3.1. Key habitats

Tolbo Lake is a pristine, high-altitude lake in the Mongolian Altai known for its crystal-clear waters and stunning natural scenery, as it is surrounded by dramatic mountains and extensive steppes. There are numerous inlets and peninsulas on the western side of the lake. There are reedbeds and tall grassy areas, but these have become degraded by overgrazing.

3.2. Importance of Tolbo Lake for migratory waterbird species

Tolbo Lake was selected as a candidate RFI site because the available evidence showed that it supports internationally important populations of the migratory waterbirds listed in the species table below, defined as those species which have exceeded the 1% population estimates from the Conservation Status Review (CSR1) (Mundkur and Langendoen 2022). The data used was this assessment was compiled from Batbayar and Tseveenmyadag (2009), together with the available count data from the peer-reviewed literature. A review of the candidate RFI sites was conducted by panels of national and international (EAAFP, Wetlands International and BirdLife) ornithological experts, and which identified a total of 11 RFI candidate sites, including Tolbo Lake.

Table 1. List of migratory species (based on the EAAFP list of species) with globally significant congregations at Tolbo Lake.

Species name	IUCN	CSR1 score
Great Cormorant *Phalacrocorax carbo*	LC	>1%
Bar-headed Goose *Anser indicus*	LC	>1%
Whooper Swan *Cygnus cygnus*	LC	>1%
Ruddy Shelduck *Tadorna ferruginea*	LC	>1%
Common Goldeneye *Bucephala clangula*	LC	>1%
Northern Lapwing *Vanellus vanellus*	NT	>1%

In addition, the following globally threatened or near threatened waterbird species have been observed in Tolbo Lake in smaller numbers include, Common Pochard *Aythya ferina* (VU) and Horned Grebe *Podiceps auritus* (VU).

3.3. Other notable biodiversity

Further to waterbirds, Tolbo Lake also supports a local population of Steppe Eagle *Aquila nipalensis* (EN) and occasionally, Pallas's Fish-eagle *Haliaeetus leucoryphus* (EN). Surrounding mountains in the Altai supports populations of Siberian Ibex *Capra s. sibirica*, Argali *Ovis ammon ammon* and Snow Leopard *Panthera uncia*.

4. Ecosystem services

4.1. Ecosystem services provided by Tolbo Lake

The Tolbo Lake landscape encompasses diverse wetland habitats and provides a variety of ecosystem services (Figure 2), including provisioning and cultural services that are vital to communities within the site (Table 2). The results from the RFI workshop[1] highlight the top ecosystem services provided by the site, emphasizing their essential and non-substitutable nature (Table 2). These provisioning services (fresh water and cultivated food) and cultural services (recreation/ecotourism; knowledge systems/education; and cognitive development, psychological and physical health, and wellbeing) are considered essential or non-substitutable, benefitting the communities within, adjacent to, and distant from the site.

