

GEF-8 Program Framework Document (PFD)

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General Program Information

Program Title

Central Asia Water and Land Nexus (CAWLN) for Ecosystem Restoration, Improved Natural Resource Management and Increased Resilience

GEF Agency(ies):

FAO

GEF Agency ID

747486

Other GEF Agency(ies):

Submission Date

10/17/2023

Type of Trust Fund

GET

Anticipated Program Executing Entity(s):

Anticipated Program Executing Partner Type(s):

Sector (Only for Programs on CC):

Project Duration (Months):

48

GEF Focal Area (s)

Multi Focal Area

Program Commitment Deadline:

8/31/2025

Taxonomy

Climate Change, Focal Areas, Climate Change Mitigation, Agriculture, Forestry, and Other Land Use, Biodiversity, Biomes, Grasslands, Desert, Rivers, Mainstreaming, Agriculture and agrobiodiversity, Plant Genetic Resources, Species, Crop Wild Relatives, International Waters, Strategic Action Plan Implementation, Transboundary Diagnostic Analysis and Strategic Action Plan Preparation, Freshwater, River Basin, Forest, Forest and Landscape Restoration, Land Degradation, Land Degradation Neutrality, Land Productivity, Land Cover and Land cover change, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Sustainable Pasture Management, Sustainable Agriculture, Improved Soil and Water Management Techniques, Ecosystem Approach, Drought Mitigation, Community Based Organization, Civil Society, Academia, Non-Governmental Organization, Behavior change, Communications, Awareness Raising, Stakeholders, Public Campaigns, Type of Engagement, Gender Equality, Gender Mainstreaming, Beneficiaries, Sex-disaggregated indicators, Gender-sensitive indicators, Food Systems, Land Use and Restoration, Integrated Programs, Comprehensive Land Use Planning, Landscape Restoration, Capacity, Knowledge and Research, Knowledge Generation, Knowledge Exchange, Innovation, Capacity Development, Adaptive management, Learning, Theory of change, Demonstrate innovative approaches, Influencing models, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Convene multi-stakeholder alliances, Private Sector, Individuals/Entrepreneurs, SMEs, Local Communities

GEF Program Financing (a)

26,007,810.00

PPG Amount: (c)

950,000.00

Agency Fee(s): (b)

2,340,694.00

PPG Agency Fee(s): (d)

85,496.00

Total GEF Project Financing: (a+b+c+d)

29,384,000.00

Total Co-financing

355,504,935.00

Project Tags

CBIT: No SGP: No

Program:

Other Program

Program Summary

Provide a brief summary description of the program, including: (i) what is the problem and issues to be addressed? (ii) what are the program objectives, and how will the program promote transformational change? (iii) how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the program should be in section B “program description”. (max. 250 words, approximately 1/2 page)

Importance of region for biodiversity and ecosystems

The Central Asian countries (Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan) share ecologically important river and wetland systems, extensive grasslands, semi-deserts, and high mountain ranges which support some of the most unique species and habitats on earth. These ecosystems also provide essential services to people, including water, food and livelihoods, and are critical for achieving human development goals. Central Asia is also home to many wild crop relatives and has high agrobiodiversity.

Problem statement and root causes

Central Asia’s natural environments are being degraded and lost, with significant declines in both terrestrial and aquatic biodiversity, as evidenced by the current extinct or critically endangered status of many indigenous species such as false shovelnose sturgeon (*Pseudoscaphirhynchus kaufmanni*) and the White-headed Duck (*Oxyura leucocephala* Scop) as well as riparian habitats of the Central Asian riparian woodlands [ecoregion](#). This is largely due to increasing (and competing) demands for natural resources, human population growth and migration, and unsustainable economic development, whose effects are being exacerbated by changing climate patterns. Demand for water is a particular concern for Central Asia due to its largely arid nature, limited water resources and generally fragile vegetation cover. Indeed, the region suffers significant desertification with 66% of the land in Kazakhstan and up to 80% in Turkmenistan and Uzbekistan affected, and almost half of the region suffers from land degradation processes with an associated economic loss of around USD 6 billion/year. The distribution and availability of water resources in Central Asian also shapes transboundary and political relationships in the region, with different national policies and strategies on water use and management sometimes leading to tensions, particularly between upstream and downstream nations.

Drivers

The region has suffered from over-extraction of water by multipurpose water management schemes, especially for irrigated agriculture, along with other damaging land and natural resource uses and practices including over-reliance on water-demanding monocultures, overuse of harmful pesticides and fertilizers, inappropriate forestation management schemes in mountainous areas and overgrazing of natural grasslands. These are driving water and food insecurity, salinization, soil loss and land degradation, reduced river flows and pollution (mostly from irrigation return flow), and loss and fragmentation of natural ecosystems and biodiversity, with significant negative socio-economic consequences, especially for the rural poor. These damaging practices are encouraged by

uncoordinated and conflicting national land and water policies and ineffective management practices. Indeed, the Aral Sea, which before 1960 was the fourth largest body of freshwater on Earth but today is on the edge of extinction, illustrates the complex interplay of drivers and feedback loops resulting in potentially irreversible consequences of unsustainable water, land and natural resource use for biodiversity and ecosystems, human populations, and economies across the region.

Previous attempts to address the environmental problem

Previous national and regional initiatives that have sought to promote a more rationale use of water, land and natural resources in the region have had mixed success, largely because most focused on single countries or a single sector. There has not been sufficient emphasis on an integrated approach that manages water, land and natural resources as one system (a Water-Land Nexus approach) sustainably and - importantly - cooperatively within and across all five national boundaries.

Barriers preventing effective action to address the problem

The main current challenges hindering achievement of sustainability are: (i) weak and fragmented policy and regulatory frameworks governing land, water and natural resource use and management that need to be updated to reflect the most effective approaches and best practices such as Integrated Watershed Management; (ii) limited national institutional capacity and cooperation to carry out effective integrated natural resource management, particularly for sustainable management of agricultural systems; (iii) Lack of comparable monitoring data for effective decision-making in sustainable use of natural resources, both within and across countries; (iv) Poor knowledge and resources for application of sustainable agriculture and ecosystem management practices among land, water and natural resource users, including best practice measures to achieve Land Degradation Neutrality; (v) Insufficient incentives, to encourage widespread adoption of sustainable natural resource and nature-positive practices across the two river basins.

Proposed alternative - objective and geographic target area

To address the above challenges, the proposed *Central Asia Water and Land Nexus (CAWLN) for Ecosystem Restoration, Improved Natural Resource Management, and Increased Resilience Program* aims at enhancing the Water-Land Nexus (WLN) and contributing to Land Degradation Neutrality (LDN) in Central Asia. The CAWLN program objective is to 'enhance water-land nexus approaches and implementation for strengthening water security, increasing resilience and improving rural livelihoods in the Amu Darya river basin (originating from Tajikistan and flowing into Uzbekistan and then to Turkmenistan) and Syr Darya river basin (originating from Kyrgyz Republic and flowing into Uzbekistan and then to Kazakhstan)'. These two rivers, which together form the Aral Sea basin, are the primary source of water for these five Central Asian countries, supporting around 60 million people (80% of the total population of the five countries) and much of their agriculture and energy generation, as well as being critical for other ecosystem services and livelihoods of the rural poor.

The CAWLN program supports a transformative approach to manage shared water sources on a regional level as well as transforming national practices for the management of water and land for agriculture and biodiversity to support the Sustainable Development Goals (SDGs). It will develop a coherent framework to coordinate all interventions supporting the strengthening of water security and improving the status and conditions of land, including support to and collaboration with water and natural resources management sectors, including those involved in ecosystems restoration and biodiversity protection, agriculture and climate change planning. The program consists of five components, addressing the above barriers, which will deliver the following key outcomes (transformations):

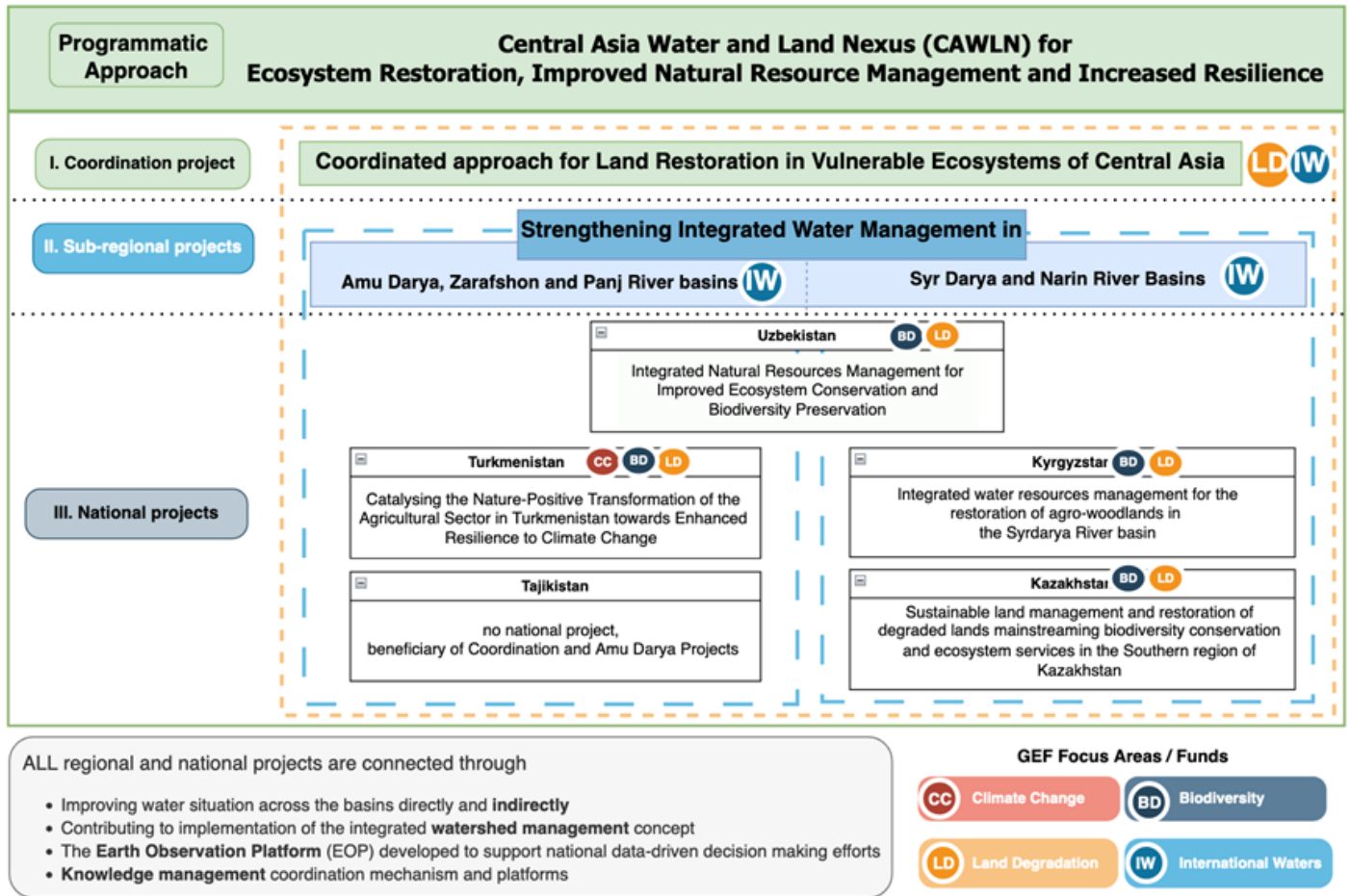
1. Strengthened transboundary and cross-sectoral cooperation within the Amu Darya and Syr Darya river basins and an established framework for advancing a harmonized approach to integrated watershed management (IWM), as well as exchange of relevant knowledge and best practices and standards across sectors and countries;
2. Enhanced national and regional governance frameworks and mechanisms supporting integrated watershed management and improved stakeholder capacities to apply integrated and gender-responsive land-water-biodiversity management in support of national commitments/priorities;
3. Improved tools and capacity for earth observation and evidence based decision-making, particularly satellite imagery-based Monitoring and Decision Support Systems, for planning of water, land, agriculture, and ecosystems/biodiversity management, including early warning systems for disaster risk reduction and establishment of a system for river basin and national monitoring systems;
4. Increased uptake and application of gender-responsive approaches and best practices for sustainable land management in agriculture and ecosystems restoration, including multi-stakeholder mechanisms, incentives, particularly to address Land Degradation Neutrality; and
5. Key aquatic and terrestrial habitats and ecosystems services restored, protecting and promoting native biodiversity while improving livelihoods other ecosystem service benefits to rural communities in Central Asia.

The program and its child projects are innovative in that they will address the underlying institutional and capacity barriers that are holding back transformation to address the unsustainable use water, land and natural resources in Central Asia to more sustainable levels. The innovations that the program will deliver: the use of near-real-time satellite imagery-based Earth Observation for basin-wide monitoring which is not yet available in Central Asia; development of associated decision-support systems, tailored to the national priorities and more generally the application of an integrated water-land nexus approach in the region.

Without the GEF transformative investment, the current disjointed national and largely sector-specific efforts to manage water, land and natural resources are likely to have limited effect because of the failure to recognize the interconnected nature of water and land resources and their relationship with natural ecosystems, and to manage these in an integrated manner. In addition, given the transboundary nature of many of the environmental problems affecting the region, loss and degradation of natural ecosystems will continue without agreement, alignment, and cooperation between the five Central Asian countries. The GEF intervention will help break the self-reinforcing water-land ecosystem degradation cycle in the region, reducing the pressure on, and allowing for recovery of, natural ecosystems. The program will also promote food security, livelihoods, and regional stability and other human development goals, including gender equality.

Programmatic approach and program structure

A programmatic approach is required to overcome the current scenario of weak coordination of policy, regulations, and decision-making in water and land management, both within and between countries. Consequently, sub-regional (by basin) and national activities will take place under the umbrella of a regional programmatic approach.



The CAWLN program consists of: (a) two regional projects, one in the Amu Darya basin (covering Tajikistan, Turkmenistan and Uzbekistan) and another in the Syr Darya basin (covering Kazakhstan, the Kyrgyz Republic and Uzbekistan); (b) four National projects that will address unsustainable agriculture and natural resource management practices affecting water generation, use and conservation, including, but not limited to measures to address deforestation, land degradation, biodiversity loss, and ecosystems services deterioration; and (c) an overarching Program Coordination (PC) project to ensure optimization of child project activities and impacts across the basins (particularly on policy and transboundary cooperation), and effective knowledge management, lesson learning and sharing of best practices and technologies among the five Central Asia countries (see graphic).

Global Environmental Benefits (GEBs)

In terms of GEBs, the CAWLN program will contribute to the following GEF Core Indicators: (a) Indicator 3 - 5,350 ha of land and ecosystems under restoration; (b) Indicator 4 - 1,329,000 ha of landscapes under improved landscape practices; (c) Indicator 6 - 11,118,670 tCO₂ of greenhouse gas emissions mitigated; (d) Indicator 7 - two shared water ecosystems under new or improved cooperative management; and Indicator 11 - 487,000 direct beneficiaries (235,000 women, 252,000 men): benefiting from GEF-financed investments. In addition, the recovery of degraded ecosystems and habitats that will result from the joint program and child projects efforts will support the recovery of some of the region's threatened animal and plant species.

Program Core Indicators

Expected at PFD

3	Area of land and ecosystems under restoration (hectare)	5 350
4	Area of landscapes under improved practices (hectare)	1 329 000
6	Greenhouse Gas Emissions Mitigated (metric ton of CO ₂ e)	11 118 670
7	Shared water ecosystems under new or improved cooperative management (count)	2
11	People benefiting from GEF-financed investments disaggregated by sex (count)	487 000 (252 000 men and 235 000 women)

Gender

The CAWLN program will be gender-responsive and help to narrow gender gaps in natural resource access and management, as well as offering expanded opportunities for women and minority groups to engage in nature-positive businesses through capacity development. The program will improve women's access to water, food, and other ecosystems services (such as plants for medicinal purposes), as well as supporting household food security. CAWLN will promote transformative gender-responsive pathways e.g., through encouraging women's equal and meaningful participation in natural resource governance in the home, community, and the national and transboundary levels through more equitable participation in relevant institutions, capacity development and program participation targets, backed up by leadership training as needed. Women will be engaged vertically throughout the program and this is reflected in the GEF Core Indicator 11.

Key stakeholders

The main stakeholders include national ministries with mandates in agriculture (including forests and fisheries), environment, water resources and climate and specialized agencies concerned with management or research related to these sectors e.g., academic institutions, civil society organizations, and private sector actors (especially linked to the agricultural sector), along with regional bodies and groups such as the International Fund for Saving the Aral Sea. Local farmer communities and other water users are likely to be the group to benefit most directly from the program, through improved capacity (knowledge, skills, tools) and involvement in participatory water/land planning and management activities and restoration of degraded agricultural areas and natural ecosystems.

Funding and co-financing

The combined GEF funds, covering the two regional, five national and program coordination projects, requested for the CAWLN program is US\$ 29,384,000, and a combined US\$ 335.5 million has been provisionally identified as co-financing for the program, representing a 1: 12 ratio for the GEF financing.

Indicative Program Overview

Program Objective

Enhance water-land nexus approaches and implementation for strengthening water security, increasing resilience and improving rural livelihoods in the Amu Darya and Syr Darya river basins.

Program Components

1. Supporting Knowledge Management and Program Coordination

Component Type	Trust Fund
Technical Assistance	GET
GEF Program Financing (\$)	Co-financing (\$)
2,374,960.00	32,451,854.00

Program Outcome:

O1. Effective coordination among all Child Projects, consistency with the programmatic approach objectives, and synergies among projects and partners ensured

O2. Increased uptake of knowledge and lessons learned about gender-equitable effective practices, solutions, and innovations for nature-positive transformation and mainstreaming Integrated Natural Resources Management (INRM) and LDN

2. Enabling integrated and participatory watershed management

Component Type	Trust Fund
Technical Assistance	GET
GEF Program Financing (\$)	Co-financing (\$)
5,537,764.00	51,865,715.00

Program Outcome:

O3. Strengthened national and regional governance frameworks and mechanisms, supporting the INRM and promoting harmonized, gender-mainstreamed policies and standards across the sectors and countries

O4. Enhanced stakeholders' capacities in applying integrated and **gender-responsive** land-water-biodiversity management in agriculture in accordance with national priorities

3. Enhancing data-driven decision making

Component Type	Trust Fund
Technical Assistance	GET
GEF Program Financing (\$)	Co-financing (\$)
4,026,733.00	27,136,864.00

Program Outcome:

O5. CA regional satellite imagery-based Earth Observation platform established as a foundation for **basin and national monitoring systems**

O6. Tailored to national priorities, satellite Imagery-Based Monitoring and Decision Support Systems for water, land, agriculture, and biodiversity, including early warning systems, developed and piloted

07. Enhanced national **stakeholders' capacity** for data-driven decision making, leveraging geospatial technologies and other innovations

4. Enhancing sustainable land management

Component Type	Trust Fund
Investment	GET
GEF Program Financing (\$)	Co-financing (\$)
6,008,212.00	75,006,723.00

Program Outcome:

08. Uptake of **innovation-based and gender-responsive solutions** and best practices in sustainable agriculture and ecosystems management, including **multi-stakeholder mechanisms**, incentives, and actions to enhance VGGT alignment, towards achieving LDN, catalyzed and facilitated

5. Promoting ecosystem services

Component Type	Trust Fund
Investment	GET
GEF Program Financing (\$)	Co-financing (\$)
5,871,674.00	136,123,779.00

Program Outcome:

09. Aquatic and terrestrial **ecosystems** restored, protecting native **biodiversity** and enhancing **water generation and quality** in river catchment areas

010. Improved capacity of rural communities, including women and youth, to benefit from ecosystem services in a sustainable manner

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Program Financing (\$)	Co-financing (\$)
950,000.00	16,200,000.00

Program Outcome:

Effective Monitoring, Evaluation and Coordination systems are established; both by the project management units at each child project level and at the Program Level under the Coordination Project.

Yearly PIR are prepared. Mid-Term and Final Evaluations are conducted.

Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
1. Supporting Knowledge Management and Program Coordination	2,374,960.00	32,451,854.00
2. Enabling integrated and participatory watershed management	5,537,764.00	51,865,715.00
3. Enhancing data-driven decision making	4,026,733.00	27,136,864.00
4. Enhancing sustainable land management	6,008,212.00	75,006,723.00
5. Promoting ecosystem services	5,871,674.00	136,123,779.00
M&E	950,000.00	16,200,000.00
Subtotal	24,769,343.00	338,784,935.00
Project Management Cost	1,238,467.00	16,720,000.00
Total Project Cost (\$)	26,007,810.00	355,504,935.00

Please provide Justification

PROGRAM OUTLINE

A. PROGRAM RATIONALE

Briefly describe the current situation: the global environmental problems that the program will address, the key elements and underlying drivers of environmental change to be targeted, and the urgency to transform associated systems in line with the GEF-8 Programming Directions document. Describe the overall objective of the program, and the justification for it. (Approximately 3-5 pages) see guidance here

Current Situation/problem analysis

Central Asia (CA) is a diverse, landlocked and largely arid region encompassing the countries of Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan (Figure 1). The region is undergoing economic, demographic and environmental changes, accompanied by ongoing socio-political transformations following the disintegration of the Former Soviet Union.

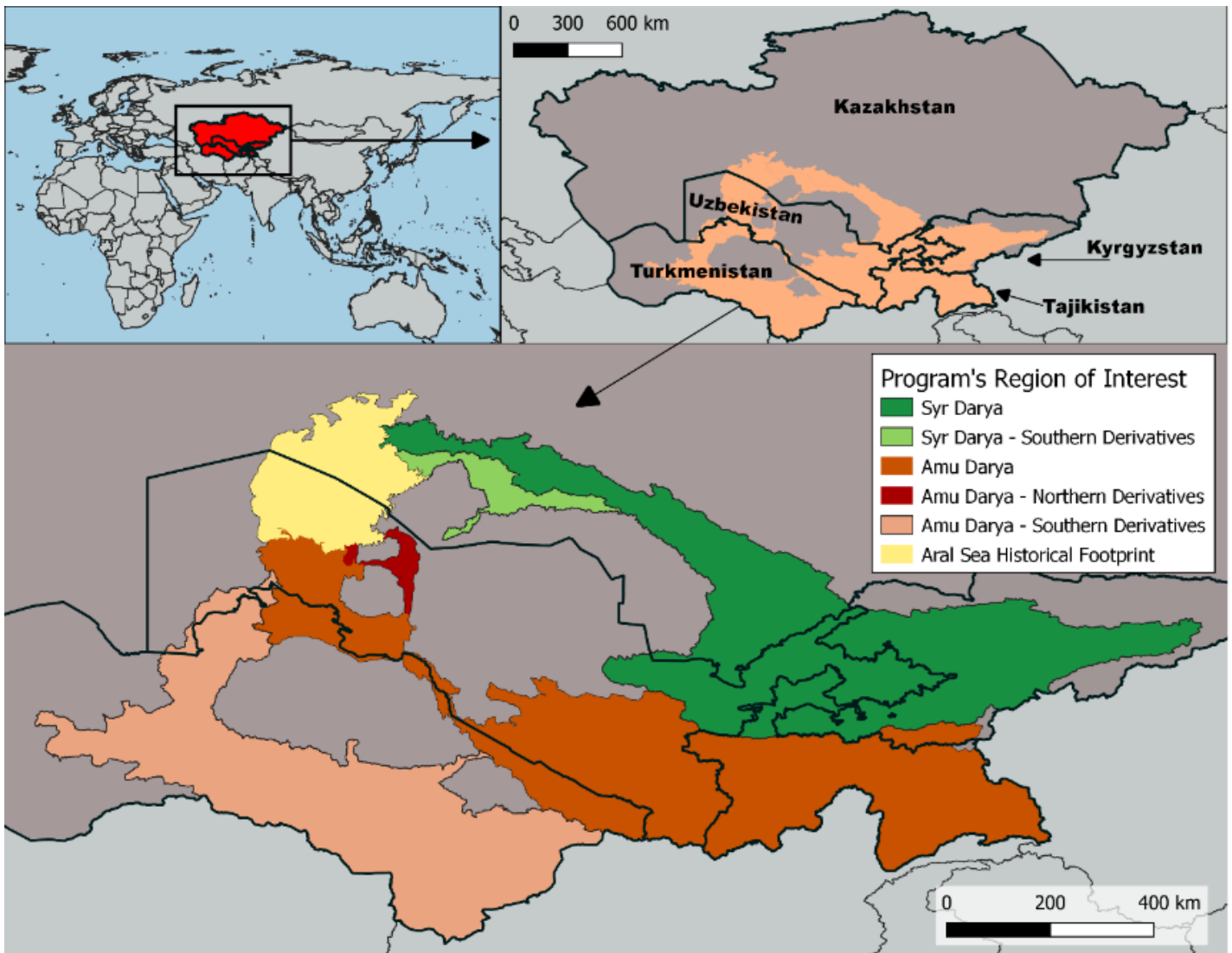


Figure 1 Map of Countries in Central Asia and the two river basins that the program is targeting^[1]

The Central Asian countries share ecologically important river systems with associated riparian forests and wetlands, and extensive grasslands, semi-deserts, and high mountain ranges which support some of the most unique species and habitats on earth, such as the critically endangered false shovelnose sturgeon (*Pseudoscaphirhynchus kaufmanni*) and the White-headed Duck (*Oxyura leucocephala Scop*). Since 1990, more than half of the species originally living in the Aral Sea (region) have disappeared due to its decreased size. In 2015, 21% of endemic species in Central Asia were considered as threatened, of which 11% were listed as “critically endangered” by the International Union for Conservation of Nature (IUCN). The IUCN found in 2017 that 155 terrestrial and

freshwater species were currently vulnerable, threatened or critically endangered in Central Asia^[2].

The region's natural environments are being degraded and lost due to various factors, including competing demands for natural resources (especially water), population growth and economic development, and changing climate patterns. For instance, because of human intervention (water diversion, and reservoir canals), all the region's riparian ecosystems have been heavily impacted and are threatened to some degree – for example, the Central Asian riparian woodlands ecoregion is disappearing due to the disrupted natural hydrology and droughts caused by extensive dam construction, water diversion and deforestation.

These threatened ecosystems provide essential ecosystem services, such as freshwater for agricultural, energy, urban and industrial use and for food security and livelihoods and are especially important for the rural poor. They are also key to the achievement of national Sustainable Development Goal (SDG) targets and fulfilling environmental commitments such as achieving targets for Land Degradation Neutrality (LDN) and the Global Biodiversity Framework and climate-related goals.

Consequently, managing land and water resources effectively, sustainably, and cooperatively across national boundaries is critical to maintaining and restoring the natural environments and continued human development. The key threats and challenges affecting the Central Asian environment are outlined below.

(i) Water Insecurity

Water availability is a particularly critical issue due to the dry nature of the region, and the situation is set to worsen due to climatic changes and anthropogenic factors. Recent studies show water sources (rivers, lakes, as well as glaciers) and their supply are changing, with increasing flow in the upstream countries due to glacier melting and decreasing flow in the downstream countries due to water overuse^[3], exacerbated by the degradation and loss of ecosystems important for regulating water flow, such as

forests and wetlands^{[4]³, [5], [6]}, and indeed the Amu Darya does not reach the Aral Sea anymore.

