SGP Country Programme Strategy (SCP) Operational Phase 8

Small Grants Programme of Global Environment Facility

Kyrgyz Republic

OPERATIONAL PHASE 8 (OP8)
SGP COUNTRY PROGRAMME STRATEGY (CPS)
KYRGYZ REPUBLIC

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List of abbreviations

ABS – Nagoya Protocol on Access and Benefit-Sharing
ACTED – Agence d'aide à la coopération technique et au développement
AFLU – Association of Forest and Land Users of Kyrgyzstan
AKDN – Aga Khan Development Network
AUCA – American University of Central Asia
BG NAS KR – Botanical Garden of the National Academy of Sciences of Kyrgyz Republic
BI NAS KR – Biology Institute of the National Academy of Sciences of Kyrgyz Republic
CAIAG – Central Asian Institute of Applied Geosciences
CAREC – Central Asian Regional Environmental Centre
CBA – Community-Based Adaptation
CBD – UN Convention on Biological Diversity
CBOs – Community-based organizations
CSOs – Civil society organizations
CEPF – Critical Ecosystem Partnership Fund
CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMDEKS – Community Development and Knowledge Management for the Satoyama Initiative Programme
COP – Conference of Parties of United Nations Framework Convention on Climate Change
DDT – Dichlorodiphenyltrichloroethane (pesticide)
ESG — Environmental, Social, and Governance
FAO – Food and Agriculture Organization
FFI – Fauna & Flora International
FI NAS KR – Forest Institute of the National Academy of Sciences of Kyrgyz Republic
FOD Bio-Kg – Federation of organic movement Bio-Kg
FPIC – Free, Prior, and Informed Consent
FSC – Forest Stewardship Council
GEF – Global Environment Facility
GHG – Greenhouse gases
GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit
GLOF – glacial lake outburst flood
GSLEP – Global Snow Leopard & Ecosystem Protection Program
ICCA – Indigenous and Community Conserved Areas
IFAD – International Fund for Agricultural Development
JICA – Japan International Cooperation Agency
KNAU – Kyrgyz National Agrarian University
KNU – Kyrgyz National University
KOODP – Kyrgyz Society of Wild Nature Protection
KSTU – Kyrgyz State Technical University after Razzakov
M&E – Monitoring and Evaluation
MSDSP – Mountain Societies Development Support Programme
MSRI – Mountain Societies Research Institute
NABU – Naturschutzbund Deutschland
NAMA – Nationally Appropriate Mitigation Actions

NAP – National Action Programme
NAPA – National Adaptation Programmes of Action
NAS – National Academy of Sciences
NatStatCom – National Statistical Committee
NBSAP – National Biodiversity Strategy and Action Plan
NDC – Nationally Determined Contribution
NSC – National Steering Committee
NDVI – Normalized Difference Vegetation Index
OECMs – Other Effective area-based Conservation Measures
OP7 – 7th Operational Phase
OP8 – 8th Operational Phase
POPs – Persistent Organic Pollutants
PWDs – Persons with Disabilities
RDF – Rural Development Fund
ROAM — Restoration Opportunities Assessment Methodology
SAEPF – State Agency for Environmental Protection and Forestry
SAICM – Strategic Approach to International Chemicals Management
SAP – Strategic Action Plan
SDGs – Sustainable Development Goals
SGP – Small Grants Programme
SLF – Snow Leopard Foundation
SLN – Snow Leopard Network
SLT – Snow Leopard Trust
TAG – Technical Advisory Group
UCA – University of Central Asia
UNCCD – UN Convention to Combat Desertification
UNDP – United Nations Development Programme
UNECE – Convention on Environmental Impact Assessment in a Transboundary Context
UNFCCC – UN Framework Convention on Climate Change
UNIDO – United Nations Industrial Development Organization
USAID – U.S. Agency for International Development
VNRs – Voluntary National Reviews
WB – World Bank
WFP – World Food Programme
WWF – World Wide Fund for Nature

OP8 Financial Resources - SGP Country Programme (estimated US$)[1]

	GEF	Not GEF	Total
Current SGP grants since 2002:	4 671 387	877 993	5 549 380
Number of projects	296	34	330
Project co-funding in cash		2 764 105	2 764 105
Project in kind contribution		3 155 886	3 155 886
OP8 GEF Core Funds	790 975	150 000	940 975
Other funds (secured)	None		
Other funds (expected/to be mobilized)	None		

1. INTRODUCTION

The Eighth Operational Phase of the Small Grants Programme (SGP OP8) builds on 30 years of successful experience in empowering local civil society organizations (CSOs) and community-based organizations (CBOs) in designing and leading community driven initiatives that have enhanced household wellbeing, increased awareness and resilience regarding environmental threats, and generated global environmental benefits. With economic development pressures intensifying in many parts of the developing world and the associated rising inequalities, local communities, particularly vulnerable and disadvantaged groups are becoming more and more marginalized, unable to cope with threats associated with ecosystem degradation, biodiversity loss and climate change. Lessons learned and experience gained in previous SGP Operational Phases have demonstrated that integrated, landscape-seascape approaches are effective in mobilizing multiple stakeholder collaboration, linking local CSOs/CBOs with enabling partners and achieving mutually supportive livelihood and environmental outcomes at scale.

The objectives of the SGP OP8 is to engage local CSOs/CBOs in landscape-seascape approaches across the world, providing them access to knowledge and information, capacitating them through learning-by-doing, skills development, and delivering technical and grant assistance for interventions that enhance wellbeing and socioeconomic conditions and generate global environmental benefits.

The OP8 objectives reflect the key features of Global Environment Facility Small Grants Programme 2.0 (GEF SGP), including new approaches to support youth, women and local communities, linking up with complementary mechanisms, such as the Microfinance Initiative and CSO Challenge Programme, cooperating with other GEF Agencies, and leveraging opportunities with GEF strategies, including the delivery of the GEF-8 Integrated Programmes. In addition, OP8 will facilitate opportunities for innovation and scaling up, catalyse multi-stakeholder alliances to test new approaches through CSOs, and leverage its dialogue platforms towards greater impact. OP8 will also align and contribute to the UNDP Strategic Plan (2022-2025).

[1] The level of SGP OP8 resources is an estimated total of: (a) the GEF8 core grant allocation; (b) approved STAR resources; as well as (c) other sources of cost sharing & co-financing (country, regional and/or global levels). SGP countries with remaining OP7 balances that have not been pipelined will be expected to use these balances in line with the OP8 strategic approach in order to be coherent in terms of SGP programming and results expected.

2. COUNTRY PROGRAMME SUMMARY

The GEF Small Grants Program (GEF SGP) has been implemented in the Kyrgyz Republic since 2002 and, for over two decades, has served as an effective mechanism for supporting local initiatives aimed at addressing global environmental challenges in the context of sustainable development. Since the program's inception, 330 projects totalling over $5.5 million have been implemented in the country, including approximately $2.7 million in cofinancing from local communities, government agencies, the private sector, and international partners. These projects covered all regions of the country, with a geographic focus on the Osh and Batken provinces.

The projects are distributed across the GEF's core areas as follows: 46% of grant resources are directed toward biodiversity conservation, 26% toward preventing land degradation, 19% toward climate change mitigation, and 3% toward international waters and sustainable chemicals management. Key thematic areas included the protection of rare species, pasture management, sustainable agriculture, alternative energy, ecotourism, sustainable forest management and the preservation of traditional knowledge.

The GEF SGP played a significant role in institutionalizing a community-based approach to nature conservation: the program supported the establishment of over 30 nature conservancies and actively promoted the concept of Indigenous and Community Conserved Areas (ICCA), including through the ICCA-GSI initiative. The GEF SGP significantly contributed to the development of biodiversity conservation and natural resource management strategies, both at the National Biodiversity Strategy and Action Plan (NBSAP) level and within the framework of national adaptation plans (NAPs), and sustainable forest and pasture management strategies. Through collaboration with the Ministry of Natural Resources, the National Academy of Sciences of the Kyrgyz Republic (NAS KR), United Nations Development Programme (UNDP), German Agency for International Cooperation (GIZ), Food and Agriculture Organization of the United Nations (FAO), and several nongovernmental organizations (NGOs) and academic institutions, the program catalysed the integration of local knowledge into national policy.

Of particular note is the implementation of the Community development and knowledge management for *Satoyama* Initiative (COMDEKS) flagship project from 2013 to 2016, which enabled the investment of over $500000 in the landscape of the Issyk-Kul region, as well as projects to conserve snow leopards and support forest biocentres in the Naryn and Chon-Alai valleys. COMDEKS implemented environmentally friendly irrigation practices, water-saving technologies, sustainable fisheries management, and ecosystem restoration.

In terms of social impact, more than 160 NGOs and over 280 communities directly benefited from the program. Women and youth were involved in the development and implementation of over 40% of projects, and several initiatives aimed to support the inclusive participation of people with disabilities and representatives of vulnerable groups. The program also supported gender equality and women's empowerment through projects on organic farming, handicrafts, and eco-entrepreneurship.

Thanks to accumulated experience and ongoing engagement with the National Steering Committee (NSC), Technical Expert Groups, and a broad range of stakeholders, the GEF SGP in Kyrgyzstan has proven itself to be an effective bottom-up tool for implementing global and national environmental strategies. A significant

outcome is the widespread dissemination of successful project models, including their scaling up within the programs of other donors and UN agencies.

Key lessons learned over the years of implementation include the need to consider an ecosystem approach when setting priorities, the importance of sustainable partnerships at the local level, and the need for flexibility in adapting project solutions to specific socio-ecological conditions.

Key lessons learned during the GEF SGP implementation include:

- the need to combine environmental and economic objectives for project sustainability;
- the importance of supporting community-driven initiatives;
- the importance of gender inclusion and youth participation;
- the need for an integrated ecosystem approach, including work in target natural landscapes/ecosystems;
- strengthening coordination between government agencies, donors, and communities to scale up successful practices.

Thus, the GEF SGP in the Kyrgyz Republic not only provides support to communities but also acts as a catalyst for systemic change in the areas of environmental protection, sustainable development, and strengthening the capacity of civil society.

3. COUNTRY PRIORITIES AND STRATEGIC ALIGNMENT

3.1 Alignment with national priorities

The Ministry of Natural Resources, Ecology, and Technical Supervision of the Kyrgyz Republic (Ministry of Natural Resources) plays a key role in the development and implementation of state policy in the areas of environmental protection, sustainable use of natural resources, climate change, geology, and subsoil use. The Ministry ensures intersectoral coordination of the environmental agenda, develops and implements regulations, strategies, and programs, and is responsible for implementing international environmental commitments, including the UN Framework Convention on Climate Change, the Convention on Biological Diversity, the Rotterdam and Basel Conventions, and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The GEF SGP strategy under OP8 is fully aligned with the priorities outlined in the National Biodiversity Conservation Strategy and Action Plan (NBSAP, 2025–2035), the Disaster Risk Management Strategy, the National Sustainable Development Strategy, climate change adaptation plans, as well as commitments under the updated NDCs and SDGs. Particular attention is paid to priorities identified by the Ministry of Natural Resources as fundamental to the national agenda and strategic engagement with the GEF:

- Supporting the conservation and restoration of wetland ecosystems, including the participation of local communities in the management of these areas and their integration into the national system of protected areas;
- Supporting community initiatives to monitor rare and endangered species, with the possibility of recognizing community conservancies and other forms of ICCA/GSI as elements of the national network of protected areas;

- Establishing and maintaining nurseries with native tree and shrub species in areas vulnerable to climate change to enhance ecosystem resilience, improve water retention capacity, and enhance biodiversity;
- Expanding the participation and voice of local communities and NGOs in environmental policy and conservation planning, including through dialogue platforms and participation in the preparation of strategic documents and international fora;
- Enhancing the role of science-based and traditional knowledge of mountain ecosystems, biodiversity conservation, climate resilience, and the provision of ecosystem services.

The GEF SGP will act as a catalyst for the implementation of an ecosystem-based approach, as reflected in the selection of the Central and Inner Tien Shan as priority regions. This high-mountain orographic region of Central Asia (primarily within the Kyrgyz Republic) is characterized by a high concentration of biodiversity and encompasses a wide range of ecosystems: coniferous forests, mountain steppes, alpine and subalpine meadows, high-mountain glacial and wetland ecosystems, all of which are highly vulnerable to climate change. Project initiatives will be aligned with planned measures within the framework of NbSAP implementation, sustainable forest management programs, local climate change adaptation strategies, and territorial planning.

The implementation of OP8 will be conducted in close collaboration with the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic, academia, and civil society, while the SGP will serve as a platform for integrating local initiatives into national policy, ensuring the flow of knowledge, pilot solutions, and new bottom-up partnership models.

The GEF SGP Country Strategy for Kyrgyzstan is based on the priorities and objectives of the National Biodiversity Conservation Program of the Kyrgyz Republic until 2040 (NBSAP), which aims to establish the country's ecological framework and ensure ecosystem resilience. The GEF SGP's contribution will focus on supporting the key national goal of conserving and sustainably managing at least 30% of the country's territory through the effective functioning of protected areas and other conservation measures (OECM). In line with the NBSAP's priority areas—ecosystem conservation and restoration, sustainable use of biodiversity, and the development of governance mechanisms and public engagement—the GEF SGP will support projects aimed at restoring mountain forests and pastures, creating and strengthening ecological corridors, developing local forms of protected areas, monitoring rare species, and promoting environmental education. The GEF SGP activities will contribute to the achievement of the NBSAP indicator indicators, including increasing the proportion of areas under effective management, improving the condition of ecosystems and habitats of rare species, and expanding the participation of local communities and women in natural resource management, which will overall ensure the program's contribution to the implementation of the Kunming-Montreal Global Framework and Sustainable Development Goal 15 "Life on Land."