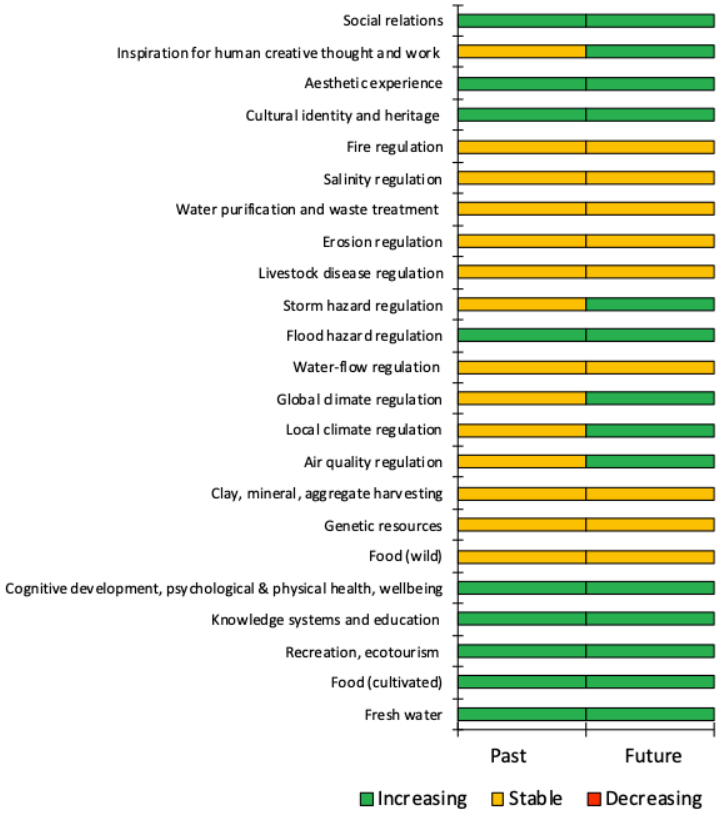

Figure 2. List of ecosystem services provided by Tolbo Lake, as identified through stakeholder consultation at the Regional Flyway Initiative workshop in 2024.

[1] Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop

Table 2. List of top ecosystem services provided by Tolbo Lake.

Ecosystem services	Essential or non-substitutable	Benefits to communities			Change	
		Within the site	Adjacent to the site	Distant to the site	Past	Future
Provisioning services						
Fresh water	Yes	✓	✓	✓	Increase	Increase
Food (cultivated)	Yes	✓	✓	✓	Increase	Increase
Cultural services						
Recreation, ecotourism	Yes	✓	✓	✓	Increase	Increase
Knowledge systems and education	Yes	✓	✓	✓	Increase	Increase
Cognitive development, psychological & physical health, wellbeing	Yes	✓	✓	✓	Increase	Increase

4.2. Global climate regulating services

The stakeholders at the RFI workshop[2] did not identify global climate regulating services as important benefits provided by Tolbo Lake. Therefore, these ecosystem services were not assessed.

4.3. Flood mitigation services

The stakeholders at the RFI workshop[3] did not identify flood mitigating services as important benefits provided by Tolbo Lake. Therefore, these ecosystem services were not assessed.

[2] Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop

[3] Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop

5. Drivers of change and their potential impacts on Tolbo Lake

5.1. Current drivers of change and their level of impact

Stakeholders from the RFI workshop[4] identified 15 drivers of change impacting Tolbo Lake and their corresponding levels of impact on the wetland site (Table 3). Tourism and recreation infrastructure is the only high-impact driver identified. A medium impact is associated with livestock farming and grazing; recreational activities and tourism; roads and railroads; and utility and service lines.

Table 3.Drivers of change and their potential impact on the integrity of Tolbo Lake based on consultations with stakeholders.

Driver of change	Impact
Tourism and recreation infrastructure	High
Livestock farming and grazing	Medium
Recreational activities and tourism	
Roads and railroads	
Utility and service lines	
Avalanches/landslides	Low
Commercial and industrial areas	
Fishing, killing and harvesting of aquatic resources	
Flight paths	
Garbage and solid waste	
Household sewage and urban wastewater from outside the wetland site	
Housing and settlement	
Loss of cultural links, traditional knowledge and/or management practices	
Storm and flooding	
Temperature extremes	

5.2. Potential alternative state of Tolbo Lake under current drivers of change

Stakeholders at the RFI workshop[5] defined the most plausible future alternative state (scenario) for the site up to 2035 and converted this scenario into a net change in the cover of different wetland habitats within this site (current habitat cover vs. future alternative cover; see Figure 3). This future scenario assumes that the current drivers of change affecting the site and the existing management practices will remain unchanged.