Irrigated agriculture is responsible for around 90% of total water usage in both basins^[7]. Increasing water insecurity is also contributing to the degradation and loss of soils as they dry out, and the agricultural systems which rely on these, threatening the achievement of SDGs far beyond water-focused SDGs (6, 14 and 15) such as SDGs 1, 2, 3 and 5 among others. **SDG 16 (peace, justice and strong institutions) is particularly impacted by the way countries jointly and independently deal with water resources: scarce water resources can trigger political tensions and conflict, and strong institutions are needed to manage these critical resources. Transboundary cooperation is below optimal in Central Asia and the cost of inaction to improve water management in the region has been estimated at USD 4.5 billion every year**^{[8]⁴}.

The CAWLN program therefore targets the two principal river basins^{[9]⁵} of Central Asia – the Amu Darya and Syr Darya rivers (Figure 1), which are shared by Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan, and support around 60 million people (80% of the total population of the 5 countries^{[10]⁶}). These are the most important freshwater ecosystems in the region and are critical for the CA countries that are heavily reliant on them^[11], **particularly for agriculture and energy generation, as well as for other ecosystem services associated with their ecosystems and habitats – see Table 1.**

Table 1 Countries of the Amu Darya and Syr Darya basins

Country	River Dependency	Extent of Dependence	Primary Reasons for Dependence	Main Ecoregions in the Basin
---------	------------------	----------------------	--------------------------------	------------------------------

Kazakhstan	Syr Darya	High	Agriculture, Hydroelectric Power	Central Asian northern desert, Kazakh steppe
Kyrgyzstan	Syr Darya	Moderate	Hydroelectric Power, Agriculture	Tian Shan montane steppe and meadows, Central Asian alpine meadow
Tajikistan	Amu Darya	High	Hydroelectric Power, Agriculture	Pamir alpine desert and tundra, Badghyz and Karabil semi-desert
Turkmenistan	Amu Darya	Very High	Agriculture (especially cotton)	Karakum Desert, Kopet Dag woodlands and forest steppe
Uzbekistan	Both	Very High	Agriculture (cotton, rice), Urban Supply	Central Asian riparian woodlands, Kyzylkum Desert

However, over the decades, large hydrological complexes, including reservoirs and hydropower stations, and agricultural irrigation canals, have been constructed in these basins to facilitate multipurpose water management schemes (particularly during the Soviet era). These have changed the hydrological regimes and negatively affected the fragile ecological and human social systems of the region.

(ii) Land Degradation/Deforestation

Land degradation is another water-related challenge which is critical for the Central Asia. This region is particularly susceptible to drought and desertification due to its arid climate and has limited water resources and generally fragile vegetation cover. Consequently, land degradation is a constant threat in Central Asia. Currently, desertification affects 66% of the land in Kazakhstan and up to 80% in Turkmenistan and Uzbekistan, while erosion affects more than 85% of arable land in the Kyrgyz Republic and 97% of agricultural land in Tajikistan^[12].

Land degradation and reduced soil fertility is also a result of by poor agricultural land management practices and deforestation of upper watershed and riparian forests. The dominant landcover type in the Amu Darya and Syr Darya rivers basins is grassland, of

which 80% is considered in decline or under stress, in part due to overgrazing[13]⁸. Although forest ecosystems are not extensive in the region, they play a vital role in water generation and conservation, as well as supplying other ecosystem services, such as providing income for rural people. For instance, local populations rely on forest areas for honey harvesting, herbs for traditional medicine such as yarrow, dill and wormwood[14]⁹ However, these forests are under threat and land degradation in river catchment areas leads to a reduction of water flow and increased sedimentation, affecting the availability and quality of water for agriculture, domestic, and industrial use.

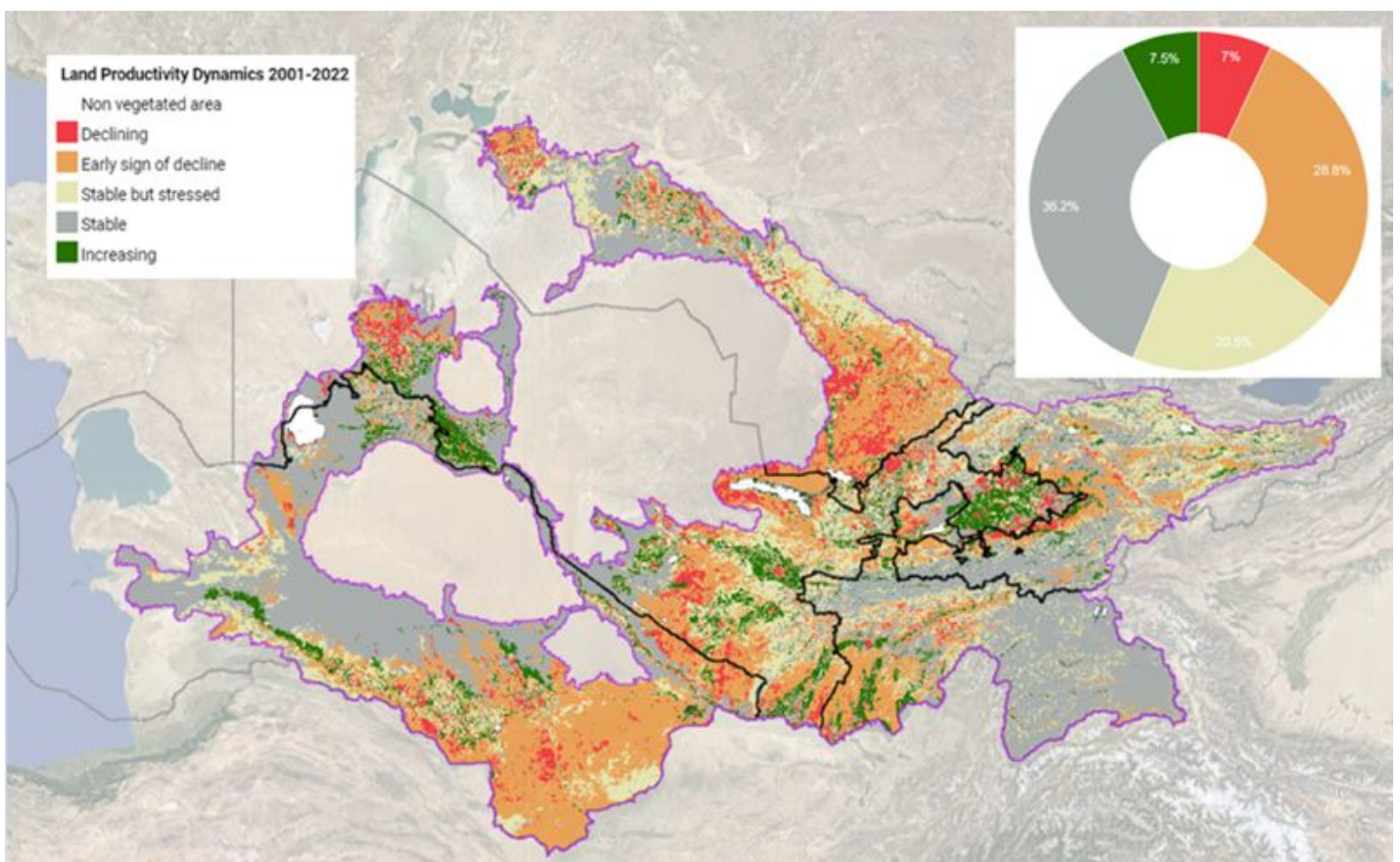


Figure 2 Land Productivity Dynamics, 2001-2022

Unfortunately, land use patterns over the past three decades have resulted in severe land degradation (LD) across the region[15]¹⁰ and a decline in agricultural productivity, an LDN indicator. According to the Food and

Agriculture Organization’s (FAO) analysis of Land Productivity Dynamics (LPD), more than 180 million hectares (44%) of land in Central Asia exhibited declining productivity between 2001-2022 (Figure 2), with only 2.8% of the land areas having increasing productivity for the 5 Central Asia countries^[16]. Regarding the two basins, almost 36% of the basins exhibit declining productivity and areas that are stable but stressed cover over half the region. Moreover, 20% of the region demonstrates stable but stressed productivity. In short, around half of the region is undergoing degradation processes, indicating annual losses of about USD 6 billion^{[17]¹¹}.

(iii) Climate Change and Climate Vulnerability

Climate change is also profoundly affecting the hydrological balance in the two river basins due to changes in precipitation patterns and the melting of glaciers in the Central Asian high mountains, and to climate-induced changes in vegetation cover in the catchment areas. Indeed, the Asian Development Bank (ADB) points to a 30% reduction in the glacial surface area in Central Asia over the past 50-60 years^{[18]¹²}. This shrinkage, in tandem with an increase in extreme weather events, heightens the risk of natural disasters such as droughts, floods and mudslides. According to ADB assessments, by 2050-2100 water volumes could decrease by up to 30% in the Syr Darya basin and as much as 40% in the Amu Darya basin due to climate impacts alone, making it critically important for countries to work together to ensure the region’s water is managed cooperatively and sustainably.

Climate change impacts will directly affect the use of these basins for agriculture, nature conservation and other purposes, potentially creating additional or increased conflicts over their use. For instance, recent studies on the Amu Darya basin^{[19]¹³} have found that

projected increases in summer temperatures of up to 5 °C by 2070–2099 under a high-emission scenario, combined with likely shifts in the seasonality of precipitation, would lead to an increase in crop water consumptive demand of 10.6 - 16.0% (or between 3.7 and 5.5 km³ y⁻¹) relative to 1961–1990. By the end of the century, it is estimated that 34 to 49% of the basin’s existing 3.4 million hectares of irrigated land could be left without irrigation in the event of a major drought (under a 5% probability of occurrence scenario, equivalent to once every 20 years).

(iv) Biodiversity Loss

Amu Darya and Syr Darya Basin are recognized as having diverse, unique and important biodiversity value, with 103 protected areas, 96 Key Biodiversity Sites (KBAs)^{[20]¹⁴}, including 11 wetland Ramsar sites and 258 Important Bird Areas (IBAs)^{[21]¹⁵}. It also hosts a Centre for Plant Diversity^{[22]¹⁶} and is acknowledged as one of the primary centers of origin for many cultivated plants, especially for apricots, cherries, apples, pears, pistachios, almonds, walnuts, and some vegetables^{[23]¹⁷}. The mountains of the region are home of various Crop Wild Relatives, which are important economically, and there is considerable international interest in new varieties such the Anzur Onion (*Allium oreoprasum*) from the mountains of Tajikistan.

However, Central Asia has suffered from considerable loss of biodiversity^{[24]¹⁸}, both in terms of individual species and reduced coverage by specific habitat types, such as grasslands ^{[25]¹⁹}. Indeed, the grasslands of Central Asia are considered the most extensive in the world, and are extensively used for pastoral livestock grazing, but the traditional utilization of these grasslands is being replaced by more intensive use for pasture causing biodiversity decline and diminishing the grasslands’ ecological role^{[26]²⁰}. Biodiversity and the wetland, forest and grassland ecosystems within the Amu Darya and Syr Darya river basins are also important sources of food and materials, such as wood and medicinal plants, for many rural communities. Unfortunately, the river loss and degradation of habitats and species populations are not only impairing ecosystem

functionality and resilience but also jeopardizing the key ecosystem services that local (especially rural) communities depend on.

(v) Human Impacts

The environmental loss and degradation occurring in Central Asia outlined above are also producing severe socio-economic consequences for the region's human population, particularly for those living in rural areas and highly dependent on its natural resources. For instance, land degradation and desertification threaten water dependent agriculture which employs approximately 20-45% of the population in Central Asian countries^{[27]²¹}.

The degradation of land and the impact of climate change are contributing to a decrease in land productivity, crop yield, and the productivity of livestock farming. Traditional land management practices are no longer sustainable under these new conditions, leading to a decline in the income and living standards of the population^{[28]²²}. Land degradation in Central Asia is estimated to cost up to 11% of GDP, with the cost of inaction being five times higher than the cost of action^{[29]²³}.

Although population growth is common to all Central Asia countries, it is particularly pronounced in overpopulated agrarian areas, where it surpasses the overall population growth rate. Many regions have experienced deurbanization, accompanied by a rise in the proportion of the rural population^{[30]²⁴}. This potentially further increases anthropogenic pressures on the region's agri-food systems and heightens vulnerability of the rural population to environmental degradation, water insecurity, and climate change.

The distribution of water resources in Central Asia have also historically shaped transboundary and political relationships between the region's countries. There have been tensions, particularly between upstream and downstream nations, due to unsustainable and competing demands for water due to different national policies and

strategies on water use and management, particularly in relation to agricultural development^{[31]²⁵} and the damming for reservoirs and energy generation.

Root causes/drivers of environmental degradation

Water and land management policies and practices across the region, designed to boost agricultural production and energy generation in the second half of the 20th century, have resulted in substantial degradation and loss of land and aquatic and terrestrial ecosystems, exacerbated the water crisis and had profound socio-economic consequences in Central Asia ^{[32]²⁶}. The Aral Sea disaster (Box 1) serves as a stark illustration of how unsustainable land and water policies and management practices can create a negatively reinforcing feedback loop in the water-land nexus.

Box 1: The Aral Sea disaster

Before 1960, the Aral Sea was the fourth-largest body of water on Earth. Today, it is on the edge of extinction. The Sea is fed by Central Asia's two major rivers, the Amu Darya and the Syr Darya, with a flow, of about 70 and 35 cubic km per year on average.

The Soviet Union's policy aimed at boosting agricultural, mainly cotton, production in Central Asia resulted in the development of one of the world's largest irrigation networks and adoption of intensive unified irrigation practices. While this increased agricultural output in the short term, in the context of uncoordinated water management by the newly independent Central Asian states, it had long-term unintended consequences for the Aral Sea and associated systems.

The desiccation of the Aral Sea led to a significant loss of biodiversity, both aquatic and terrestrial. The shrinking of the Aral Sea has also altered the local climate, contributing to extreme weather conditions. In addition, the sea shrinkage had dire socio-economic impacts on the surrounding communities. For instance, fishing industries collapsed, leading to widespread unemployment and economic decline, and the exposed seabed, containing harmful pesticides and salts, became a source of toxic

dust storms leading to significant health problems for the local population, including respiratory issues and other illnesses.

The disaster is a clear example of a reinforcing negative feedback loop in the water-land nexus. As water was increasingly diverted from the Amu Darya and Syr Darya rivers for irrigation, less water reached downstream areas and the Aral Sea, causing the sea to shrink and water scarcity. The loss and degradation of the aquatic and land systems led to additional environmental and socio-economic problems and further intensification of irrigation efforts, creating a cycle of decline that exacerbated the region's vulnerability.

Agricultural development and intensification

An increasing human population in the region and the need to ensure food security, address poverty, and develop food exports as part of national food strategies, have driven agricultural expansion in the Central Asia^{[33]²⁷}. However, due to the arid climatic conditions, most agriculture and food production in the region is heavily reliant on river and irrigation networks. Indeed, the former Soviet Union's expansive, unified irrigation and water management system, inherited by the CA countries, include numerous primary canals, distributaries, reservoirs, and smaller channels that serve farms and individual plots. By the end of 1998, the combined length of primary and inter-farm irrigation networks in both basins reached 47,750 km^{[34]²⁸}, while on-farm irrigation networks amounted to 268,500 km^{[35]²⁹}. The canals served not only to divert water from the rivers to desert regions, such as the Karakum Canal, but also to link the irrigation networks of Amu Darya and Syr Darya basins.

Unfortunately, the development and intensification of irrigated agriculture and over-reliance on water-demanding monocultures, poor land management practices and overuse of pesticide over recent decades has resulted in overutilization of limited water resources, changes in the distribution of available water, salinization and pollution (mostly from irrigation return flow) of water sources (particularly with nitrates and phosphorus in agricultural irrigation water discharged into rivers^{[36]³⁰}). Increased salination and drying up has led to severe land degradation, reduced soil fertility and soil loss across the region^{[37]³¹}. **Indeed, according to calculations by the**

CALCIM-2 Project^{[38]³²}, 40-60 percent of irrigated land in Central Asia is salt-affected or waterlogged.

In addition, water redistribution by the Central Asian countries, which led to the disappearance of the Aral Sea, has resulted in the creation of numerous artificial water reservoirs in areas outside of the natural hydrological basins^{[39]³³} over recent decades. These reservoirs play crucial roles in national economies, agricultural development and food security^{[40]³⁴}. However, they have also induced changes in local hydrology and natural environments, including creating habitat fragmentation due to damming, redistribution of annual river water flows for the needs of different economic sectors (such as agriculture and energy), alteration of local climatic conditions, and increased water scarcity downstream, among other impacts.

Central Asia holds the largest contiguous area of grazed land in the world which also serves as an important source of livelihoods for pastoral and agro-pastoral communities. Unfortunately, overgrazing of native grasslands has contributed to water depletion, pollution and soil degradation and erosion. Although livestock is not a primary water consumer, overgrazing on pastures beyond their carrying capacity, has resulted in land degradation and erosion in water catchment areas. For instance, in Tajikistan the area for pasture has decreased since independence due to land degradation and overgrazing, even though livestock numbers have increased from 4.5 million head in 2005 to about 7.4 million head in 2014^{[41]³⁵}. As a result, 89% of summer pastures and 97% of winter pastures are eroded by overgrazing in Tajikistan, and 70% of all pastures in Turkmenistan have been degraded to varying degrees due to overgrazing.

Other Land-use changes

Other land-use changes in recent decades, such as poorly conceived reforestation programs (often undertaken without sufficient scientific justification or socio-economic and environmental impact assessments or following global best practice) have also caused negative impacts on the hydrological regimes of these basins. For example, the planting of water-demanding non-native species as part of reforestation programs has decreased the supply of water in river catchments. In Kyrgyzstan, for instance, local species of sea buckthorn, such as *Hippophae rhamnoides*, are being actively replaced by more water-demanding, species through nationwide reforestation and horticulture

initiatives^[42]³⁶ which are disrupting the hydrological balance in some areas.

interplay of various drivers

The Amu Darya and Syr Darya river basins have evolved into complex socio-environmental systems over centuries of irrigated agriculture and over land uses in the arid climate. These systems exemplify the water-land nexus concept, where change drivers and challenges are interconnected^[43]³⁷. In the region's arid climate, these factors reinforce one another, accelerating the impacts on ecosystems and agri-food systems. Specifically, the inefficient use of limited water resources leads to national and regional economic and political crises and causes irreversible changes in the basin's terrestrial ecosystems. This deterioration in the water-generating functions of basin ecosystems further reduces water availability and quality. Figure 3 illustrates the main components of the water-land nexus operating in the context of the Aral Sea and shows how water insecurity in arid zones are reinforced by such dynamics. For instance, even a relatively small-scale disturbance, such as a sudden increase in anthropogenic water diversion or the impact of climate change, can lead to disproportionately large negative consequences, indicating low resilience of the system.

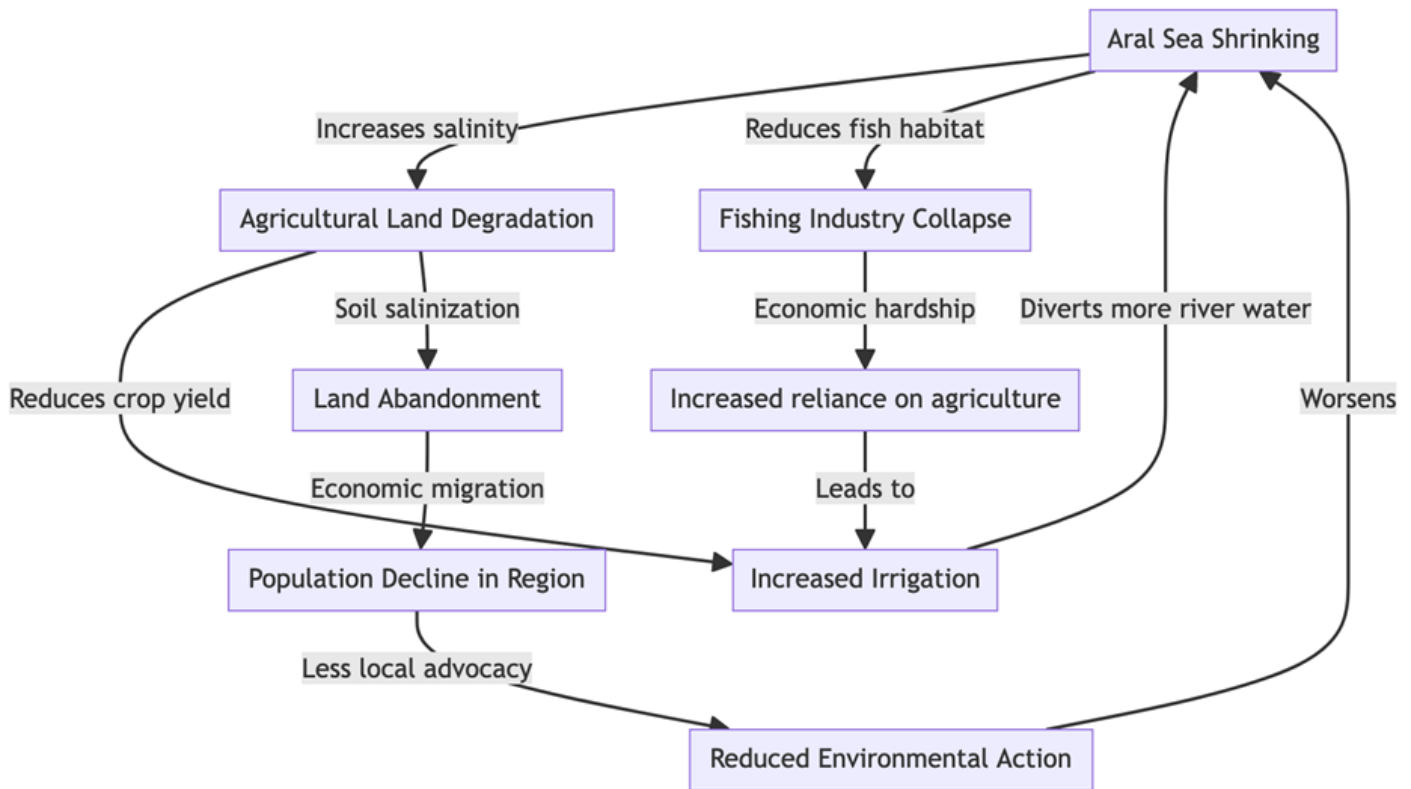


Figure 3 Selected reinforcing feedback loops, illustrating water land nexus in the Aral Sea basin

Baseline situation and interventions

There are several on-going or recently completed national and regional initiatives and programs that have sought to address water use and sustainable land and natural resource use and management in Central Asia, which are relevant to the CAWLN program and represent an important baseline.

National government and bilateral initiatives

The Governments of the Central Asian nations are seeking to improve water use efficiency, investing at different scales for sustainable and more efficient irrigation. Uzbekistan, for instance, has been investing in the modernization of its canals with relevant policies, such as subsidies for farmers to update their irrigation systems to more efficient ones, contributing to more sustainable use of natural resources. Also, the country is moving toward more real-time data analysis that is being made available to farmers through apps. In Kazakhstan the Government is investing in more efficient use

of water in pasturelands aiming to reduce conflict over water use. The country has held several dialogues and is looking at which current policies need to be updated. Similar schemes are also happening in Turkmenistan, where policy attention and investment is being channeled towards improving water management for agriculture and improving water usage efficiency.

Regional and global initiatives

All five nations recognize the urgent need to address land degradation, have ratified the UN Convention to Combat Desertification (UNCCD), and have developed national action programs, which are at various stages of implementation^{[44]³⁸}. These include measures aimed at improving the condition of irrigated lands, stabilizing shifting sands through afforestation, more rational use of pastures, and further developing forestry. The countries are also parties to the UN Convention on Biological Diversity and UN Framework Convention on Climate Change.

Several relevant projects in the region have been funded by GEF and other donors supporting various initiatives related to water management, infrastructure development, capacity building, and policy reforms. Of particular relevance is the *Strengthening the Resilience of Central Asian Countries by Enabling Regional Cooperation to Assess High Altitude Glacio-nival Systems to Develop Integrated Methods for Sustainable Development and Adaptation to Climate Change*^{[45]³⁹}, that aims to strengthen the adaptation capacity of Central Asian countries to climate change impacts on the cryosphere through assessment, promotion of regional cooperation, and stakeholder engagement. This ongoing project will generate baseline data and results that the CAWLN program will incorporate to strengthen its actions. Also, the results of the *Integrated natural resources management*^{[46]⁴⁰} in drought-prone and salt-affected agricultural production landscapes in

Central Asia and Turkey [47]⁴¹. were used to prepare this document and will continue to support the decision-making process under this program.

The *Conservation and Sustainable Management of Lakes, Wetlands, and Riparian Corridors in the Aral Basin (2022-2026)* [48]⁴² seeks to enhance landscape and livelihood resilience in the Aral Sea basin through integrated land, lake, wetland, and riparian ecosystem management, involving the private sector and local communities to achieve Land Degradation Neutrality [49]⁴³ (LDN). It will provide important lessons for the CAWLN program and child projects. Another important project for the CAWLN program is the *Strengthening transboundary cooperation and promoting integrated water resources management* [50]⁴⁴ in the Chu and Talas River Basins, and *empowering the Water Commission of Republic of Kazakhstan and the Kyrgyz Republic* [51]⁴⁵, project which will share lessons learned and contribute to the design of the sustainability and effectiveness of the CAWLN program.

Linkage with the above projects will be further investigated during the Project Preparation Grant (PPG) phase. Several other ongoing national GEF projects potential offer synergies and the potential for cooperation with the CAWLN program. These will be further explored during the PPG phase [52]⁴⁶.

Other important initiatives include the *CAWEP - Energy-water-land use nexus in Central Asia*. CAWEP is a partnership between the World Bank, the European Union, Switzerland and the United Kingdom to strengthen the enabling environment to promote energy and water security at regional level and in the beneficiary countries. CAWEP focuses on strengthening national institutional capacities and sector performance, while at the same time supporting regional cooperation and dialogue to create an enabling environment for achieving national and regional energy and water security [53]. The CAWLN program will build on the results of CAWEP and establish a coordinating mechanism with the CAWEP during the PPG phase. Box 2 provides detail on a key regional initiative.

Box 2 International Fund for Saving the Aral Sea - IFAS^[54]⁴⁷

The International Fund for Saving the Aral Sea (IFAS) was established by a decision of the Heads of CA states on the 4th of January 1993 with the aim of developing and funding environmental and applied research projects and programs to improve ecological situation in the areas affected by the Aral Sea catastrophe and address the socioeconomic issues in the region. Under the IFAS mandate, the Interstate Commission for Water Coordination of Central Asia – ICWC was established. The ICWC is the only interstate body established and authorized by the Heads of CA State to make binding decisions on current and emerging issues related to interstate water allocation and use. The main goal of the establishment of ICWC is the adoption of principles of collective decision making on common water-related issues and on measures for implementation of joint programs, while respecting the interests of the parties.