Table 1. List of relevant conventions and national/regional plans or programmes

Conventions + national planning frameworks	Date of ratification / completion
GEF-7 National Dialogues	

UN Convention on Biological Diversity (CBD)	Law of the Kyrgyz Republic #40, 26.07.1996
CBD National Biodiversity Strategy and Action Plan (NbSAP)	Adopted by the Decree of the Government of the Kyrgyz Republic #524, 03.08.2002. The new one is under revision by the Government
Nagoya Protocol on Access and Benefit-Sharing (ABS)	Law of the Kyrgyz Republic on joining of the country to the Nagoya Protocol and Access and Benefit-Sharing, 05.02.2015
On the protection of traditional knowledge	Law of the Kyrgyz Republic #116, 31.07.2007
UN Framework Convention on Climate Change (UNFCCC)	Law of the Kyrgyz Republic #11, 14.01.2000
UNFCCC National Communications (1st, 2nd, 3rd, 4th)	1st National Communication - 2003, 2nd National Communication - 2009, 3rd National Communication – 2016 4th National Communication - 2023
Regional Strategy for Adaptation to Climate Change in Central Asia	Order of the Cabinet of Ministers of the Kyrgyz Republic #18 of January 24, 2024
Paris Agreement on global climate change action Nationally Determined Contributions (NDCs) for Paris Accord	Ratified by the Parliament of the Kyrgyz Republic, Law # 125, 11.11.2019
UN Convention to Combat Desertification (UNCCD)	Law of the Kyrgyz Republic #85, 21.07.1999
UNCCD National Action Programmes (NAP)	The first UNCCD NAP was adopted by the Ministry of Agriculture and Melioration of the Kyrgyz Republic on 08.12.2000 The second UNCCD NAP for 2015-2020 was adopted by the Ministry of Agriculture and Melioration of Kyrgyz Republic in 2014
Stockholm Convention (SC) on Persistent Organic Pollutants (POPs)	Law of the Kyrgyz Republic #114 from 19.07.2006
SC National Implementation Plan (NIP)	Decree of the Government of the Kyrgyz Republic #371-p, 03.07.2006
UN 2030 Sustainable Development Goals (SDGs)	Decree of the Government of the Kyrgyz Republic #867 on Coordination Committee on adaptation, implementation and monitoring of SDGs from 22.12.2015 with editions #475 from 02.09.2016 Decree of the President of Kyrgyz Republic #221 on National sustainable development strategy for 2018-2040 from 31.10.2018
Voluntary National Reviews (VNRs) for the UN SDGs	The first developed and presented in July 2020 by the Ministry of Economy of the Kyrgyz Republic

	The second developed and presented in 2025
Strategic Action Programmes (SAPs) for shared international waterbodies (IW) [2]	Law of Kyrgyz Republic #76 on Interstate use of water bodies from 23.07.2001 Code of Kyrgyz Republic #128 Water Code from 27.06.2025 Decree of Government of Kyrgyz Republic #369-p On Kyrgyz-Kazakh commission of on interstate water equipment use from 30.06.2006
Aarhus Convention on access to information, public participation in decision making and access to justice in environmental matters Bonn convention on the conservation of migratory species of wild animals Vienna Convention for the protection of ozone layer Ramsar Convention on wetlands of international importance The Cartagena Protocol on Biosafety Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Convention on Environmental Impact Assessment in a Transboundary Context (UNECE) Convention on Long-Range Transboundary Air Pollution National Strategy of Snow Leopard Conservation in Kyrgyz Republic for 2013-2023 Concept of Environmental Safety of Kyrgyz Republic for the period up to 2040	Law of Kyrgyz Republic #5 from 12.01.2001 Law of Kyrgyz Republic #205 from 22.11.2013 Law of Kyrgyz Republic #16 from 15.01.2000 Law of Kyrgyz Republic #54 from 10.04.2002 Law of Kyrgyz Republic #140 from 06.08.2005 Decree of the Parliament of Kyrgyz Republic #304-1 from 18.01.1996 Law of Kyrgyz Republic #15 from 15.01.2000 Law of Kyrgyz Republic #192 from 30.11.2006 Law of Kyrgyz Republic #6 from 12.01.2001 Law of Kyrgyz Republic #11 from 14.01.2000 Decree of Government of Kyrgyz Republic #732 from 19.10.1012 Decree of President of Kyrgyz Republic #105 from 27.03.2025

[2] Please also identify existing IW regional projects and the regional SAPs adopted by countries sharing international waterbodies so as to align SGP local interventions. Please check this website to find some of the SAPs: http://iwlearn.net/publications/SAP

3.2 Gaps and opportunities

Kyrgyzstan is a mountainous country with unique landscapes, valuable ecosystems, and rich biodiversity. It also faces significant challenges: economic problems, natural resource degradation, and vulnerability to climate change and natural disasters. Over 60% of the population lives in rural areas and depends on natural resources such as pastures, forests, and water bodies, impacting mountain ecosystems. The country recognizes the importance of sustainable environmental management, which is enshrined in national strategies and international commitments—the Paris Agreement, Convention on Biological Diversity (CBD), CITES, Ramsar, and other conventions. This creates a solid foundation for environmental activities, which are the focus of the GEF SGP.

At the same time, significant gaps remain in the republic:

- Pasture degradation and soil erosion;
- Biodiversity decline and disruption of wildlife migration corridors;
- Pollution of aquatic ecosystems, including drinking water sources and springs;
- Insufficient monitoring and scientific information on ecosystems, rare species, and climate risks;
- Insufficient attention to Other Effective area-based Conservation Measures (OECMs) and ecosystems outside of protected areas;
- Weak institutional coordination and sustainability of local initiatives.

As part of the consultation process to develop the OP8 strategy, meetings were held with dozens of partner organizations: international agencies, national NGOs, research institutes, and government agencies. All of them confirmed the relevance of the GEF SGP, noting its role as an effective platform for piloting innovative solutions and mobilizing civil society.

Numerous organizations, such as Fauna & Flora International (FFI), Snow Leopard Foundation (SLF), The Nature and Biodiversity Conservation Union of Germany (NABU), the Ilbirs Foundation, World Wide Fund For Nature (WWF), and others, are implementing a wide range of conservation projects: from snow leopard and bird conservation to the creation of community nature conservancies, from ecotourism development to the installation of renewable energy systems. The most significant projects include restoring pastures, combating poaching, protecting migratory bird corridors, ensuring sustainable income in high-mountain communities, and preserving rare species of fauna and flora.

Scientific institutions, including the National Academy of Sciences of the Kyrgyz Republic (NAS KR), the Botanical Garden of the National Academy of Sciences of the Kyrgyz Republic (BG NAS KR), Central-Asian Institute for Applied Geosciences (CAIAG), American University of Central Asia (AUCA), and University of Central Asia (UCA), provide expertise for biodiversity monitoring, assessing pasture and forest degradation, climate change, and condition of water resources. Their research confirms the significant impact of anthropogenic pressure, overgrazing, illegal logging, and climate change on ecosystem resilience. The recommendations developed include scaling up silvopastoral practices, agroforestry, scientific reforestation, ecosystem zoning, and engaging local communities in environmental monitoring.

In the southern regions of the country, the problem of pasture degradation and water scarcity is particularly acute. Organizations such as Agency for Technical Cooperation and Development (ACTED), Aga Khan Development Network (AKDN), UNDP, CAMP Alatoo, and GIZ are working on transboundary water resource management, modernizing irrigation infrastructure, harvesting rainwater, and introducing low-water crops. This is supported by research on glacier melting, which points to the need for adaptation measures in water and agricultural policies.

In addition to working in target ecosystems and landscapes, the GEF SGP can also support limited-scale work outside these landscapes. Beyond wildlife, attention is increasing to the urban environment, which is also one of the areas supported by the GEF SGP. Particular attention should be paid to air quality, greening, and waste management. The MoveGreen initiative in Bishkek demonstrates how the SGP can support advocacy and research projects aimed at improving urban ecology, with the active participation of youth and women's organizations. Projects in cities, including the capital, will focus on waste management and air quality, which impact the well-being of urban populations as well as the ecosystems surrounding them.

The forestry sector remains vulnerable due to illegal logging, limited regeneration, and overgrazing. Programs from GIZ, UNDP, FFI, and Association of Forest and Land Users of Kyrgyzstan promote collaborative forest management models, restoration of walnut-fruit stands, and biological measures against pests. However, the scale of action remains insufficient, particularly in riparian, juniper, and spruce forests. Flora conservation is also poorly covered, with most projects focusing on fauna. The SGP can fill this gap by supporting pilot projects in tree nurseries, agroforestry, gene banks, and the conservation of rare plant species.

Cross-border issues are particularly pressing: combating illegal wildlife trafficking, protecting migration routes, and coordinating border services and customs. SLF and the Ilbirs Foundation are training border guards and implementing canine services, but these measures need to be scaled up. Rehabilitation centers for confiscated animals also need to be established.

In addition to biodiversity conservation, the GEF SGP has the potential to support sustainable agricultural systems: organic farming, traditional varieties and knowledge, environmentally friendly products, and local markets. “Bio-KG” and “Bioresurs” promote organic farm certification and farmer training, but they require resources to expand and support regional centers.

Adaptation to climate change is another key area. GIZ, UNDP, ACTED, Central Asian Regional Environmental Centre (CAREC), the World Bank (WB), and others are implementing projects on early warning of disaster, risk monitoring, sustainable land use, restoration of degraded lands, and reducing population vulnerability. This area is also critically important in the context of frequent mudflows, avalanches, landslides, and earthquakes. Supporting projects on bioengineered slope protection, nature-based solutions, and green spaces could be a significant contribution of the SGP.

There are also less covered but significant areas: work with youth, traditional practices, women's leadership, and access to sustainable energy. Many partners propose using the SGP as a tool for engaging communities in national programs, for example through microfinance, local foundations, or natural resource user associations.

One of the key advantages of the GEF SGP is its ability to ensure social inclusion and equal opportunities for various population groups to participate in environmental conservation. In Kyrgyzstan's mountainous regions, where a significant portion of the population lives in remote and socially vulnerable communities, SGP support enables the involvement of women, youth, and persons with disabilities in projects, thereby reducing inequality and marginalization. Through small grants, training, and the development of local initiatives, the program strengthens the role of vulnerable groups in natural resource management, creates sustainable livelihoods, and increases environmental awareness. This approach not only enhances social justice but also increases the resilience of local communities, balancing environmental, economic, and social objectives. Social inclusion, at the core of the SGP approach, makes it an effective tool for implementing the NBSAP's objectives of public engagement and strengthening the capacity of local communities to conserve biodiversity.

Thus, in circumstances of significant environmental, social, and institutional demands, the GEF SGP in Kyrgyzstan has a unique opportunity to fill gaps, strengthen existing practices, and scale up the best solutions—in forests, pastures, highlands, lakes, and even cities. This requires a comprehensive, cross-sectoral, and evidence-based approach with a focus on community participation and alignment with national priorities and international commitments.

OP8 offers unique opportunities for a comprehensive response to these challenges, including the following areas:

1. Supporting biodiversity and ecosystem conservation:
    - Scaling up the successful experience of community nature conservancies, micro-reserves, and community-managed natural areas;
    - Supporting the reintroduction and monitoring of rare species (goitered gazelle, red deer, tulips, juniper, and the ichthyofauna of Issyk-Kul);
    - Protecting and restoring wetland ecosystems and protecting migratory birds (Son-Kul, Chatyr-Kul);
    - Developing nature-based solutions and agroecological practices.
2. Pastures, forests, and sustainable land use:
    - Implementing silvopastoralism, rotational grazing, and reforestation practices, taking into account climate scenarios;
    - Supporting ROAM initiatives and developing native tree nurseries;
    - Conducting scientific work on analyzing pasture ecosystems, including biodiversity, soils, and climate impacts.
3. Protection of aquatic ecosystems and adaptation to climate change:
    - Protection of spring systems, including pilot projects in Batken;
    - Implementation of modern water quality monitoring methods;
    - Rehabilitation of drained marshes, ponds, channels, and floodplains;
    - Planting riparian vegetation to prevent erosion;
    - Organic agriculture around marshes.
4. Pollution control and restoration of degraded areas:
    - Raising awareness of old pesticide burial sites, including DDT, in priority areas;
    - Working with municipalities on urban greening and ecosystem services;
    - Establishing sustainable waste management mechanisms.
5. Environmental education, awareness, and citizen science:

- Support for youth, women, and schools;
- Developing environmental journalism, engaging volunteers, organizing summer schools and camps;
- Implementing citizen science initiatives for data collection and on-site monitoring.

6. Institutional strengthening and interaction with government agencies:
    - Preparing local NGOs, communities, and local governments for participation in SGP projects;
    - Supporting services (protected areas, forestry enterprises, local governments) with equipment, training, and methodological materials;
    - Developing coordination mechanisms with the Ministry of Natural Resources, including the registration of regulatory legal acts and a database on species and genetic resources.
7. Gender, inclusion, and sustainable income:
    - Expanding pilot models of ecotourism, handicrafts, and agro-ecological value chains;
    - Women's participation in natural resource management, leadership development, and cooperation;
    - Sustainable value chains: sea buckthorn, honey, dried fruit, cheese, wool, etc.

Thus, the GEF SGP can become an important catalyst for transforming the environmental and climate agenda in Kyrgyzstan, promoting sustainable development, institutional strengthening, and civil society engagement in the implementation of national and international environmental goals. This requires a focus on an ecosystem-based approach, interdisciplinary collaboration, and systemic support for local solutions that combine knowledge, innovation, and traditional practices.

3.3 OP8 strategic priorities of the SGP Country Programme

Table 2. SGP Country Programme's alignment with SGP OP8 Strategic Initiatives and country priorities/projects/programmes

SGP OP8 Strategic Initiatives - Global	SGP Country Programme's OP8 Priorities	SGP Country Programme's complementarity with GEF, UNDP, and other projects and programmes
Community-based conservation of threatened ecosystems and species 1) Improve the effectiveness of biodiversity and ecosystem conservation and management through equitable governance systems by recognizing and respecting the rights of	*1)* ● *Establishment and support of **community nature conservancies** and public protected areas.* ● *Implementation of an **ecosystem approach** in areas with high conservation value (Issyk-Kul and Naryn provinces).* ● *Ensuring the **participation of local governments, forestry enterprises, and pasture organizations** in resource management.*	**Government Agencies and Local Governments:** ● **The Ministry of Natural Resources and Environment** is the lead agency responsible for developing and implementing policies on protected areas, biodiversity, and sustainable natural resource management. It supports the creation of community conservancies and the development of ICCA legal mechanisms. ● **The Forest Service under the Ministry of Emergency Situations of the Kyrgyz Republic** is a partner in joint forest management, zoning,

Indigenous Peoples and local communities. 2) Improve community-led biodiversity friendly practices and approaches, including promoting blue economy approaches (e.g. agriculture, fisheries, forestry, tourism, infrastructure, etc.). 3) Enhance community led actions for protection of threatened species.	● *Supporting mechanisms for **participation and transparency in protected area management**, including zoning and community engagement.* ● *Supporting research on **wild animal and tree diseases**, as well as genetic resources.* *2)* ● *Development of **ecotourism** as a sustainable source of income.* ● *Implementation of **sustainable agricultural practices**, including organic farming, sustainable beekeeping, and pasture management.* ● *Supporting **the creation of nurseries with native tree and shrub species** in climate-vulnerable areas, as well as the development of agroforestry and silvopastoralism.* ● *Developing **green solutions** to combat mudflows and land degradation, including planting trees and shrubs.* ● *Supporting **value chains** (prunes, cheese, felt, nuts, honey) and green marketing.* ● *Establishing **community conservancies to protect rare species** (monitor lizards, Central Asian tortoises, red deer).* ● *Implementing programs for the **reintroduction and monitoring of rare species.*** *3)* ● *Conducting a **biodiversity inventory and establishing a monitoring system** in protected areas.* ● *Developing **behavioural programs for local populations** aimed at discouraging poaching and participating in the conservation of rare species.*	and piloting sustainable practices in forestry enterprises. ● **Local governments and pasture organizations** are key actors in land management and mobilizing communities for ecosystem-based initiatives. **International Organizations and Donors:** ● **UNDP** actively promotes integrated land management, snow leopard conservation, ecosystem-based approaches, species reintroduction, sustainable tourism, and biodiversity in a landscape context. ● **GIZ** promotes a landscape-based approach, resource co-management, sustainable pasture use, ecosystem restoration, bioengineering solutions, and support for local planning. ● **CAREC** supports ecological zoning, the development of protected area management plans, and community participation in monitoring and conservation policy. ● **WB** has initiated projects on erosion control, green infrastructure, sustainable landscape management, ecosystem services, and biodiversity. **Scientific and academic institutions:** ● **BI NAS KR** participates in research on rare species (goitered gazelle, snow leopard, and red deer), the development of monitoring and reintroduction programs, and supports community conservancies. ● **BG NAS KR, FI NAS KR, UCA, and AUCA** provide the scientific basis for zoning, monitoring, genetic resource conservation, and ecosystem research. **NGOs and initiative groups:** ● **"Ilbirs" Foundation** implements programs on snow leopard conservation, sustainable tourism, training local guides, anti-poaching efforts, and women's leadership in mountain communities. ● **SLT** is an international partner in snow leopard research and conservation, conducting observations in mountain landscapes. ● **CAMP Alatoo** promotes participatory pasture management, sustainable land use, climate change adaptation, and community outreach. ● **BIOM and MoveGreen** conduct environmental education, training on fauna conservation and anti-poaching, and engage youth in species monitoring.