[4] Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop

[5] Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop

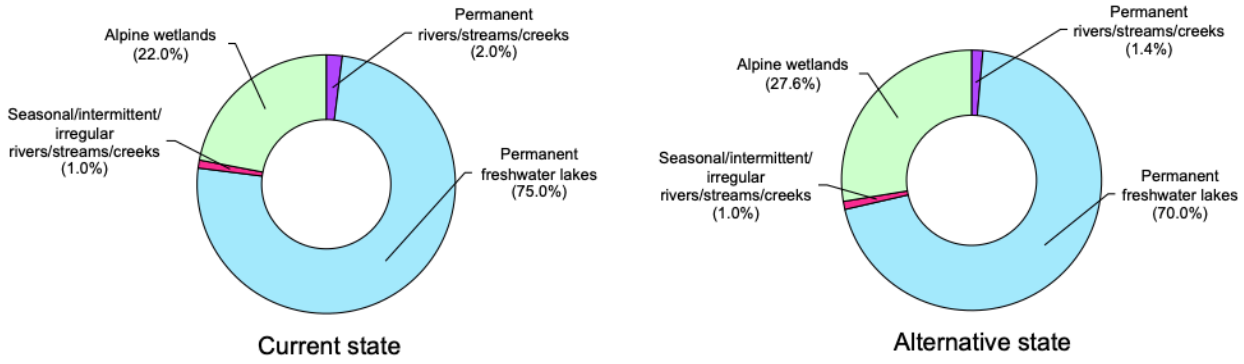

Figure 3. The proportional change in the extent of different habitat types between the current and alternative states of Tolbo Lake.

5.3. Expected changes in the ecosystem services of Tolbo Lake

Stakeholders at the RFI workshop[6] assessed future trends in the ecosystem services provided by Tolbo Lake. Based on their local knowledge, they documented whether these services are expected to increase, decrease, or remain unchanged by 2035, assuming the current drivers of change affecting the site and the current interventions remain unchanged. Key provisioning services (e.g. fresh water and cultivated food) and cultural services (e.g. recreation/ecotourism; knowledge systems/education; and cognitive development, psychological and physical health, and wellbeing) have increased and are projected to continue increasing in the future.

Mongolia has experienced a 7% drop in rainfall from 1940-2005, and over the same period average temperatures rose by 2.4°C, although anecdotal evidence suggests an increase in thunderstorms and high intensity rain events (World Bank Group 2021). Climate models suggest that under all emissions scenarios Mongolia will warm more than the global average, and most models show a small increase in annual precipitation, with an increase in the intensity of extreme weather events (World Bank Group 2021). There is a strong likelihood of the increase of drought events and in recent history the extent of surface water, nationwide lake area shrank by around 7% over the 2000-2025 period, a trend which has been noticed since at least 1974. Freshwater lakes and rivers in central and western Mongolia are fed by glacial meltwater from the Mongolian Altai. However glacial cover in the Mongolian Altai is estimated to have reduced by 30% between 1940-2011 (World Bank Group 2021).

[6] Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop

6. Capacity gaps and needs for the management of Tolbo Lake

Five stakeholder groups were identified as important to the management of the Tolbo Lake. Of immediate importance are stakeholders in the aimag government who have jurisdiction over the management of the lake resources, as well as local communities.

Table 4. Stakeholder capacity needs in Tolbo Lake.

Stakeholder group	Current role in wetland management (Positive or Negative)	Possible future role in wetland management	Current capacity for sustainable wetland management	Capacity development needed to improve wetland management	Form of capacity development (e.g. training, organizational strengthening etc.)
Bayan-Ölgii Protected Area administration	Ensuring protected areas are well managed	Strengthening site protection	Current capacity matches management plans	Improve spatial analyses and mapping skillsets	Strengthen technical capacity through workshops and training programmes
Tolbo soum government	Support implementation site management activities	Increased financial support and training	Limited	Improve knowledge and awareness capacity	Training programmes on natural resources management and biodiversity
Local community groups	Involvement in site monitoring	Community knowledge awareness improvement; collaboration with government organizations	Some capacity, in alignment with local traditions	Improve knowledge on the environmental laws and biodiversity	Community knowledge and heritage sharing
Businesses	Limited	Contribute to conservation activities	Limited	Improve knowledge on environmental issues and biodiversity	Strengthen capacity for biodiversity and environment
Research organizations	Some relevant hydrological and biodiversity research	Strengthen research approaches and methodology	Limited, not engaged with local stakeholders	Placing equipment and devices	Preparing local level researchers

7. Opportunities for RFI interventions

7.1. Recommended Interventions

There are various issues affecting Tolbo Lake, the adjacent wetlands, and the surrounding habitat. The steppe areas surrounding the lakes are sensitive to degradation, most often caused by human activities (though climate change is also having an effect.), the principal threats being the road network, tourism, over grazing and water management. Interventions at the site should focus on regulating human activities to reduce their impact, to protect ecological function and to restore degraded habitat.