Despite its relevant and powerful mandate, IFAS hadn't produced policy documents within 2002 and 2022, as it shifted its focus toward resources mobilization and project/infrastructures execution. Although the investments in the region and all the efforts done by IFAS has solved several shortfalls and short-term problems, it has shown that long term problems are still to be addressed. This policy silence was broken in 2022 with the joint statement of the head waters agencies which reflect the need for a shift in IFAS focus.

IFAS is an indispensable political platform for the development and adoption of bilateral and multilateral agreements for the integrated management, use and conservation of transboundary water resources in the region and it will be a key partner and platform for coordination and development of collaborative activities of this proposed program.

Several GIZ-funded initiatives are also operational in the region, including the Integrative and Climate-sensitive Land Use in Central Asia Regional Programme, Green Central Asia Program^[55] (until 2024), and the Promoting transboundary Climate-Resilient Water Resources Management (2023-2026) project, which addresses various environmental aspects and systematically reducing climate risks. Similarly, the USAID-funded Regional Water and Vulnerable Environment ^[56] projects seek to provide platforms for improved cooperation and management in the region. Additionally, FAO has several interventions in the CA countries that represent an important baseline for the CAWLN program and provide co-financing opportunities for the program.

The examples listed above are just a few of the initiatives currently taking place in the region and with which the CAWLN program will seek coordination, cooperation and synergies during the PPG phase^[57].

All these actions, policy changes, and innovation have in common a weak, and in some cases non-existent, coordination between different sectors. All five countries have reported weak internal coordination in decision-making in areas related to water and land management; leading to these 2 sectors being assigned to different ministries/agencies with fragmented decision-making processes. Although all the efforts and projects implemented were able to reach short-term solutions and alleviate many problems, they fell short of tackling the core of the situation of water insecurity in the region. Most of the interventions and investments in the region have had a weak coordination process among sectors and countries; they focus on short-term intervention (limitation of donor-funded projects) and local (limitations of having few stakeholders/sectors involved in the project design). Also, one challenge of so many initiatives is the plethora of terms and approaches in use. This program therefore adopts two main concepts- see Box 3.

Box 3: Streamlining concepts and terminologies in the Water Land nexus

Various projects supported by different national government and international agencies employ different methodological approaches such as INRM, IWRM, and LDN, all of which can contribute to the improvement of water and land management practices, and ultimately, water security in the region. While designing the CAWLN program, and to respect national preferences, several terminologies were included. The main two approaches to be employed by this program are the Water-Land Nexus

(WLN) ^[58] approach and Integrated Watershed Management (IWM) ^[59].

Water-Land Nexus, in the context of this program, refers to the interdependence and interaction between water and land resources, and how they affect each other in various ways. This concept is often used in the context of sustainable development, particularly in agriculture.

Integrated Watershed Management (IWM) is an approach to managing natural resources within a watershed that seeks to balance environmental, social, and economic objectives. IWM entails the coordinated management of land, water, and other natural resources within a specific geographic area, such as a water catchment area or river basin, with the aim of achieving sustainable development and preserving ecological integrity. IWM postulates that aquatic and terrestrial ecosystems depend on each other

and improvements in one cannot be achieved without corresponding changes in another (the 'water-land nexus'). Thus, the quality and quantity of water in a river network is defined by the status of and activities within, the corresponding land catchment area.

This IWM approach is a reliable instrument for the practical application of the Water-Land Nexus and incorporates the relevant elements of many other frameworks and concepts, such as INRM, IWRM, SLM and LDN. These additional frameworks are explained below in the project description session.

Barriers to WLN and IWM adoption in Central Asia

Despite the above interventions, several key barriers remain that hinder application of the water-land-nexus approach and effective measures to address the unsustainable use of water, land and natural resources in Central Asia and improve water security, resilience and rural livelihoods in the Amu Darya and Sir Darya river basins. These are:

- **Barrier I (BI): Weak and fragmented regulatory frameworks governing land, water and natural resource management. Although they vary between Central Asian countries, current policies and regulations governing land, water and natural resource use continue to need updating. Many still need to reflect current best water-land nexus practices, such as following an ecosystem approach, Integrated Watershed Management (IWM), Integrated Natural Resources Management (INRM), Land Degradation Neutrality (LDN), Sustainable Land Management (SLM), and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT). In addition, water and land use is often addressed under different regulatory frameworks and there is a need for greater harmonization between different sector policies and plans addressing these resources. Furthermore, policies and regulations need to be adapted to address future challenges for land and water management under predicted climate change scenarios for the region. Inadequate enforcement of regulations is also considered a related barrier to effective and sustainable land, water and natural resource management.**
- **BII: Limited national institutional capacity and cooperation to carry out effective integrated natural resource management. There is a lack of knowledge and capacity to manage land and water resources sustainably (particularly for agricultural systems) within government agencies, including appropriate technologies and innovations^{[60]⁴⁸}. This is compounded by weak intersectoral and institutional cooperation, particularly between government bodies responsible for water**

management, land management (mostly agriculture and forestry), environmental protection and biodiversity conservation, and energy generation, which produces conflicting resource use and hinders integrated management. For example, some CA countries do not have unified national databases supporting integrated land planning and water management in river catchment areas. All the countries have different ministries/agencies managing different data bases with a focus on water and land management but of varying quality and usefulness and with poor or absent coordination and knowledge sharing among them.

- **BIII: Insufficient earth observation monitoring data for effective decision-making in sustainable use of natural resources.** Modern technologies of near-real-time satellite imagery-based Earth Observation hold significant value for interventions in the water-land nexus for several reasons. Such technologies, imagery, and related services are becoming increasingly available and user-friendly^{[61]⁴⁹}. Having a basin-wide earth observation platform to monitor characteristics of terrestrial and aquatic ecosystems, as well as agricultural practices in river basins, is essential for ensuring an integrated water-land nexus approach. Many countries worldwide have introduced such satellite imagery-based systems in transboundary river basins^{[62]⁵⁰}. However, such basin-wide systems are not yet available in Central Asia (CA)^{[63]⁵¹}. Isolated project-based initiatives on a national scale are limited in lifespan and scope^{[64]⁵²}, and lacked components for building national and regional capacity which creates overreliance on external assistance^{[65]⁵³}. In addition, available water and soil data along with information on the status and use of natural ecosystems in the two basins are outdated and insufficient to develop effective sustainable management strategies and planning.
- **BIV: Poor knowledge and resources for application of sustainable agriculture and ecosystem management practices among land, water and natural resource users. There is poor knowledge (and access to information) on integrated natural resource management (including integrated water management), measures to tackle land degradation and achieving LDN, and appreciation of the value of taking a water-land nexus approach. There are also limited resources (materials, equipment, tools,**

technologies, training, support) available to water, land and other natural resource users to apply sustainable management approaches or take advantage of more nature-positive opportunities. Together these hinder the uptake of new approaches and technologies. While substantial progress has been made in capacity-building efforts by existing initiatives, most of these efforts can be characterized as: 1) focused on technical solutions within a narrow domain, with limited accessibility and a short lifecycle for the products promoted; 2) undermined by a lack of coordination across sectors, agencies, and borders, as required by IWM and the water-land-nexus approach, and often focusing on a targeted domain and locality of a specific country (e.g., irrigation improvements in a specific province); 3) compromised by inadequate policy frameworks, funding and resources to sustain continuous capacity building; and 4) having insufficient focus on economic and social implications. In terms of institutional capacity building, there has been progress, but long-term and harmonized commitments of financial and human resources are required for the mainstreaming of integrated land and water management.

BV: Insufficient incentives for community adoption of sustainable natural resource practices. There are currently few incentives, such as financial, fiscal/tax, social, livelihood or health-related schemes, to encourage water, land and natural resource users to adopt more sustainable practices, including nature-based solutions and integrated pest management, across the two river basins. As a result, farming communities are reluctant to change established practice and explore new approaches and opportunities (considered too risky).

Alternative Scenario

Under a ‘business as usual’ scenario, Central Asia, and particularly the Amu Darya and Syr Darya river basins, is likely to face continuing deterioration and loss of scarce water and land resources and the critical ecosystems that provide and support these, weakening rural livelihoods, local and national economies, and efforts to address poverty and other human development and environmental goals, while increasing the risk of conflicts over resource use. Without transformative action, the current disjointed national and generally sector-specific efforts to manage water and land resources are likely to have limited effectiveness because of the interconnected nature of water and land resources and their relationship with natural ecosystems. In addition, given the transboundary nature of many of these environmental problems, loss and degradation of natural ecosystems will continue without agreement, alignment, and cooperation between the five Central Asian countries on the use and management of scarce water resources in the region, particularly for the Amu Darya and Syr Darya river basins. Such a scenario would not only be detrimental to Central Asia but could also have global repercussions given the region's strategic significance in global geopolitics^{[66]⁵⁴}. Furthermore, without intervention, these challenges are likely to intensify under predicted climate change scenarios for the Central Asia region over the coming decades. Consequently, there is an urgent need to transform the use and management of the region’s dwindling natural resources to ensure their sustainability and build resilience.

The alternative scenario proposed by the CAWLN program aims to contribute to overcome the fragmented status, anchored on the growing request from all CA countries to find integrated solutions to the increasing need for water and its management in the region, and will develop stronger coordination among the five countries in land-water sector decision-making processes. It aims to strengthen current coordination mechanisms (such as IFAS) to enhance capacities for long-term decision-making and more integrated, holistic investments. It will also create new coordination mechanisms, such as the between the National Hydrometeorological Services to assure harmonized data analysis and data sharing paths, leading to a joint understanding of common problems, which can eventually lead to a common decision-making process. To achieve this, the program will gather all five CA countries under a regional umbrella, but at the same time, sub-regional (basin level) and national processes will take place. This integrated bottom-up and top-down approach will promote a transformation of the current status quo on how such projects are managed and implemented in the region.

[1] All illustrations are made by FAO, using own tools (e.g. <https://projectgeffao.users.earthengine.app/view/lwn-dss>), unless it is clearly indicated otherwise.

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[13] See Annex D for more details.

[14] <https://www.mdpi.com/2305-6320/2/1/28>

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[46] Integrated Natural Resources Management (INRM) is an approach to managing natural resources that seeks to balance environmental, social, and economic objectives. INRM recognizes that natural resources are interconnected and that their management requires a holistic and integrated approach.

[47] <https://www.thegef.org/projects-operations/projects/9094>

[48] <https://www.thegef.org/projects-operations/projects/10356>

[49] LDN is 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 and a planning principle that involves making land-use decisions.

[50] IWRM is a holistic approach to water use and management: a systemic and sustainable approach to water resources management that takes into consideration the limited nature of water resources and the effects of negative impacts on this resource.

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[52] A list of the current project is available at Section B (Coordination and Cooperation with Ongoing Initiatives and Programs)

[53]

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[57] A list of the current project is available at Section B (Coordination and Cooperation with Ongoing Initiatives and Programs)

[58] WLN refers to the interdependence and interaction between water and land resources, and how they affect each other in various ways. See Annex I

[59] IWM is referred as Integrated River Basin Management (IRBM) by some sources

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B. PROGRAM DESCRIPTION

This section asks for a theory of change as part of a joined-up description of the program as a whole. The program description is expected to cover the key elements of "good project design" in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PFD guidance document. (Approximately 10-15 pages) see guidance here

Program's Objectives

The proposed CAWLN program and associated set of child projects (Table 1) seeks to directly overcome the above barriers by enhancing the Water Land Nexus (WLN) in Central Asia through applying water-land nexus approaches to strengthen water security, increase resilience and improve rural livelihoods in the Amu Darya and Syr Darya river basins.

The program intends to overturn the baseline of self-reinforcing degradation trends within the Amu Darya and Syr Darya river basins by fostering an enabling environment for natural resources management transformation, improving regional cooperation, enhancing capacities for evidence-based and participatory management, and effectively coordinating efforts across sectors for maximized impact.

The program focuses on the Amu Darya and Syr Darya river basins, which underpin the core of the regional economy and agri-food systems and will thereby contribute to improving the overall resilience in Central Asia. The program aims to catalyze transformative and sustained change at regional, national, and subnational levels as well as address critical global environmental problems including land degradation, water insecurity, diminishing ecosystem services, biodiversity loss, and unsustainable water and land management practices. Furthermore, the CAWLN program will contribute to the ongoing process of strengthening the cooperation and establishing common solutions

between CA countries that started with the creation of IFAS and have continued until now.

CAWLN approaches

The CAWLN program will enhance water-land nexus approaches and implementation for strengthening water security, increasing resilience, and improving rural livelihoods in the Amu Darya and Syr Darya river basins. These two river basins function as complex hydro-social systems featuring a historically established fragile dynamic between human societies and supporting ecosystems. Consequently, the CAWLN program takes an integrated, systems-thinking, evidence-based and collaborative approach to addressing the complex, intertwined and escalating challenges within these river basins that considers the socio-economic and natural ecosystem demands on water and land, as well as the politically sensitive nature of water use and management in Central Asia.

Recognizing the transboundary nature of the natural resources that need transformative management, the CAWLN program proposes a regional programmatic approach (PA) that not only emphasizes and supports national land and water conservation efforts aligned with national priorities but fosters international collaborative efforts among all five basin nations toward proactive water conservation, moving beyond the existing cooperation efforts on water allocation by countries.

Given that the challenges facing Central Asia's water management are multifold, a unified strategy that follows a water-land-nexus approach emphasizing the interdependent relationships between water, land and natural resources and seeks to harmonize their use for long-term sustainability is needed.

To mainstream the Water-Land Nexus vision, the programmatic approach will predominately employ an Integrated Watershed Management (IWM) approach to provide a robust framework to synchronize water resource management with land usage, accompanied by considering other crucial elements (see Figure 4) (transboundary dialogue, innovations, public-private partnerships, gender mainstreaming, youth engagement, etc.).

By emphasizing the interconnectedness of water and land and advocating for ecosystem-based river restoration, the program aims to not only improve related water use and availability but also to promote Land Degradation Neutrality (LDN) both at national and regional levels. The programmatic approach will also capitalize on sustainable agricultural methodologies, irrigation optimization, forest conservation, and biodiversity protection. Importantly, the inclusion of local communities in evidence-based decision-making processes and management as well as knowledge exchange on LDN and other best practices is key to success.

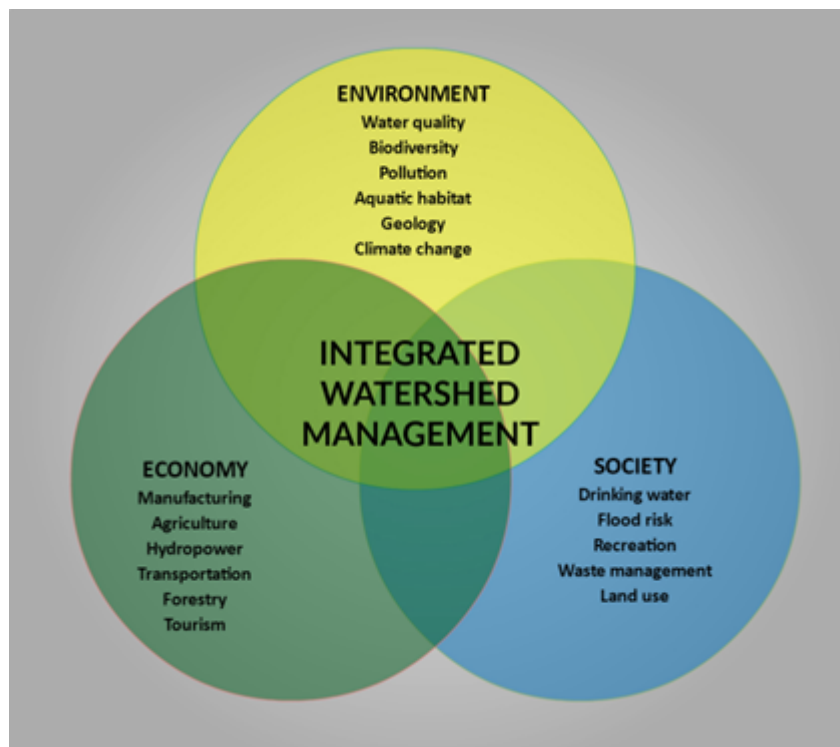


Figure 4: Integrated Watershed Management Domains

Moreover, adopting IWM as the program’s overarching approach to improving the Water Land Nexus in Central Asia brings together several complimentary approaches, including Integrated Natural Resource Management (INRM), Integrated Water Resource Management (IWRM), and Sustainable Land management (SLM), and helps clarify the role of relevant stakeholders in Water Land Nexus, and together these represent the pillars of Integrated Watershed Management (Figure 5).

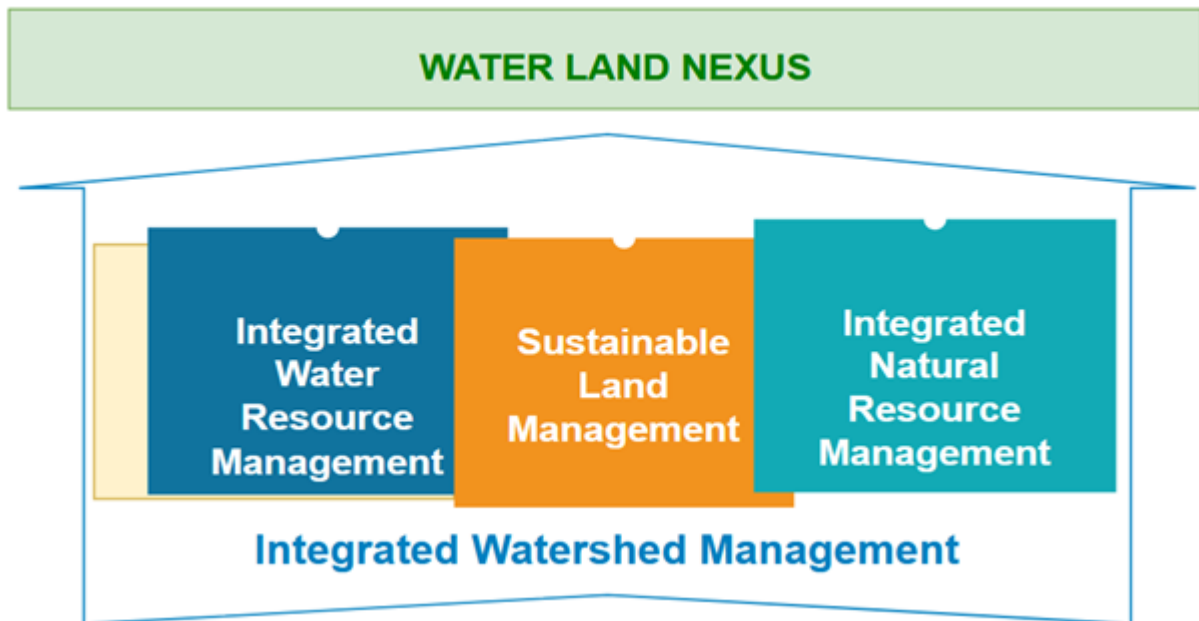


Figure 5: The pillars of the Water-Land Nexus (prepared by FAO)

By embracing this complementarity between different resource management approaches under one IWM umbrella, the CAWLN program can capitalize on the best practices in each domain to address the key WLN challenges such as deforestation, soil erosion to land degradation (see Box 4). This integrated approach is increasingly seen as vital for balancing economic, social, and environmental priorities. For instance, the United Nations has recognized the role of IWM in achieving the Sustainable Development Goals (SDGs)^{[3]⁵⁵}.

Box 4 - Approach and Framework for Water Land Nexus

Integrated Natural Resources Management (INRM) is an approach to managing natural resources that seeks to balance environmental, social, and economic objectives. INRM recognizes that natural resources are interconnected and that their management requires a holistic and integrated approach.

Integrated Water Resources Management (IWRM) is a holistic approach to water use and management as well as a systemic and sustainable approach to water resources management that takes into consideration the limited nature of water resources and the effects of negative impacts on this resource.

Sustainable Land Management (SLM) is the use of land resources, including soils, water, animals and plants, to produce goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions.

Land Degradation Neutrality (LDN) is 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. LDN is a planning principle that involves making land-use decisions according to a response hierarchy that prioritizes the avoidance of land degradation. An integrated and holistic approach is essential to achieve LDN, requiring coordination among multiple development priorities, such as food, water, and climate change, among others.

Rationale for a programmatic approach

The CAWLN program’s objective and outcomes are ambitious, but the programmatic approach (PA) represents an innovative and timely intervention, addressing the individual needs of the countries, and is well suited to the unique geographic, climatic, and current socio-political context of Central Asia. Addressing the Water-Land Nexus, including preservation and restoration of both terrestrial and aquatic ecosystems, is high on the regional and national agendas. As a result, the program is strategically designed as a regional approach, promoting shared and scalable solutions to common challenges, yet acting on national levels and responds to the understanding and commitments of national governments in Central Asia to address environmental threats and mitigate climate risks that result in land degradation, depletion of forest resources, and reduction in water sources, while also supporting the aims of a range of several international agreements and national strategies.

The PA is expected to generate impacts that will extend beyond the duration of the program, catalyzing policy reforms and driving market transformations due to several specific aspects of the program. Firstly, unlike standalone projects, the programmatic approach systematically addresses several root causes of environmental degradation in a lasting, coherent, multifactorial way. Secondly, the practical pilot activities to be carried out through the Child Projects are tailored to national priorities, which will secure and maintain interest and cooperation from the relevant national stakeholders (Table 3). Thirdly, the program views the entire watershed/water basin as a connected system and seeks to balance the needs of various stakeholders while maintaining the ecological integrity of the area. The use of IWM in particular, which involves several components, such as LDN, land use planning, water resource management, soil conservation, forestry management, and stakeholder engagement, will help achieve multiple environmental and societal benefits, making it more attractive to stakeholders.

Table 3: The child projects of the proposed programmatic approach

Child project	abbr	Funding	USD, mil	Beneficiary Countries				
				KAZ	KGZ	TJK	TKM	UZB
Coordinated Approach for Land Restoration in Vulnerable Ecosystems of Central Asia	PC	GEF LD set-aside (USD 1 mil) and IW (USD 1 mil)	2	-	-	-	-	-
Strengthening Integrated Water Management in Amu Darya, Zarafshon and Panj River Basins	ADB	GEF International Waters Focal Area	6	-	-	-	-	-
Strengthening Integrated Water Management in Syr Darya and Narin River Basins	SDB	GEF International Waters Focal Area	5	-	-	-	-	-
Sustainable land management and restoration of degraded lands mainstreaming biodiversity conservation and ecosystem services in the Southern region of Kazakhstan	KAZ	Country STAR Allocation	3.5	-	-	-	-	-
Integrated Water Resources Management for The Restoration of Agro-Woodlands in the Syr Darya River Basin	KGZ	Country STAR Allocation	3.5	-	-	-	-	-
Catalyzing the Nature-Positive Transformation of the Agricultural Sector in Turkmenistan towards Enhanced Resilience to Climate Change	TKM	Country STAR Allocation	3.784	-	-	-	-	-
Integrated Natural Resources Management for Improved Ecosystem Services and Biodiversity Preservation	UZB	Country STAR Allocation	5.6	-	-	-	-	-

Summary of Child Projects

Child project	Geographic scope	Description
Coordinated Approach for Land Restoration in Vulnerable Ecosystems of Central Asia (Program Coordination project)	Regional (All 5 countries)	<p>The Program Coordination (PC) project ensures the harmonization of activities across basins and facilitates the efficient exchange of best practices, lessons learned, knowledge, and technologies among the five Central Asian countries. Its approach is centered on IWM to align water resource management with land use, fostering transboundary dialogue and partnerships. This includes a specific focus on mainstreaming the LDN approach and supporting the achievement of LDN targets through common capacity building and the dissemination of information.</p> <p>The project forms the backbone of the entire programmatic approach, establishing the framework for watershed management in Central Asia, enhancing the effectiveness of individual child projects through coordinated and collaborative inputs, and</p>

		<p>resource pooling. It also extends the outreach of child projects through supplementary activities aiming to strengthen regional cooperation, stimulate policy harmonization, ensure knowledge dissemination, and enhance monitoring and decision-making systems through a satellite-based platform. It seeks to coordinate and enhance the collective impact of all child projects aimed at ecosystem restoration, improved natural resource management, and increased resilience in Central Asia while fostering regional cooperation and stakeholder engagement across diverse sectors. Additionally, the project incorporates a gender-responsive perspective, addressing the specific needs and strategic priorities of women in the region.</p>
<p>Strengthening Integrated Water Management in Amu Darya, Zarafshon and Panj River Basins</p>	<p>Sub regional (Amu Darya Basin: Tajikistan, Turkmenistan, Uzbekistan)</p>	<p>The Amu Darya Basin (ADB) project recognizes the interconnectedness of water, land, and biodiversity management, supporting the Program's emphasis on IWM practices to enhance the Water-Land Nexus approach. The project addresses a range of identified barriers through five components. These include fostering transboundary cooperation among riparian countries; contributing to environmental restoration, water resources conservation, and capacity-building; enhancing knowledge management; and establishing mechanisms for basin-wide joint interventions, such as shared monitoring systems and harmonizing legal frameworks at both regional and national levels. It also emphasizes the need for evidence-based solutions and approaches, aiming to develop satellite imagery-based monitoring and decision support systems and enhance stakeholder capacity for data-driven decision-making.</p> <p>Through pilot activities in targeted watersheds, this project contributes to restoring aquatic and terrestrial ecosystem services, promoting efficient water use in agriculture, and strengthening the resilience of food systems. The existing baseline investments, institutional frameworks, stakeholder engagement processes, and gender integration efforts constitute a robust foundation for the success of the ADB Project. Furthermore, the project enhances the PA's management processes at the basin level, ensuring that program impact is maximized and resources are efficiently utilized.</p>
<p>Strengthening Integrated Water Management in Syr Darya and Narin River Basins</p>	<p>Sub regional (Syr Darya Basin: Kazakhstan, Kyrgyzstan, Uzbekistan)</p>	<p>The Syr Darya Basin (SDB) project encourages transboundary cooperation and capacity building among riparian countries, leading to the development and implementation of integrated and adaptive water management strategies in the basin. Composed of four components, this project aims to restore and preserve water-related ecosystem functions in targeted sub-watersheds, and to promote sustainable agricultural practices and climate resilience. Its interventions align with the program's pathways: enhancing the policy and regulatory framework; enhancing data-driven decision-making by developing a basin-wide earth observation platform; building national capacity in using innovations; catalyzing IWM practices in land, water, and biodiversity management; supporting knowledge management, increasing public awareness and community engagement; and securing transboundary and cross-sectoral coordination.</p> <p>By establishing a Transboundary Diagnostic Analysis (TDA) linked to a Strategic Action Programme (SAP) that advocates an ecosystem-based strategy in land, biodiversity, and water resources management, the project aims to enhance food security, revitalize ecosystems, and strengthen rural livelihoods. It will build capacity in Evidence-Based and Participatory Basin Water Management by strengthening institutional capacity for</p>

		IWM implementation, harmonizing relevant national regulations, promoting sustainable land management, and developing basin monitoring and decision support systems.
Sustainable land management and restoration of degraded lands mainstreaming biodiversity conservation and ecosystem services in the Southern region of Kazakhstan	National (Kazakhstan)	<p>The proposed project in the Zhambyl region of Kazakhstan aims to combat pasture degradation and enhance biodiversity, contributing to food security and rural livelihoods. With agricultural lands spanning 4.6 million hectares, of which 77% are pastures, the region grapples with a scarcity of pastureland relative to livestock numbers, leading to overgrazing and land degradation. The project will adopt sustainable and integrated land management practices to restore pastures and decrease land degradation, thereby contributing to enhancing water land nexus in the Syr Darya basin.</p> <p>The project will strengthen institutions for sustainable production of local pasture crops, conserving biodiversity, and piloting sustainable management practices as well promote biodiversity in land management, involving revegetation and agroforestry to rehabilitate pastures and validate land management approaches. It will also develop stakeholder capacities for evidence-based decision-making through innovative technologies like unmanned aviation for monitoring and national spatial planning. A strong component on coordination knowledge management and M&E will sustain the project's impact and share findings regionally and globally.</p>
Integrated Water Resources Management for The Restoration of Agro-Woodlands in the Syr Darya River Basin	National (Kyrgyzstan)	<p>The Syr Darya Basin project in the Kyrgyz Republic (KGZ) aims to combat land degradation and promote the resilience of watershed ecosystems. This is achieved by implementing the IWM approach, enhancing the management of forests, pastures, and wetlands, and by advocating for and piloting agroforestry and agro-woodland practices in the targeted sub-watersheds of the Syr Darya Basin.</p> <p>The project focuses on IWM to enhance food security, ecosystem vitality, and meet environmental targets. The project advocates for a comprehensive ecosystem management approach that includes both water and land management, seamlessly aligning with the objectives of the regional program. It promotes regional knowledge exchange and national capacity building through national workshops and training in agroforestry and agro-woodlands management. It will document relevant activities, share findings, and promote successful strategies, emphasizing community benefits and ecosystem services to ensure the widespread adoption and institutionalization of sustainable practices. It also emphasizes gender equity and stakeholder involvement, with a gender action plan to address the diverse needs of the community.</p>
Catalysing the Nature-Positive Transformation of the Agricultural Sector in Turkmenistan towards Enhanced Resilience to Climate Change	National (Turkmenistan)	The project in the Lebap Province of Turkmenistan (TKM) aims to enhance the resilience of watershed ecosystems and promote sustainable agricultural practices in response to climate change and resource degradation. The project's activities are multifaceted and grounded in a WLN approach that integrates land and water management. It supports Turkmenistan's national frameworks for sustainable development, climate change mitigation, biodiversity preservation, and land and water management, focusing on capacity building and infrastructure development. Community engagement and stakeholder participation are crucial components of the project, with a strong commitment to gender integration and empowerment.