		● **AFLU and ICCA initiatives** support community conservancies, community monitoring, and local conservation planning. **Economic and Marketing Partners:** ● **GIZ Value Chain Project, UNDP-GEF projects, Bio-KG, AKDN** - provide sustainable sales, certification, and green marketing of eco-products and services (eco-guesthouses, tourist routes, sea buckthorn and nut products, honey, felt, cheese).
Sustainable agriculture and fisheries, and food security 1) Increase efficiency and effectiveness of overall food production and value chain, including in vulnerable ecosystems (mountains, island ecosystems, etc.). 2) Increase diversification and livelihood improvement. 3) Remove deforestation from supply chain and expand restoration of degraded lands.	*1)* ● *Support **organic agriculture** and promote **local value chains** (prunes, honey, cheese, felt, sea buckthorn and apple products).* ● *Conservation and sustainable use of **local agrobiodiversity** to improve food security and resilience of rural communities* ● *Develop **agritourism and organic products** as a sustainable approach for mountainous regions (Issyk-Kul and Naryn regions).* ● *Improve **product quality and safety** through improved logistics, certification, and market access (including piloting FSC certification in forestry enterprises).* ● *Implement **resource-saving technologies**, including drip irrigation, biofertilizers, and eco-friendly greenhouses.* ● *Support the **fishing industry**, including monitoring and restoring populations of native species (chebak, chebachok) in Issyk-Kul.* *2)* ● *Developing **alternative and sustainable income sources** in rural communities: beekeeping, handicrafts, guesthouses, sewing and cheese-making workshops, and poultry hatcheries.* ● *Training farmers and women entrepreneurs in **sustainable farming and food processing skills**, including gender-sensitive approaches.* ● *Supporting **information and financial services** (financial literacy,*	**National and international NGOs with** experience in agroecology, organic farming, and sustainable rural development. ● **Ilbirs Foundation** — actively works in mountainous regions, implementing projects on beekeeping, crafts, and ecotourism development. ● **BIOM** — conducts educational activities on sustainable land use and biodiversity, and trains rural NGOs. ● **CAMP Alatoo** — has extensive experience in agroforestry, silvopastoralism, reforestation, sustainable pasture management, and bioengineering slope stabilization. ● **Bio-KG** — develops standards and certification for organic farms, promotes local markets, and trains farmers. ● **NGO Bioresurs** — works on agroecology, biofertilizers, eco-greenhouses, and the preservation of traditional plant varieties. ● RDF — works in the areas of sustainable rural development, natural resource management, support of traditional knowledge, and applied research. ● **AFLU** — implements projects on joint forest management, organic production, and renewable energy in rural areas. Government Agencies and Scientific Institutions ● **The Forest Service under the Ministry of Emergency Situations of Kyrgyz Republic** is a key partner in reforestation, certification, biodiversity, and sustainable land use. ● **The Pasture Department under the Ministry of Agriculture of the Kyrgyz Republic** — a partner in pasture management, including digital tools, rotation plans, and degradation and restoration programs. ● **BG NAS KR** — research on biodiversity, reforestation, nut and rare tree species.

	access to microfinance, digital solutions). ● *Promoting **social entrepreneurship**, especially among women and youth in remote areas.* *3)* ● *Implementing **reforestation measures** (including walnut-fruit, riparian, and coniferous forests).* ● *Using **bioengineering solutions against soil erosion and landslides**, including planting trees, shrubs, and grasses.* ● *Supporting **sustainable pasture management**, including digital tracking (electronic pasture maps).* ● *Reducing **pressure on forests and shrubs** by introducing alternative heating methods.* ● *Implementing **green technologies and long-term monitoring of land restoration**, including the involvement of communities and youth.*	● **KNU, UCA, KNAU** — can participate in training specialists, developing technologies, and monitoring agroecosystems. International Development Agencies and Programs ● **UNDP** — implements initiatives on organic agriculture, sustainable livelihoods, reforestation, and digital pasture management. ● **AKDN** — has extensive experience in community training, green product marketing, and reforestation, supporting women, artisans, guesthouses, and agro-initiatives in mountainous and remote areas. ● **GIZ** — promotes organic production, drip irrigation, eco-product marketing, and training for women and cooperatives. ● **FAO** — has a mandate in sustainable agriculture, agrobiodiversity conservation, and food security. ● **CAREC** — works on sustainable management of water, pasture, and forest resources, including training and dialogue with government authorities. ● **WB** — has implemented pilot bioengineering solutions, adaptation technologies, and alternative heating in mountainous areas. ● **UNIDO and IFAD** are potential donors for rural value chains and the expansion of agricultural processing. **Private sector and cooperatives** ● **Women's cooperatives** (cheese dairies, sewing workshops, fruit drying and processing) are already operating in the Issyk-Kul, Batken, Osh, and Naryn regions, supported by UNDP, the Ilbirs Foundation, and GIZ. ● **Farmers' associations and processors' unions** can become channels for scaling up successful solutions (e.g., cheese, honey, and prunes). ● **Social entrepreneurship networks (through Bio-KG, Ilbirs Foundation, and CAMP Alatoo)** are effective for creating models with high sustainability and return on investment. **Other partners in education, finance, and market access** ● **Local governments** are key actors for co-financing, logistics, and community participation. ● **Microfinance organizations and digital platforms** provide support for access to credit and digital tools.

		● **Ecotourism networks (e.g. CBT Kyrgyzstan)** promote eco-friendly products and ecotourism.
Low-carbon energy access co-benefits Support implementation of Paris Agreement and the NDCs 1) Promote renewable and energy efficient technologies providing socio-economic benefits and improving livelihoods. 2) Promote off-grid energy service needs in rural and urban areas.	*1)* ● ***Installation of solar panels, solar systems, and heat pumps*** *for households, schools, and first aid stations in remote and high-altitude areas.* ● ***Expanding pilot solutions for energy-efficient heating*** *and hot water supply (e.g., solar collectors) in areas with harsh climates.* ● ***Supporting sustainable production*** *using energy-efficient technologies in agricultural processing (e.g., dryers, cheese factories, etc.), especially in women's cooperatives and NGOs.* ● ***Training and engaging local specialists and entrepreneurs*** *in the installation and maintenance of renewable energy equipment (job creation, on-site technical support).* *2)* ● ***Implementation of autonomous energy systems based on solar and wind energy*** *in isolated villages or those with unstable electricity connection.* ● ***Supporting "energy cooperatives"*** *for joint management of community energy supply as a sustainability model.* ● ***Lighting public buildings*** *(medical centres, schools, community centres) using autonomous renewable energy solutions.* ● *Conducting* ***educational campaigns and demonstration projects*** *to encourage the transition to renewable energy among the population and small businesses.*	**1. National and regional NGOs and cooperatives with experience in renewable energy and energy efficiency** ● **CAMP Alatoo** is a key partner of the SGP, with experience installing solar collectors, conducting energy audits, training technicians on-site, and implementing energy-efficient heating models in the mountains. ● **AgroLead NGO** works with women's cooperatives, including supporting the drying, canning, and processing of products using renewable energy. ●**"Alternative" NGO (Osh)** specializes in solar and wind installations in the southern regions, including Alai and Chon-Alai. ● **AFLU** promotes the introduction of energy-efficient stoves and renewable energy in forest and rural communities. **2. Government and scientific partners** ● **The Ministry of Energy of the Kyrgyz Republic** formulates renewable energy policy and can facilitate the coordination of pilot solutions with national programs. ● **The State Committee for Industry, Energy, and Subsoil Use** is a regulator for small-scale energy production, including support for cooperative solutions. ● **KSTU** – the departments of heat engineering and power engineering can participate in training installers and system maintenance. ● **KNAU and agricultural colleges** – for the implementation of energy-efficient technologies in product processing and agricultural education. **3. International Organizations and Development Agencies** ● **UNDP** – implements energy and climate projects, including solar power stations in schools and medical centres. ● **GIZ** – promotes the development of a sustainable energy market and supports production chains with a renewable energy component.

		● **AKDN** – works in hard-to-reach areas with solar panels and microhydro installations. ● **UNIDO** – participated in supporting energy efficiency in agricultural processing and small production cooperatives. **4. Private Sector and Technology Partners** ● **"Solar.kg", "SunPower Kyrgyzstan", and "GreenEnergy.kg"** – local companies providing solar panels, pumps, and other renewable energy components can assist with training, certification, and cost reduction. **5. Additional Education and Outreach Partners** ● **Schools, youth clubs, and Aarhus centres, MoveGreen, and BIOM** – as partners in information and educational campaigns. ● **Employment centres and colleges in the regions** – platforms for courses on the installation and maintenance of renewable energy sources. ● **The Climate and Renewable Energy Platform at CAREC or UNDP** can serve as a hub for the exchange of best practices, policy dialogue, and the scaling of solutions.
Local to global coalitions for chemicals and waste management 1) Reduce and promote alternative to mercury use in artisanal and small-scale gold mining. 2) Promote plastics/solid waste management and circular economy. 3) Reduce/remove use of chemicals in agriculture. 4) Enhance local to global coalitions on chemicals, waste and mercury management.	*1)* ● *Support **local initiatives to reclaim burial sites containing DDT and other pesticides**, particularly in the Naryn region (Kochkor district) and other areas with vulnerable populations.* ● *Develop **environmental education projects** for local residents on the risks of chemical pollution, particularly in areas where burial sites have been opened.* ● *Assistance in creating a **national registry of chemically contaminated sites** and conducting an inventory in collaboration with the Ministry of Natural Resources and scientific organizations.* ● ***Pilot solutions** for the safe collection, temporary storage, and transportation of chemical waste, drawing on international experience (Cartagena Protocol, Basel and Stockholm Conventions).* *2)* ● *Projects to **reduce plastic pollution in natural areas**, particularly in Issyk-*	**Chemical Legacy, DDT, and Toxic Waste Management:** **Government and Scientific Partners:** ● **The Ministry of Natural Resources** is the primary regulatory body responsible for implementing international obligations (the Basel, Rotterdam, and Stockholm Conventions). ● **The State Enterprise "Kyrgyzgiprozem" and the Environmental and Technical Supervision Service** may participate in inventory and oversight. ● **NAS KR (Institute of Chemistry and Phytotechnology, Institute of Water Problems and Hydropower)** – assessment of contaminated areas, development of pollution maps and safe disposal solutions. ● **The Ministry of Agriculture of the Kyrgyz Republic** – partner in integrating practices into state support for farmers. ● **KNAU and the KNAU Centre for Organic Farming** – scientific support, training programs. ● **Institute of Biology of the National Academy of Sciences of the Kyrgyz Republic** – expertise in soil fertility, biofertilizers, and soil microorganisms.

	Kul (support for coastal cleanups, banning/reducing plastic, replacing packaging). ● ***Developing waste reuse and recycling initiatives**—creating cooperatives, workshops, and incubators for craft and eco-businesses.* ● *Developing **local waste sorting and recycling systems** in partnership with local governments and businesses (including the participation of women and youth).* ● *Educational campaigns on **conscious consumption and zero waste** in tourism and communities near protected areas.* *3)* ● *Supporting **organic farming and biological plant protection** as part of sustainable agricultural practices.* ● *Implementing and demonstrating **alternative methods of soil fertility**, composting, and biofertilizers.* ● *Establishing **farmer schools** and conducting training for rural communities on the rejection of pesticides and chemical fertilizers, especially near protected areas and water bodies.* *4)* ● *Support the **participation of NGOs and research organizations in international alliances**, conferences, and networks (e.g., the Cartagena Protocol).* ● *Create **open platforms for sharing knowledge**, results, and best waste management practices between projects, ministries, local governments, and NGOs.* ● *Strengthening communities and coalitions for integrated chemicals and waste management based on **One Health***	● **CAIAG** – experience in field research and risk assessment. **International and technical partners:** ● **UNEP, UNDP, and UNITAR** – implement programs on POPs and toxic substances management and can provide methodological support and inventory templates. ● **FAO and GEF** – previously supported POPs projects in Central Asia. ● **CAREC** – previously participated in projects on the safe disposal of chemicals, including the Cartagena and Basel Processes. ● **Global Alliance for Sustainable Pesticide Management (SAICM)** – a platform for the international exchange of experience and fundraising. **NGO:** ● **BIOM** – works in the field of biodiversity and health and can conduct environmental education. ● **Public councils under the Ministry of Natural Resources and in the regions** can support local initiatives to identify illegal dumping sites and engage the public and local governments. **Combating plastic pollution and the circular economy:** **Local NGOs and initiatives:** ● **"MoveGreen"** – one of the most active organizations on waste issues, education, and advocacy, with experience in Issyk-Kul and the Chui region. ● **"Tazalyk"** – has experience in waste collection and sorting and working with youth. ● **Kyrgyz Association of Waste Recyclers** – an association of small and medium-sized businesses recycling plastic, paper, and metal. ● **Zero Waste Civic Platforms** – operate in Bishkek and Osh, conducting trainings and campaigns. **Municipal and Private Partners:** ● **Councils of Elders and Local Self-Government Authorities (Balykchy, Cholpon-Ata, Kyzyl-Suu, Osh)** – partners in implementing local waste collection systems. ● **Private recycling companies** operating in Bishkek and Osh – can provide sales for recycled materials. **International Partners:** ● **UNDP and GIZ** – have experience supporting projects on the circular economy, waste

		management, and environmental entrepreneurship. ● **UNEP and UNIDO** – can be involved in demonstrating approaches to reducing the plastic footprint and establishing recycling facilities. ● **IFOAM – Organics International** – provides international support in the field of organic certification. ● **FAO and GIZ** – have expertise in biological plant protection and agro-ecological training. **Organic farming and the elimination of agrochemicals:** **National NGOs and associations:** ● **"Bio-KG"** – a key partner in farmer training, certification, and the creation of "Farmer Schools." ● **NGO "Bioresurs"** – conducts training on biofertilizers, agroecology, and biodiversity monitoring in agricultural landscapes. ● **AFLU** – engages farmers in land restoration, biofertilizer use, and agroforestry.
Catalyzing sustainable urban solutions 1) Improve capacities to promote community-driven, socially inclusive and integrated solutions to address low-emission and resilient urban development. 2) Demonstrate innovative socially inclusive urban solutions/ approaches (including waste and chemical management, energy, transport, watershed protection, ecosystem services and biodiversity). 3) Implement public-private partnership approach for low carbon energy access for marginalized urban communities. 4) Promoting the strengthening of municipal capacity in	*1)* ● *Urban greening and creation of green belts –* ***with the planting of adapted and native tree species*** *recommended by the scientific community.* ● ***Ecological reconstruction of ravines, rivers, and streams*** *in urban and suburban environments (e.g., in the Chui Valley), including flood protection and biodiversity restoration.* ● *Implementation of* ***green barriers and strips*** *in dusty, windy, and climate-vulnerable areas.* *2)* ● ***Pilot solutions for increasing climate resilience in remote areas****, in conditions of irrigation water shortages, hot weather, and air pollution.* ● ***Community participation in climate risk assessment and the design of adaptation measures****, including drainage, greening, housing adaptation, and sediment management.*	**Urban greening, green belts, ecological reconstruction of waterways:** **National and municipal partners:** ● **The mayors' offices of Bishkek, Naryn, Karakol, and other cities** – coordination of urban greening, land access, operation of stormwater drainage systems, and embankment protection. ● **The Ministry of Construction, Architecture, and Housing and Public Utilities** – partner on urban integration and the design of nature-oriented solutions. ● **The Ministry of Agriculture** – expert and regulatory support, recommendations on plant species, and protection of water bodies. **NGOs and scientific partners:** ● **"MoveGreen" and "SILK"** – an active urban environmental movement that conducts monitoring, advocacy, and tree planting, as well as interacting with residents and local governments. ● **BG NAS KR** – recommendations on native and adapted species, monitoring the survival of plantings. ● **AUCA and UCA** can participate in analysing the environmental and social impacts of urban green solutions.

climate-smart planning through training and methodological support.	● *Training of local governments, schoolchildren, and youth in* ***sustainable urban practices*** *– from composting to adaptation to heat and floods.* *3)* ● ***Pilot projects*** *for the collection, recycling, and reuse of household and plastic waste, especially in suburban areas and areas with high pressure on ecosystems (near Lake Issyk-Kul, Son-Kul, etc.).* ● ***Educational initiatives among residents and tourists*** *on proper waste management and the protection of urban water bodies and landscapes.* ● *Educational initiatives aimed at raising public awareness of the transition to an environmentally friendly lifestyle and its role in reducing emissions.* ● ***Cleanup of areas and elimination of illegal dumps****, especially in nature conservation areas and protected areas (Issyk-Kul, Son-Kul, Chon-Kemin).*	● **CAIAG and AKDN** has experience in the ecological restoration of ravines, streams, and floodplains, including using nature-based solutions. **International and Donor Partners:** ● **WB** already has experience supporting an urban greening project in Bishkek and can be involved in scaling up or supporting similar initiatives. ● **GIZ and UNDP** are active participants in projects on nature-based urban development and sustainable urbanization. **Climate resilience in vulnerable and remote areas, community participation:** ● **CAMP Alatoo** is a leader in developing and piloting CBA solutions, including training local authorities and community participation. ● **UNDP** can contribute through initiatives under the Paris Agreement, NDCs, and adaptation projects. ● **CAREC and ACTED** – focus on vulnerable groups and adaptation to economic vulnerability and climate threats. ● **NGO "EcoIs" and the Climate Finance Centre** – work to engage youth and conduct awareness-raising activities and analyse climate vulnerabilities. ● **The Ministry of Education and Science of the Kyrgyz Republic** – can be involved in educational and outreach activities through school programs and environmental education. ● **AUCA, UCA, NAS KR** – engage in climate risk analysis, vulnerability modelling, and training for local governments. **Sustainable waste management, site cleanup, and protection of tourist areas:** ● **"MoveGreen"** – has experience conducting cleanup, and educational campaigns, including working with youth and schoolchildren. ● **Mayor's offices and local governments** should be key players in organizing cleanups and installing waste collection infrastructure. ● **The Ministry of Natural Resources of KR and the Communal Services** are important partners in waste management and decision-making. ● **GIZ and UNDP** are already working on implementing a circular economy model, sustainable waste management approaches, and dialogue with local governments on this topic.