At the local level, stakeholders assessed that the main threats to Tolbo Lake relate to site management, tourism, livestock, land clearance, vegetation collection and off-road driving.

Interventions are largely focused on improving the management of the site, through zonation, grazing control and habitat restoration. Livelihoods are considered, but there is a need to regulate tourism and shift towards a more sustainable model.

Table 5. List of proposed interventions for Terkhiin Tsagaan Lake and possible project indicators

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Component 1. Strengthening site management and protection of the Tolbo Lakes and the surrounding alpine landscape through protected area creation					
Undertake scoping study of existing threats and interventions at Tolbo Lake, including targeted assessment on long-term threats (from climate change, overfishing, unpaved roads overgrazing, tourism expansion and lake fisheries).	Assessment and scoping guidance to provide basis for proposed RFI interventions. Threats faced by the lake ecosystem better understood, and potential interventions identified.	Assessment report with key threats identified and recommendations for improved management published and disseminated to key stakeholders. Number of stakeholder meetings conducted in the scoping study. Number of stakeholder groups engaged in the scoping study, ensuring a participatory assessment of	100,000	2 years	MECC Bayan-Ölgii aimag administration Tolbo soum administration Conservation organizations Research institutions ADB

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		existing interventions and threats.			
Support the establishment of a new provincial or national level protected area (e.g. provincial nature reserve)	Increased protection through the establishment of a new protected area in Bayan Olgii and the development of management plan for Tolbo Lake and landscape.	Site management plan over short to medium-term developed, in consultation with key stakeholders, including communities inside the site through participatory mapping. Number of stakeholder consultation meetings organized with local government and herding households in all four soums (at least 200 households) to strengthen engagement local stakeholders for participatory mapping for zonation, understand local livelihood needs, and engage national stakeholders. Management plan for Tolbo Lake and landscape established through participatory processes involving and represented households within site.	300,000	2 years	MECC Bayan-Ölgii aimag administration Tolbo soum administration Conservation organizations Research institutions

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Component 2. Expand grassland and vegetation management and restoration in the wider Tolbo Lake landscapes					
Undertake a comprehensive assessment of grazing pressure and degradation in Tolbo Lake and the landscape immediately surrounding the lake. The assessment to include mapping of sensitive areas and hotspots of nutrient pollution (from animal waste).	Tolbo Lake is better managed through the action plan development of an action plan for grassland restoration activities guided by remote sensing and participatory mapping of overgrazed areas, map of hotspots of overgrazing and water pollution (from animal waste), and grassland/ vegetation degradation map of Tolbo Lake site.	Map of grassland / vegetation degradation of Tolbo Lake produced. Action plan for grassland restoration activities drafted guided by remote sensing, participatory mapping of overgrazed areas, and grassland/ vegetation degradation maps of Tolbo Lake, and hotspot mapping of overgrazing and water pollution (from animal waste) Number of stakeholder groups engaged, targeting the local government and herding households (about 200 households) Number of meetings and workshops organized to strengthen engagement local stakeholders for participatory mapping for zonation, understand local livelihood needs, and engage national stakeholders.	50,000	1 year	MECC MOFALI Bayan-Ölgii aimag administration Tolbo soum administration, and other adjacent soums Conservation organizations Local community groups

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Restore the degraded and overgrazed/ over-exploited areas of grassland / vegetation	Degraded areas of alpine steppe damaged resulting from overgrazing restored.	Nurseries for vegetation restoration established. At least two pilot plots for grassland restoration established, with grazing exclusion structures and signage in place. At least 500 ha of degraded grassland restored over a five-year period.	500,000	5 years	
Component 3. Wildlife research and monitoring					
Strengthen the wildlife protection and enforcement at Tolbo Lake.	Improved wildlife protection and enforcement through co-management framework, increased patrol and enforcement efforts for landscape, wildlife protection and encroachment activities, and increased capacity of local rangers	Co-management framework with local communities developed. Number of households (target of at least 50% households in site) engaged and actively participating in co-management activities. Training program and modules on patrol and enforcement and using SMART approaches developed. Number of training activities conducted Number of local rangers trained on patrolling and enforcement.	200,000	5 years	MECC Bayan-Ölgii aimag administration Tolbo soum administration, and other adjacent soums Conservation organizations Research institutions