		<p>The project will work with government bodies to foster a transformative shift in the agricultural sector towards climate-resilient and nature-positive practices. This includes enhancing regulatory frameworks, institutional capacities, and awareness, establishing councils for project oversight, and implementing pilot projects to demonstrate sustainable practices. It will create an agricultural landscape resilient to climate shocks and sustain food production and it will increase climate change resilience, contribute to achieving LDN, enhance IWM approach, and reduce GHG emissions and it is expected to deliver substantial environmental benefits by promoting nature-positive transformation at the local level and long-term strategies at the institutional level and to foster systemic change in Turkmenistan's agricultural sector.</p>
<p>Integrated Natural Resources Management for Improved Ecosystem Services and Biodiversity Preservation</p>	<p>National (Uzbekistan)</p>	<p>The project operating in Uzbekistan's portion of the Amu Darya and Syr Darya Basins (UZB) is designed to protect the water supply, agriculture, and ecosystem health. This initiative comprises five interlinked components that promote systemic solutions for environmental sustainability and resilience, in line with the PA's WLN approach. The project is dedicated to mitigating ecosystem degradation by implementing sustainable land and water management, diversifying agricultural practices, and restoring genetic diversity in agroecosystems. It tackles land degradation and water scarcity by encouraging efficient irrigation and integrated water resource management. Additionally, it confronts unsustainable agricultural practices by promoting climate-resilient crops and farming methods, thereby mitigating associated challenges.</p> <p>Planned pilot initiatives will demonstrate the viability of sustainable agricultural and ecosystem restoration practices. The project places a strong emphasis on developing and adapting innovative, evidence-based solutions, such as establishing a National Satellite Monitoring System, to enhance technical expertise. Furthermore, the project initiates gender-integrated, multi-stakeholder mechanisms and builds local capacity to facilitate the adoption of best practices. The experiences and lessons learned will be disseminated throughout the Central Asian region as part of the dedicated PA's components.</p>

Stakeholder approach

A key pillar of the CAWLN program is its engagement with a spectrum of stakeholders. National governments and their sector ministries and agencies (notably agriculture, water, food, environment, energy) are the key stakeholder group given their national remit governing water, land and natural resources. Other key stakeholders include local communities and grassroots organisations, the private sector (particularly the agri-food sector), NGOs (including environmental management groups), regional coordination mechanisms, and international agencies (especially those leading relevant baseline projects – see baseline section above). The roles of these groups are complementary with governments providing policy and regulatory support, communities acting as stewards of local resources, the private sector driving innovation and investment, NGOs facilitating knowledge sharing and capacity building, and international agencies providing technical expertise and financial support. Consultations with the key stakeholders were carried out during the design of the program, but more in-depth consultations will take place during the PPG phase (see Section D).

During the preparation of the program, there was specific discussion on the role and level of involvement of the private sector. Although the participating countries agreed that the private sector needed to play a significant role in the program, discussions on how and to what degree they should be involved were deferred to the PPG phase. During the PPG, a private sector engagement plan for the program (including national and regional action) will be developed.

Gender approach

Access to and control over ecosystems services often differ between genders – in other words, women and men derive different benefits from ecosystems services, both of which are critical for livelihoods and household wellbeing. For instance, purely economic or biophysical valuations of ecosystem services may not recognize the essential non-cash role that medicinal plants and non-timber forest products provide women and their households unless they are sold. Consequently, a key dimension of the CAWLN program is anchored in understanding how gender roles and gaps are linked to natural resource use and addressing these. In particular, the program will act to reduce gender gaps in accessing ecosystem services from land and water, as well as measures to ensure women are able to make an equal contribution to shaping land-water decision-making processes.

Theory of Change

The proposed “Central Asia Water and Land Nexus for Ecosystem Restoration, Improved Natural Resource Management and Increased Resilience” (CAWLN) program aims to enhance an integrated water-land nexus approach and its

implementation for strengthening water security, increasing resilience, and improving rural livelihoods in the Amu Darya and Syr Darya river basins.

The program aims to:

- **Decrease water consumption in the irrigation-based agricultural sector through a set of interventions, including improvement of irrigation efficiency and promoting drought resilient crop types.**
- **Improve water generation functions in the terrestrial ecosystems through a set of interventions, including various Land Degradation Neutrality (LDN) activities, reforestation, and improvement of pastures.**

It is expected that developing an improved enabling environment for application of the water-land nexus approach and demonstrating the efficiency and feasibility of selected IWM interventions tailored to the two basins will encourage the scaling-up of the successful practices both within national boundaries and across the wider transboundary ecoregions and the mainstreaming of LDN into national planning processes.. Adopting IWM as the guiding approach for the program in the Amu Darya and Syr Darya river systems will help maintain adequate water supply for the regional irrigation-dependent agri-food systems, enhance the resilience of natural ecosystems, agriculture and associated human communities to climate change and anthropogenic impacts.

Theory of Change Program areas of focus and pathways and Theory of Change

The program will focus on:

- **Supporting the adoption of effective evidence-based practices for the integrated management of natural resources in both Amu Darya and Syr Darya river basins, including irrigation networks and associated water catchment areas, that address local, national and regional environmental and socio-economic (including gender-related) challenges; and**
- **Stimulating cooperation and intersectoral dialogue among riparian countries to improve transboundary policy frameworks and supporting governance mechanisms addressing the use and management of scarce shared water sources.**

The CAWLN program will work on three levels to enhance the IWM approach: regional (entire CA); river basin (subregional); national and local (subnational). The achievement

of the overall program goal is contingent on the realization of individual outcomes, identified to overcome the barriers that hinder application of the water-land-nexus approach and effective measures to address the unsustainable use of water, land and natural resources in Central Asia and improve water security, resilience and rural livelihoods in the Amu Darya and Sir Darya river basins. Each barrier requires a suite of coordinated interventions along specific pathways to initiate and sustain a transformative and sustainable change. These pathways, incorporating IWM principles, are outlined below

Pathway (P)1. Enhancing policy and regulatory frameworks for integrated and participatory natural resource management. Gender sensitive regional and national policies as well as national action plans in natural resource management, particularly related to water generation and conservation will be reviewed and efforts to harmonize them made.

P2. Enhancing data-driven decision-making through adoption of Earth Observation Platform (EOP) technologies with associated national capacity building in using these innovative systems. The latest technologies on earth surface observation will be employed to develop national tailored monitoring platforms and Decision Support System (DSS) and associated technical capacity building will be provided.

P3. Catalyzing integrated watershed management (land, water, biodiversity) practices. Assistance will be provided in piloting new approaches and scaling up the successful experiences of restoration of degraded lands, increasing water availability and its effective use, climate change adaptation, and achieving land degradation neutrality in vulnerable ecosystems relevant to the region's water-land nexus, taking into consideration gender specificities.

P4. Supporting gender-sensitive knowledge management, increasing public awareness and community engagement. Lessons learned and best practices will be collected and distributed to relevant stakeholders for further scaling up across the ecoregions and boundaries.

P5. Securing transboundary and cross-sectoral coordination. A range of activities will be carried out to foster and support transboundary and cross-sectoral cooperation, including, but not limited to, activities such as child projects coordination, joint workshops, and exchange visits. All these activities will take into consideration the different needs of men and women in the region.

Each Program's pathway is designed to help countries overcome the barriers identified above through interventions on various levels delivered through national and regional projects (Table 3). A pathway aims to complete one or several outcomes. Causal chains along some pathways are reflected in Figure 6 in different colors.

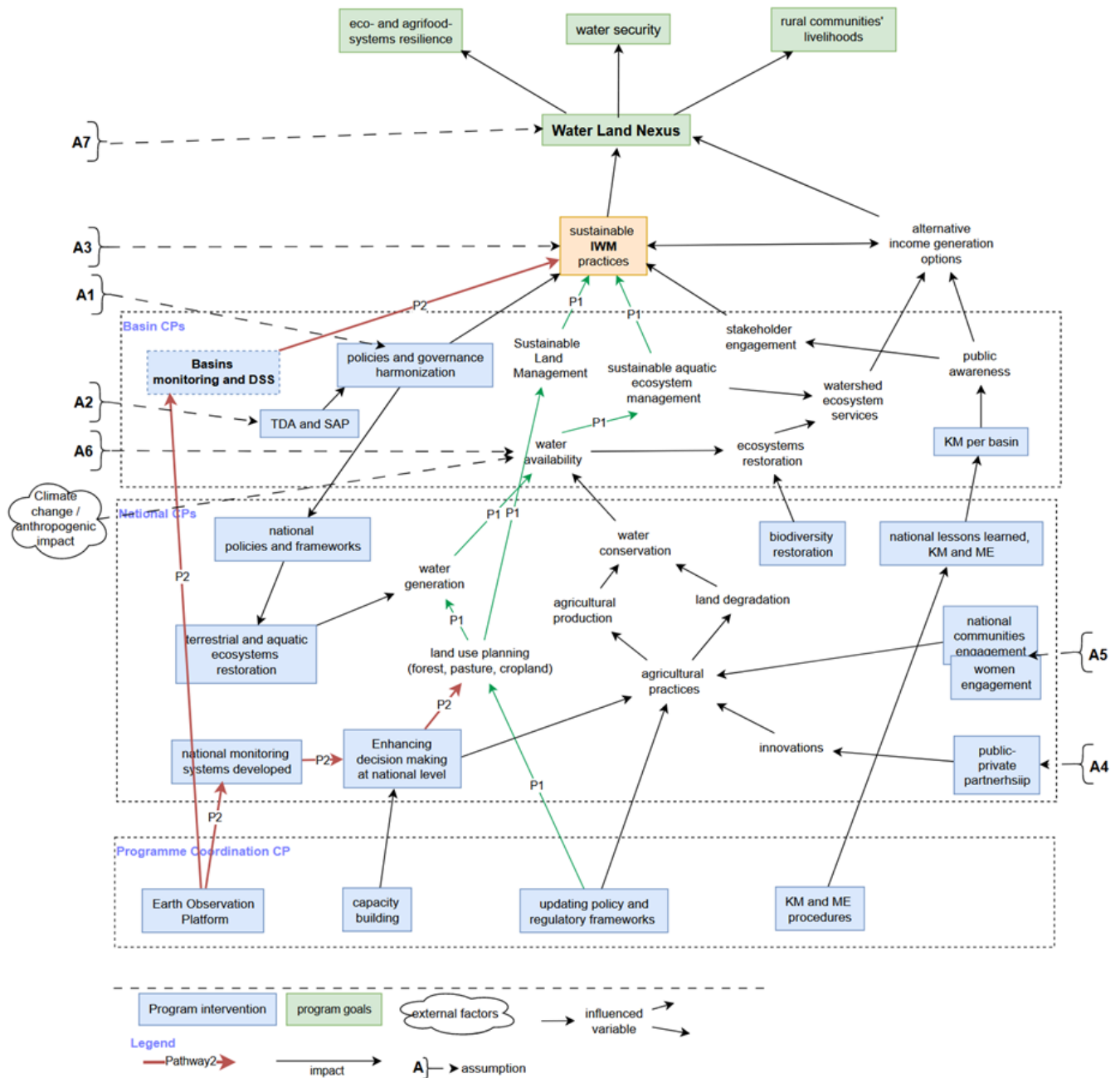


Figure 6: Cascading ripple effects through the intervention pathways towards the overarching Programmatic Approach (PA) goal.

Figure 7 represents the program's overall Theory of Change, connecting the baseline with the outcomes and the program's overall goal through the national and regional interventions within the pathways described above. However, successful intervention requires meeting a range of conditions. The programmatic approach is designed to foster and secure some of these conditions by enabling the necessary environment for the planned interventions. However, some factors lie beyond the immediate control of the CAWLN program, which are captured as assumptions on which successful achievement

of outcomes rests. An initial set of assumptions that apply at the program level is identified below (and position along various casual chains shown in Figure 6).

- A1) The Central Asian countries agree to engage in regional discussions to develop a shared vision for the conservation and management of their common transboundary water resources.**
- A2) Necessary data and scientific analyses will be accessible to guide the identification of shared threats, develop effective responses and execute management measures.**
- A3) The respective governments maintain the current national priorities, including prioritizing sustainable water and land resources management, and continue to set aside necessary funding (dedicated budgets) for the implementations of the suggested interventions.**
- A4) The private sector and other stakeholders can actively participate and cooperate in achieving the objectives outlined in the programmatic approach.**
- A5) Women and other underrepresented groups will be sufficiently involved, playing a vital role in the productive use and management of water resources.**
- A6) The current climate change trends remain as they are now or will not significantly worsen in the immediate future.**
- A7) The level of political and socio-economic stability in the region remains at the same level or is reduced.**

These assumptions will be further analyzed during the PPG phase, and additional assumptions may be formulated/identified.

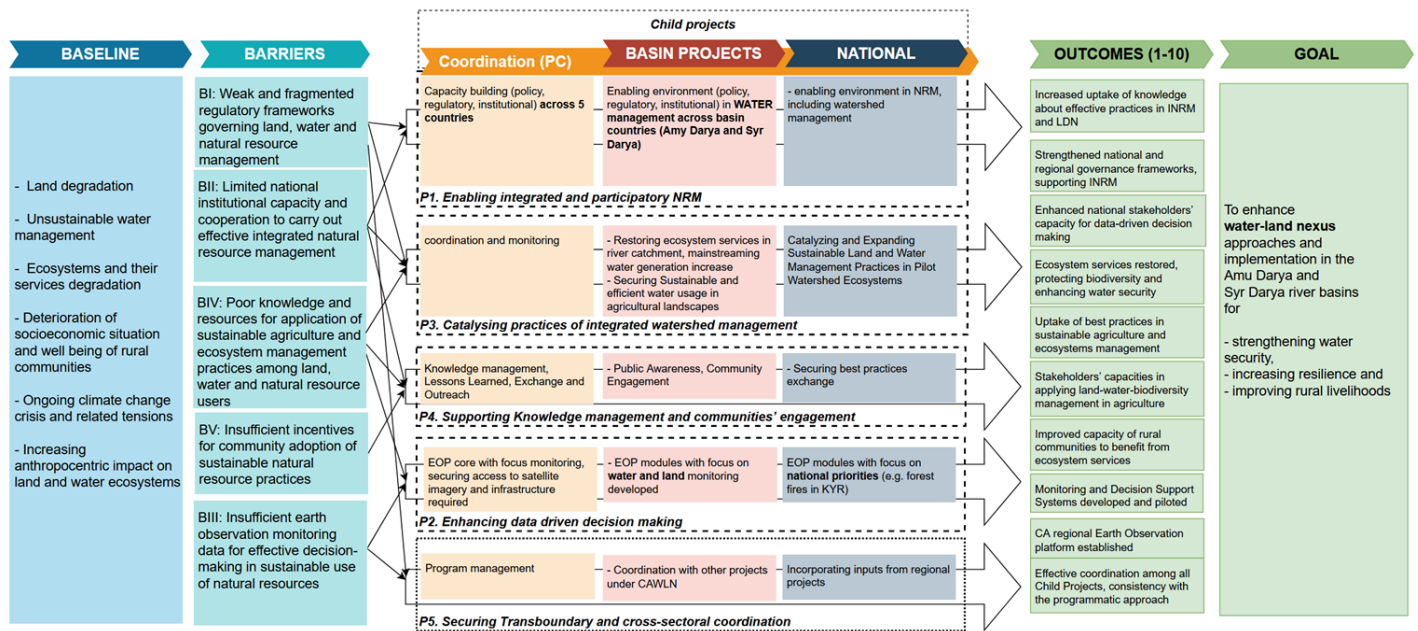


Figure 7: The program's pathways and other foundational elements, linking identified barriers to desired outcomes through a series of interventions carried out within individual child projects. The illustration is provisional and will be updated during the PPG phase.

Program components

Following an integrated approach, and ensuring both transboundary and cross-sectoral cooperation, the program consists of three major interlinked elements (Figure 8).

I. An overarching regional Program Coordination (PC) project for ensuring harmonization of activities across the basins, and efficient exchange of the best practices and lessons learned, knowledge and technologies among the five Central Asia countries. The PC project will also have a specific focus on supporting the mainstreaming the LDN approach and the achievement of LDN targets through shared capacity building activities and disseminating information regarding best practices in the implementation of LDN practices. The PC project will serve all five targeted countries in Central Asia and is supported by LD and IW GEF funds.

II. Two GEF International Waters (IW) sub-regional projects; one on the Amu Darya basin (ADB – covering TJK, TKM and UZB) and another for the Syr Darya basin (SDB – covering KAZ, KYR and UZB). These projects will focus on enhancing sustainability of water resources use and associated agri-food systems through integrated water, land,

and biodiversity management and through pilot interventions on national levels, and will have a special focus on fostering transboundary cooperation among countries at the basin level.

III. Four national projects that will address unsustainable agriculture and natural resource management practices affecting water generation, use and conservation of ecosystem services and biodiversity, including, but not limited to, practices causing deforestation, land degradation, biodiversity loss, and ecosystems services deterioration.

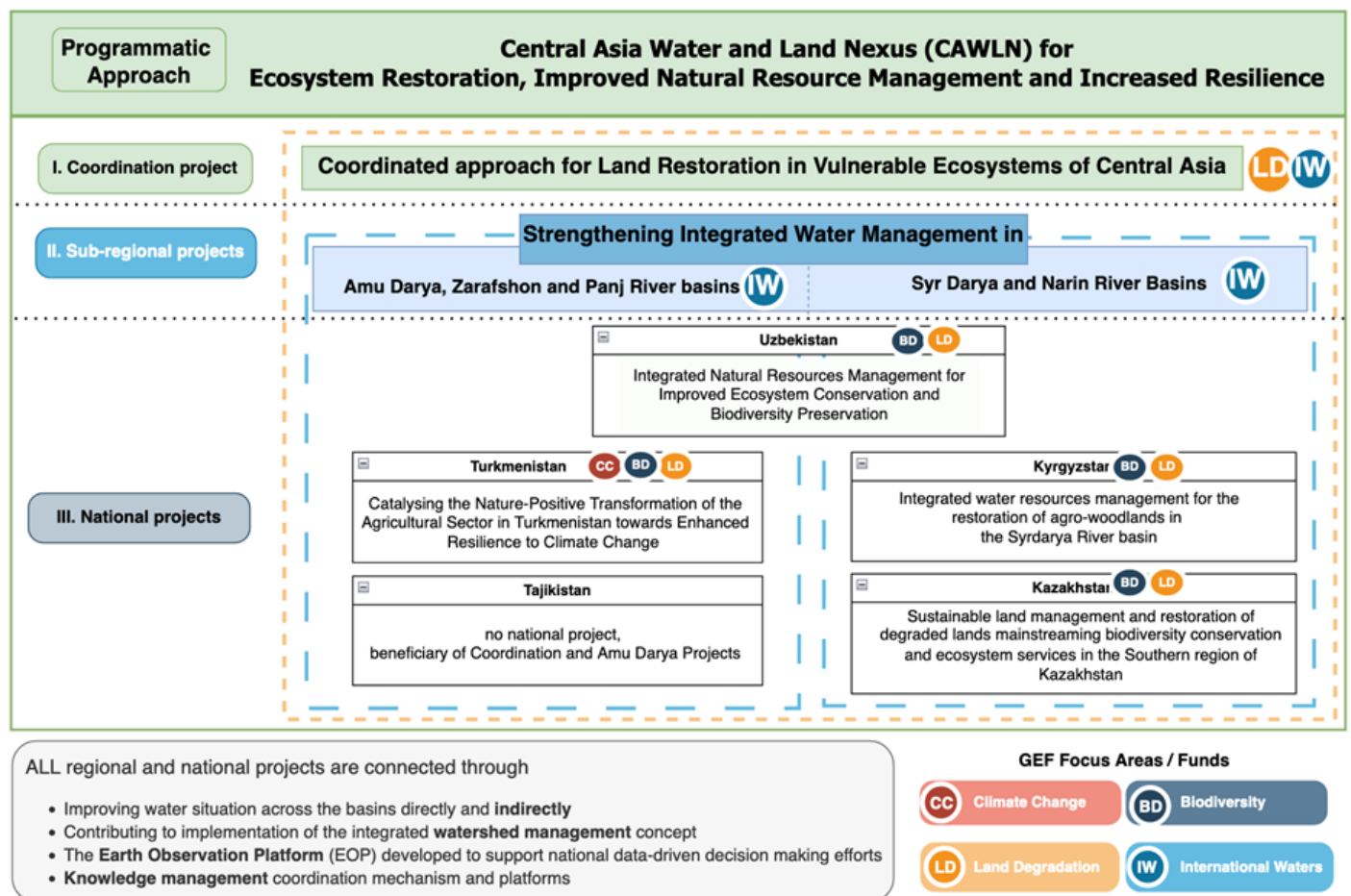


Figure 8: Hierarchy of child projects (CP) in the CAWLN programmatic approach (PA)

The structure of the programmatic approach and the relationship with child projects' activities (Figure 8) are defined by the intervention pathways outlined in Figure 7.

As outlined above, the maintenance and recovery of vital ecosystem services, which are crucial for enhancing the resilience of agri-food systems, hinge on the successful application of IWRM, SLM^{[4]⁵⁶}, and other related frameworks^{[5]⁵⁷} within an overall Integrated Watershed Management (IWM) approach.

To meet its goals, the CAWLN program will work on strengthening the institutional, legal, and technical capacities of all five countries in integrated water and land use management in the region's shared basins. Depending on the context in each country, the program will implement an array of IWRM and LDN interventions. Among other activities, the program will employ tools for scientific, evidence-based decision-making; develop and promote cost-effective and nature-based solutions into soil and water conservation across the region; promote the introduction of integrated agroforestry systems; identify, pioneer, and assess the feasibility of various practices for effective water and land management including for restoration of degraded pastures and sustainable afforestation and reforestation in catchments particularly in riparian areas; and undertake capacity development and dissemination of best agricultural practices.

Special emphasis will be placed on efforts to restore and enhance ecosystem services to procure socio-economic and gender-responsive benefits for local communities. Improving resource use efficiency, advocating affordable, locally appropriate, nature-based solutions, and rehabilitating degraded ecosystems—including their goods and services—will be pivotal in advancing poverty eradication in rural areas, which is a high priority for Central Asian countries.

Initiatives that stimulate public-private partnerships, aimed at catalyzing alternative income generation and innovation, will be supported. Market and socio-economic assessments undertaken under the program will pave the way for the development and stimulation of new value chains, coupled with the expansion of market access.

The Program aims to advance both the pioneering and uptake of technological innovations in water and land use monitoring and management in the Central Asia region, including the integration of early warning systems developed to meet national priorities (e.g., forest fire risk in Kyrgyzstan), and leverage the latest advancements in evidence-based decision-making and lessons from past collaborative efforts of FAO and partner institutions (e.g., CACILM I/II and other GEF projects with substantial technological components).

Furthermore, global best practices in citizen science and crowdsourcing innovations will be pioneered following thorough feasibility assessments and tailoring exercises. These

will foster participatory processes and are geared towards bolstering monitoring of degraded ecosystems, as well as supporting other key IWRM and LDN components.

The Program will foster a dynamic exchange of knowledge, experiences, and best practices among national and international stakeholders, alongside capacity building in implementing IWM and LDN. The Program builds upon the extensive information base developed under the GEF International Waters Focal Area (e.g., IW:LEARN^[6]), but will also contribute to the IW:LEARN knowledge base and engage in IW:LEARN-led activities (ring-fenced funds will ensure this).

It should also be highlighted that the program's will support: (i) equitable access to natural resources, (ii) equitable participation and decision-making in environmental planning and governance at all levels, (iii) equitable access to socio-economic benefits and services, and (iv) improved state of knowledge relating to the land-water-gender nexus in Central Asia, taking into consideration gender specificities.