		● **The Kyrgyz Waste Recyclers Association** is a private sector player engaged in scalable waste management solutions. ● **EU and Swiss-supported projects** are potential sources of co-financing or scaling.
Global ICCA Support Initiative (ICCA GSI Phase 2) (with BMUKN IKI funding) 1) Work Package 1: Provide national level ICCA small grants. 2) Work Package 2: Provide legal and governance assistance to ICCAs. 3) Work Package 3: Network exchange and knowledge management for ICCAs.	*1)* ● *Support the **creation and operation of micro-reserves and community conservancies**, particularly in areas with unique biodiversity (Issyk-Kul and Naryn provinces).* ● *Funding initiatives **to restore ecosystems, conserve rare species** (e.g., snow leopard, goitered gazelle, turtle, red deer, monitor lizard), and monitor biodiversity through local communities.* ● *Support projects for **sustainable natural resource management** (walnut forests, pastures, agroforestry) with the active participation of local communities.* ● *Implementation of **ecosystem-based initiatives**, as recommended by the Ministry of Natural Resources and UNDP, including the creation of community conservancies, bio-corridors, and sustainable income sources.* *2)* ● *Support the **development and implementation of mechanisms for the legal recognition of ICCA**, including amendments to laws on protected areas and pastures, which is particularly important considering administrative reform.* ● *Assistance in **developing mechanisms for co-management**, zoning, monitoring, and control at the community level.* ● *Assistance in **formalizing existing voluntary nature conservation initiatives** (e.g., community patrols, ecotourism groups).* ● *Developing ICCA **management models and methods**, taking into account traditional knowledge.* *3)*	**Support for the creation and operation of community conservancies and ecosystem restoration** ● **The Ministry of Natural Resources of KR** is the initiator of the recognition of public reserves and the promotion of an ecosystem-based approach; it provides regulatory support, zoning, and integration into the protected area system. ● **UNDP** is the main strategic partner of the GEF SGP and ICCA GSI, supporting the creation of pilot community conservancies, as well as projects on landscape management, co-management, and sustainable land use. ● **Ilbirs Foundation** implements projects to conserve the snow leopard, engage herders and communities in wildlife protection, and create community conservancies and sustainable livelihoods. ● **SLF** develops the protection of snow leopard migration corridors, mobilizes community patrols, and conducts monitoring. ● **WWF** promotes an ecosystem-based approach, sustainable pasture management, and the restoration of natural connections within bio-corridors. ● **GIZ** — promotes agroforestry, cooperative management practices, and the conservation of flora and pastures. ● **CAIAG** — provides data on biodiversity, bioindexation, and impacts on ecosystem services. **Supports the legal recognition of ICCA, develops management models, and formalizes initiatives.** ● **Aarhus Centres** — facilitate access to environmental information, participation in decision-making, and the formalization of community-based natural resource management initiatives. ● **CAREC** — coordinates dialogue between civil society and the government and can assist in the creation of co-management mechanisms

	● *Conducting **exchange visits, dialogues, trainings, and seminars** for communities practicing ICCA approaches (within Kyrgyzstan and with other countries in the region).* ● *Developing and disseminating **educational and informational materials** on ICCA, including legal aspects, monitoring mechanisms, and sustainability indicators.* ● ***Digitalization and creation of an ICCA database**, including spatial data, monitoring results, local knowledge, and successful cases.* ● *Maintaining a **register of ICCAs and their initiatives** in partnership with the Ministry of Natural Resources and scientific institutes.*	and the institutionalization of public protected areas. ● **GIZ, UNDP, and BIOFIN** — promote the integration of nature-based solutions and ICCA approaches into national policies and strategic planning. ● **Advocacy NGOs such as BIOM and "MoveGreen"** can act as trainers, facilitators, and experts in community engagement and legislative initiatives. ● **AFLU** is already working within the framework of joint forest management and can be involved in similar ICCA models. **Experience exchange, digitalization, and knowledge creation** ● **AUCA, UCA, BI NAS KR, and BG NAS KR** provide expert knowledge and a scientific basis for monitoring, genetic assessment, biodiversity, and sustainability of ICCA. ● **The Academy of Public Administration** can participate in training local governments and government specialists.
Community Development and Knowledge Management for the Satoyama Initiative (COMDEKS Phase 4) (with Ministry of Environment, Japan and Keidanren Nature Conservation Fund funding) 1) Sustainable landscape and seascape management and restoration. 2) Knowledge Management for capacity building, replication, and up-scaling.	*1)* ● ***Restoration of degraded ecosystems** (forests, pastures, floodplains).* ● *Restoration of **habitat for rare species** (turtles, monitor lizards, red deer, goitered gazelles, snow leopards).* ● ***Anti-erosion** and bioengineering measures.* ● ***Sustainable forest and pasture management** (in collaboration with forestry enterprises and local governments).* ● ***Support for community conservancies** and protected areas within the framework of ecosystem initiatives.* *2)* ● *Creation and dissemination of **educational materials and methods** on sustainable land use, biodiversity, and climate adaptation.* ● *Conducting **training events** for communities, local governments, and government agencies.*	**Restoration of ecosystems, habitats, and sustainable management of natural resources** ● **The Ministry of Natural Resources of KR** is the central government partner in coordinating nature conservation and forestry activities, including support for community conservancies and rare species restoration programs. ● **The Forestry Service and forestry enterprises** are key partners in forest restoration, joint management, and nursery management. They actively collaborate with the GEF SGP, GIZ, and UNDP. ● **Pasture management organizations and local governments** participate in pasture planning, allocation, monitoring, and restoration; they are important partners in designing nature-based measures against erosion and degradation. ● **UNDP, GIZ, WB** implement and support initiatives on bioengineering solutions, arid landscape restoration, and joint forest and pasture management, including the introduction of digital platforms and sustainable practices. ● **Ilbirs Foundation, SLT, NABU, and WWF** are specialized partners in the conservation and restoration of habitats for snow leopards, red

	● *Development of **electronic platforms and digital monitoring systems** (e.g., pastures, biodiversity, projects).* ● *Exchange of experience between regions, support for a **network of pilot projects** and best practices.*	deer, tortoises, monitor lizards, goitered gazelles, and other protected species. They are active in Issyk-Kul, Chon-Kemin, Naryn, and Batken. ● **CAIAG, CAMP Alatoo, AUCA, UCA, and BI NAS KR** provide scientific expertise and data on the state of biodiversity, ecosystem degradation, rare species, and ecosystem connections. ● **Bio-KG and AFLU** implement agroforestry, regenerative agriculture, and agricultural nursery approaches, engaging communities and farmer cooperatives. **Training, Digital Tools, and Knowledge Exchange** ● **GIZ and UNDP** have developed and are implementing training courses on sustainable land use, pasture management, monitoring, and climate adaptation, including online platforms and maps. ● **UCA, AUCA, the Academy of Public Administration, and BI NAS KR** can develop and disseminate training modules, methodological manuals, and digital tools for monitoring biodiversity, ecosystem status, risks, and adaptation. ● **CAREC and the Aarhus Centres** are involved in educational activities, promoting access rights to information, supporting training programs, and digitalizing ecosystem data. ● **BIOM and "MoveGreen"** can provide local support and adaptation of training programs for communities, conduct trainings, participate in data collection, and organize experience exchanges.
CSO-government-private sector policy and planning dialogue platforms 1) Promote/enhance community voices and participation in global and national policy, strategy development related to global environment and sustainable development issues.	● *Establishment/support of regular multi-stakeholder dialogue platforms on biodiversity, climate adaptation, and sustainable development.* ● *Support for the participation of local NGOs and communities in the development and implementation of national strategies (NBSAP, climate, protected areas, etc.).* ● *Support for bottom-up policy analysis and recommendations from local projects into government policy.*	**Government Agencies and Platforms** ● **The Ministry of Natural Resources of KR** is the primary partner for institutionalizing dialogue between the government and NGOs, supporting mechanisms for participation in the implementation of the NBSAP, the climate strategy, and other national documents. ● **The Parliament of KR (Committee on Agrarian Policy, Water Resources, Ecology, and Regional Development)** – to support NGOs in the legislative amendment process. International Agencies and Programs

	● *Strengthening the role of NGOs and local communities in monitoring the implementation of policies, protected areas, climate measures, biodiversity, etc.*	● **UNDP** – actively works with the government on the Paris Agreement, climate strategies, protected area reform, and biodiversity financing mechanisms (BIOFIN), and actively engages NGOs in dialogue. ● **GIZ** – promotes civil society participation in the development of environmental and climate policies, including pasture regulation, state forest fund reform, zoning, and monitoring. ● **RDF** – works in the areas of sustainable rural development, natural resource management, support for traditional knowledge, and applied research. ● **CAREC** implements dialogue platforms on climate, biodiversity, and transboundary waters, including public hearings, seminars, and the preparation of policy recommendations. ● **Aarhus Centres** support the advocacy and information aspects of NGO participation in environmental policy and monitoring. **Scientific and Academic Partners** ● **UCA, AUCA, BI NAS KR, and CAIAG** can act as expert organizations, support the analysis of national and local policies, prepare recommendations, and assist in the preparation and training of NGOs for participation in dialogue. **NGOs and Public Networks** ● **BIOM, "MoveGreen", AFLU, Bioresurs**, and others have experience engaging in policy, conducting environmental assessments, developing alternative reports, and fostering bottom-up dialogue. ● **Ilbirs Foundation, SLT, NABU, WWF** – actively participate in strategic processes, including snow leopard strategies, species monitoring, protected area management, and have experience in preparing policy recommendations.
Enhancing social inclusion 1) Promote inclusive targeted initiatives. 2) Mainstream social inclusion in all projects. (e.g. women/girls, Indigenous Peoples, youth, and persons with disabilities).	*1)* ● *Promote the implementation of* ***inclusive, targeted initiatives****.* ● *Support* ***women's cooperatives*** *in ecotourism, wool processing, honey production, agroforestry, and organic farming.* ● *Train* ***young people and girls*** *in mountain and border areas in*	**Government Agencies:** ● **The Ministry of Natural Resources of KR** is a key partner in integrating an inclusive approach into environmental policy, including piloting inclusive community conservancies and engaging women and youth in ICCAs and protected areas. ● **The Ministry of Education and Science of KR** is working to introduce environmental and

	sustainable nature management skills, eco-business management, guiding, and environmental education. *2)* ● *Mainstream **social inclusion into all projects** (e.g., women/girls, local communities, youth, and people with disabilities).* ● *Create **community conservancies** with the inclusion of people with disabilities in biodiversity monitoring and eco-product manufacturing.* ● *Use **inclusive digital platforms** (mobile apps for biodiversity tracking, survey participation, and environmental feedback).* ● *Projects on **reforestation**, degraded pastures, and wetland protection with the mandatory participation of **youth, women, and local communities.*** ● *Support for **youth and schoolchildren's initiatives** in environmental education, wildlife monitoring, and adaptation measures (e.g., school nurseries, local nature observation posts).* ● *Programs **on traditional pasture management and the integration of ethnobotanical knowledge** into biodiversity conservation.* ● *Training **traditional users of natural resources** in sustainable use methods, resource accounting and inventory, and collaboration with scientists and government agencies.* ● *Introducing **mandatory criteria for evaluating GEF SGP applications** on social inclusion.* ● *Conducting **special training and consultations** for NGOs on the implementation of inclusion components.*	inclusive education components into school and extracurricular programs, creating school nurseries and environmental clubs. ● **The Agency for Youth Affairs and the Ministry of Labor, Social Security, and Migration** are facilitating the involvement of youth, women, and people with disabilities in environmental projects, especially in highly vulnerable regions. **International Agencies and Programs:** ● **UNDP, GIZ, FAO, UNICEF, and UN Women** are implementing programs that support women, youth, and marginalized groups in sustainable development and agriculture (e.g., through the creation of cooperatives, accelerators, and inclusive business models). ● **CAREC** can be engaged to promote social inclusion issues within environmental policy and local participation, as well as for dialogues at the regional level. ● **Aarhus Centres** provide advocacy and educational support on environmental participation, including inclusive practices. **Civil sector, NGOs, and social initiatives:** ● **BIOM, "MoveGreen", "Bioresurs", "AgroLead", and "SILK"** have experience in environmental education, working with communities and vulnerable groups, and conduct educational and environmental initiatives with inclusive components. **Academic and research institutions:** ● **BI NAS KR, FI NAS KR, UCA, AUCA** can provide scientific support and prepare methodological materials on inclusive nature management and ethnobotany. **Technology and digital solutions partners:** ● **Digital Kyrgyzstan, AUCA, UCA, CAIAG** can be involved in developing inclusive applications for biodiversity accounting, feedback, and monitoring.
Knowledge Management (KM) 1) Capture knowledge and lessons from projects and activities.	*1)* *Develop and launch an open **online portal or GEF SGP database**, which will systematically upload:* ● ***Descriptions of completed projects** (NGOs, government agencies, donors),*	**Academic and research institutions:** ● **BI NAS KR, FI NAS KR** — capable of conducting research, developing methods, and maintaining databases on species, protected areas, pastures, climate, etc.