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Strengthen wetland monitoring, with a focus on waterbird and wildfowl species.	Better monitoring of biodiversity and wetland ecosystems in the landscape through a locally engaged biodiversity monitoring program and increased awareness of globally threatened species in the landscape and migratory waterbird conservation amongst local households.	Monitoring mechanism for the site established Number of monitoring activities conducted using the established biodiversity and wetland monitoring scheme. A locally led conservation group organized Number of awareness-raising activities (including workshops and WMBD activities) on importance of nature protection, with a focus on charismatic bird species, implemented. Number of stakeholder groups engaged in the awareness-raising activities.	50,000	5 years	

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Component 4. Regulate and strengthen tourism infrastructure and local capacity					
Establish licensing and regulations for tourism.	Habitat degradation caused by tourism activities in the landscape reduced through improved local capacity for sustainable tourism activities, guidance for tourism operators including permits and licensing systems to negative impacts, established and widely adopted by tourism operators, and microfinancing mechanisms.	Provincial-level tourism regulations. plans updated in coordination with government and relevant tourism stakeholders. Guidance for sustainable tourism activities developed and disseminated. Number of stakeholder groups engaged in the development of the tourism regulations. Number of compliant stakeholders (i.e., tourism operators) to the developed guidelines for tourism operators. Training programme on sustainable tourism developed. Number of training activities to strengthen local capacity for sustainable specialized tourism Number of target stakeholders trained on sustainable tourism Microfinance schemes established to provide loans to	500,000	3 years	MCST Bayan-Ölgii aimag administration Tolbo soum administration, and other adjacent soums Tourism operators Conservation organizations

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		small tourism businesses to improve sustainability and reduce impact. At least 50 households benefit from benefits and income from tourism (through frameworks such as revolving and community funds)			
Strengthen the capacity of local communities and businesses for nature-based tourism.	Impact of habitat degradation caused by tourism activities in the landscape reduced through increased local capacity of local communities and businesses for nature-based tourism.	Nature-based tourism strategy and business plans and packages on specialized wildlife/nature tourism developed. Number of piloted business plans with tourism operators (including international bird and wildlife tour companies) Framework for benefits-sharing from nature-based tourism enhanced for households in Tolbo Lake. Training program on nature-based tourism developed Number of stakeholders trained	300,000	5 years	

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		on tourist management			
Improve limited tourism infrastructure to reduce negative impacts.	Impact of habitat degradation caused by tourism activities in the landscape reduced through well-regulated road network, tourism facilities, and solid and liquid waste management activities.	Road network plan developed with local stakeholders. Number of waste management and connectivity facilities developed in with the goal or a well-regulated tourism. Number of stakeholders engaged in tourism-related activities Number of stakeholder groups engaged in the upgrading of tourism infrastructure and local planning Number of people benefiting from the upgraded tourism infrastructure Volume of solid and liquid waste managed.	500,000	3 years	MCST Bayan-Ölgii aimag administration Tolbo soum administration, and other adjacent soums Tourism operators
Component 5. Strengthening sustainable, community-based management of rangelands and grazing activities in Tolbo Lake and adjacent areas					
Strengthen local capacity in sustainable rangeland management, and management of livestock	Improved conditions at Tolbo Lake against baselines (reduced organic waste pollution from livestock waste)	Number of stakeholder consultation meetings organized, targeting at least 50 households. Number of meetings and workshops to	500,000	5 years	MOFALI Bayan-Ölgii aimag administration