Structure

The CAWLN Program is divided into five interconnected components, each having distinct targeted outcomes and employing specific types of interventions (Table 4):

- 1) **SUPPORTING KNOWLEDGE MANAGEMENT AND PROGRAM COORDINATION**
- 2) **ENABLING INTEGRATED AND PARTICIPATORY WATERSHED MANAGEMENT**
- 3) **ENHANCING DATA-DRIVEN DECISION MAKING**
- 4) **ENHANCING SUSTAINABLE LAND MANAGEMENT**
- 5) **PROTECTING ECOSYSTEM SERVICES**

Table 4: Program Components and corresponding outcomes

Program Objective:	Enhance water-land nexus approaches and their implementation for strengthening water security, increasing resilience and improving rural livelihoods in the Amu Darya and Syr Darya river basins		
Program Components	Program Outcomes	Child projects	Funds
1. Supporting Knowledge Management and Program Coordination	<p>O1. Effective coordination among all Child Projects, consistency with the programmatic approach objectives, and synergies among projects and partners, ensured.</p> <p><i>Indicators</i>^{[7][58]}</p> <ul style="list-style-type: none"> Program monitoring system successfully developed and periodically reporting (every six months) on the progress of the Program as a whole, and of child projects 	PC	IW, LD
	<p>O2. Increased uptake of knowledge and lessons learned about gender-equitable effective practices, solutions, and innovations for nature-positive transformation and adoption of INRM and LDN.</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of publications documenting the knowledge generated across the portfolio of interventions Number of awareness raising communication tools at regional and global levels on the objectives, progress and accomplishments of the Program Number of stakeholders that access new contents, material or other kinds of knowledge shared 	All CPs	IW, LD
2. Enabling integrated and participatory watershed management	<p>O3. Strengthened national and regional governance frameworks^{[8][59]} and mechanisms, supporting INRM and promoting harmonized, gender mainstreamed policies and standards across the sectors and countries.</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> TDA^s updated for the Syr Darya basin and developed for the Amu Darya Basin, including gender and water-land nexus considerations 	<p>All CPs, but PC.</p> <p>Grouped by basins:</p> <p>AD (ADB,TAJ, TKM, UZB)</p>	IW, LD

	<ul style="list-style-type: none"> • <i>2 gender sensitive Strategic Actions Programmes (SAPs) that are developed (one for each of the river basins)</i> • <i>Number of harmonized policy instruments facilitated and adopted</i> <ul style="list-style-type: none"> - Count of legal agreements signed: This could include treaties, MOUs, and other formal agreements that facilitate cooperation and collaboration between different regions or countries. - Number of policies, guidelines, or standards revised or developed: To reflect the harmonization, policies might be revised to incorporate elements that facilitate integrated management, or new ones could be developed. • <i>Rate of stakeholder engagement and consensus in policy harmonization processes</i> <ul style="list-style-type: none"> - Stakeholder satisfaction rate: After engagement activities, stakeholders – disaggregated by gender – could be surveyed to identify areas they consider to be improved through the harmonization processes and areas that would benefit from further improvement and possible methods to overcome bottlenecks. - Representation of women and underrepresented groups: Recording the representation statistics of women and underrepresented groups in the stakeholder engagement processes to ensure inclusivity. • <i>Number of capacity-building initiatives implemented to support policy harmonization</i> <ul style="list-style-type: none"> - Training sessions held: The number of training sessions, workshops, or webinars that are aimed at building capacity for harmonized policy implementation. - Knowledge and skills enhancement: Through pre- and post-training assessments, measuring the enhancement in knowledge and skills of the participants to gauge the effectiveness of capacity-building initiatives. 	SD (SDB,KAZ, KGZ, UZB)	
	<p>O4. Enhanced stakeholders’ capacities in applying integrated and gender-responsive land-water-biodiversity management in agriculture in accordance with national priorities</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> • <i>Number of trained stakeholders on gender-responsive land-water-biodiversity management in agriculture</i> 	All but PC	IW, LD
3. Enhancing data-driven decision making	<p>O5. CA regional satellite imagery-based Earth Observation platform established as a foundation for basin and national monitoring systems</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> • <i>Platform(s) established</i> 	PC, ADB, SDB	IW, LD
	<p>O6. Tailored to national priorities, satellite Imagery-Based Monitoring and Decision Support Systems for water, land, agriculture, and biodiversity, including early warning systems, developed and piloted</p> <p><i>Indicators</i></p>	All but PC	BD, CC, IW, LD

	<ul style="list-style-type: none"> Number of DSS designed and operative 		
	<p>O7. Enhanced national stakeholders' capacity for data-driven decision making, leveraging geospatial technologies and other innovations.</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of trained stakeholders on data-driven decision making disaggregated by gender 	All national	BD, CC, IW, LD
4. Enhancing SLM	<p>O8. Uptake of innovation-based and gender-responsive solutions and best practices in sustainable agriculture and ecosystems management, including <i>multi-stakeholder mechanisms</i>^{[9]⁶⁰}, incentives, and actions to enhance VGGT alignment towards achieving LDN, catalyzed and facilitated</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of innovations adopted in sustainable agriculture and ecosystem management Area of land and ecosystems under restoration (hectare) Area of landscapes under improved practices (hectare) Number of beneficiaries able to use new solution and best practices 	All but PC	BD, CC, IW, LD
5. Protecting ecosystem services	<p>O9. Aquatic and terrestrial ecosystem services improved, protecting native biodiversity and enhancing water generation and quality in targeted river catchments</p> <p><i>Indicators</i></p> <ul style="list-style-type: none"> <i>Extent of restored habitats (aquatic and terrestrial)</i> <ul style="list-style-type: none"> Number of restored habitat sites Area of landscapes under improved practices (hectare) <i>Biodiversity indicators</i> <ul style="list-style-type: none"> Biodiversity trends: Tracking in the project area using monitoring tools (e.g. satellite imagery) to understand the impact of the restoration activities. <i>Ecosystem service valuation</i> <ul style="list-style-type: none"> Economic valuation of ecosystem services: Conducting studies to estimate the economic value of the ecosystem services provided by the restored habitats. Community perception of ecosystem services: Surveying local communities to understand their perception of the changes in ecosystem services using gender sensitive methodologies. 	KAZ, KGZ, UZB	BD, CC, IW, LD
	<p>O10. Improved capacity of rural communities, including women and youth, to benefit from ecosystem services in a sustainable manner</p>	All but PC	BD, CC, IW, LD

	<p style="text-align: center;"><i>Indicators</i></p> <ul style="list-style-type: none"> • <i>Level of Community Knowledge and Understanding</i> <ul style="list-style-type: none"> - Number of training programs, workshops, etc., disaggregated by gender. - Number of trained people disaggregated by gender • <i>Sustainable Utilization of Ecosystem Services</i> <ul style="list-style-type: none"> - The number and scale of sustainable harvesting practices adopted by the communities. • <i>Economic Benefits</i> <ul style="list-style-type: none"> - Assessment of the increase in community income derived from sustainable use of ecosystem services disaggregated by gender. • <i>Access to and Control Over Ecosystem Services</i> <ul style="list-style-type: none"> - The establishment and functioning of gender-responsive legal frameworks that regulate/grant communities access rights to local ecosystem services. • <i>Gender inclusivity: Measuring the extent to which women and underrepresented groups benefit from ecosystem services</i> 		
Monitoring and Evaluation	<p>Output. Effective Monitoring, Evaluation and Coordination systems are established; both by the project management units at each child project level and at the Program Level under the Coordination Project.</p> <p style="text-align: center;"><i>Indicators</i></p> <ul style="list-style-type: none"> • <i>Annual Project Implementation Reports</i> • <i>Mid-Term Evaluation Reports</i> • <i>Terminal Evaluation Reports</i> 	All	BD, CC, IW, LD

Component 1: Supporting Knowledge Management and Program Coordination

This Component acts as a fundamental pillar for supporting the programmatic approach, establishing the framework for a harmonized approach to watershed management in Central Asia, enhancing the effectiveness of individual child projects through coordinated and collaborative inputs and resource pooling. Most activities under this component are delivered through the regional Program Coordination (PC) project. The main goals of Component 1 are:

- **To orchestrate a coordinated deployment of the CAWLN programmatic approach, catering to common needs while encouraging transboundary cooperation; and,**
- **To foster seamless coordination and knowledge management across the CAWLN child projects, leveraging collaborative learning and regional cooperation to support the sustainable growth and resilience of agri-food systems in Central Asia.**

Component 1 largely comprises the activities in the PC project and complimentary activities under the child projects, such as enhancing opportunities for intra-regional learning, multiplying child projects' outreach through supplementary activities, fostering intergovernmental cooperation, shared use of common Monitoring and Evaluation (M&E) tools and geospatial services, promoting common best practices in water and land management, and developing portfolio-wide training and communication strategies. These will help maximize the effectiveness of the individual child projects. Coordination with, and inputs to, the IW:LEARN program will be established under this Component to strengthen learning, transfer of best practice and knowledge management.

Core interventions

- **Program Monitoring and Evaluation.** A robust monitoring and reporting mechanism will be established to assess the program's progress, focusing on key areas such as ecosystem restoration, integrated watershed management, LDN and gender equality.
- **Regional Awareness and Knowledge Dissemination.** A focused gender-responsive communication strategy leveraging modern approaches and tools (such as an interactive platform for sharing knowledge, knowledge hubs, e-learning platforms) will be developed and implemented to raise regional awareness of the program's objectives and results, thereby promoting a cohesive understanding for the CAWLN initiative and its impact. Also, knowledge products tailored for youth audience will be prepared to engage the younger generation in the relevant regional and national processes.

The results, experiences and lessons learned, including those from specific gender assessments and best practices to advance gender equity generated from the child projects will be used to inform region-wide discussions to support the development of agreements on water-land nexus actions among regional and national stakeholders. Support for government stewardship of relevant national platforms developed during the program, laying a strong foundation for their long-term sustainability, will also be a target for action under this Component.

Component 1 will assist in scaling up the successful practices identified as most suitable for specific ecoregions in Central Asia, which spread across national boundaries in the two river basins. Under this Component, a digital platform will be developed for facilitating integrated knowledge exchange, disseminating lessons learned, and fostering a community of practice.

Expected Outcomes:

- O1 Effective coordination among all Child Projects, consistent with the programmatic approach objectives, and synergies among projects and partners ensured.**

- O2 Increased uptake of knowledge and lessons learned about effective and gender-equitable practices, solutions, and innovations for nature-positive transformation and adoption of INRM and LDN.**

This component will contribute to the achievement of Core Indicators 7 and 11, including 10% of the CI 11 targets.

Component 2: Enabling Integrated and Participatory Watershed Management

This Component aims to enable a comprehensive and collaborative environment for integrated watershed management at subregional, national, and local levels. Through a combination of activities that will support strategic planning, community engagement, and sustainable practices, Component 2 will strengthen land and water governance and reduce water insecurity, in alignment with national, regional, and global sustainability goals. IFAS will be an important partner on the execution of this Component, supporting the program’s regional efforts. By considering the wider international policy landscape and integrating diverse stakeholders, such as national and local government, affected communities and local NGOs into the process, the program will effectively identify and address gaps in land and water governance and capacity development. This Component will address the immediate challenges at national and local scale while at the same time ensuring the long-term sustainability of water resources at the regional level. Special focus will be given to considering the interdependencies of ecological and social systems, to progress towards an integrated watershed management strategy that enhances ecosystems services and promotes the well-being of local populations. The governments and their agencies will also play a key role in the implementation and coordination of national actions and, when possible, ensure key sectors and stakeholders, including local government and communities, participate in the decision-making process.

The main goals of this Component are:

- To strengthen land and water governance frameworks at regional, national, and local levels; and
- To develop stakeholders' knowledge and skills necessary to effectively apply integrated land-water-biodiversity management practices in their contexts.

The two regional (transboundary) projects in Amu Darya and Syr Darya Basins, as well as the four national child projects, will directly contribute to the achievement of the component's outcomes.

Core interventions

- **Enhancing policy and regulatory frameworks.** The program will analyze and enhance existing land and water governance frameworks, including ensuring incorporation of gender assessments, at national and regional levels to identify gaps and areas for improvement in policies and mechanisms that support Integrated Natural Resources Management (INRM) at the regional level.
- **TDA and SAPs.** Developing and/or updating the existing Transboundary Diagnostic Analysis (TDA) for each basin and formulating two Strategic Action Programs (one for Syr Darya and one for Amu Darya).
- **Capacity building.** Training programs, targeting government officials, communities, and organizations (including civil society organizations), will be implemented that address common challenges in the region, aligned with national and regional commitments, promoting the documentation and scaling-up of gender-mainstreamed sustainable land and water management practices that enhance ecosystem services and benefit local populations.

Expected Outcomes

O3 Strengthened national and regional governance frameworks and mechanisms, supporting INRM and promoting a harmonized, gender mainstreamed approach and standards across the sectors and countries.

O4 Enhanced stakeholders' capacities to apply integrated and gender-responsive land-water-biodiversity management in agriculture in accordance with national priorities.

This component will contribute to the achievement of Core Indicators 7 and 11, including 10% of the CI 11 targets.

Component 3: Enhancing data-driven decision making

Component 3 aims to strengthen evidence-based decision-making in Central Asia. Building on the successful outcomes of previous projects and experiences in the region undertaken by FAO, GEF, and other partners^{[10]⁶¹} (see baseline section above), this Component will promote the use of geospatial data by decision-makers through efforts to support cloud computing and development (with partners) of decision-support systems owned by national stakeholders. Easy access to such tools, relevant context and validated maps will help prioritize areas for different interventions, support the water and land-use planning process and optimize investments and the implementation and scaling up of IWM practices.

The satellite imagery will be used by child projects for developing monitoring tools, decision-support mechanisms and early warning systems tailored to the national needs and priorities (Table 5). For this Component, the National Hydrometeorological Services^{[11]⁶²} from the five countries will play a leading role to ensure both national coordination among different sectors and harmonization of data collection and data analysis, as well as regional coordination, by sharing lessons learnt and harmonizing methodologies and practices.

Table 5: Possible national tools to be developed using the regional Earth Observation Platform, as discussed with national agencies during the program proposal preparatory stage

Country	Potential Earth Observation tool	Interested National Agency
Kyrgyzstan	Real-Time Deforestation Monitoring System	Ministry of Agriculture, Forestry Department
Kyrgyzstan	Forest Fire Early Warning System	Ministry of Agriculture, Forestry Department
Turkmenistan	Water use for irrigation by farmers assessment	Ministry of Agriculture, Water Department

Both free, open-source and commercial data will be utilized. Where relevant, access to imagery from the leading commercial providers (such as Airbus, MAXAR, Planet) will be facilitated and brokered through an open competition basis^{[12]⁶³}. Satellite data is

becoming increasingly accessible, diverse, and affordable^{[13]⁶⁴}, in the **satellite imagery industry, while skills in data processing are becoming an important asset.**

Emphasis will be placed on building national capacity to utilize the latest technologies available and on developing national products instead of purchasing third-party, ready-to-use products (thus also helping to further build national capacity in the use of spatial data for decision-making). To support the program's sustainability, the component will also, develop a strategy to engage national youth and academic centers in using satellite imagery-based earth monitoring and in developing decision support tools.

Component 3 will also ensure that the relevant knowledge that is generated by each Child Project using geospatial information is accessible in a transparent and easy-to-use way so that national stakeholders can base their decisions on reliable evidence.

In this way, the main goals of this Component are:

- To facilitate participatory evidence-based decision-making and gender-mainstreamed collaborative processes in the region by integrating diverse data sources and technologies, which will help foster synergies required for successful IWM; and
- To enable easy access to relevant information to stakeholders and foster their skills in data use (considering gender-based differences and targeting different needs and gaps), thereby supporting informed decision-making and planning across sectors and by the diverse range of stakeholder groups that are needed for effective IWM.

Core interventions

- Conducting institutional needs and capacity assessments, including a gender assessment, to support national priorities related to IWM decision-making.
- Facilitating access to geospatial imagery and building national capacities in data storage, processing and analysis of such information.
- Supporting participatory data collection and analysis, while ensuring the gender mainstreaming of definitions and analysis of the data.
- Co-developing tools and systems that enable easy access to the results of monitoring.

- **Training end users in the use of developed tools and interpretation of satellite imagery-based knowledge products.**
- **Developing and operationalizing a Regional Earth Observation Platform, to be done in partnerships with regional and national stakeholders and global leaders in Information and Communication Technologies (ICT), and to serve as a central hub for hosting systems tailored to specific national needs and supporting national and regional IWM interventions.**

Expected Outcomes

O5 A Central Asia regional satellite imagery-based Earth Observation Platform established as a foundation for river basin and national monitoring systems.

O6 Satellite Imagery-Based Monitoring and Decision Support Systems for water, land, agriculture, and biodiversity, including early warning systems, developed and piloted, tailored to national priorities.

O7 Enhanced national stakeholders' capacity for data-driven decision making, leveraging geospatial technologies and other innovations.

This component will contribute to the achievement of Core Indicators 7 and 11, including 10% of the CI 11 targets.

Component 4: Enhancing Sustainable Land Management

Component 4 aims at enhancing Sustainable Land Management to avoid, reduce and reverse land and, correspondingly, through the causation chain, water degradation in the AD and SD basins. Under the Water-Land Nexus (WLN) approach (shown in Figure 5) adopted by this proposal, Sustainable Land Management (SLM) is a crucial pillar of Integrated Watershed Management, and essential for advancing towards the Water-Land Nexus. This Component aims at scaling up SLM and achieving LDN in the region and will involve local government and local communities, paying special attention to both men and women's needs, in the planning process of the interventions. All the interventions activities will be carried out in a gender-sensitive manner, using participatory methodologies to assure the ownership of the interventions by the beneficiaries.

All four national projects will directly contribute to this program Component, which aims to catalyze the application of innovative solutions for preserving the vital ecosystems services provided by water, land and biodiversity, by integrating biophysical, socio-cultural, and economic needs and values.

Depending on the context, SLM practices will aim to restore and sustainably manage services and functions of the targeted terrestrial ecosystems and agri-food systems in targeted watersheds. These practices will provide nature-based solutions to simultaneously address desertification, land degradation, and drought. Additionally, they will support climate change adaptation and mitigation, while achieving co-benefits, such as protecting biodiversity and preserving the quantity and quality of soil and water resources. The CAWLN program will also promote monitoring of pesticide usage and advocate for the adoption of safer, more sustainable pest management practices (such as integrated pest management strategies).

The objectives and interventions of the CAWLN's child projects will be aligned with the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests (VGGT)^{[14]⁶⁵}, which provide a robust framework to improve governance structures surrounding land and natural resource tenures. This harmonization will foster more sustainable land and water management practices, ensuring equitable resource allocation and promoting environmental stewardship in line with international standards^{[15]⁶⁶}.

The main goals of this Component are:

- To catalyze innovative nature-based solutions and SLM best practices that integrate land and water needs to combat desertification, land degradation, and drought while supporting climate change adaptation and mitigation; and
- To reverse, reduce and avoid land and water degradation through the scaling up of SLM practices to achieve LDN.

Core interventions

- Supporting integrated land-use planning processes that consider Land Degradation Neutrality.
 - Implementing innovative SLM practices that integrate the diverse needs and values related to land and water (such as pasture restoration, and natural resource management, based on ecological principles, among others; also
-

including gender-based analysis of needs, capacities and abilities of access and use).

- Identifying and scaling up effective SLM practices tailored to specific contexts, emphasizing the restoration and sustainable management of watersheds.

Expected outcome

O8 Uptake of innovative and gender-responsive solutions and best practices in sustainable agriculture and ecosystems management, including multi-stakeholder mechanisms, incentives, and actions to enhance VGGT alignment towards achieving LDN, catalyzed and facilitated.

This component will contribute to the achievement of Core Indicator 3, 4, 6, and 11, including 100% of the CI 3 and 6; 40% of CI 4, and 35% of CI 11 targets.

Component 5: Protecting Ecosystem services

This Component seeks to improve management and restoration of the relevant services and functions of aquatic and terrestrial ecosystems in targeted catchment areas, through the contributions of all national child projects, generating positive impacts on water generation and quality, enhancing environmental sustainability, and providing a blueprint for scaling up across the region and beyond (through the knowledge exchange activities in Component 1).

Additionally, Component 5 will support rural communities by improving their capacity to benefit from the sustainable use of ecosystem services. For example, in Uzbekistan the Component aims to protect biodiversity through the promotion of responsible management and conservation of agrobiodiversity. In addition, capacity-building for biodiversity conservation in Kyrgyzstan will not only support the preservation of biodiversity but will also contribute to local livelihoods. The planned interventions will be carried out in a gender-sensitive manner using participatory methodologies to assure the ownership of the interventions by the beneficiaries. Also, local government will be at the core of the planning process avoiding a top-down approach when it comes to the implementation of the on-the-ground activities. Overall, this Component will foster a more harmonious relationship between human communities and the environment.

Core interventions

- Depending on the context of the child project^{[16]⁶⁷}
- a range of interventions is suggested, including but not limited to habitat restoration, biodiversity monitoring, and ecosystem services valuation.

Expected outcomes

O9 Aquatic and terrestrial ecosystem services improved, protecting native biodiversity and enhancing water generation and quality in targeted river catchments.

O10 Improved capacity of rural communities, including women and youth, to benefit from ecosystem services in a sustainable manner.

This component will contribute to the achievement of core indicator 4, and 11. Including 60% of CI 4 and 35% of CI 11 targets.

Monitoring and Evaluation

Under this program component, the expected outcome is for the Effective Monitoring, Evaluation and Coordination systems are established. both by the project management units at each child project level and at the Program Level under the Coordination Project. Under this component, annual PIRs will be prepared, and Mid-Term and Final Evaluations conducted. More details are given under the Monitoring and Evaluation Section below.

Incremental Cost Reasoning

Without the GEF incremental investment through the CAWLN programme, the general region of Central Asia, especially the Amu Darya and Syr Darya river basins, are likely to face continuing deterioration; leading to loss of scarce water and land resources and the critical ecosystems that provide and support these; weakening rural livelihoods, local and national economies, and efforts to address poverty and other human development and environmental goals, while increasing the risk of conflicts over resource use. Without the transformative action that the GEF incremental investment will catalyze, the current disjointed national and generally sector-specific efforts to manage water and land resources are likely to have limited effectiveness due to the interconnected nature of water and land resources and their relationship with natural ecosystems. In addition, given the transboundary nature of many of these environmental problems, loss and

degradation of natural ecosystems will continue without agreement, alignment, and cooperation between the five Central Asian countries on the use and management of scarce water resources in the region. Furthermore, without the transformation that the GEF incremental support can bring, the current trend of environmental deterioration will continue and likely intensify under predicted climate change scenarios over the coming decades.

The GEF increment will provide the additional incentive and platform for the five countries to engage in and establish mechanisms for stronger coordination in land-water sector decision-making processes. The additional support that the GEF-financed program will bring will create a dynamic to overcome the fragmented current status quo, turning the growing realization of the need to address key environmental challenges of the CA region into action and meet the requests from all CA countries to find integrated solutions to the increasing need for water and its management in the region.

Child projects

Table 6: Individual Child Projects' Contribution Towards Achieving the Program's Outcomes (Ox) by Addressing Specific Barriers (Bx)

	Components										Funds	pathways
	1. Coordination		2. IWM		3. EO and DSS			4. SLM	5. Ecosystems			
Outcomes	O1	O2	O3	O4	O5	O6	O7	O8	O9	O10		
PC	BI, BII, BIII	BIV			BII, BIII						IW, LD	P1-5
ADB		BII, BIV	BI, BII	BII		BIII					IW	P1-5
SDB		BII, BIV	BI, BII	BII		BIII					IW	P1-5
KAZ		BIV	BI, BII	BII		BIII	BII	BII, BIV, BV	BII, BV	BV	BD, CC, LD	P1-4
KGZ		BIV	BI, BII	BII		BIII	BII	BII, BIV, BV	BII, BV	BV	BD, LD	P1-4
TKM		BIV	BI, BII	BII		BIII	BII	BII, BIV, BV		BV	BD, CC, LD	P1-4
UZB		BIV	BI, BII	BII		BIII	BII	BII, BIV, BV	BII, BV	BV	BD, LD	P1-4
funds	IW, LD	IW, LD	IW, LD	IW, LD	IW, LD	BD, CC, IW, LD	BD, CC, IW, LD	BD, CC, IW, LD	BD, CC, IW, LD	BD, CC, IW, LD		

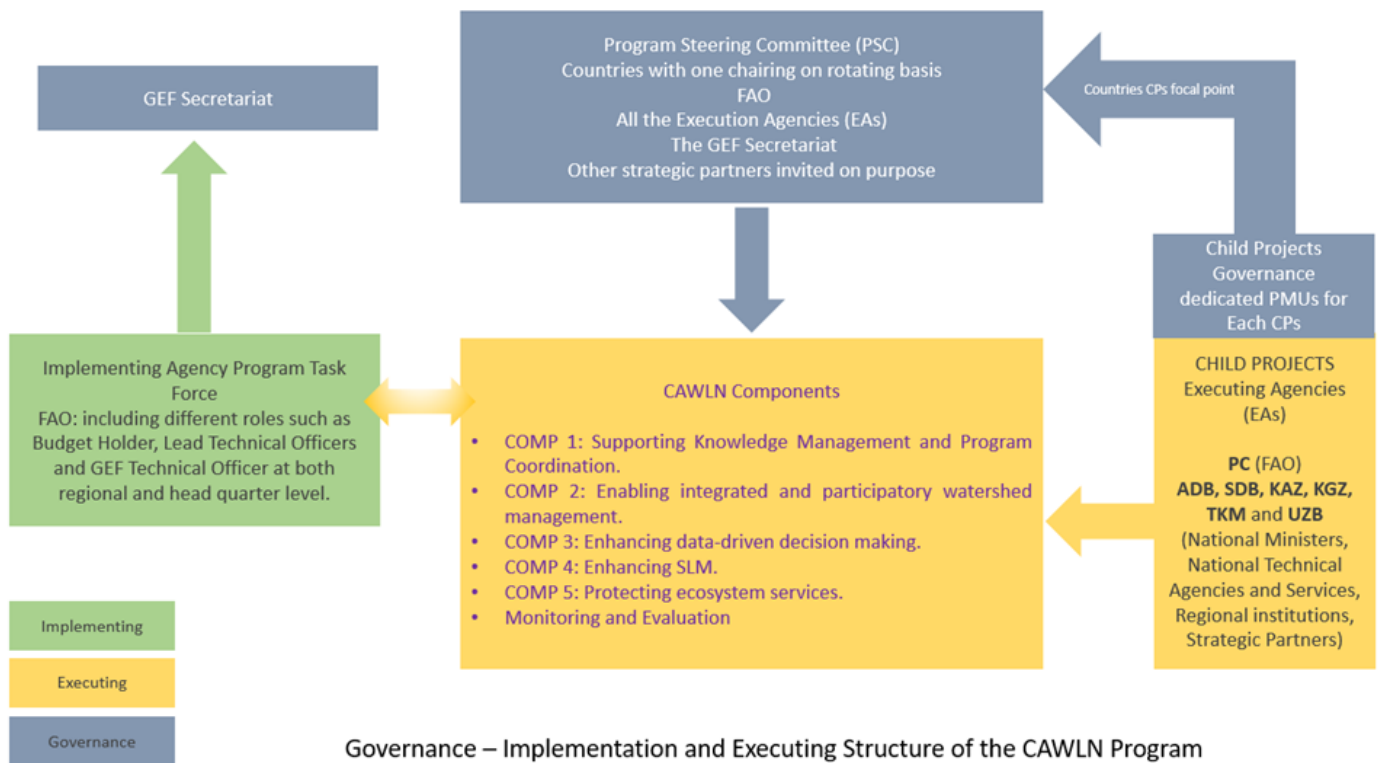
Table 6 demonstrates the relationship between the interventions by child projects, the identified barriers (Bx), and the targeted project outcomes (Ox). Each child project is uniquely designed to contribute to the program's outcomes based on the specific country context, aligning with the designated pathways (Px).