2) Improve capacities of CSOs/CBOs. 3) Conduct South-South Exchanges to promote technology transfer and replication of good practices.	● *Reports, maps, videos, methodologies,* ● *Research results, including inventories and monitoring of species and landscapes.* *2)* *Create **hubs or resource centres** in the regions where:* ● ***Trainings will be conducted for local NGOs and communities** on project management, environmental monitoring, social inclusion, and landscape approaches.* ● ***Visual and localized training materials** will be developed (in Kyrgyz and Russian).* ● ***Mentoring support** will be offered for new initiatives.* *3)* *Organization of **visits, summer schools, seminars, and exchanges** between environmental organizations from Kyrgyzstan, Kazakhstan, Uzbekistan, and Tajikistan on the following topics:* ● *Management of protected areas and forests (e.g., exchange with Kazakhstan on forest certification),* ● *Sustainable livestock farming and agroforestry methods,* ● *Use of SMART/MET, and community participation in nature conservation.* ● *Funding applied research by NGOs and academic organizations with mandatory publication of open data (inventories, protected area zoning, vulnerable species and ecosystems).*	● **UCA and AUCA** — possess high competencies in digital technologies, natural resource management, community outreach, and environmental education modules. ● **CAIAG** — actively works with digital knowledge platforms and regional databases, and has experience in developing climate scenarios, training materials, and decision support systems. ● **KNAU, KNU** — potential partners in developing agroecological methods, curricula, and working with farmer cooperatives. National and international NGOs: ● **"BIOM", "Bioresurs", CAMP Alatoo, "MoveGreen"** are actively working with digital platforms, developing field methods, video content, visualization, and educational materials. They have participated in projects on biodiversity monitoring, air pollution, SMART conservation, and sustainable land use. ● **ICCA Network Kyrgyzstan, AFLU** are systematically documenting local knowledge, zoning, community-based monitoring using digital tools. ● **The Institute of Social Initiatives and women farmers** focus on knowledge transfer to women and youth, disseminating lessons to target groups, and forming exchange networks between regions. **Government agencies and structures:** ● **The Ministry of Natural Resources of KR** is a key partner in the creation of a national knowledge portal, including the integration of data on ICCA, protected areas, and climate change. ● **The Ministry of Education and Science of KR** — to integrate SGP results into supplementary and environmental education programs. **International agencies and programs:** ● **UNDP, GIZ, CAREC, FAO, SLT, WWF, IUCN, FFI** — have extensive regional experience and educational products that can be adapted. They can facilitate south-south exchanges (e.g., with Kazakhstan, Mongolia, and Nepal). ● **Aarhus Centres** — act as platforms for information exchange, promoting open data, and working with NGOs. **Resource and training centres/local hubs:** ● Ecocentre in Sary-Chelek, ● UCA Educational Centre in Naryn,

		● CAMP Alatoo regional training sites, ● NGO hubs in Karakol, Osh, and Batken — can be developed as SGP Resource Centres for organizing trainings, storing educational materials, mentoring, and demonstration visits.
Results Management, Monitoring & Evaluation (M&E) 1) Administer new M&E strategy in Country Programme and project design, implementation and overall decision making using participatory mechanisms.	*Develop a simple but effective **national monitoring and evaluation (M&E) strategy**, considering commitments under the CBD, NBSAP, and NDCs.* *The strategy should consider:* ● ***Mandatory GEF and SGP OP8 indicators,*** ● ***Local environmental and social indicators** (e.g., abundance of protected species, extent of pasture degradation, level of women and youth engagement),* ● ***Incorporation of local community knowledge and practices** (engagement in M&E).* *In relevant projects, provide for **community participation in monitoring** through:* ● *Basic monitoring training (e.g., SMART or MET),* ● *Photo documentation,* ● *Simple flora/fauna observation logs,* ● *GPS tracking of changes,* ● *Involvement of volunteer groups/youth.* *Develop a **unified online form** (e.g., via Google Forms, KoboToolbox, or a national platform) that will:* ● *be submitted with the application (baseline indicators),* ● *be updated every 6 months (current progress),* ● *be used for the final report.* *For geographic tracking, free tools such as **QGIS, NextGIS, or MapHub** can be used (possibly with support from CAREC or CAIAG).* *Organize annual peer reviews (with the participation of the Ministry of Natural*	**Government agencies and national focal points:** ● **The Ministry of Natural Resources and Environment of KR** is a key partner responsible for monitoring the implementation of national strategies. It can ensure the institutionalization of data from the SGP. ● **Kyrgyz hydromet** can participate in weather and climate M&E indicators, particularly for the evaluation of adaptation projects. ● **Department of Protected Areas** monitors projects in forest zones, participates in SMART and MET, registers community conservancies and ICCA. **Academic and research organizations:** ● **CAIAG, CAMP Alatoo** have expertise in developing national monitoring systems and assessing pastures and ecosystems. ● **BI NAS KR** conducts bioinventories, develops indicators for species and ecosystems, and prepares templates. ● **UCA, AUCA** can develop digital monitoring tools, maps, online forms, and train students and local partners. ● **KNAU** is a key partner in monitoring pastures and agricultural landscapes and working with farmer groups. **International organizations and development agencies:** ● **UNDP** — experience in developing and implementing M&E systems within climate and biodiversity projects. ● **GIZ, FFI, WWF, CAMP Alatoo** — developments in SMART, METT, digital monitoring, and engaging pasture committees in land degradation tracking. ● **CAREC** — regional experience, capacity building in biodiversity monitoring, mapping, and ecosystem assessments. ● **FAO, UNEP** — methodological support on agro-ecological indicators, online data collection, and regular reviews. **NGOs and civil society:**

	Resources, UNDP, GIZ, CAREC, universities, etc.) to: ● *analyze progress,* ● *identify duplications or gaps,* ● *provide recommendations for project improvement.* *In each project, allocate **5–10% of the budget for monitoring and evaluation**, including:* ● *community visits to collect data,* ● *training local partners/youth in M&E skills,* ● *visualization and publication of results.*	● **CAMP Alatoo** — has successful experience implementing a pasture and climate risk monitoring system with the participation of local committees and local governments. ● **BIOM, Bioresurs, MoveGreen** taking photographs, and training schoolchildren and communities in flora and fauna monitoring. ● **AFLU, ICCA Network** are monitoring natural resources within public protected areas and community consernvancies. Digital and technology partners: ● **DataLab AUCA, CAIAG** are developing and adapting QGIS tools, Kobo forms, and Google Forms. ● **National IT startups and developers** can create a customized M&E dashboard if funding is available.

4. OP8 PRIORITY LANDSCAPES/SEASCAPES & STRATEGIC INITIATIVES

4.1 Grantmaking within the priority landscape/seascapes

a) Process for selecting priority landscapes and seascapes

The GEF Small Grants Programme (SGP) Operational Phase 8 (OP8) utilizes an ecosystem-based approach, focusing project support on ecologically significant natural systems—such as rangelands, mountain forests, wetlands and lake ecosystems—regardless of administrative boundaries. This allows for consideration of the interconnectedness between natural components and society, strengthening the integrity of biodiversity conservation, and ensuring resilience to climate change and resource pressures. However, to ensure more targeted funding, it was decided to focus on areas with physical boundaries that support specific historically formed ecosystems.

The identification of the target ecosystem and priorities for the SGP in Kyrgyzstan was carried out through extensive consultations with national stakeholders. Non-governmental and scientific organizations, government agencies, and international development agencies with significant experience in research, environmental initiatives, and sustainable development programs participated in the process.

To ensure openness and transparency, the GEF SGP has developed **clear criteria for ecosystem selection**, including:

- Ecological significance;
- Threats of degradation and climate vulnerability;
- Community and NGO involvement;
- Potential for sustainable resource management and replication of successful solutions;
- Institutional support and coordination possibilities.

Stage 1: Consultations with National Stakeholders

At the initial stage of the GEF SGP, extensive consultations were held with representatives of:

- **Government agencies** (the Ministry of Natural Resources),
- **Scientific institutions** (the National Academy of Sciences of the Kyrgyz Republic, the Kyrgyz National University, the American University of Central Asia, etc.),
- **Environmental NGOs and associations** (SLT/SLF, CAMP Alatoo, the Ilbirs Foundation, BIO-KG, AFLU, BIOM, the Kyrgyz Wildlife Conservation Society, etc.),
- **International partners and donors** (UNDP, WB, GIZ, FAO, WFP, ACTED, OSCE, CAREC, WWF, NABU, FFI, etc.).

A separate strategic meeting was held with the **National Steering Committee (NSC) of the GEF SGP**, where participants identified ecosystem zones in need of priority support and made proposals for project topics.

Stage 2: Participatory Ecosystem Mapping
At the expanded consultation meeting, participants:

- Presented existing initiatives and areas of their activities;
- Identified **ecosystems most vulnerable to anthropogenic and climate impacts;**
- Analyzed potential areas for the GEF SGP focus;
- Agreed on approaches to integrating climate adaptation, sustainable land use, and biodiversity conservation.

Stage 3: Selection of Priority Ecosystems
Based on the discussions and considering comprehensive criteria, **two priority ecosystems were identified for focus support in OP8:**

1. Mountain pasture-forest ecosystems of the Central and Inner Tien Shan (Naryn and Issyk-Kul regions)
- High biodiversity (including snow leopard, red deer, goitered gazelle, etc.);
- Combination of forests, pastures, mountain rivers, and wetlands (Son-Kul, Chatyr-Kul);
- Vulnerability to climate change (water shortages, desertification, avalanches and mudflows);
- Problems: old pesticide burial sites, soil erosion, overgrazing, poaching;
- Potential: development of ecotourism, restoration of natural populations, introduction of alternative income sources, ecosystem health monitoring.

2. Wetland and lake ecosystems throughout the Republic
- Unique wetland biodiversity and endemics (ichthyofauna, avifauna);
- Threats: species displacement, plastic pollution, coastal urbanization;
- Social significance: tourism, fisheries, water source protection;
- The importance of coastal zone restoration, monitoring, and integrating ecosystem services into policy.

Stage 4: Finalizing the Selection
Finally, a coordination meeting was held with **UNDP, the GEF, and the Ministry of Natural Resources of the KR**, as well as consultations with national stakeholders. During the meeting, the following were achieved:
- The selected ecosystems were confirmed as priority zones for OP8;

- Focus approaches (biodiversity, climate, sustainable use) were identified;
- The need to consider the rights of local communities, engage the scientific community, and coordinate with government agencies was recognized.

The application of the ecosystem approach allowed the GEF SGP to:

- Consider the links between biodiversity, climate, water, land use, and community well-being;
- Identify areas with high environmental and social value;
- Develop a platform for intersectoral interaction and scaling up successful solutions;
- Ensure contribution to the implementation of the NBSAP, NDC and other international commitments of the Kyrgyz Republic.

Fig. 1. Results of voting by participants in the national consultation meeting; red indicates the primary choice, yellow indicates the secondary choice.

The Central and Inner Tien Shan ecosystem was selected as a priority during the national consultation (Fig. 1). The region encompasses the ridges of the Naryn and Issyk-Kul regions, where the orography is represented by a chain of mountains extending latitudinally. The Issyk-Kul basin is framed by the Kungey and Teskey Ala-Too mountains, while to the south and east lie the Ak-Shyirak, Keolyu-Too, Jetim-Bel,

Borkoldoy, Kakshal-Too, Sary-Dzhaz, and Enilchek-Too mountains, which transition into the Khan-Tengri system. Almost all the peaks are covered by glaciers, the largest of which are the Southern and Northern Enilchek, Kaiyndy, Semenov, Mushketov, Petrov, Kolpakovsky, and Karakol-Tor mountains. **The Central Tien Shan** is characterized by high absolute elevations and extensive glaciation, which covers up to 40% of the area. Slope glaciers predominate, but it is valley glaciers that provide the region's primary water resources. They feed rivers and determine the region's hydrological regime.

b) Selected landscapes/seascapes for OP8

Geography

The selected ecosystem geographically represents the mountainous regions of the Inner and Central Tien Shan, located between 40°–43° N and 73°–80° E. The following protected areas are located on this territory: Karatal-Zhapyryk Reserve - 36419 hectares, Nature Park "Salkyn-Tor" - 10412 hectares, Naryn Nature Reserve - 36959 hectares, State Nature Reserve "Sarychat-Eertash" - 149309 hectares, State Nature Reserve "Kara-Kol" - 38273 hectares, State Nature Park "Khan Tengri" - 322034 hectares, Issyk-Kul Nature Reserve - 18996 hectares. And also downstream of the Naryn River there are the Kan-Achuu State Nature Reserve - 30397 hectares, the Saimaluu-Tash State Nature Reserve - 31987 hectares, which are connected by migration corridors with the Central Tien Shan.

Relief and Glaciation

Overall, the Tien Shan is a vast, significantly elevated mountain structure with a complex combination of ridges (tectonic uplifts) and intermontane depressions (tectonic troughs). The depressions, as well as most ridges, are characterized by a gradual divergence to the west, with a general decrease in absolute elevation from 7439 m above sea level (Pobeda Peak) in the east to 1300 m above sea level (the middle reaches of the Naryn River) and to 400 m above sea level in the west (the Fergana Valley). The elevation of the ridges above the adjacent basins ranges from 200-600 m above sea level to 2200-3000 m above sea level and higher (Fig. 2).

The orography of the Naryn and Issyk-Kul regions is characterized by a large number of mountain ranges, primarily along the latitudinal axis. The Issyk-Kul depression is bordered by the Kungey Ala-Too ranges to the north and the Teskey Ala-Too ranges to the south. Further south is the Ak-Shyyrak, Keolu-Too, Jetim-Bel, Dzhany-Dzher, Borkoldoy-Too, and Kakshal-Too ranges on the border with China. In the eastern part of the valley are the Sary-Dzhaz and Enilchek-Too ranges, which abut the Khan Tengri mountain system. Almost all the ranges have intense glaciation on their peaks. In the Naryn region, two ranges, the Naryn-Too and At-Bashi, also have glaciers, but the glaciation is much less extensive than in the Issyk-Kul region due to their lower elevations.

Nival-glacial relief-forming processes predominate in the Central Tien Shan. The ridges are closely spaced and cut by narrow valleys. The mountain ranges of the Central and Inner Tien Shan, originating from the Central Tien Shan as isolated branches, gradually diverge, widening to the west and curving gently to the south. Fragments of ancient denudation surfaces are most abundant here.

The Central Tien Shan is characterized by its highest elevations and extensive glaciation (approximately 40% of the total area). Glaciers forming on slopes predominate in number, while valley glaciers are less numerous and flat-topped glaciers are very rare. However, valley glaciers predominate in terms of area and water content. The largest glaciers in the area of Pobeda Peak are: South Enilchek, North Enilchek, Kaiyndy, Semenov Glacier, Mushketov Glacier, Koykap and Kan-Jailoo. On the Ak-Shyyrak ridge there are glaciers Petrov, Northern Kara-Sai, Jaman-Suu and Koyonduu. On the Teskey Ala-Too ridge: Kolpakovsky and Karakol-Tor glacier, on the Keolyu-Too ridge: Kara-Tor glacier, on the Kungei Ala-Too ridge: Chon-Ak-Suu glacier.

Climate

The significant complexity of the terrain, its deep ruggedness, and the varying exposure of the mountain slopes to the sun and air currents create an exceptional diversity of climate characteristics and define a distinct vertical climatic zonation. Four distinct climatic zones can be identified here (Figs. 4, 5).

The valley-foothill zone (500–1200 m above sea level) is characterized by hot summers (up to 28°C), moderately cool and snowless winters, and a significant precipitation deficit. In the upper part of the valley-foothill zone, the climate is warm and even hot, also with mild winters. Summer temperatures (July) are 20–25°C, while winter temperatures (January) are -4–7°C. Maximum summer temperatures in this zone reach 44°C, decreasing to 27–30°C with increasing elevation. Absolute winter minimums range from -22°C to -30°C, with only localized drops below -40°C.

The mid-mountain zone (1200–2200 m above sea level) has a typical temperate climate with warm summers and moderately cold, fairly stable, snowy winters. Temperatures here are significantly lower: summers are warm, with July lows of 18–19°C, while winters are quite cold, with January lows of -7°C to -8°C and December and February lows of -3°C to -5°C. At elevations of 1000–1500 m above sea level, the frost-free period lasts 7 months or more, which, given sufficient moisture, creates favorable conditions for the growth of many heat-loving plant species. In the upper part of the mid-mountain zone, the frost-free period lasts approximately 6 months—this is typical of a temperate climate (Figs. 4, 5).

The high-mountain zone (2200–3500 m above sea level) is characterized by cool summers and cold, sometimes snowy winters. July temperatures here are only 11–16°C. Winters are long (November–March), with January temperatures of -8–-10°C below zero, and -3–-7°C below zero in the remaining cold months. In the upper part of the high-mountain zone, the frost-free period is reduced to 3–4 months or less, and higher up, it may be completely absent, meaning even the warmest summer months experience frost.

The nival zone (from 3500 m above sea level) is characterized by a harsh, very cold climate. This is a belt of snowfields, cliffs, glaciers, and moisture accumulation. Even in the lower part of this belt, average July temperatures do not exceed 4–7°C, and January temperatures drop to -19–-22°C.

Over most of the selected area, the surface elevation exceeds 3000 m above sea level. Therefore, the climate here is very cold and characterized by permafrost or tundra climate, where the average monthly temperature is below 10°C. The exception is the valley of the Sary-Dzhaz River and its tributaries, with snowless winters. Here, the climate resembles an arid steppe climate in terms of annual precipitation and average annual temperatures, with the average temperature of the warmest month above 10°C and the

temperature of the coldest month below -3°C. The climate in the eastern part of the Issyk-Kul Basin is sufficiently humid, with the average temperature in the warmest month being below 22°C. However, up to four months of the year have average temperatures above 10°C. The southern coast of Issyk-Kul has an arid steppe climate with no regular snow cover, and the average temperature in the warmest month is above 22°C. The climate on the northern coast is less arid and cooler. The western coast of Issyk-Kul is characterized by snowless winters and an arid desert climate (Figs. 4, 5).