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	Improved condition of grassland (pasture) in Tolbo Lake (in zoned areas) and adjacent landscapes against baselines.	engage local people on rangeland management, sustainable grazing practices (at least 100 households) Training programmes focusing on community-based rangeland management, including livestock grazing regimes (e.g. rotational grazing) established. At least 100 households at Tolbo Lake and the surrounding landscapes trained with sustainable rangeland management and herding practices. Number of trained stakeholders adopting sustainable rangeland management and herding practices			Tolbo soum administration, and other adjacent soums Community groups Conservation organizations Research institutions

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Scale up of sustainable rangeland use/grazing activities to strengthen the resilience of herding households.	Improved condition of grassland in degraded areas around Tolbo Lake (in zoned areas) and adjacent landscapes against baselines through microfinance mechanism (for local loans and grants), incentives (and compliance mechanisms) for best practices in grazing and rangeland management, and benchmarking visits.	Number of stakeholder consultation meetings organized, targeting 200 households. Number of exchange visits for herding households to other landscapes with good grazing and livestock management in place. 100 households benefiting from small grants and microloans on animal husbandry and livestock management practices. Incentives (and compliance mechanisms) for best practices in grazing and rangeland management created. Number of stakeholders trained and engaged who adopted sustainable rangeland use/ grazing activities	250,000	5 years	
Component 6. Assess the status of existing fisheries in Tolbo Lake and develop a fishery management plan					
Undertake a short-term assessment of the Tolbo Lake fisheries for Mongolian and Arctic grayling	Tolbo Lake fisheries are better managed through better understanding the key fish	At least one fishery assessment on key fish species in Tolbo Lake published and widely disseminated,	100,000	1 year	MOFALI Bayan-Ölgii aimag administration

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	species in Tolbo Lake.	in consultation with key stakeholders Number of workshops organized to engage local stakeholders and scope fishery management activities Number of stakeholder groups engaged in the fishery assessment in Tolbo Lake.			Tolbo soum administration, and other adjacent soums Local community groups
Total investment for five years			12,950,000		

7.2. Potential Financing

The estimated project cost is USD 12,950,000 over a 5-year period. This project supports the development of plans for site management, road network, nature-based tourism strategy, and creation of a co-management framework, training programs on patrol and enforcement, biodiversity monitoring, nature-based tourism, community-based rangeland management, and solid waste management, establishment of infrastructure for tourism and waste management, and creation of microfinance mechanisms.

7.3. Proposed Institutional Arrangements

The proposed project is expected to be implemented over a period of at least five (5) years, with the main project components focusing on the designation of formal protection for Tolbo Lake and the development of a site management plan, tourism, biodiversity monitoring, enhancing rangeland and grazing management practices (led by MECC and the soum government) and lake fishery assessment. Conservation and research organizations such as the Wildlife Science and Conservation Center Mongolia can be expected to play a major supporting and technical role in the project.

7.4. Project Beneficiaries

This proposed project is expected to undertake activities to promote gender inclusion and participation in livelihood activities, through capacity building activities for local households. Local communities that

are expected to benefit from the project including Muslim Kazakh communities living in the wider Tolbo basin landscape.

7.5. Anticipated Implementation Risks

Environment: Nature-based tourism has been identified as a key project concept theme. The proposed interventions include establishing tourism infrastructure to improve the tourism experience at Tolbo Lake. Building these infrastructures, however, would generate noise that may disturb wildlife. Moreover, increasing tourism activities bring other human-induced impact, such as waste pollution. Planning with stakeholders, particularly tourism operators, is critical before any infrastructure development or tourism management.

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Annex 1. Supplementary information on flood mitigation services

Table A5. Key habitat types in Tolbo Lake based on stakeholder-based assessment at the Regional Flyway Initiative workshop in November 2024.

Habitat type	Current state		Alternative state (2035)	
	Area (ha)	Cover (%)	Area (ha)	Cover (%)
Permanent rivers/streams/creeks	317.5	2.0	222.2	1.4
Permanent freshwater lakes	11905.0	75.0	11111.3	70.0
Seasonal/intermittent/irregular rivers/streams/creeks	158.7	1.0	158.7	1.0
Alpine wetlands	3492.1	22.0	4381.0	27.6
Total	15873.3	100.0	15873.3	100.00