Table 7 Breakdown of Core Indicator Targets per Child Project

	Core Indicator 3			Core Indicator 4		Core Indicator 6		Core Indicator 11	
	3.1	3.2	3.3	4.1	4.3	Direct	Indirect	men	women
PC	40	20	10		200,000	219,886	604,041	60,000	60,000
KYZ	800	600		20,000	100,000	114,105	1,589,894	25,000	25,000
TURK	450				39,000	6,611	404,417	20,000	15,000
UZB	1,000	300	100	50,000	230,000	39,903	2,352,761	34,500	34,500
Amu Darya	120	190	50	40,000	310,000	17,322	1,057,072	47,000	40,000
Syr Darya	450	300	50	20,000	250,000	29,694	2,268,734	42,000	37,000
KAZ	840		50		70,000	30,310	2,383,920	23,500	23,500
Total	3,700	1,410	260	130,000	1,199,000	457,831	10,660,839	252,000	235,000

Institutional arrangements

The institutional arrangements foreseen for the program are present below



General Agency Roles

FAO will serve as Lead Agency for the Central Asia Water and Land Nexus (CAWLN) for Ecosystem Restoration, Improved Natural Resource Management, and Increased Resilience Program. FAO is the UN specialized agency responsible for food and agriculture covering crop, livestock, and aquaculture production with an overall vision of a world free from hunger and malnutrition through more efficient, inclusive, resilient, and sustainable agri-food systems. As Lead Agency, FAO brings highly respected and exclusively relevant institutional capacities needed to support enhancing water-land nexus approaches and implementation for strengthening water security, increasing resilience, and improving rural livelihoods in the Amu Darya and Syr Darya river basins. FAO’s responsibilities, as GEF Implementing Agency, will include:

- **Administrate funds from GEF in accordance with the rules and procedures of FAO.**
- **Monitor project implementation in accordance with the project documents, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s) and other rules and procedures of FAO.**
- **Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned; and**

- **Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Reports, on project progress and provide financial reports to the GEF Trustee.**
- **Provide administrative support for the Program Steering Committee.**

All contributions and engagement will be conducted under FAO's leadership. FAO will be responsible for the development and implementation of the entire CAWLN program oversight with contributions from the countries and strategic partners that will be identified during PPG phase as appropriate.

FAO will ensure overall programmatic coordination and be responsible for program development and management, administrative roles, program coordination coherence, linking the seven Child Projects (CPs), and full accountability to GEF for program implementation. FAO will prepare and submit required reports and lead the conduct of mid-term and terminal evaluations.

Country Child Project governance

Country Child Project governance arrangements: Each Country Child Project will have its own governance arrangements, which FAO will define during project development. As a minimum, however, each Country Child Project will appoint a country focal point to represent the Country Child Project on the Steering Committee, help with annual Programme reporting and ensure coherence and support coordination between the Regional Coordination Project and the Country Child Projects, as well as with the overall Programme.

Country Child Project focal points: FAO will agree with Child Project a communications protocol between the Regional Coordination Project and the Country Child Projects. The aim will be to streamline operational communications, directing communication between child projects, while keeping all the countries involved informed on the needs to achieve intended results; keeping them abreast of project implementation and supporting their effective coordination, as well as to ensure smooth adaptation of the program and projects to any changing conditions. The expectation is that each Country Child Project will appoint a primary project contact who will support the following issues:

- **identify appropriate staff to participate in meetings;**
- **identify the correct counterparts for capacity building needs assessment;**
- **help identify trainees for capacity building events;**
- **to identify opportunities for peer-to-peer exchanges, study tours and other capacity building events;**

- **participate in the SC meetings and other cohort events;**
- **identify the right counterpart to help organise training events sponsored by the Regional Coordination Project;**
- **help with the transfer of lessons learned to the Regional Coordination Project and support communications products; liaise for the preparation of the annual Programme reporting and;**
- **for other organizational or coordination issues between the Regional Coordination Project and the Country Child Projects.**
- **represent the country in meetings and events related to the Programme as needed to discuss results, share good practices and lessons learned.**

Child Projects Steering Committees

The seven CPs will establish individual Steering Committees. The SC will be comprised of representatives from the five countries and will also include representatives from the executing agencies, the GEF Secretariat and strategic partners invited on purpose. The level of the representation will be discussed during the PPG phase.

Each CP will also establish its own Project Coordination Unit (PSC). The definition of the coordination unit and operating mechanisms for coordination will be part of the PPG to assure all the partners are properly consulted and the executing agencies are selected in accordance with GEF and FAO rules and in agreement with the participating countries to assure a proper execution of the program. The members of the PSC of each CP will be responsible for:

- **oversight and review of technical activities carried out under the CP.**
- **review and report on the progress towards the project's objectives and their contribution to the overall programmatic objectives.**
- **assessment of the progress in the implementation of the CP in accordance with timelines and goals stated in the Results Framework, including review of the project Theory of Change assumptions.**
- **taking consensus-based strategic decisions and recommendations when guidance is required by the Project Coordinator.**
- **a review of the narrative that links the impacts of the activities, outputs, and outcomes of the CP in particular in relation to their contribution to the programmatic objective.**

-
- **assessing effectiveness of the knowledge management and communication efforts at the project level.**
 - **reviewing sustainability of key project outcomes, including up-scaling and replication.**
 - **approval of the project's Annual Work Plan and Budget (AWP/B).**
 - **enhance synergy between the project and other relevant initiatives, including those related to the GEF International Waters Focal Area.**
 - **reviewing and providing comments to independent external reviews and evaluations.**
 - **advise on any other issues that would be brought to its attention by the PMU.**

The Program Steering Committee comprising a representative for each of the seven Child Projects, FAO, the GEF Secretariat and strategic partners invited on purpose. The Program SC will meet at least once per year in person (virtually if necessary) and will meet with greater frequency as required, to ensure:

- **review and report on the progresses of the seven technical projects towards their specific objectives and their contribution to the overall CAWLN Program.**
- **ensure a fluid two-way exchange of information and knowledge between all the stakeholders involved in the program,**
- **facilitate coordination and links between the projects and the Program and participate in identifying possible areas of cooperation among the projects, and report on the status on co-financing to the Program.**
- **Assessment of the progress in the implementation of the Program in accordance with timelines and goals stated in the Results framework, including review of the programmatic Theory of Change assumptions.**
- **An on-going review of the narrative that links the impacts of the activities, outputs, and outcomes of the child projects, in particular in relation to their contribution to the programmatic objective and dissemination of lessons learned.**
- **Identification of linkages and opportunities for synergies among the child projects, as well as other ongoing external activities relevant to the Program.**
- **Effectiveness of the knowledge management and communication efforts at the programmatic level.**

- **Sustainability of key project outcomes, including up-scaling and replication.**

The executing agencies for each of the Child Projects will be identified during the PPG, but it is expected that IFAS will take a leading role under component 2. The Hydromets from the participating countries shall be leading component 3. Finally, CAREC is also expected to play an important role for component 1.

Implementing Agency Program Task Force: the FAO will establish an interdisciplinary Program Task Force (PTF) within FAO. The PTF is a consultative body that integrates the necessary technical qualifications from relevant FAO units to backstop the implementation of the Program. The PTF comprises the Budget Holder, the Lead Technical Officer (LTO), any other relevant Technical Officer (TO) depending on the technical area of expertise that is needed, the GEG Technical Officer (GTO) and the Funding Liaison Officer (FLO).

[1] While the terms 'basin', 'watershed,' and 'catchment area' are often used interchangeably and refer to an area of land where all water flows to a single stream, for the purposes of this proposal, a river basin and watershed are defined as including the irrigation network originating from a river and the catchment areas associated with it. By differentiating a river basin and watershed in this way, the interlinked relationships and feedback loops between water, society, and the environment can be better understood in such a complex system as Amu Darya and Syr Darya river basins in Central Asia and develop more equitable and sustainable water management practices.

[2] IWM entails the coordinated management of land, water, and other natural resources within a specific geographic area, such as a water catchment area or river basin, with the aim of achieving sustainable development and preserving ecological integrity. IWM postulates that aquatic and terrestrial ecosystems depend on each other and improvements in one cannot be achieved without corresponding changes in another ('water-land nexus'). Quality and quantity of water in a river network is defined by the status and activities within the corresponding land catchment area. IWM is referred to as Integrated River Basin Management (IRBM) by some sources. For more information, [see Annex I](#).

[3] UNEP 2012. The UN-Water Status Report on the Application of Integrated Approaches to Water Resources Management. https://www.un.org/waterforlifedecade/pdf/un_water_status_report_2012.pdf

[4] All the SLM practices implemented during the project will be defined under the LDN framework for each country. LDN is the guiding concept for the project formulation during the PPG phase.

[5] See Annex I for discussion of related frameworks and concepts.

[6] IW:LEARN is the Global Environment Facility's (GEF) International Waters Learning Exchange and Resource Network. <https://iwlearn.net>

[7] All the indicators proposed here are provisional and will be reviewed during the Project Preparation Grant (PPG) phase. Additional indicators will be jointly defined to enable proper monitoring of the program implementation and to measure its impacts.

[8] Including institutional structures, coherent policies, regulatory framework, plans and strategies

[9] Including coalitions and platforms; both "horizontal" partnerships among countries and international actors as well as cooperation at national and subnational levels, including but not limited to public-private partnerships, and "vertical" partnerships linking subnational actors to national and national to regional and global platforms and coalitions.

[10] The program will utilize the Central Asia Spatial Agent portal (<https://spatialagent.org/CentralAsia/>), among other resources, for accessing available data sources, validating the lessons learned, and distributing the knowledge and information to be generated.

[11] National Hydrometeorological Services, often referred to as Hydromets in the CA region, are governmental agencies within various nations responsible for gathering and analyzing data related to weather, climate, and water. These services provide weather forecasts, monitor atmospheric conditions, predict climate trends, and issue warnings for severe weather conditions, such as hurricanes, floods, and droughts.

[12] Existing UN agreements and partnerships will be leveraged in collaboration with specialized UN entities, such as the UN Office for Outer Space Affairs (UNOOSA). A provisional cooperation agreement for this project with UNOOSA has been secured.

[13] Business Insider. 2023. Satellite Imaging Market Growth, Size, Share & COVID-19 Impact Analysis and Regional Forecasts, 2023-2030. <https://www.fortunebusinessinsights.com/satellite-imaging-market-103372>

[14] <https://www.fao.org/tenure/voluntary-guidelines/en/>

[15] FAO, 2022. Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the context of National Food Security. <https://www.fao.org/tenure/voluntary-guidelines/en/>

https://unfao-my.sharepoint.com/personal/kaan_basaran_fao_org1/Documents/Documents/1.%20a.%20GEF/Regional/GEF-8%20Water-Land%20Nexus/CAWLN_PFD.v3_24Nov23.docx - ftoref16[16] See Annex H for the details on each child project.

Monitoring and Evaluation

Describe the approach to program-level Monitoring and Evaluation, including ways to ensure coherence across Child Projects and to allow for adapting to changing conditions, consistent with GEF policies. In addition, please list results indicators that will track the Program Objective, beyond Core Indicators. (Max 1-2 pages).

This program is strategically designed as a regional approach to promote shared, scalable solutions to common challenges across the Central Asia countries. It represents an innovative and timely intervention, responding to the unique geographic, climatic, and socio-political context of Central Asia. Monitoring and evaluating the achievements of the program and child projects are essential to ensuring that the program is delivering on its results and the proposed catalytic transformation at regional, national, and subnational levels is taking place. It will:

- Catalyze transformational changes in behavior.
- Introduce sustainable capacity for utilizing modern technologies in the region.
- Promote ecosystem restoration by demonstrating key ecosystem functions.
- Protect biodiversity.
- Engage communities.
- Achieve multiple benefits (local, national, and global) through an integrated approach.
- Increase resilience of agri-food systems, communities, and ecosystems to potential future disturbances, both natural and anthropogenic.

Each of the program's child projects will establish and operate its own Monitoring and Evaluation (M&E) system, as a key element of adaptive project management in line with GEF policy requirements. However, the coordination project will be responsible for overall programmatic M&E of the program, and the overarching objectives of the project will be monitored at both program and project levels. It is important to highlight that the indicators for the program and child projects will be fine-tuned during the PPG phase.

Under the "Coordinated Approach for Land Restoration in Vulnerable Ecosystems of Central Asia" project, a specific outcome is "Effective mechanisms of coordination of inputs and results from the CAWLN child projects at the regional and international level established and implemented". The aim of this outcome is to ensure coordination among the results but it will also ensure that the child project achievements are aligned

with the program as well as GEF policies. The coordination project will also deliver program level monitoring and reporting; in addition to the yearly Project Implementation Reports (PIRs) that each child project will prepare. Mid-Term and Terminal Evaluations will be carried out as a key part of the Monitoring and Evaluation Plan, following the GEF and FAO M&E requirements.

Some proposed indicators to monitor performance and results at program level are listed below.

- Program monitoring system successfully developed, with periodic reporting (every six months) on the progress of the child projects and program as a whole.
- Number of publications documenting the knowledge generated across the intervention portfolio.
- Number of capacity-building initiatives implemented to support policy harmonization.
- Number of awareness-raising communication tools and materials developed at regional and global levels, showcasing the objectives, progress, and accomplishments of the program.
- Transboundary Diagnostic Analysis (TDA) updated for the Syr Darya basin and developed for the Amu Darya Basin, including considerations of gender and the water-land nexus.
- Number of harmonized policy instruments facilitated and adopted.
- Rate of stakeholder engagement and consensus achieved in policy harmonization processes.
- Knowledge and skills enhancement assessed through pre- and post-training evaluations, measuring the enhancement in knowledge and skills of the participants to gauge the effectiveness of capacity-building initiatives.
- Number of trained stakeholders on land-water-biodiversity management in agriculture.
- Systems for water, land, agriculture, and biodiversity, including early warning systems, developed and piloted.

Co-benefits

In addition to the overall GEBs that will be delivered through the program (conserving and sustainably using biodiversity, sustainably managing and restoring land, reducing GHG emissions and strengthening transboundary water management) several co-benefits are expected to be generated. These include: (i) Improved livelihoods, (ii) improved human health, (iii) improved food security, (iv) enhance participation and equality and inclusion by women and youth, (v) improved technical capacity of farmers and government staff on topics related to water, land and natural resources management. To ensure these are monitored, the M&E matrix will include different SDGs indicators, including but not limited to 1.1.1, 2.3.2, 3.9.1, modified 5.5.1 6.3.2, 12.4.2, modified 16.7.2.

In terms of co-benefits, the following are expected to be achieved: (i) reduced freshwater pollution, (ii) reduced chemicals and pesticide outside GEF supported MEAS, (iii) Better water availability, (iv) Reduced sandstorms and other weather-related impacts affecting human populations, (v) Phasing out of damaging

water, land and natural resource use practices, (vi) Creation of new form of financing for environmentally supportive water, land and biodiversity uses, (vi) Promotion of peace, safety and security.

Coordination and cooperation with Ongoing Initiatives and Programs.

Is the GEF Agency being asked to play an execution role on this program? Yes

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing (max. 500 words, approximately 1 page)

The coordination of the program will be further discussed during the PPG phase to agree upon the best way to move forward to avoid polarization among countries during the process. IFAS is expected to play a critical role as a neutral regional platform that could take over the execution role.

Several relevant projects in the region have been funded by GEF and other donors, assisting countries in coping with environmental threats. Below are some of the GEF-funded projects in the region and an explanation of how this program will leverage their results:

- **Strengthening the Resilience of Central Asian Countries by Enabling Regional Cooperation to Assess High Altitude Glacio-nival Systems to Develop Integrated Methods for Sustainable Development and Adaptation to Climate Change**[\[1\]⁶⁸](#). The project aims at strengthening the adaptation capacity of Central Asian countries to climate change impacts on the cryosphere through assessment, promotion of regional cooperation, and stakeholder engagement. This ongoing project will generate baseline data and results that the program will incorporate to strengthen its actions.
- **Integrated natural resources management in drought-prone and salt-affected agricultural production landscapes in Central Asia and Turkey ('CACILM2')**[\[2\]⁶⁹](#). Both phases of this project, CACILM 1 and 2, have produced significant knowledge and lessons learned that will be scaled up through the program.
- **Strengthening transboundary cooperation and promoting integrated water resources management in the Chu and Talas River Basins**, and empowering the Water Commission of Republic of Kazakhstan and the Kyrgyz Republic[\[3\]⁷⁰](#).
- **Lifecycle Management of Pesticides and Disposal of POPs Pesticides in Central Asian Countries and Turkey**[\[4\]⁷¹](#) The project's goal is to reduce releases of POPs from obsolete pesticide stockpiles and strengthen capacity for sound pesticide management throughout the life cycle in 4 Central Asian countries and Turkey. Although not directly linked to the program, the project is supporting countries in preparing proper guidelines for pesticide management, the program will incorporate the guidelines when applicable and the Program will also continue to work on pesticide management.

Additionally, several ongoing national projects have the potential to be coordinated with the program's actions. These will be further explored during the PPG phase.

- Sustainable Management of Forests in Mountain and Valley Areas in Uzbekistan (GEF, 2018-2024) introduces sustainable forest management practices, emphasizing carbon sequestration, and ecosystem service enhancement.
- Sustainable Natural Resource Use and Forest Management in Key Mountainous Areas (GEF, UNDP, 2017-2022), aligns with GEF's strategies for biodiversity, land degradation, and sustainable forest management.
- Reducing Pressure on Natural Resources from Competing Land Use in Non-Irrigated Arid Mountain, Semi-Desert, and Desert Landscapes (GEF, UNDP2, 2014-2019), promoted integrated management of rangeland and forests to reduce natural resource pressures.
- Conservation and Sustainable Management of Lakes, Wetlands, and Riparian Corridors in the Aral Basin (GEF, UNDP3, 2022-2026), seeks to enhance landscape and livelihood resilience in the Aral basin through integrated land, lake, wetland, and riparian ecosystem management, involving the private sector and local communities to achieve Land Degradation Neutrality (LDN).
- Conservation and Sustainable Land Management (GEF/UNDP; 2022-2027), promotes balanced land management, addressing soil salinity, biodiversity, and water issues in the Amu Darya region;
- UNDP/GCF Readiness Project (2021-2024), enhances national adaptation planning and water sector resilience;
- Integrated Natural Resources Management (GEF/FAO; 2018-2024), fosters climate resilience and drought-resistant crops;
- Green Central Asia Program (GIZ; until 2024), addresses various environmental aspects and systematically reducing climate risks;
- Climate-Resilient Water Resources Management (GIZ Regional Program; 2023-2026), improves flood and drought early warning systems with climate-informed models.
- Tajikistan Ecosystem Restoration and Resilient Agriculture (TERRA) (IFAD; 2025-2029), a specific coordination mechanism will be established with the GEF-8 project in Tajikistan so that the technical know-how and approaches, informational products and assessments can feed into shaping the two initiatives together and achieve the maximum amount of synergies and more sound impact. FAO and IFAD Teams have met in Tajikistan in June and the CAWLN has been presented to IFAD representatives. Together with the encouragement and agreement of the national counterparts, it was agreed that further discussions will be held during the PPG process.

Furthermore, FAO currently is working on all the countries with projects that can be used as co-financing and baseline for the program:

- Supporting Water Policy in Central Asian Agri-food Sector with Emphasis on Climate Change Impact – USD 465,000 (FAO funded). Project will enhance the regional capacity for dialogue and exchange of experience and expertise in water policy development and implementation is recommended to coordinate such policies and discuss all relevant water issues. The development of a regional network for facilitation of dialogue is part of an effective response to this need.
- Forest Restoration Improvement for Environmental Development and Sustainability (FRIENDS) - USD 2 000 000 (FAO-Turkey Forestry Partnership funded). The project will ensure that participating countries are equipped with the necessary gender-responsive knowledge and skills for

large-scale forest and other wooded lands restoration, improved frameworks/strategies to address prevention of degradation, and a network for regional cooperation/information exchange.

- Carbon Sequestration through Climate Investment in Forests and Rangelands (CS-FOR) - USD 29,988,520 (GCF Funded). The project will provide Kyrgyzstan with an enabling environment that supports investment for carbon sequestration through forest and rangeland management while providing economic and social incentives to the users of natural resources, to avoid the depletion of carbon sink potential. The project will be executed in similar target areas where the program will also promote improved livelihood. Further synergies and co-financing will be further explored under the PPG phase.
- Support to the establishment of digital Land Cadaster in Turkmenistan - USD 300,000 (FAO Funded). The project aims to support the digitalization and improvement of the land cadaster in the country, allowing a better land governance policy. It is creating a digital land database which will also be used by the program.
- Enhancing Capacities for Climate-Resilient Water Management in Turkmenistan - USD 100 000 (FAO Funded). The project aims to enhance ecosystem services, sustainable utilization of natural capital and increase resilience to climate change impacts in the Lebap region and will be used as the baseline for all the interventions in the country.
- Enhancing agricultural land market development to address land abandonment and improve land consolidation procedures - USD 710,000 (FAO-Turkey Partnership Programme Funded). The project aims to enable the environment for proper land governance in Uzbekistan which has a direct impact on land degradation. The program actions will benefit from a more organized land governance setup and will support the results of the initial program.

Additionally, during the PPG phase and linked with the preparation of the private sector engagement plan, a coordination mechanism will be established with the CAWEP, as an import trust fund for the region. Moreover, international organizations, including the United Nations, World Bank, and Asian Development Bank, support various initiatives related to water management, infrastructure development, capacity building, and policy reforms in Central Asia. FAO will ensure proper coordination with them, and they will be consulted and involved during the PPG phase.

[1] <https://iwlearn.net/iw-projects/10077> and <https://core.unesco.org/en/project/RAS0122395>

[2] <https://www.thegef.org/projects-operations/projects/9094>

[3] <https://www.thegef.org/projects-operations/projects/5310>

[4] <https://www.thegef.org/projects-operations/projects/5000>

Table On Core Indicators

Indicator 3 Area of land and ecosystems under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5370	0	0	0

Indicator 3.1 Area of degraded agricultural lands under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
Rangeland and pasture	2,500.00			
Cropland	1,200.00			

Indicator 3.2 Area of forest and forest land under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1,410.00			

Indicator 3.3 Area of natural grass and woodland under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
Natural grass	260.00			

Indicator 3.4 Area of wetlands (including estuaries, mangroves) under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1329000	0	0	0

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
130,000.00			

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1,199,000.00			

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
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Documents (Document(s) that justifies the HCVF)

Title

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)	457831	0	0	0
Expected metric tons of CO₂e (indirect)	10660839	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)	457,831			
Expected metric tons of CO₂e (indirect)	10,660,839			
Anticipated start year of accounting	2025			
Duration of accounting	20			

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)				
Expected metric tons of CO₂e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 7 Shared water ecosystems under new or improved cooperative management

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Shared water Ecosystem	Amu-Darya,Syr Darya			
Count	2	0	0	0

Indicator 7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Amu-Darya	1			
Syr Darya	2			

Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Amu-Darya	1			
Syr Darya	2			

Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministeral Committees (IMC; scale 1 to 4; See Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Amu-Darya	1			
Syr Darya	1			

Indicator 7.4 Level of engagement in IWLEARN through participation and delivery of key products(scale 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Amu-Darya	1			
Syr Darya	1			

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	235,000			
Male	252,000			
Total	487,000	0	0	0

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

Core indicator 3

The target of area of land and ecosystem under restoration represents the total sum of the indicators across all child projects, with each child project providing a clear explanation for its indicator and sub indicators, and the breakdown of the calculation per CP/sub indicator is available at Table 7. The PC will contribute to all 3 sub indicators and will be mostly demonstration areas that will be defined during the PPG based on potential scalability of the restoration approaches used. The two projects focusing on the Amu Darya and Syr Darya will contribute to all 3 sub indicators, the numbers are calculated based on the project budget, co-financing and countries and FAO experiences. The specific areas will be defined during the PPG, taking into considerations, countries request and the program goal. For KAZ, the focus will be on sub-indicator 3.1 as the CP aims to restore degraded pastureland. The targets were discussed and agreed upon with the government, were calculated considering FAO and the government's experiences. For KYG, sub indicators 3.1 and 3.2 will be targeted, as both agriculture land (including managed pasture) and forest will be restored. The areas are still to be defined, but they will surely be in riparian ecosystems. The targets were calculated considering the co-financing mobilized and FAO experience in similar project in the country/target regions. For TKM, only the sub-indicator 3.1 is targeted as the main goal of this CP is to restore production system in the Lebap region, the target number is an estimation based on the potential result of the project and the co-financing that will be provided. For UZB, the CP will contribute to all the 3 sub indicators, with a strong focus on 3.1 as the project aims to restore degraded agriculture land but will also restore catchment areas contributing to 3.2 and 3.3. The areas will be better defined during the PPG phase, and the final targets are the result of discussion with the government and previous experience in the country.

Core indicator 4

The area of landscapes under improvement represents the total sum of the indicators across all child projects, with each child project providing a clear explanation for its indicator and the program will contribute to sub indicator 4.1 and sub indicator 4.3. The breakdown of the calculation per CP/sub indicator is available at Table 7. The PC will only contribute to 4.3 as this project has a stronger focus on LD. While the two projects focus on the Amu Darya and Syr Darya will contribute to both 4.1 and 4.3 as they have activities under comp 4 and 5. Under these 3 projects, the estimation of the landscapes under improved practices was done based on the geography coverage of the 2 basins as tailored monitoring tools, decision support systems and early warning systems tailored to the national needs and priorities. Monitoring tools associated with sub-regional guidance on landscape management allows 820 000 ha under the regional and sub-regional components to be achieved. For KAZ, the main focus of the CP is on pasture and the number (70 000) is a result of the consultation with the government and GEF funds and co-financing mobilized. This number was agreed upon based on previous experience from both FAO and the government. For KYG, the CP will contribute to 4.1 and 4.3, and while 4.1 will focus on areas relevant for biodiversity and recently restored, the 4.3 is the result of improvement in managed pasture and managed forest. The number is an estimation based on FAO and government experiences and previous projects data. For TKM, only the sub-indicator 4.3 is targeted, as there is the need to improve management in production system in the Lebap region. The target number is an estimation based on the potential result of the project and the co-financing that will be provided. For UZB, both 4.1 and 4.3 will be achieved, the numbers were

calculated based on discussion with the government, results from other project and FAO experience in similar projects.

Core indicator 6 - The Greenhouse Gas (GHG) emissions mitigated represent the total sum of the indicators across all child projects, with each child project providing a clear explanation for its indicator, contributing solely to sub-indicator 6.1. Ex-act was used to calculate the GHG mitigation, and the summary of the calculation is available in Annex J.

Core indicator 7

The program will focus on two shared water ecosystem the Syr Darya basin and the Amu Darya as they are individual water shared systems. At sub-indicator level 7.1 is expected to be 3; 7.2 is expected to be 2; 7.3 is expected to be 2; and 7.4 is expected to be 3.