The lower part of the Naryn and At-Bashi River valleys is characterized by an arid steppe climate, with low precipitation and average temperatures in the warmest month below 22°C but above 10°C for at least four months. The foothills and mid-mountain areas of the Naryn and At-Bashi River valleys are characterized by sufficient moisture, with temperatures in the warmest month below 22°C but above 10°C.

Water Resources

The largest rivers in the region are the Sary-Jaz River, which belongs to the Tarim Basin. Its source is on the slopes of Khan Tengri (Semyonov Glacier) and flows south into China, where it becomes a left tributary of the Tarim River. The Sary-Jaz River's discharge at the mouth of the Koyluu River reaches 47 m^3/s in wet years. The river is important for irrigation and hydroelectric power, supplying the Ak-Suu oasis and a hydroelectric power station in China. The Chu River originates in the Teskey Ala-Too mountain range and then flows northwest into Kazakhstan, where it becomes swampy and disappears into the Moyynkum Desert. The Chu River's discharge at the Kochkorka observation point reaches 37 m^3/s in wet years. The river is of great importance for irrigation and hydroelectric power, feeding the Orto-Tokoy Reservoir. The largest river is the Naryn, which originates in the glaciers of the Central Tien Shan (Ak-Shyirak, Teskey Ala-Too) and flows west into Uzbekistan, where it merges with the Kara Darya River to form the Syr Darya, and then flows into the Aral Sea. The Naryn River's discharge at the Naryn observation point reaches 124 m^3/s and 618 m^3/s at the Uch-Korgon observation point. The river is of great importance for irrigation and hydroelectric power, feeding the Toktogul Reservoir.

There are approximately 2000 lakes in the republic, located primarily in the mountainous region. Most of the mountain lakes are small bodies of glacial and landslide origin. Exceptions include large lakes in tectonic basins. The largest of these are Issyk-Kul (surface area 6236 km^2), Lake Son-Kul (surface area 270 km^2), and Lake Chatyr-Kul (surface area 153 km^2). All three lakes are located within the landscape under consideration and are firmly embedded in the ecosystem. They are key reservoirs for aquatic biodiversity and are also involved in waterfowl migration. Furthermore, they play a significant role in providing ecosystem services and are important tourist destinations, generating income for the state and local populations.

Geobotanical Zoning

The selected landscape encompasses several geobotanical regions: the Issyk-Kul Province, the Central Tien Shan Province, and the Central and Inner Tien Shan Province. The Issyk-Kul Province is dominated by desert communities, thorn cushion grasslands, sod steppes, deciduous shrublands, tallgrass meadows, spruce forests, subalpine meadows, and alpine meadows. In the eastern part of the province, the sod steppe belt occupies elevations of 1700–2000 m above sea level. The forest, tallgrass meadow, and shrub belt occupies elevations of 2000–2500 m above sea level. The subalpine meadow belt occupies elevations of 2500–3000 m above sea level. Alpine meadow belt – 3000–3600 m above sea level. In the western part of the province,

the desert belt extends at elevations of 1700–1800 m above sea level, the steppe belt – 1900–2600 m above sea level, the subalpine meadow belt – 2600–3000 m above sea level, and the alpine meadow belt – 3000–3600 m above sea level (Fig. 3).

The dominant species in the western Issyk-Kul district are *Ephedra equisetina* Bunge, *E. intermedia* Schrenk & C.A. Mey., *Sympegma regelii* Bunge, *Acantholimon alatavicum* Bunge, *Convolvulus tragacanthoides* Turcz., *Reaumuria songarica* (Pall.) Maxim., *Artemisia tianschanica* Krasch. ex Poljak., *Caragana kirghisorum* Pojark., *Festuca rupicola* Heuff., *Stipa caucasica* Schmalh., *Phlomoides oreophila* (Kar. & Kir.) Adylov, Kamelin & Makhm., *Kobresia capilliformis* N.A. Ivanova, *Hippophae rhamnoides* L. In the Balykchy region, deserts with petrophytes, psammophytes, and fragments of meadows predominate. In the Cholpon-Ata region, steppe relief with fragments of meadows, spruce forests, and thorn-cushion forests predominate. The Ton district is dominated by a desert-steppe landscape with patches of meadows and spruce forests.

The eastern Issyk-Kul district is dominated by: *Artemisia tianschanica* Krasch. ex Poljak., *Festuca rupicola* Heuff., *Caragana pleiophylla* (Regel) Pojark., *Phlomoides oreophila* (Kar. & Kir.) Adylov, Kamelin & Makhm., *Iris ruthenica* Ker Gawl., *Lonicera hispida* Pall. ex-Schult., *L. altmannii* Regel & Schmalh., *Cotoneaster multiflorus* Bunge, *Caragana jubata* (Pall.) Poir., *Picea schrenkiana* Fisch. & C.A. Mey., *Dactylis glomerata* L., *Helictotrichon pubescens* (Huds.) Pilg., *Poa pratensis* L., Veratrum lobelianum Bernh., *Alchemilla sibirica* Zamelis, *Bistorta vivipara* (L.) Delarbre, *Poa alpina* L. The Ak-Suu and Tyup areas are dominated by meadow-steppe landscapes with patches of forests and shrubs. Shrub-forest-meadow landscapes predominate in the Jety-Oguz and Jergalan areas.

The Central Tien Shan Province is also characterized by a wide diversity of vegetation types, including deserts, sod steppes, alpine meadows, mountain tundra, and cryophilic cushion mosses. Most of the territory is occupied by landscapes with very sparse vegetation. The subalpine desert and steppe belt occupies elevations of 2600–3400 m above sea level. The alpine meadow, mountain tundra, and cryophilic cushion belt occupies elevations of 3400–4000 m above sea level.

The following species predominate in the northern Sarydzhaz district: *Stipa subsessiliflora* (Rupr.) Roshev., *S. purpurea* Griseb., *Festuca kryloviana* Reverd., *Kobresia capilliformis* N.A. Ivanova, *Allium semenowii* Regel, *Carex melanantha* C.A. Mey., *Festuca alatavica* (St.-Yves) Roshev., *Salix alatavica* Kar. ex Stschegl., *Caragana jubata* (Pall.) Poir., *Sibbaldia tetrandra* Bunge, and plant communities (*Smelowskia calycina* (Stephan ex Willd.) C.A. Mey., *Eritrichium villosum* (Ledeb.) Bunge, *Callianthemum alatavicum* Freyn, *Saxifraga alberti* Regel & Schmalh., *S. oppositifolia* L.).

The Ak-Shyyrak-Koyluu district is dominated by a meadow-steppe landscape with fragments of spruce forests and tundra. The Upper Sary-Jaz district is characterized by a meadow-steppe landscape with fragments of willow and spruce forests. The Khan-Tengri region is dominated by a tundra-alpine-meadow landscape with a wide variety of plant communities.

In the southern Sary-Jaz district, the following species predominate: *Reaumuria kaschgarica* Rupr., *Artemisia rhodantha* Rupr., *Festuca rupicola* Heuff., *Stipa orientalis* Trin., *Salix alatavica* Kar. ex Stschegl., *Farinopsis salesoviana* (Stephan) Chrtek & Soják, *Dasiphora phyllocalyx* Juz., *Berberis kaschgarica* Rupr., and *Rheum spiciforme* Royle. In the Ak-Shyyrak-Koykap district, desert-steppe landscapes with fragments of shrubs predominate.

The Central and Inner Tien Shan Province includes the following vegetation types: deserts, thorn cushion forests, sod steppes, tall-grass meadows, subalpine meadows, alpine meadows, cryophilic cushion forests, swamps, spruce forests, deciduous summer-green forests (tokoi), deciduous shrubs, and juniper forests (Fig. 3, 6). Large areas are occupied by plant groups with sparse vegetation; mountain tundra is found in fragments. The belt of wormwood and saltwort deserts occupies elevations of 1400–1700 m above sea level and 3000–3800 m above sea level. The steppe belt occupies 1700–2200 m above sea level. The belt of forests and tall-grass meadows and shrubs occupy elevations of 2000–2800 m above sea level. The subalpine meadows and steppes belt occupies elevations of 2800–3000 m above sea level. The alpine meadows and cushion mosses belt occupies elevations of 3000–3600 m above sea level.

The dominant species in the Middle Naryn district are: *Suaeda physophora* Pall., *Salsola passerina* Bunge, *Artemisia compacta* Fisch. ex-DC., *A. tianschanica* Krasch. ex Poljak., *Festuca rupicola* Heuff., *Achnatherum splendens* (Trin.) M. Nobis, P. Gudkova et A. Nowak, *Stipa kirghisorum* P.A. Smirn., *Helictotrichon desertorum* (Less.) Nevski, *Picea schrenkiana* Fisch. & C.A. Mey., *Calamagrostis epigeios* (L.) Roth, *Caragana pleiophylla* (Regel) Pojark., *C. jubata* (Pall.) Poir., *Phlomoides oreophila* (Kar. & Kir.) Adylov, Kamelin & Makhm., *Carex stenocarpa* Turcz. ex Krecz., *Kobresia capilliformis* N.A. Ivanova.

The Kokomeren-Minkush district is dominated by shrub-forest-meadow landscapes with a wide variety of plant communities. The Naryn region is dominated by desert-steppe landscapes with patches of forests and meadows. The Atbashi-Karakoyun district is dominated by dry-steppe landscapes with patches of forests, meadows, and shrubs.

In the Aksai-Upper Naryn district, the following species dominate: *Kalidium cuspidatum* (Ung. -Sternb.) Grubov, *Artemisia rhodantha* Rupr., *Festuca rupicola* Heuff., *F. alatavica* (St.-Yves) Roshev., *F. kryloviana* Reverd., *F. olgae* (Regel) Krivot., *Hordeum turkestanicum* Nevski, *Stipa subsessiliflora* (Rupr.) Roshev., *Kobresia capilliformis* N.A. Ivanova, *Carex stenocarpa* Turcz. ex Krecz., *C. melanantha* C.A. Mey., *C. orbicularis* Boott, *Allium atrosanguineum* Kar. & Kir., *Dryadanthe tetrandra* (Bunge) Juz.

In the Kichi-Naryn district, the landscape is predominantly steppe with fragments of kobresia. The Arabel district is dominated by a tundra-alpine-meadow landscape. The Chakyrkorum-Naryn district is characterized by a desert-steppe landscape with patches of cushion plants. The Uzengu-Kush district is dominated by a desert-steppe landscape. The Chatyrkul-Aksai district is characterized by a meadow-steppe landscape. The Arpa district is characterized by a steppe landscape.

The Toguz-Toro-Aktalaa district is dominated by: *Salsola passerina* Bunge, *Nanophyton erinaceum* (Pall.) Bunge, *Suaeda physophora* Pall., *Acantholimon alatavicum* Bunge, *Helianthemum songaricum* Schrenk, *Atriplex cana* C.A. Mey., *Artemisia compacta* Fisch. ex-DC., *A. prolixa* Krasch. ex Poljak., and *A. tianschanica* Krasch. ex Poljak., *Stipa caucasica* Schmalh., *S. kirghisorum* P.A. Smirn., *Elytrigia trichophora* (Link) Nevski, *Festuca rupicola* Heuff., *Helictotrichon desertorum* (Less.) Nevski, *Prangos pabularia* Lindl., *Bothriochloa ischaemum* (L.) Keng, *Ligularia macrophylla* (Ledeb.) DC., *Allium aflatunense* B. Fedtsch., *Phlomoides oreophila* (Kar. & Kir.) Adylov, Kamelin & Makhm., *Caragana jubata* (Pall.) Poir., *Sorbus tianschanica* Rupr., *Spiraea hypericifolia* L., *Rosa platyacantha* Schrenk. In the Toguz-Toro district, the landscapes are represented by meadow-steppe formations with fragments of shrubs. The Ak-Tala district is dominated by desert-steppe landscapes.

The Suusamyr-Karakudzhur district is dominated by *Sympegma regelii* Bunge, *Kalidium cuspidatum* (Ung. - Sternb.) Grubov, *Reaumuria songarica* (Pall.) Maxim., *Acantholimon alatavicum* Bunge, *Artemisia tianschanica* Krasch. ex Poljak., and *A. compacta* Fisch. ex-DC., *Stipa caucasica* Schmalh., *S. capillata* L., *Festuca rupicola* Heuff., *Caragana kirghisorum* Pojark., *C. aurantiaca* Koehne, *Cerasus tianshanica* Pojark., *Ferula kuhistanica* Korovin, *Helictotrichon desertorum* (Less.) Nevski, *Phlomoides oreophila* (Kar. & Kir.) Adylov, Kamelin & Makhm., *Geranium regelii* Nevski, *G. Himalayense* Klotzsch, *Kobresia capilliformis* N.A. Ivanova, *Carex stenocarpa* Turcz. ex Krecz., *C. melanantha* C.A. Mey., *Salix acutifolia* Willd., *Betula turkestanica* Litv., *Hippophae rhamnoides* L.

Shrub-meadow-steppe landscapes predominate in the Suusamyr district. Desert-steppe landscapes predominate in the Kochkor district. Desert-steppe landscapes with patches of forests and meadows predominate in the Jumgal district. Meadow-steppe landscapes with patches of marshes predominate in the Son-Kul district. Meadow-steppe landscapes with patches of marshes (saz) predominate in the Solton-Sary-Karakudzhur district.

Rare Species

Species found in the Central and Inner Tien Shan and listed in the Red Data Book of the Kyrgyz Republic: golden eagle (*Aquila chrysaetos* L.), bearded vulture (*Gypaetus barbatus* L.), saker falcon (*Falco cherrug* Gray), gyrfalcon (*Falco rusticolus* L.), peregrine falcon (*Falco peregrinus* Tunstall.), kumai (*Gyps himalayensis* Hume.), demoiselle crane (*Anthropoides virgo* L.), sociable lapwing (*Vanellus gregarious* Pallas.), short-toed eagle (*Circaetus gallicus* Gmelin.), Persian rowan (*Sorbus persica* Hedl.), Turkestan rowan (*Sorbus turkestanica* (Franch.) Hedl.), Tien Shan sibiraea (*Sibiraea tianschanica* Pojark.), Kashgar barberry (*Berberis kaschgarica* Rupr.), Kashgar zigzag (*Zygophyllum kaschgaricum* Boriss.), *Tianschaniella umbellifera* B. Fedtsch. ex M. Pop.), *Anemone obtusiloba* D. Don., *Eminium regelii* Vved., *Erianthera anomala* Juz., *Iridodictyum kolpakowskianum* (Regel) Rodionenko, *Saussurea involucrata* (Kar.et Kir.) Sch. Bip.), *Otostegia schennikovii* V. Scharaschova, hairy chesnea (*Chesneya villosa* (Boriss.) R. Kam. et R. Vinogradova), Kolpakovsky's tulip (*Tulipa kolpakowskiana* Regel), Greig's tulip (*Tulipa greigii* Regel), snow leopard (*Panthera uncia* Schreber, 1775), lynx (*Lynx lynx* Linnaeus, 1758), Pallas's cat (*Otocolobus manul* (Pallas, 1776)), brown bear (*Ursus arctos* Linnaeus, 1758), maral (*Cervus elaphus* Linnaeus, 1758 ssp. asiaticus Lydekker, 1898), goitered gazelle (*Gazella subgutturoza* Gulg., 1780), Tien Shan mountain sheep (*Ovis ammon* Linnaeus, 1758), marbled polecat (*Vormela peregusna* Guldenstaedt, 1770), Ibisbill (*Ibidorhyncha struthersii* Vigors, 1832), Greater Black-headed Gull (*Larus ichtyaetus* Pallas, 1773), Whooper Swan (*Cygnus cygnus* Linnaeus, 1758), Bar-headed Goose (*Anser indica* (Latham, 1790)), Little Bustard (*Tetrax tetrax* Linnaeus, 1758), Dalmatian Pelican (*Pelecanus crispus* Bruch, 1832), Greater Pink Pelican (*Pelecanus onocrotalus* Linnaeus, 1758), Greater Flamingo (*Phoenicopterus ruber* Linnaeus, 1758), Black Grouse (*Lyrurus tetrix* (Linnaeus, 1758)), European Asp (*Aspiolucius esocinus* (Kessler)), Turkestan catfish (*Glyptosternum reticulatum* McClelland), Apollo loxias (*Parnassius loxias* Püngeler, 1901), common Apollo (*Parnassius apollo* (Linnaeus, 1758)), Alexandrine swallowtail (*Papilio alexanor* Esper, 1800), and *Satanas gigas* (Eversmann, 1854).