Core indicator 11

The number of people benefiting from the project represents the total sum of the indicators across all child projects, with each child project providing a clear explanation for its indicator. The PC will benefit 120 000, as per the changes in policy which will

improve life quality and livelihood of all targeted communities, but mostly by the results achieved under component 3, as monitoring system will be made available – alongside with training - for several communities supporting them in the decision-making process, the same apply for the 2 basin CP (Amu Darya and Syr Darya). The numbers for these 3 projects are estimations based on consultation with the government. For KAZ, the beneficiaries will come from the target region as changes in natural resources management, alongside innovation and training, will be made available. The number are a result of the discussion with the government. For KYG, the beneficiaries will be mostly from the riparian areas targeted by the project. As the project will produce and make available tools/innovations alongside training when it comes to natural resources management, 50 000 direct beneficiaries are expected at the end of the project, alongside innovation and training will be made available. For TKM, the beneficiaries will mostly be from Lebab region as local policies regarding sustainable agriculture alongside appropriated technologies and training will be made available, the results of the piloting area, policies in place and innovations available is expected to reach 35 000 people, this number has been discussed with the government. For UZB, 69 000 people will be benefited by the project, as a result of a combination of restored land, improved land, alongside training and capacity building programs linked to tailored solutions, tools, and innovations and decision support system.

Risks to Achieving Program Outcomes

Summarize program-level risks that might emerge from preparation and implementation phases of child projects under the program, and what are the mitigation strategies the child project preparation process will undertake to address these (e.g. what alternatives may be considered during child project preparation-such as in terms of consultations, role and choice of counterparts, delivery mechanisms, locations in country, flexible design elements, etc.). Identify any of the risks listed below that would call in question the viability of the child project during its implementation. Please describe any possible mitigation measures needed.

The risk rating should reflect the overall risk to program outcomes considering the global context and ambition of the program. The rating scale is: High, Substantial, Moderate, Low.

Risk Categories	Rating	Comments
Climate	Moderate	Both ecosystems and human populations are vulnerable to the anticipated impacts of climate change in the region. These impacts include a scenario of increasing extreme weather events such as dust storms, prolonged high temperatures, and extended droughts. These challenges are beyond the project's control. Nevertheless, they occurrence can and will impact the execution of the project. The region has shown a trend toward aridity and every year, as globally, the temperatures are reaching the extremes, wither getting colder and summer getting hotter, and additional to getting less rain, the pattern and periods of the rains are also changing. In order to mitigate these

		<p>risks: • All the on the ground activities will prioritize disaster-resilient options for farm and landscape management, including diversified, agroecological and regenerative systems, and to identifying and promoting these within a framework of diversified and resilient livelihoods. • The technical and social feasibility of disaster-resilient options will be maximized by the sharing of knowledge, learning and capacity building on state-of-the-art technologies and approaches, and the use of participatory approaches in the detailed design of local-level interventions to ensure that interventions build the resilience of local communities, including of women and other vulnerable groups. Also, during the PPG, an individual climate risk screening – following FAO methodology- will be conduct for every child project. Conducting the screening on the PPG phase will allow the be more tailored and better analysis the specific risks for each project and propose proper mitigation actions at child project level.</p>
Environment and Social	Moderate	<p>The growing population, combined with the challenges of climate change, places increased pressure on the environment, creating an unstable scenario for the project's implementation. Addressing social needs and reducing pressure on natural resources are essential components for ensuring the future well-being of the population in this region. There is a risk that actions and approaches may not be gender-responsive, potentially exacerbating existing inequalities. However, the implementation of Gender Action</p>

		<p>Plans at both the Program and child project levels serves as a mitigation strategy.</p>
<p>Political and Governance</p>	<p>Moderate</p>	<p>Regional level Bilateral dissonance and tensions over water resources have historically affected the region following the disintegration of the Soviet Union. The program is only possible because there was a common agreement among the 5 countries. The insufficient and inconsistent level of current political support for expanding transboundary cooperation can hinder efforts to harmonize the policy and regulatory framework, which is anchored in diverse national needs and uses of water resources. However, the project builds on the growing political commitment to strengthen cooperative efforts, reversing the degradation trends of both land and water ecosystems in the basins, and to maintain a high level of engagement from political and administrative institutions. The suggested cooperation doesn't involve the sensitive water allocation sector, so the risk of lacking cooperation is not high. An additional risk assessment will be conducted during the PPF phase. National level Low political support at the national level for contributing to the development of the regional monitoring platform can pose a challenge during project implementation. To overcome this potential barrier, the program will work through national CPs and initially focus solely on national platforms, taking into account national priorities and constraints. The regional platform, focusing on selected parameters and benefiting from advanced technologies and data</p>

		<p>access, will be developed independently and shared with national stakeholders as the essential foundation for the national platforms. The program deals with water arrangements (TDA/SAP), what can be perceived as a negative impact on the country's sovereignty over its own resources. However, water allocation is discussed under the different international mechanisms and the program will not focus on it. Still, where needed, the program will approach the topic in a transparent and participatory way to avoid potential conflicts.</p>
Macro-economic	Low	<p>Water scarcity and energy production significantly influence regional macro-economics since they can directly affect a country's GDP. To mitigate this risk, the program will focus on working towards ensuring a consistent water supply and enhancing shared water management based on regional assumptions. Additionally, the interventions proposed aim to boost national GDP growth by stimulating local economies, such as the agrifood sector, are designed to be sustainable with minimal financial support.</p>
Strategies and Policies	Substantial	<p>While all the countries have expressed interest in aligning policies and strategies at the regional level for improved coordination in natural resources management, achieving this can be a lengthy and political process. Reaching a consensus over scarce shared resources is especially challenging. Instead of ensuring the adoption and implementation of these policies and strategies, the program primarily aims to create an environment conducive to drafting potential common policies and</p>

		<p>strategies. Bottlenecks and challenges will be identified during the initial PPG phase and, subsequently, through the regional TDA/SAP process. Appropriate mitigation measures will then be established to minimize these risks.</p>
Technical design of project or program	Low	<p>The technical design of the project is aligned with the country's needs and priorities through consultations and validation processes as well as with GEF policy and poses a low risk.</p>
Institutional capacity for implementation and sustainability	Moderate	<p>As a rule, national agencies in the region lack robust institutional capacities. To mitigate this risk, the program and its associated projects will be executed by various national and regional partners, each possessing diverse institutional strengths. Central to the program is capacity building, which aims to reduce this risk through interventions across several components. Emphasizing youth engagement, national skills development, and the incorporation of affordable technological advancements in capacity-building interventions (such as freely available satellite imagery) will bolster project sustainability. FAO will spearhead the program's coordination, leveraging its institutional expertise in areas like IWM, SLM, monitoring, and DSS. A comprehensive plan and budget will be formulated during the PPG phase.</p>
Fiduciary: Financial Management and Procurement	Moderate	<p>The program and its child projects will be executed by a diverse group of partners, resulting in a wide range of financial management and procurement capabilities. While some potential partners already possess adequate capacity, others will need to develop skills as the projects progress. A variety of</p>

		<p>agreements will be established, and FAO will enhance the capacity of certain organizations. As the IA, FAO will oversee the financial management of both the program and its projects. Detailed information and a comprehensive budget will be formulated during the PPG phase.</p>
Stakeholder Engagement	Moderate	<p>During project implementation, there's a risk of limited interest or involvement from target stakeholders and local communities in certain sectors. This could lead to less effective multi-stakeholder engagement. Many of the topics in focus, such as food security, ecosystem restoration, and modern earth observation technologies, are prioritized in the political and management agendas of the concerned countries. Therefore, a high level of interest and participation is anticipated. Nonetheless, this risk will be continuously addressed with systematic communication activities to heighten awareness. Knowledge will be disseminated among stakeholders using a combination of alternative engagement methods and contemporary communication tools and media. A comprehensive stakeholder analysis will be conducted during the PPG stage.</p>
Other	Substantial	<p>The Government of Afghanistan's plans to construct the Qush Tepa canal have the potential to significantly impact the hydrological system and the sustained water availability for downstream countries of the Amu Darya river. While construction of the Qush Tepa canal began in early 2022 and is slated for completion in 2028, it is currently ahead of schedule and may be</p>

		<p>finalized earlier. This canal is expected to divert a considerable volume of water from the river, leading to a further decrease in water availability along its course. Consequently, the interventions the program is developing—to enhance catchment functions and improve water use efficiency—are anticipated to become even more vital for the affected countries. This could heighten their interest in and commitment to the program. During the PPG phase, a thorough risk analysis assessing the impacts of the canal's construction will be conducted.</p>
Financial Risks for NGI projects	Low	There are no significant financial risks that are foreseen.
Overall Risk Rating	Moderate	The risks to achieving the program outcomes are considered moderate and are expected to be managed through proper risk mitigation measures.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm that any country policies that might contradict with intended outcomes of the project have been identified. (approximately 2-3 pages)

This program aligns with GEF-8 programming directions, as it aims to improve the health of agricultural land and river basin ecosystems, and promote rural economies through collaborative, science-based integrated approaches to managing both natural and anthropogenic landscapes. The program is aligned with: a) addressing drivers of environmental degradation; b) protecting major global environmental assets; and c) enhancing policy coherence and tackling disincentives to nature protection and climate mitigation by: 1) integrating actions across water-land nexus, agriculture, and natural resources management , GEF focal areas, and supply chains; 2) complementing country-level investments with transboundary action to achieve impact at regional scales; 3) mobilizing a diverse coalition of stakeholders from relevant sectors for system transformation; and 4) fostering knowledge sharing and learning.

The connection can be easily identified by analyzing the program pathways:

- Enhancing policy and regulatory frameworks for integrated and participatory NRM.
- Enhancing data-driven decision-making through the development of EOP and building national capacity in utilizing innovations.

- Catalyzing practices of integrated watershed management (land, water, biodiversity).
- Supporting knowledge management, increasing public awareness, and fostering communities' engagement.
- Securing transboundary and cross-sectoral coordination.

Focal areas and MEA alignment in the region

The program will contribute to several focal areas, in different level (regional, national and local level)

BD-1-3 Ecosystem Restoration

BD-1-4 Biodiversity mainstreaming in priority sectors

CCM-1.4 Promote Nature-based Solutions with high mitigation potential.

LD-1 Avoid and reduce land degradation through sustainable land management (SLM)

LD-2 Reverse land degradation through landscape restoration

LD-4 Improve the enabling policy and institutional framework for LDN

IW-3 Enhance water security in shared freshwater ecosystems

The program will develop a policy framework through the TDA/SAP process which will lead to mainstreaming biodiversity across the agriculture and water management sectors. The Uzbekistan project will contribute to the sustainable use of plant and animal genetic resources. During PPG, this may also be the case in Kazakhstan as there is a focus on work on recover the natural biodiversity of pasture lands. This focal area will only have importance at the child project level.

Although only included in the Turkmenistan project, the whole program will also be able to demonstrate mitigation options with system impact for land use and restoration. As the program has a strong focus on restoring land, during the process, mitigation impact will also be measured and demonstrated.

The land degradation focal areas will be catalyzed at the program level, as they will be a result of the TDA/SAP as well as all on-the-ground interventions. SLM and SFM are the main approaches used in the LD intervention.

The focal area for IW is to enhance water security in the Amu Darya and Syr Darya basins, this will be archived by the preparation and implementation of the TDA/SAP.

The Governments in Central Asia demonstrate a clear understanding of the urgent need to eliminate environmental threats and mitigate climate risks that result in land degradation, depletion of forest resources, and reduction in water sources and availability. They ratified the UN Convention to Combat Desertification (UNCCD), starting the implementation of 10 to 15-year national action programmes^[172] aimed at

afforestation of shifting sands, improving the condition of irrigated lands, rational use of pastures, and development of forestry. In addition, the international community is making great efforts to achieve ecological balance and progress in sustainable development in the region, both at the country level and in a transboundary context.

The UNCCD targets have been set in all 5 countries and there has been an intense effort from the countries to avoid, halt and reverse land degradation. It is important to note that according to the Land Productivity Dynamics (LPD) more than 180 million hectares (44%) of land show declining productivity in the period from 2001 to 2022, with only 2.8% of the land areas presenting increasing productivity in the same period, in the 5 countries. While this is only one LDN indicator, it illustrates the magnitude of degradation-related issues in this region. This shows that despite efforts, the lack of coordinated action and integrated approaches have limited the improvement in this sector.

The program will also enhance water security in shared freshwater ecosystems (for both system Amu Darya and Syr Darya), which is aligned with the countries priorities. This will be achieved through a TDA/SAP. The program will prepare 2 TDA, one per Syr Darya and one per Amu Darya, which will lead to the formulation of the two Strategic Action Program. Also the region has 2 World Heritage Site - Tajik National Park (Mountains of the Pamirs – TAJ) and Western Tien-shan (UZB;KGZ;KAZ) and one Ramsar site Tudakul and Kuymazar Water Reservoirs (UZB).

This program is designed to support the implementation of the Kunming-Montreal Global Biodiversity Framework in the region and will contribute to Target 1, Target 2, Target 10, Target 11 and Target 20. In addition, all countries have adopted their National Biodiversity Strategies and Action Plans (NBSAPs) and are making efforts to implement them.

Regional approach

Water, today, is one of the major factors shaping the economy of the five Central Asian states. With a poor and uneven distribution of water resources, irrigation and related water management have historically shaped the economy and social development in Central Asia. Regarding water availability, Central Asia can be divided into two discernible regions: the east and the west. While the mountainous east (east Kazakhstan, the Kyrgyz Republic, and Tajikistan) suffers less from the scarcity of water, for the uplands and low-lying deserts of West Central Asia (west Kazakhstan, Uzbekistan, and Turkmenistan), including the Kyzyl-Kum and Karakum deserts, water shortage has always been an issue.

Water resources are reasonably abundant in certain mountainous and plateau regions of Kazakhstan, the Kyrgyz Republic, and Tajikistan, but only the two rivers of the region, the Amu Darya and Syr Darya, supply the invaluable resource to the deserts and semi-deserts of Kazakhstan, Uzbekistan, and Turkmenistan. Both rivers flow into the Aral Sea, but intensive withdrawal of water for cotton and other crops has tangibly reduced their annual discharge, leading to the drastic shrinking of the Aral Sea since the 1960s.

The Program envisages a future where Central Asia's unique ecosystems are preserved and revitalized, where sustainable and resilient agrifood systems thrive, and where regional cooperation ensures equitable and sustainable use of shared resources. This is an ambitious goal but is anchored in a behaviour change from the government in Central Asia, with the environmental threats worsen day after day and the risk of water insecurity leading to food insecurity and energy crises, the willingness for cooperation is growing. This will also influence behaviour change in the local communities as well as reshaping investments.

Addressing the complexities of these basins demands a fresh, comprehensive, and integrated approach—one rooted in the latest technological advancements and evidence-based decision-making on one side, and active

and inclusive community engagement on another. This strategy should offer real-time monitoring capabilities, enabling stakeholders to assess current local conditions and anticipate the potential impacts of various interventions.

Additionally, the program will be built on current governance structures and will strengthen the role of IFAS[2] which is the main player in the policy process for water in the region and will be the lead in the execution of component 1 and 2. Also, CAREC[3] will play an important role in the execution of the program at the regional level, leveraging its experiences and presence in all countries. The program success is anchored in the strengthening of relevant regional governance mechanisms, which will continue enabling the environment for cooperation and negotiation that is extremely needed in the region. Additional to this, geopolitical changes in the region over recent years have also encouraged greater cooperation among the 5 governments. Also, as the content and design of the program was driven by the countries based on their priorities and considering they will take an active role in the execution, it is expected to achieve permanent results.

Furthermore, the program will also strengthen the ongoing cooperation process among the five Hydrometeorological Services (Hydromets) in the region. Recent projects have been executed by all the Hydromets and this program will build on this ongoing process. The cooperation among the Hydromets is at the core of the success of component 3 of the program. Meetings were conducted with all them and during the PPG phase further discussion will take place, it is expected that a common agreement (memorandum of understanding) will be developed by the end of the PPG phase on how the Hydromets will coordinate the process under component 3, share data and information and build one each other knowledge and capacities.

Moreover, international organizations, including the United Nations, World Bank, EU, Asian Development Bank among others, which support various initiatives related to water management, infrastructure development, capacity building, and policy reforms in Central Asia, will be invited to engage with the program when fit. Tailored consultation will take place during the PPG phase to attract and engage these players.

Child project selection criteria

In the harsh geographic and climatic conditions, effective management of abundant natural resources is critical to the region's continued development and well-being. The criteria for child project selection were based on the catalytic potential of the national and regional actions toward the program objective and to contribute to the program pathways. The selection of the child projects was based on their alignment level and the degree of contribution to the CAWLN program pathways. The three regional projects will contribute to all program pathways, while the national projects will contribute to all pathways except the last one listed below:

- P1.** Enhancing policy and regulatory framework on integrated and participatory NRM
- P2.** Enhancing data driven decision making by developing EOP and national capacity building in using innovations
- P3.** Catalysing practices of integrated watershed management (land, water, biodiversity)
- P4.** Supporting Knowledge management, increasing public awareness and communities' engagement
- P5.** Securing Transboundary and cross-sectoral coordination

The contribution of CPs to the pathways implementation is depicted in Table 2.

[1] Subregional Action Programme for the Central Asian countries on combating desertification within the UNCCD context, 2003. <https://www.unccd.int/resources/other/sub-regional-action-programmes-sraps-asia-region>. The Action Programmes for other CA countries can be found at <https://www.unccd.int/convention/regions/action-programmes>: The Program on combating desertification in the Republic of Kazakhstan 2005-2015, 2005. The National Action Programme and the activity frameworks for implementation UNCCD in the Kyrgyz Republic for 2015 – 2020, 2014. The National Action Programme on combating desertification in Tajikistan, 2000. National Action Programme on combating desertification in Turkmenistan, 1997. National Action Programme on combating desertification in Republic of Uzbekistan, 1999.

[2] The International Fund for Saving the Aral Sea (IFAS) was established by a decision of the Heads of CA states on the 4th of January 1993 with the aim of developing and funding environmental and applied research projects and programs in order to improve ecological situation in the areas affected by the Aral Sea catastrophe and address the socioeconomic issues in the region.

[3] The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 countries and development partners working together to promote development through cooperation, leading to accelerated economic growth and poverty reduction.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment

We confirm that gender dimensions relevant to the program have been addressed as per GEF Policy and are clearly articulated in the Program Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PFD development as required per GEF policy, their relevant roles to program outcomes and plan to develop a Stakeholder Engagement Plan in the Coordination Child Project before CEO endorsement has been clearly articulated in the Program Description (Section B).

Yes

Were the following stakeholders consulted during PFD preparation phase:

Indigenous Peoples and Local Communities: No

Civil Society Organizations : Yes

Private Sector :

Provide a brief summary and list of names and dates of consultations

Stakeholders	Date of Consultation and Outcomes	Means of Future Engagement
Regional meetings		
FAO Regional GEF-8 Planning Workshop	A consultation workshop with representatives from Europe and Central Asia Region was held in Istanbul in May 2022. The country representatives indicated their interest to continue to build up on the work that was being done by the CACILM-2 project, to pursue improvements in natural resources management, but focusing on the improved management of shared water resources, also integrating measures for the conservation of landscapes.	The program idea was proposed by the countries and the FAO was requested to develop a framework for possible interventions that will work in coherence in the individual countries.
GEF Regional Workshop	Consultations were held with country representatives about possible project ideas in the lead up to GEF's Regional Workshop in December 2022 in Sarajevo; finalizing the project ideas for individual country projects. In the discussion with the countries and GEF Secretariat representatives, the idea of a program proposal that would frame a number of different projects, both with multiple countries as beneficiaries and those focused on single countries were shaped.	The program proposal was to be further developed and shaped by FAO, along with project outlines for the child projects, to be presented to the countries.
GEF Constituency Meeting	Countries were presented with the outline of the program, multi country and single-country child projects under the program in the lead up to the GEF Constituency Meeting in Dushanbe, in May 2023. Country representatives provided their feedbacks and support for the project ideas and the program proposal.	FAO team would conduct missions to each of the beneficiary countries, to identify further their needs and expectations for the development of Program Framework Document and the Child Projects Concept Notes.
Ministers of environment and GEF OFP	High level meeting in Vancouver during the GEF Assembly in August 2023. High level commitment from the countries regarding the program, leading role from FAO and relevance on the GEF-8 cycle. Also during this meeting, the representatives from Switzerland Federal Office of Environment, as representatives of the GEF Constituency for the region were invited and the Council Member was present during the discussion.	They are the highest decision making stakeholders and they will be involved throughout the whole process
Consultation workshop	26 September, 2023 (online) Participation of all countries, program presentation and discussion of the expected outcomes, timeline for the process and next steps.	Consultation will take place during the PPG phase, both national and regional ones

	The program was welcomed and the importance of a coordinate approach was stresses by the countries	
Kazakhstan		
Ministry of Ecology and Natural Resources (MENR)	<p>4 July 2023 the team met with:</p> <p>1) Ms. Asem Kussainova - Head of the Division of Green Technologies and Projects of the Department of Climate Policy and Green Technologies;</p> <p>2) Mr. Saken Atel - Head of the Department of Water Resources Accounting of the Committee on Water Resources;</p> <p>3) Mr. Erbolat Mukhtaruli - Chief Expert of the Division of International Water Relations of the Department of Transboundary Rivers;</p> <p>4) Ms. Ainur Zhassulanova - Expert of the Forestry Development Department of the Committee of Forestry and Wildlife.</p> <p>8 September 2023:</p> <p>Ms. Saule Sabiyeva, Deputy Director of the Climate Policy Department, GEF Operational Focal Point</p> <p>Nurman Tanatov, Expert of the Department of Climate Policy</p>	<p>The representatives of the MENR expressed their interest in the regional program proposal within their work function and confirmed its relevance to the Government's priorities. Questions on specific and technical activities were raised. Colleagues from REU explained that one of the main goals of their mission is to collect information on current context, gaps, and needs and agree on the details of the program and projects that are intended to be developed.</p> <p>Integration of the National Project within the STAR allocation into the regional program under 1 umbrella was discussed. The representatives noted that decision on the country's STAR has not been taken yet and will be discussed with GEF Focal point further.</p> <p>On 8 September, the project was represented to the GEF Operational Focal point.</p>
Committee for Water Resources the Ministry of Ecology and Natural Resources	<p>4 July 2023</p> <p>The meeting with the representative of the Committee was held jointly with the delegation above</p>	<p>Follow-up bilateral meetings with Mr. Saken Atel on the regional program's activities were held by the country office during August-September 2023. Since 1 September 2023, a new Ministry of Water Resources and Irrigation was established and the project was resent informally to the Ministry.</p>
Ministry of Agriculture	<p>5 July 2023 the team met with:</p> <p>1) Ms. Assel Berentayeva - Representative of the Committee for Land Resources Management</p> <p>2) Mr. Medet Zhadigeruly - Head of Agromelioration Division</p>	<p>The representative from the Ministry provided valuable insight and details on where the program/projects can focus its interventions and potential piloting.</p>

	<p>3) heads of the hydromelioration stations</p> <p>4) Mr. Meirzhan Essanbekov - Head of the South Hydro melioration expedition of Ministry</p> <p>The main goal of the meeting was to discuss potential project proposals. The discussion and guidelines from the MoA led to the first design of the proposal</p>	
Tajikistan		
Hydromet	<p>19 June, 2023</p> <p>Meeting with Hydromet to present and discuss the program</p> <p>The role that hydromet can play during the program implementation as discussed, they are the national body controlling all the meteorological data and have relevant historical data also monitoring mechanisms in place for water, glaciers monitoring</p>	Hydromet will be involved/led the execution of component 2 as all the monitoring process proposed by the program should be under Hydromet responsibility, also all 5 Hydromets are open to cooperation
Ministry of water	<p>26 June, 2023</p> <p>The program proposal was discussed with department on policies and department of irrigation, the proposal was shared in advance and all comments were addressed in the final proposal.</p> <p>Main point from department of policy was on how to better integrate the work at regional level and coordinate with other countries and from irrigation as on how to test and upscale water saving irrigations technologies within the country</p>	Ministry of water will be engaged during the ppg phase and a more active role during the execution of the program at national level will be evaluated
IFAS	<p>Currently, the Tajikistan is the IFAS presidency, the discussion with IFAS in Tajikistan was extremely relevant to better understand how this governance body will be strengthened during the program implementation, the concern about the current absence of Kyz from IFAS was shared. Ways to deal with the situation will be further discussed during the PPG phase</p>	IFAS will be the main governing body for the implementation for the com 1 of the program, including the 2 commission for the Syr Darya and Amu Darya
The Kyrgyz Republic		
Ministry of Agriculture (MoA)	<p>June 8, 2023</p> <p>Meeting with the head of the Forestry Service under the MoA:</p>	Interest in the following components, aligned with the CAWLN proposal identified:

	<p>Mr. Almaz Musaev, Head of the Forestry Service;</p> <p>Mr. Bakyt Yrsaliev, Deputy Head</p> <p>Ms. Baglan Salykmambetova, Chief of International Cooperation Unit</p> <p>The goal was to first discuss the main concern and potential area for project development. Main points were: Clear cut due to small hydropower construction, Forest fires. Human induced to have more land for pastures, unclear normative documents, sometimes outdated; Uncontrolled tourist activities, Incoherency in Maps used by government, Development of unproductive lands, livestock grazing in winter and pasture lands expansion (deliberate burning of forests); Non-endemic tree species used for plantations;</p> <p>August 01, 2023</p> <p>Mr. Azamat Shamiev, Lead Specialist</p> <p>The main goal of the meeting was to gather information on the ongoing projects implemented by MoA. The information was received within a week and used for the development of the draft documentation.</p>	<ul style="list-style-type: none"> - Piloted projects on reforestation and afforestation - Early warning systems - Riparian forests development - Review and update of the existing legislation - Research components <p>Institutional Capacity building</p> <p>Received information could be used during the detailed project design phase for meetings with relevant projects and discussing concrete areas for project activities.</p>
Kyrgyzhydromet	<p>September 12, 2023 Kyrgyzhydromet Ministry of Emergency Situations Ms. Zoia Kretova, former Head of the climate department.</p> <p>The main aim of the meeting was to identify major issues related to the current capacity of the organization.</p> <p>The meeting went very productively, Ms. Kretova provided a lot very valuable information about Kyrgyzhydromet and it's activities in the country, as well cooperation with the neighboring countries.</p>	<p>Kyrgyzhydromet is the major organization in the country mandated with climate monitoring and analysis. Therefore, it is useful to include them into the project activities related to climate change adaptation.</p> <p>In particular she provided information about the staffing and knowledge management in the organization.</p> <p>It was also confirmed in an informal consultation that Kyrgyzhydromet is willing to cooperate with the other Hydromet under the program scope</p>

Kyrgyzgirozem	<p>August 16, 2023</p> <p>Mr. Almaz Abdiev, Head of Kyrgyzgirozem</p> <p>Kyrgyzgirozem is responsible for monitoring of the land degradation in the country. They have field staff across whole Kyrgyzstan. Land degradation is a big issue, pasture management is of particular concern. The organization suffer lack of capacity and trainings. And still has a lot of information (historical data) that needs to be digitalized.</p>	<p>Kyrgyzgirozem is ready to support FAO GEF project in any capacity. And it will be involved in the next phases</p> <p>Most of the staff don't speak English so this needs to be consider duirgn the project preparation and implementation</p>
Ministry of Natural Resources, Ecology and Technical Supervision (MNRETS)	<p>August 10, 2023</p> <p>Meeting with Climate Finance Centre:</p> <p>Mr. Azamat Temirkulov, Director</p> <p>Mr. Aibek Karabaev, Agriculture Specialist</p> <p>Mr. Chyngyz Kochorov, Head of Global Snow Leopard Secretariat</p> <p>MNRETS is the GEF OFP and shall be involved in all discussion from the beginning, even that water and forest resources are under MoA responsibility</p>	<p>Consultation will take place during the PPG phase, both national and regional ones</p> <p>Ministry of Foreign Affairs should be a key partner in discussion, as the water issues is sensitive in the CA region</p>
Turkmenistan		
IFAS	<p>Meeting took place on 20 July</p> <p>IFAS present the main problems they are facing with water management in the Amu Darya and the potential geopolitical changes in the region, the main concerns they shared were already integrated in the program. Further discussion will take place during the PPG phase.</p>	<p>IFAS will be the main governing body for the implementation for the com 1 of the program, including the 2 commission for the Syr Darya and Amu Darya</p>
Agricultural University	<p>Meeting took place on the 17 July</p> <p>The University has a pilot area of 1000 ha, where the demonstration plots and are open to cooperation with the program. Also they are open to cooperation in the project, development of curriculum, study programs for the professors and students.</p>	<p>The agriculture university can play an important role in knowledge generation and dissemination, more details roles will be further discussed during the PPG phase</p>
Hydromet	<p>Meeting took place on 17 July</p> <p>Hydromet is responsible on hydrology and agrometeorology in the country, there is an strong need to increase the institutional capacity and the team we met were positive with the program proposal and open to be</p>	<p>Hydromet will be involved/led the execution of component. In the case of Turkmenistan, the country will benefit from other countries experiences and will also be able to strength their own capacity.</p>

	involved and be able to increase their technical capacity	
CAREC	The meeting was held on the 19 July CAREC current has projects in the Lebab, the target region for the national project and also the main important area for the Amy Daria project in the country. They share they experience working in the region	As CAREC is presence in all 5 countries they may play an execution role during the project. No formal meeting took place during the curet phase of the project, only informal talks, but this will be further explored during the PPG phase.
University of desertification	The meeting was held on the 19 July The potential of Aral Sea restoration was discussed.	The university has potential to conduct filed testing pilots and produce new knowledge for halt desertification. They will be a important stakeholder during the project implementation
Ministry of Agriculture and Environment Protection ^{[1]73}	The meeting was held on the 17 July Discussion related to Land cadaster and GIS technologies and how these could be integrated in the project design too place. The department of forest was also consulted and discussion on afforestation and restoration of degraded area took place, discussion of different approaches that can be used and tested were at the main points of the discussion The State committee on water management was also consulted topics on the main issues regard water management, water use and water scarcity were discussed.	With the restructure of the Ministry of Agriculture and Environment Protection into 2 entities, during he PPG phase additional consultation will be held to re-identify the main partners from both ministries, As per the complexity of the program, both ministries will be involved in the implementation
Consultation workshop	The Inception workshop/meeting (19 th July)	Consultation will take place during the project preparation, the main goal is to assure that the program and national project are aligned with the country needs and all the stakeholder are properly heard.
Ministry of Defense	The meeting was held on the 20 of July In the country, the ministry of defense is responsible and need to be involved in all discussion related to satellite image using, and remote sensing , as the program has a strong component on that, the meeting was to inform the process to them and agree on the procedures to get proper authorizations and follow the natural rules during the project implementation	Ministry of defense will be involved in the project and will be informed about how satellite image will be used and all the clearances necessary will be followed by the project team accordingly .