Environmental Conservation

During meetings with the administrations of specially protected natural areas in the Naryn and Issyk-Kul regions (the Naryn, Karatal-Zhapyryk, Sarychat-Eertash, and Issyk-Kul Nature Reserves, the Salkyn-Tor and Khan-Tengri National Parks, and the Issyk-Kul Biosphere Reserve), key needs and priorities were identified. The nature reserves and parks note the need to strengthen scientific research, particularly on endangered species, avifauna, flora, and glaciers, as well as to develop photo tourism and environmental education. Proposals have been made to create and modernize nature museums, develop tourism with consideration of environmental impacts, and establish nurseries for medicinal plants and forest crops.

Material and technical needs include monitoring equipment (GPS trackers, camera traps, weather stations, binoculars, and drones), vehicles, communications equipment, and the construction of cordons. The importance of training researchers and rangers, including in anti-poaching, animal census techniques, and working with local communities to prevent conflicts with wildlife, is emphasized. The data obtained will form the basis for project initiatives under the GEF SGP Country Program aimed at biodiversity conservation, scientific advancement, sustainable tourism, and strengthening engagement with local communities.

The Inner and Central Tien Shan ecosystem is a unique mountain ecosystem with distinct vertical zonation, diverse climatic zones, and rich biodiversity. The territory encompasses mountain ranges, glaciers, high-mountain lakes (Issyk-Kul, Son-Kul, Chatyr-Kul), and major rivers (Naryn, Sary-Dzhaz, Chu), which play a key role in the region's water supply and the migration of waterfowl. A significant number of specially protected natural areas are concentrated here—from nature reserves (Sarychat-Eertash, Naryn, Karatal-Zhapyryk, and others) to national parks and sanctuaries—forming the basis for the conservation of rare species and ecosystems.

The vegetation cover is highly mosaic: from deserts and steppes to spruce forests, subalpine and alpine meadows, tundra, and swamps. Geobotanical zoning includes the Issyk-Kul, Central and Inner Tien Shan provinces, each with its own set of dominant species and ecosystems. The area is home to numerous species listed in the Red Data Book of Kyrgyzstan, including snow leopard, argali, red deer, goitered gazelle, as well as rare birds of prey (golden eagle, saker falcon, bearded vulture), and endemic plants (*Sorbus turkestanica*, *Saussurea involucrata*, etc.).

Davletbakov et al. (2016) presents a review of the status of the snow leopard (*Panthera uncia*) in Kyrgyzstan, where its range covers approximately 89000 km² and the population is estimated at 300–400 individuals. The main threats are poaching, depletion of prey, and habitat fragmentation. The species inhabits eight nature reserves and three national parks, with plans to expand the network of protected areas and develop cross-border initiatives. Since 2014, measures have been implemented to regulate hunting and develop community-based hunting farms, while NGOs (NABU, WWF, SLT, FFI, and others) conduct anti-poaching programs, photo monitoring, environmental education, and alternative income projects. The authors emphasize the need for increased monitoring outside nature reserves, strengthening community initiatives, and international cooperation for the long-term conservation of the species.

The ecosystem is under pressure from climate change (glaciers melting, shortening of the snow season), pasture degradation, deforestation, poaching, and habitat loss. Coastal wetlands and high-mountain habitats for large mammals remain particularly vulnerable. Despite the existence of protected areas, habitat fragmentation is high and systematic monitoring is insufficient. For key species, such as the snow leopard, international and national programs are being implemented to combat poaching, develop community-

based hunting enterprises, promote environmental education, and foster alternative livelihoods. Successful collaboration between conservation organizations and businesses (NABU, WWF, SLT, FFI, and others) demonstrates the potential for expanding partnerships, integrating conservation goals into corporate strategies, and pooling efforts in transboundary initiatives. However, other species receive far less attention and conservation efforts.

Hotham et al. (2024) examine the interaction between corporate business and snow leopard conservation, demonstrating that the interests of companies and conservation organizations can be compatible and mutually beneficial. The authors analyze examples of successful partnerships in which businesses not only minimize their own impact on ecosystems but also actively participate in their restoration and protection. It emphasizes that the effective integration of environmental goals into corporate strategies can yield both environmental and socioeconomic benefits, as well as enhance a company's reputation. The paper proposes practical approaches for expanding such collaborations and overcoming the barriers between economic and environmental priorities.

Thus, the Central and Inner Tien Shan landscape is a natural core with a high concentration of endemic and rare species, a strategic reserve of fresh water, and significant climate-regulating potential, but requires comprehensive measures to conserve and restore biodiversity based on scientific data, local knowledge, and sustainable nature management.

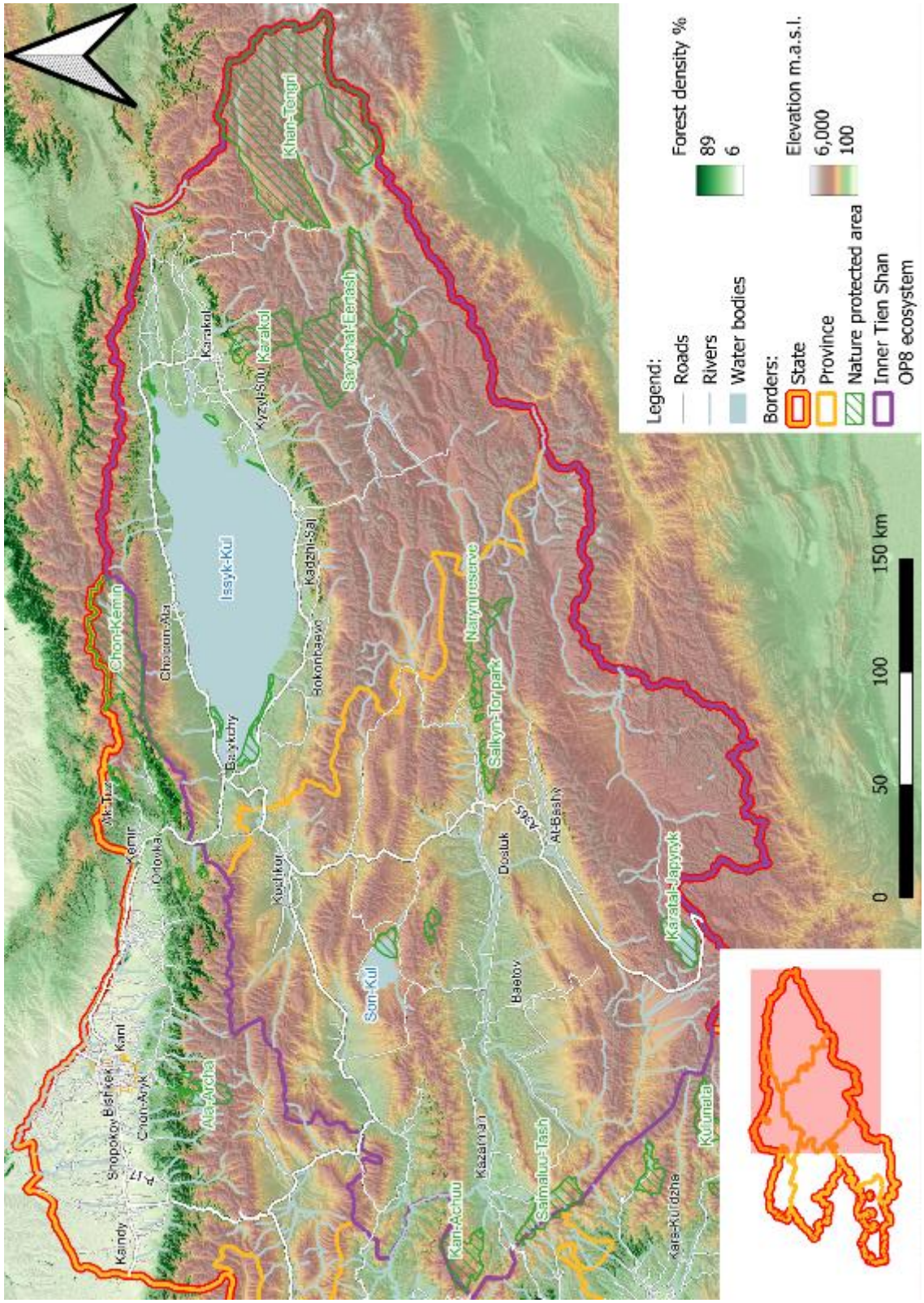

Fig. 2 Map of Central and Inner Tian Shan, OP8 target ecosystem.