Uzbekistan

IFAS	<p>12 July Meeting with IFAS team to discuss potential collaboration, main actions that IFAS has in the country, they are in the beta phase of a APP application on water management to be used by farmers, the program can integrate this app in the future actions and also make it available to other countries.</p>	<p>IFAS will be the main governing body for the implementation for the com 1 of the program, including the 2 commission for the Syr Darya and Amu Darya</p>
Ministry of agriculture	<p>11 July, 2023 - Meeting with of Agriculture was conducted with heads of departments and advisor of Minster of MoA The main point of concern is water availability as 80% of the water used in UZB is produced in other countries, and only 36% of the water is not saline, so the agriculture sector is at constant treat because of water scarcity. The MoA is always open to testing new technologies and options to dela with water scarcity and salinity (water saving techniques, bioremediation and salt resistant species among them).</p>	<p>MoA will be a important player in the execution of the project, it will support all the piloting process of new approach and practices. During the PPG phase all the roles and responsibility of the MoA will be properly defined.</p>
Ministry of water	<p>12 July, 2023 Meeting with MoWR representatives to discuss the priorities from the government and present the project layout They have a relevant database on water use in the country, also deal with soil monitoring and (real time monitoring) in some regions in the country. Also have some tools and monitoring mechanism for groundwater monitoring and are developing a APP for farmers on soil quality.</p>	<p>MoW has very strong knowledge as well a setup for data collection and data analysis and is developing mechanisms to share these data with farmers. During the PPG phase the role and responsibility of the MoW will be further clarified.</p>
UzHydromet	<p>Meeting with Deputy Director Discussion on the capacity of UzHydromet in data analysis and potential of knowledge transferred was discussed, UzHydromet is the CA hup for meteorological issues and has very advanced facilities and staff capacity.</p>	<p>Hydromet will be involved/led the execution of component 2 as all the monitoring process proposed by the program should be under Hydromet responsibility, also all 5 Hydromets are open to cooperation</p>
Consultation workshop	<p>13 July The program was present to several stakeholders in the country (government). The scope of the program and national project were presented. Working group discussion took place and suggestions were made. The project designed was adjusted to include the suggestions</p>	<p>Consultation will take place during the project preparation, the main goal is to assure that the program and national project are aligned with the country needs and all the stakeholder are properly heard.</p>
Other consultation		

European Union (EC)	European commission was consulted during the second week of September (desk dealing with Central Asia) and they informed they are not interested in partner with the program.	Additional consultations and coordination meetings will take place during the PPG phase to assure coordination and coherence among this program and initiatives and investments from EU in the same area.
Swiss Development Agency	Written communication has been sent to GEF Council Member from Switzerland, representing the GEF Constituency in the region, who also shared the communication and information with representatives from Swiss Agency for Development and Cooperation, from May to end of September, informing them about the program (progression, design, logframe) also they were invited to the program consultations.	Additional discussion will continue during the PPG phase to identify potential areas of collaboration
IBRD	Meeting with EBRD took place in July and August. Potential partnership, and collaboration were discussed.	Future discussion will continue, if possible, involving GEFSEC
Private sector and investors	As per lack of time, no proper consultation with private sector and inverter in the region was conducted, informal meeting took place, but not in a coherent and structured way.	During the PPG phase, specific country led actions will take place to engage and attract private sector into the program and child projects

[1] Ministry of Agriculture and Environment Protection, that according to the Decree of the President of Turkmenistan dated July 14, 2023 was reorganized into two ministries - the Ministry of Agriculture of Turkmenistan and the Ministry of Environment Protection of Turkmenistan, but at the time of the consultation the reorganization as still under process so they were consider as only one entity

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PFD preparation phase)

Private Sector

Will there be private sector engagement in the program?

Yes

And if so, has its role been described and justified in section B program description?

Yes

Environmental and Social Safeguards

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Program Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	GEF Program Financing (\$)	Agency Fee(\$)	Total GEF Financing (\$)
FAO	GET	Regional	Land Degradation	LD Global/Regional Set-Aside	892,432.00	80,318.00	972,750.00
FAO	GET	Regional	International Waters	International Waters: IW-3	892,432.00	80,318.00	972,750.00
FAO	GET	Regional	International Waters	International Waters: IW-3	5,354,588.00	481,912.00	5,836,500.00
FAO	GET	Regional	International Waters	International Waters: IW-3	4,437,156.00	399,344.00	4,836,500.00
FAO	GET	Kazakhstan	Biodiversity	BD STAR Allocation: BD-1	1,530,506.00	137,744.00	1,668,250.00
FAO	GET	Kazakhstan	Land Degradation	LD STAR Allocation: LD-1	1,530,505.00	137,745.00	1,668,250.00
FAO	GET	Kyrgyz Republic	Biodiversity	BD STAR Allocation: BD-1	874,575.00	78,711.00	953,286.00
FAO	GET	Kyrgyz Republic	Land Degradation	LD STAR Allocation: LD-1	2,186,436.00	196,779.00	2,383,215.00

FAO	GET	Turkmenistan	Biodiversity	BD STAR Allocation: BD-1	438,897.00	39,500.00	478,397.00
FAO	GET	Turkmenistan	Climate Change	CC STAR Allocation: CCM-1-4	1,316,687.00	118,501.00	1,435,188.00
FAO	GET	Turkmenistan	Land Degradation	LD STAR Allocation: LD-3	1,565,979.00	140,938.00	1,706,917.00
FAO	GET	Uzbekistan	Biodiversity	BD STAR Allocation: BD-1	2,671,937.00	240,474.00	2,912,411.00
FAO	GET	Uzbekistan	Climate Change	CC STAR Allocation: CCM-1-4	534,388.00	48,094.00	582,482.00
FAO	GET	Uzbekistan	Land Degradation	LD STAR Allocation: LD-1	1,781,292.00	160,316.00	1,941,608.00
Total GEF Resources (\$)						2,340,694.00	28,348,504.00

Project Preparation Grant (PPG)

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
FAO	GET	Regional	Land Degradation	LD Global/Regional Set-Aside	25,000.00	2,250.00	27,250.00
FAO	GET	Regional	International Waters	International Waters: IW-3	25,000.00	2,250.00	27,250.00
FAO	GET	Regional	International Waters	International Waters: IW-3	150,000.00	13,500.00	163,500.00
FAO	GET	Regional	International Waters	International Waters: IW-3	150,000.00	13,500.00	163,500.00
FAO	GET	Kazakhstan	Biodiversity	BD STAR Allocation: BD-1	75,000.00	6,750.00	81,750.00
FAO	GET	Kazakhstan	Land Degradation	LD STAR Allocation: LD-1	75,000.00	6,750.00	81,750.00
FAO	GET	Kyrgyz Republic	Biodiversity	BD STAR Allocation: BD-1	42,857.00	3,857.00	46,714.00

FAO	GET	Kyrgyz Republic	Land Degradation	LD STAR Allocation: LD-1	107,143.00	9,642.00	116,785.00
FAO	GET	Turkmenistan	Biodiversity	BD STAR Allocation: BD-1	19,820.00	1,783.00	21,603.00
FAO	GET	Turkmenistan	Climate Change	CC STAR Allocation: CCM-1-4	59,461.00	5,351.00	64,812.00
FAO	GET	Turkmenistan	Land Degradation	LD STAR Allocation: LD-3	70,719.00	6,364.00	77,083.00
FAO	GET	Uzbekistan	Biodiversity	BD STAR Allocation: BD-1	80,357.00	7,232.00	87,589.00
FAO	GET	Uzbekistan	Climate Change	CC STAR Allocation: CCM-1-4	16,072.00	1,446.00	17,518.00
FAO	GET	Uzbekistan	Land Degradation	LD STAR Allocation: LD-1	53,571.00	4,821.00	58,392.00
Total PPG Amount (\$)					950,000.00	85,496.00	1,035,496.00

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
FAO	GET	Kazakhstan	Climate Change	CC STAR Allocation	3,500,000.00
FAO	GET	Kyrgyz Republic	Biodiversity	BD STAR Allocation	1,000,000.00
FAO	GET	Kyrgyz Republic	Land Degradation	LD STAR Allocation	2,500,000.00
FAO	GET	Turkmenistan	Biodiversity	BD STAR Allocation	500,000.00
FAO	GET	Turkmenistan	Climate Change	CC STAR Allocation	1,500,000.00
FAO	GET	Turkmenistan	Land Degradation	LD STAR Allocation	1,784,000.00
FAO	GET	Uzbekistan	Biodiversity	BD STAR Allocation	200,000.00
FAO	GET	Uzbekistan	Climate Change	CC STAR Allocation	2,400,000.00
FAO	GET	Uzbekistan	Land Degradation	LD STAR Allocation	3,000,000.00
Total GEF Resources					16,384,000.00

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
IW-3	GET	892,432.00	15,219,870.00
LD-4	GET	892,432.00	15,219,870.00
IW-3	GET	5,354,588.00	87,435,000.00
IW-3	GET	4,437,156.00	65,350,810.00
BD-1-3	GET	1,530,506.00	27,338,520.00
LD-1	GET	1,530,505.00	27,338,520.00
BD-1-4	GET	874,575.00	15,726,716.00
LD-1	GET	2,186,436.00	39,261,804.00
BD-1-3	GET	438,897.00	5,616,035.00
CCM-1-4	GET	1,316,687.00	16,809,813.00
LD-3	GET	1,565,979.00	19,987,977.00
BD-1-3	GET	2,671,937.00	6,000,000.00
CCM-1-4	GET	534,388.00	2,000,000.00
LD-1	GET	1,781,292.00	12,200,000.00
Total Project Cost		26,007,810.00	355,504,935.00

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Kazakhstan Ministry of Agriculture, co-financing for LDN Coordination project	In-kind	Recurrent expenditures	2,889,740.00
Recipient Country Government	Kyrgyzstan Ministry of Agriculture, co-financing for LDN Coordination project	In-kind	Recurrent expenditures	1,500,000.00

Recipient Country Government	Turkmenistan Ministry of Environment Protection, co-financing for LDN Coordination project	Public Investment	Investment mobilized	3,800,000.00
Recipient Country Government	Tajikistan Centre for Environmental Projects, co-financing for LDN Coordination project	Grant	Investment mobilized	9,000,000.00
Recipient Country Government	Uzbekistan, Ministry of Water Resources co-financing for LDN Coordination project	Public Investment	Investment mobilized	10,000,000.00
GEF Agency	FAO, co-financing for LDN Coordination project	Grant	Investment mobilized	2,100,000.00
Recipient Country Government	Tajikistan, co-financing for LDN Coordination project	In-kind	Recurrent expenditures	150,000.00
Recipient Country Government	Kyrgyzstan Ministry of Natural Resources, Environment and Technical Supervision, co-financing for LDN Coordination project	In-kind	Recurrent expenditures	1,000,000.00
Recipient Country Government	Tajikistan Centre for Environmental Projects co-financing for Amu Darya Project	In-kind	Recurrent expenditures	200,000.00
Recipient Country Government	Tajikistan Centre for Environmental Projects/World Bank co-financing for Amu Darya Project	Grant	Investment mobilized	36,000,000.00
Recipient Country Government	Turkmenistan Ministry of Environment Protection co-financing for Amu Darya Project	Public Investment	Investment mobilized	21,000,000.00
Recipient Country Government	Uzbekistan Ministry of Water Resources co-financing for Amu Darya Project	Public Investment	Investment mobilized	30,000,000.00
GEF Agency	FAO co-financing for Amu Darya Project	Grant	Investment mobilized	235,000.00
Recipient Country Government	Kazakhstan Ministry of Water Resources and Irrigation co-financing for Syr Darya Project	In-kind	Recurrent expenditures	13,115,810.00
Recipient Country Government	Kyrgyzstan Ministry of Agriculture co-financing for Syr Darya Project	In-kind	Recurrent expenditures	8,000,000.00

Recipient Country Government	Uzbekistan Ministry of Water Resources co-financing for Syr Darya Project	Public Investment	Investment mobilized	30,000,000.00
GEF Agency	FAO co-financing for Syr Darya Project	Grant	Investment mobilized	235,000.00
Recipient Country Government	Kazakhstan Ministry of Environment and Natural Resources co-financing for Syr Darya Project	In-kind	Recurrent expenditures	10,000,000.00
Recipient Country Government	Kyrgyzstan Ministry of Natural Resources, Environment and Technical Supervision co-financing for Syr Darya Project	In-kind	Recurrent expenditures	4,000,000.00
Recipient Country Government	Ministry of Agriculture of Kazakhstan, co-financing for the National Project	Public Investment	Investment mobilized	54,677,040.00
Recipient Country Government	Ministry of Agriculture of Kyrgyzstan, co-financing for National Child Project	In-kind	Recurrent expenditures	12,000,000.00
Recipient Country Government	Ministry of Agriculture of Kyrgyzstan, co-financing for National Child Project	Public Investment	Investment mobilized	1,500,000.00
Recipient Country Government	Ministry of Natural Resources, Environment and Technical Supervision of Kyrgyzstan, co-financing for National Child Project	In-kind	Recurrent expenditures	11,500,000.00
GEF Agency	FAO co-financing for Kyrgyzstan National Project	Grant	Investment mobilized	29,988,520.00
Recipient Country Government	Ministry of Environment Protection of Turkmenistan, co-financing for National Child Project	Public Investment	Investment mobilized	41,321,000.00
GEF Agency	FAO co-financing for National Child Project in Turkmenistan	Grant	Investment mobilized	1,092,825.00
Recipient Country Government	Ministry of Agriculture of Uzbekistan, co-financing for National Child Project	Public Investment	Investment mobilized	20,000,000.00
GEF Agency	FAO co-financing for National Child Project in Uzbekistan	Grant	Investment mobilized	200,000.00
Total Co-financing				355,504,935.00

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	phone	Email
GEF Agency Coordinator	FAO	10/16/2023	Jeffery Griffin	+390657055680	Jeffrey.Griffin@fao.org
Project Coordinator	FAO	10/16/2023	Lorenzo Galbiati	+393333981370	lorenzo.galbiati@fao.org
Project Coordinator	FAO	10/16/2023	Kaan Evren Basaran	+905078986087	kaan.basaran@fao.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name	Position	Ministry	Date (MM/DD/YYYY)
Saule Sabiyeva	Deputy Director of the Climate Policy Department	Ministry of Ecology and Natural Resources of the Republic of Kazakhstan	10/20/2023
Melis Turgunbaev	Minister	Ministry of Natural Resources, Ecology and Technical Supervision, Kyrgyz Republic	9/12/2023
Sheralizoda Bahodur	Chairperson	Committee of Environmental Protection Under the Government of The Republic of Tajikistan	9/4/2023
Berdi Berdiyev	Head of the Department for Coordinating International Environmental Cooperation and Projects	Ministry of Environmental Protection of Turkmenistan	9/2/2023
Jakhongir Talipov	Head of Department	Ministry of Natural Resources - International Cooperation and Projects, Republic of Uzbekistan	9/14/2023

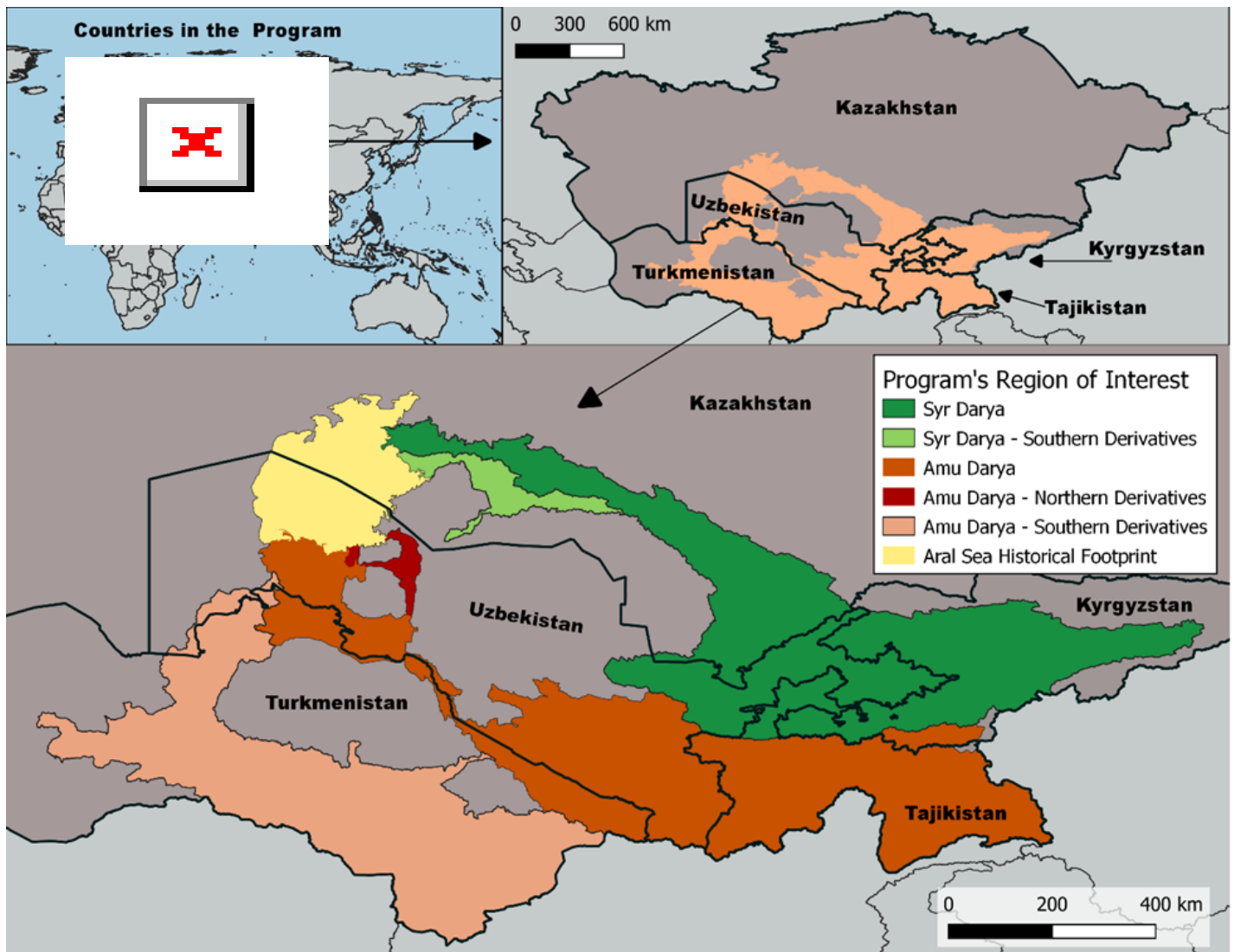
ANNEX C: PROGRAM LOCATION

Please provide geo-referenced information and map where the project interventions will take place

The geographic location of the program's field interventions is confined to the extended Amu Darya and Syr Darya river basins, including the river streams, originating irrigation networks, and associated catchment areas, as outlined in the figure below.

An interactive web application developed by FAO, which features the boundaries of the described area of intervention and associated datasets on land, society, and ecosystems parameters, can be found at <https://projectgef.fao.users.earthengine.app/view/lwn-dss>

The interventions concerning policy, regulatory framework, capacity building, knowledge exchange, and other soft components will extend across the entire territory of the Central Asian (CA) countries.



Regions	Min Longitude	Min Latitude	Max Longitude	Max Latitude	Area hectares
Amu Darya	36.672	58.225	43.942	75.153	30,226,948
Amu Darya - Northern Derivatives	42.092	60.133	43.971	61.774	700,319
Amu Darya - Southern Derivatives	35.129	53.621	43.054	65.659	24,670,185
Syr Darya	39.383	60.896	46.334	78.354	28,454,537
Syr Darya - Southern Derivatives	43.687	61.233	45.604	66.071	1,922,079
Aral Sea Historical Footprint	43.391	58.178	46.873	61.972	6,776,759

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(Program level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title

ESS Checklist

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Decertification
Significant Objective 1	No Contribution 0	Significant Objective 1	Principal Objective 2

ANNEX F: TAXONOMY WORKSHEET

Level 1	Level 2	Level 3	Level 4
Influencing models			
	Transform policy and regulatory environments		
	Strengthen institutional capacity and decision-making		
	Convene multi-stakeholder alliances		
	Demonstrate innovative approaches		
Stakeholders			
	Private Sector		
		SMEs	
		Individuals/Entrepreneurs	
	Beneficiaries		
	Local Communities		
	Civil Society		
		Community Based Organization	
		Non-Governmental Organization	
		Academia	
	Type of Engagement		
		Information Dissemination	
		Partnership	
		Consultation	
		Participation	
	Communications		
		Awareness Raising	
		Public Campaigns	
		Behavior Change	
Capacity, Knowledge and Research			
	Capacity Development		
	Knowledge Generation and Exchange		
	Learning		
		Theory of Change	
		Adaptive Management	
		Indicators to Measure Change	
	Innovation		
	Knowledge and Learning		
		Knowledge Management	
		Innovation	
		Capacity Development	
	Stakeholder Engagement Plan		
Gender Equality			
	Gender Mainstreaming		
		Beneficiaries	
		Sex-disaggregated indicators	
		Gender-sensitive indicators	

Focal Areas/Theme		Food Systems, Land Use and Restoration	
			Landscape Restoration
			Comprehensive Land Use Planning
	Biodiversity		
		Mainstreaming	
			Agriculture & agrobiodiversity
			Crop Wild Relatives
			Plant Genetic Resources
		Biomes	
			Rivers
			Grasslands
			Desert
	Forests		
		Forest and Landscape Restoration	
	Land Degradation		
		Sustainable Land Management	
			Restoration and Rehabilitation of Degraded Lands
			Ecosystem Approach
			Sustainable Agriculture
			Sustainable Pasture Management
			Improved Soil and Water Management Techniques
			Drought Mitigation/Early Warning
		Land Degradation Neutrality	
			Land Productivity
			Land Cover and Land cover change
	International Waters		
		Ship	
		Coastal	
		Freshwater	
			River Basin
		Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		Strategic Action Plan Implementation	
	Climate Change		
		Climate Change Mitigation	
			Agriculture, Forestry, and other Land Use

ANNEX H : CHILD PROJECT INFORMATION

Title

Child Projects Concept Notes.v2_revised after "upstream comments"

PFD.v2_revised per "upstream comments"_2Nov23

PFD Document

Child Projects Description File

Child Projects under the Program

Country	Project Title	GEF Agency	GEF Amount (\$) PROJECT FINANCING	Agency Fees(\$)	Total(\$)
	FSPs				
Regional	Strengthening Integrated Water Management in Amu Darya, Zarafshon and Panj River Basins	FAO	5,354,588.00	481,912.00	5,836,500.00
Regional	Strengthening integrated Water Management in Syr Darya and Narin River Basins project	FAO	4,437,156.00	399,344.00	4,836,500.00
Kazakhstan	Sustainable land management and restoration of degraded lands mainstreaming biodiversity conservation and ecosystem services in the Southern region of Kazakhstan	FAO	3,061,011.00	275,489.00	3,336,500.00
Kyrgyz Republic	Integrated water resources management for the restoration of agro-woodlands in the Syrdarya River basin project	FAO	3,061,011.00	275,490.00	3,336,501.00
Turkmenistan	Catalyzing the Nature-Positive Transformation of the Agricultural Sector in Turkmenistan towards Enhanced Resilience to Climate Change project	FAO	3,321,563.00	298,939.00	3,620,502.00
Uzbekistan	Integrated Natural Resources Management for Improved Ecosystem Conservation and Biodiversity Preservation	FAO	4,987,617.00	448,884.00	5,436,501.00
	Subtotal (\$)		24,222,946.00	2,180,058.00	26,403,004.00
	MSPs				
Regional	Coordinated approach for Land Restoration in Vulnerable Ecosystems of Central Asia	FAO	1,784,864.00	160,636.00	1,945,500.00
	Subtotal (\$)		1,784,864.00	160,636.00	1,945,500.00

	Grant Total (\$)		26,007,810.00	2,340,694.00	28,348,504.00
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