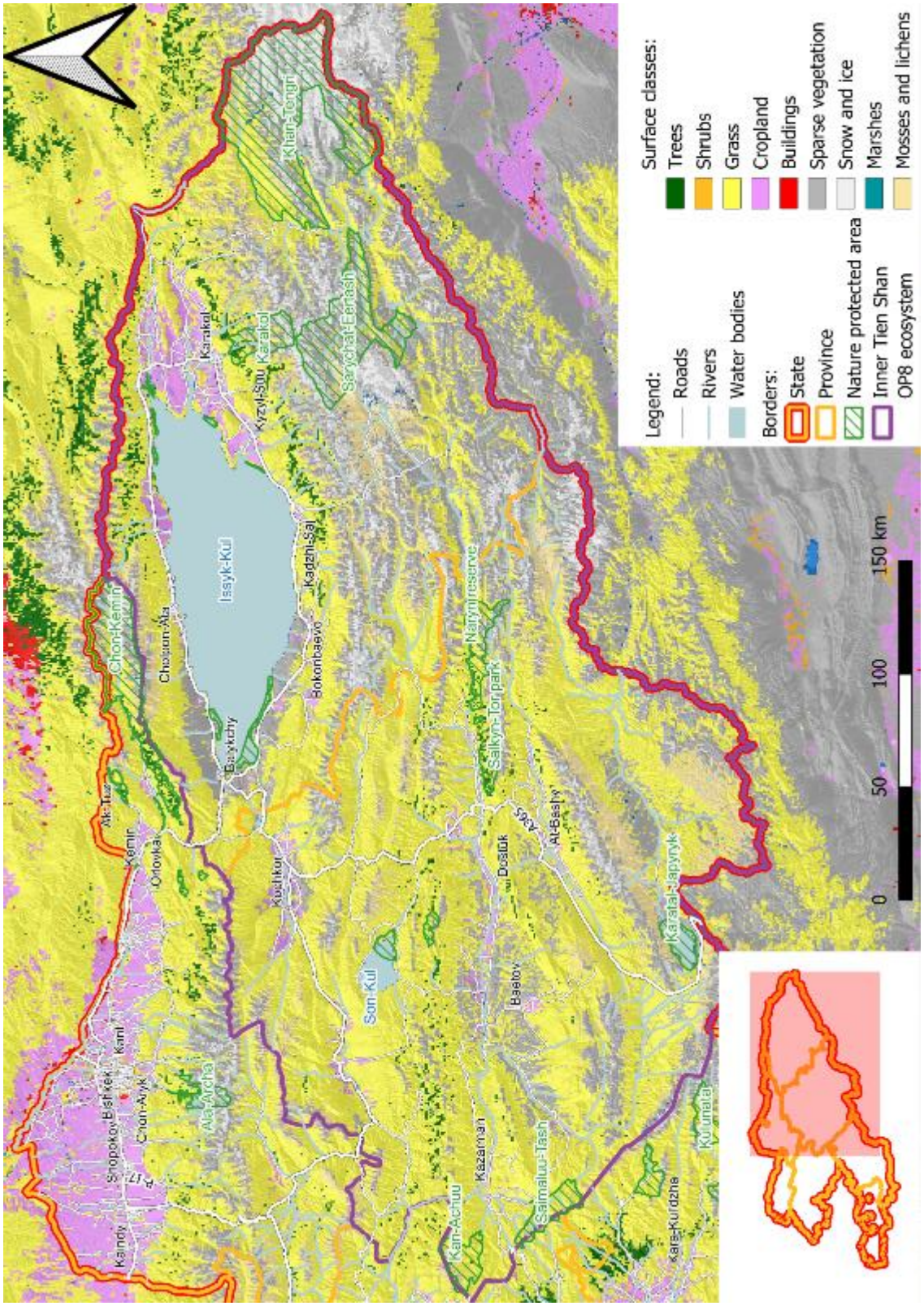

Fig. 3 Map of surface classes of Central and Inner Tien Shan

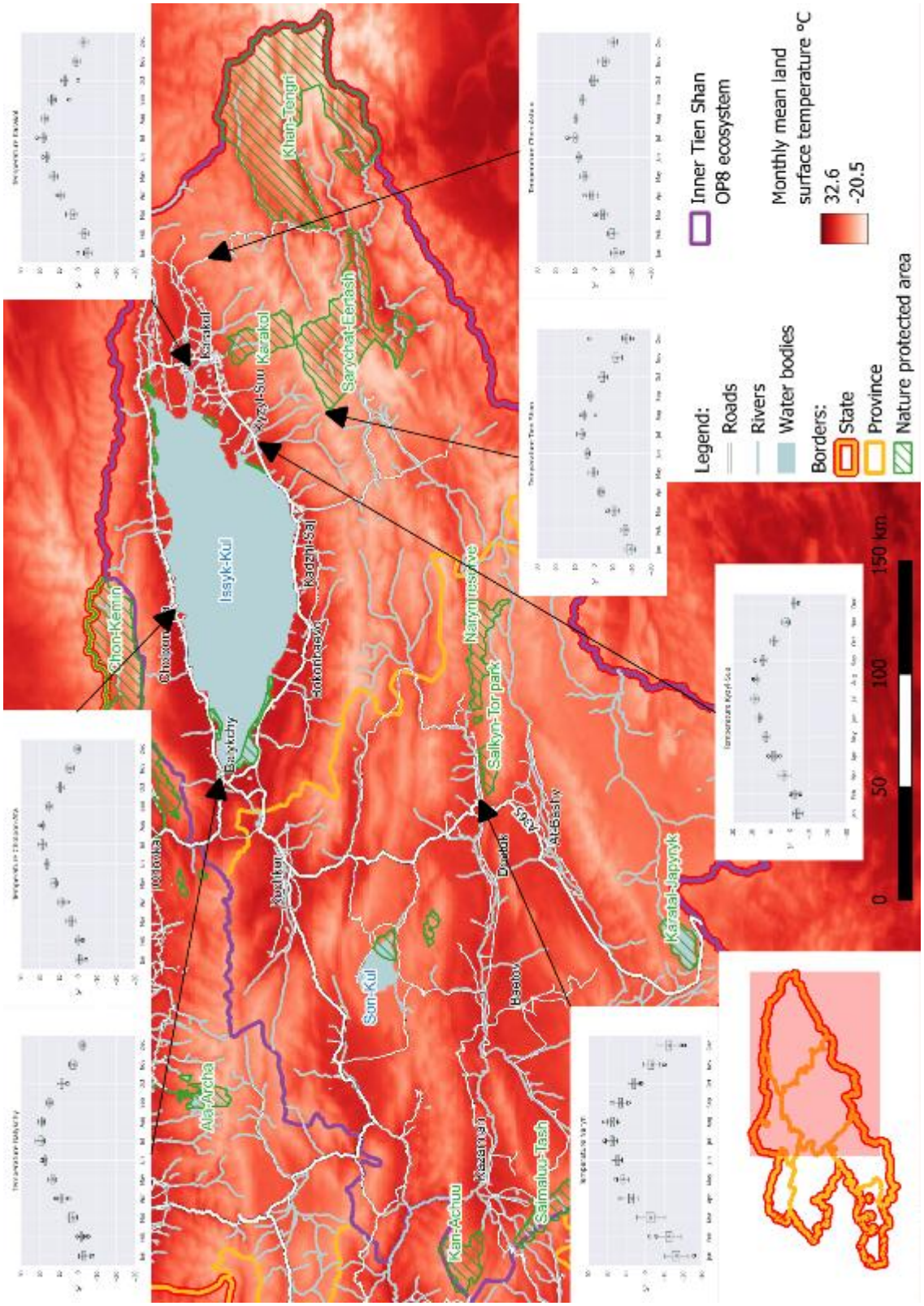

Fig. 4 Map of temperature regime of Central and Inner Tien Shan

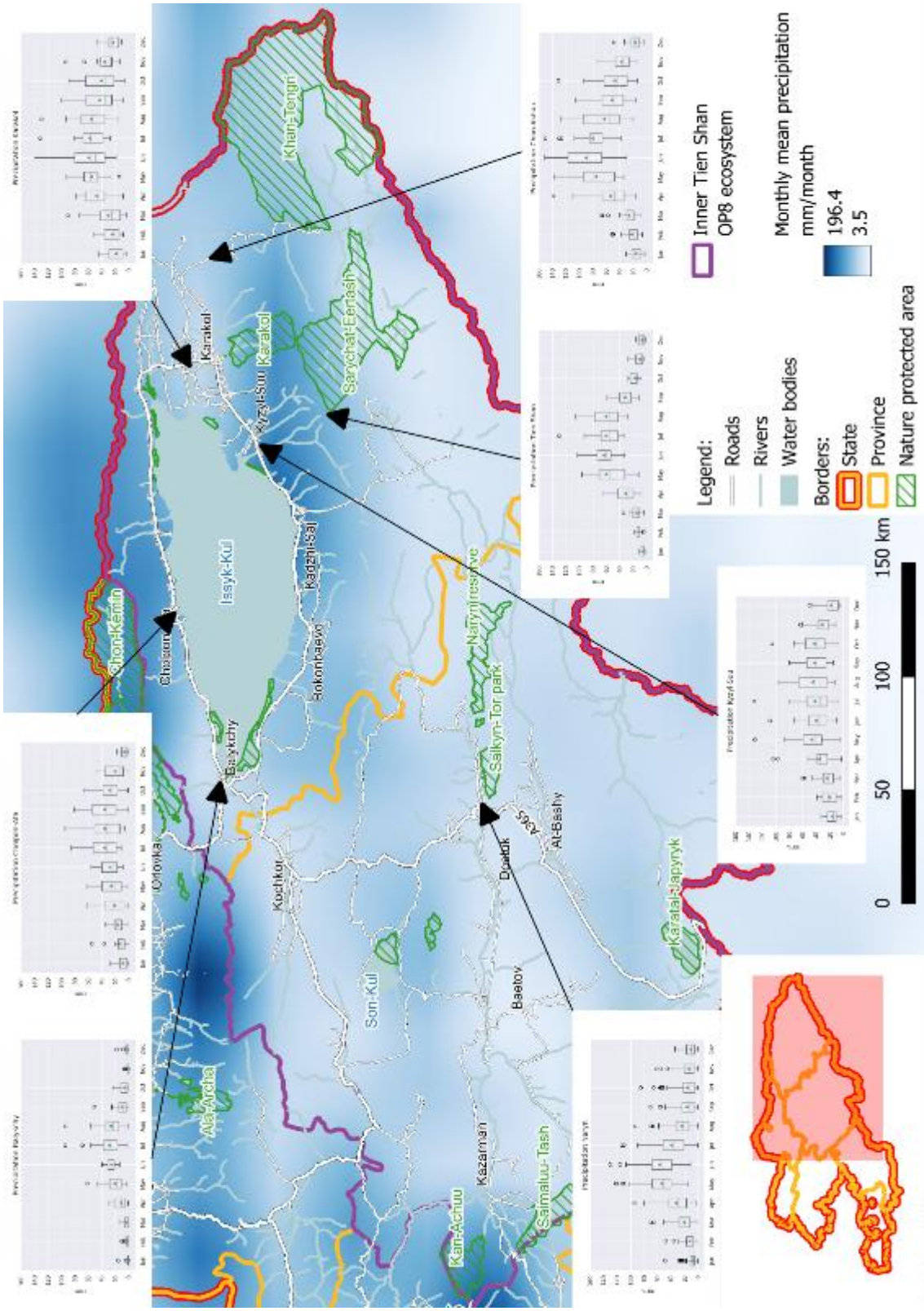

Fig. 5 Precipitation map of Central and Inner Tien Shan

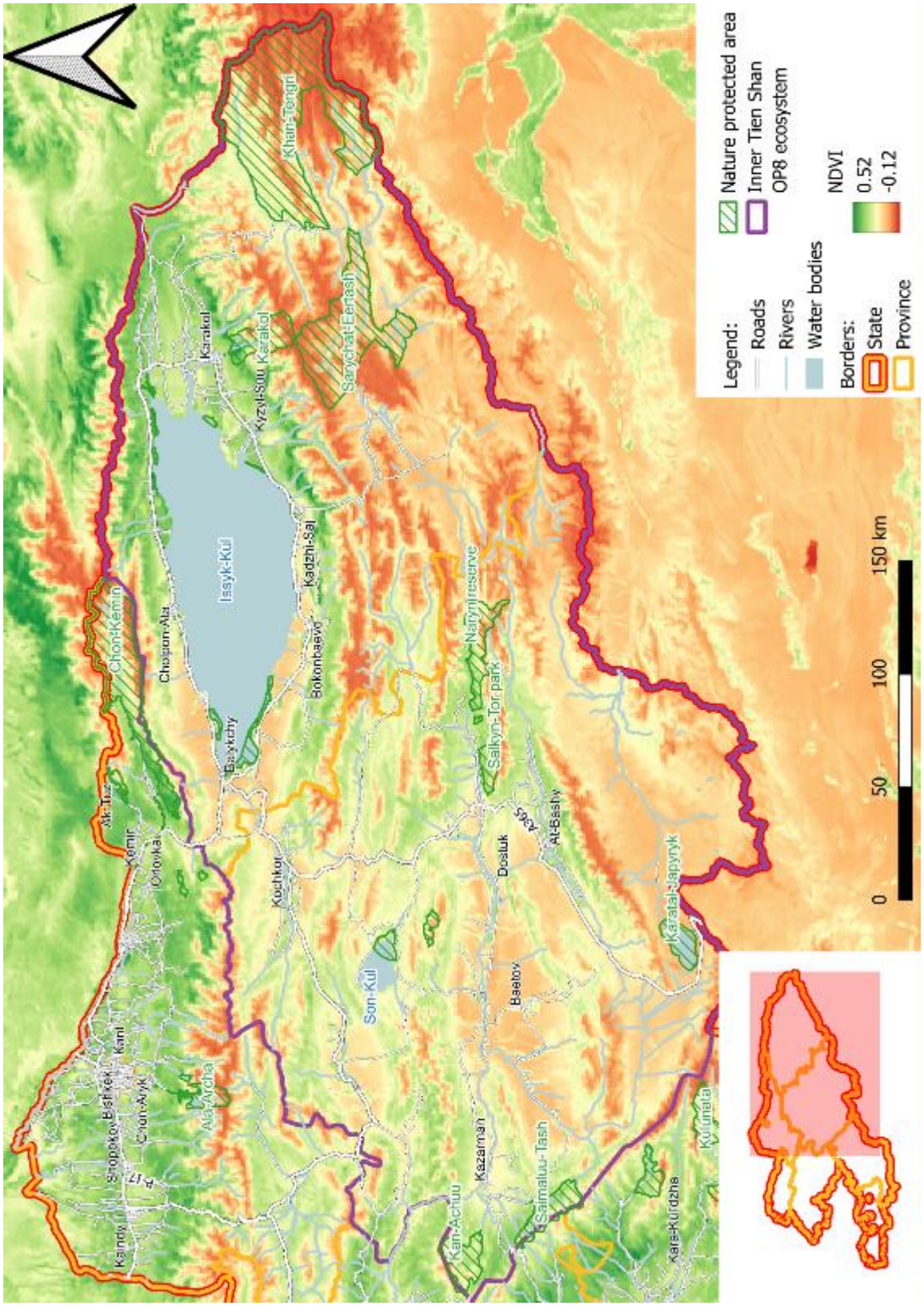

Fig. 6 Map of monthly mean NDVI of Central and Inner Tien Shan

c) OP8 Strategic Initiatives in the landscapes/seascapes

Strategic initiatives for the Central and Inner Tien Shan ecosystem:

1. Biodiversity conservation in collaboration with local communities

- Conservation of rare species (red deer, Pallas's cat, golden eagle, snow leopard) through the creation of community conservancies and the maintenance of migration corridors (e.g., Sarychat-Eertash – Naryn – Kulun-Ata Nature Reserves).
- Support for community conservancies, ecotourism, and behavioral change in rural communities.
- Collaboration with the Ministry of Natural Resources and Environment and UNDP on regulatory and practical measures for biodiversity conservation.

2. Sustainable management of land and forest resources

- Implementation of voluntary forest management certification (e.g., FSC-like standards) with the participation of forestry enterprises.
- Work with pasture committees (and new municipal enterprises) to prevent pasture degradation.
- Support for agroforestry, nurseries, and protective greening (especially in watershed areas).

3. Climate change adaptation and risk reduction

- Integration of adaptation measures into local management: protection from mudflows, land degradation, and increasing the resilience of high-mountain ecosystems.
- Joint projects with GIZ on climate risk management (including in the Chui and Issyk-Kul regions).
- Application of bioengineering solutions and ecosystem-based adaptation approaches.

4. Conservation of aquatic and wetland ecosystems

- Monitoring and protection of wetlands: Son-Kul, Chatyr-Kul, Issyk-Kul.
- Support for projects on net removal, lake ecosystem research, and sustainable use of fish resources.
- Raising awareness and environmental education on the role of wetlands.

5. Pollution and Chemical Waste Management

- Information campaigns and pilot projects to eliminate pesticide (DDT) burial sites in the Naryn region.
- Raising local awareness of chemical safety.
- Collaboration with the Ministry of Natural Resources and GEF/FAO on the Cartagena Protocol and genetic resources.

6. Green Economy and Income Diversification

- Development of value chains (prunes, honey, wool, cheese, etc.) with environmental certification.
- Support for ecotourism, agritourism, and craft and processing micro-businesses taking into account ESG.
- Development of renewable energy sources and energy efficiency in hard-to-reach areas.

7. Knowledge Management and M&E

- Creation of a digitally accessible database of projects and results.
- Supporting local NGOs in data collection and biodiversity monitoring (SMART, MET, citizen science).
- Conducting South-South exchanges and training partners within knowledge platforms.

d) Grantmaking outside the priority landscapes/seascapes

Potential projects outside the Central and Inner Tien Shan ecosystem (up to 30% of the total grant portfolio) will focus on **innovative, inclusive, and strategically significant initiatives** that complement the goals and enhance the impact of programs in the priority ecosystem. These projects not only align with the

GEF's global environmental priorities but also strengthen a systems-based approach to nature conservation and sustainable development throughout Kyrgyzstan.

Proposed projects outside the Central and Inner Tien Shan ecosystem:

1. Rehabilitation of pesticide burial sites (DDT)
Location: Chui and Batken provinces
Goal: Address acute threats to health and biodiversity from destroyed DDT burial sites
Description:

- Support pilot projects for land reclamation;
- Public education (especially for shepherds and farmers);
- Support the efforts of the Ministry of Natural Resources within the national chemical safety program.
- **Link with the Inner Tien-Shan:** Strengthening the region's resilience to pollution, protecting the health of migratory species and the local population.

2. Conservation of unique species in the southern regions
Location: Batken province (Isfayram-Sai, Kadamzhai)
Goal: Conservation of vulnerable and rare species not covered by the priority ecosystem
Description:

- Establishment of community conservancies for the protection of the Central Asian tortoise, monitor lizard, and juniper forests;
- Campaigns against poaching and myths (e.g., the use of monitor lizards in folk medicine);
- Engaging local communities in species monitoring and protection.
- **Link with the Inner Tien-Shan:** Sharing experience of establishing community conservancies, supporting migration routes.

3. Urban Greening and Circular Economy
Location: Bishkek, Osh, Batken, and others.
Goal: Developing urban solutions for waste, plastic, and greening management.
Description:

- Pilot projects to ban plastic bags and install waste collection containers;
- Greening of areas (scientifically based), reducing urban heat islands;
- Environmental awareness campaigns in schools and universities.
- **Link with the Inner Tien-Shan:** Information and behavioral transformation, connection between the city and the natural ecosystem.

4. Small projects for testing innovative solutions
Location: Chui province, Talas
Goal: Testing new approaches in reforestation, biodiversity, or sustainable tourism.
Description:

- Multi-component pilot projects to restore floodplain forests and preserve ichthyofauna;
- Support local NGOs in developing replicable models;
- Incorporating biodiversity and ESG topics to engage businesses.
- **Link with the Inner Tien-Shan:** Opportunity to transfer successful solutions; creation of models for scaling.

5. Knowledge, Digitalization, and Monitoring Support

Location: Countrywide
Goal: Strengthening the institutional and digital capacity of CSOs and the Ministry of Natural Resources
Description:

- Creation of a national platform/database for projects and results;
- Training on SMART monitoring, M&E, and data visualization;
- Support for southern CSOs in exchanging experiences with organizations in Central and Inner Tien Shan.
- **Link with the Inner Tien-Shan:** Improving the effectiveness of program implementation, expanding human resource and information capacity.

Projects outside the Central and Inner Tien Shan complement the target ecosystem, ensuring ecological, institutional, and territorial complementarity. Not only do they enhance the overall impact of the program, but they also allow for testing and preparation of scalable models for future phases.

4.2 CSO-government-private sector dialogue platforms

Under OP8, the GEF Small Grants Programme in the Kyrgyz Republic plans to establish and support **dialogue platforms between civil society organizations (CSOs), government agencies, and the private sector**, with the aim of strengthening community contributions to national and regional sustainable development and environmental protection processes. These platforms will serve as a **mechanism for knowledge sharing, coordinating efforts, and promoting best practices** developed through local initiatives.

One key focus will be the **organization of regular (annual or semi-annual) national dialogues**, which will include representatives of the Ministry of Natural Resources, the Ministry of Economy, the Ministry of Agriculture, the Investment Agency, local communities, pasture organizations, women's and youth organizations, as well as NGOs and the private sector. Thematic priorities will include:

- Joint preparation for the COP UNFCCC and the COP CBD (e.g., through the formation of working groups with NGOs and local governments),
- Dialogues on integrating traditional knowledge and ICCA experience into updated nature protected area policies,
- Developing a green economy and ESG mechanisms,
- Promoting agroecology and local agro-networks,
- Civil society participation in the implementation and monitoring of NBSAPs, NDCs, and climate strategies,
- Improving chemicals and waste management under international conventions (Basel, Stockholm, and the Cartagena Protocol).

Particular attention will be paid to **transferring practices and knowledge from the local level to policy through thematic case studies**, the development of **policy recommendations**, and the participation of SGP project representatives in **working groups developing national strategies and programs**. The platforms will also serve as a channel for **disseminating successful models of landscape approaches, CBA, ICCA, and natural resource management**, as well as dialogues on climate change adaptation and biodiversity.

Furthermore, the GEF SGP will initiate **regional exchanges and dialogues among Central Asian countries**, particularly within transboundary ecosystems (e.g., the Chu and Naryn River basins), including partnerships with CAREC, CAIAG, GIZ, UNDP, and other initiatives.

In the long term, a mechanism for **capturing and transferring policy-relevant knowledge** will be developed, including short brochures, policy briefs, and citizen engagement platforms (e.g., digital surveys, public reports on protected areas, climate, and biodiversity). These measures will enhance the institutional sustainability of the SGP approach and make its contribution to the implementation of Kyrgyzstan's international commitments under the CBD, UNFCCC, SDGs, and other processes more systemic and visible.

4.3 Promoting social Inclusion, including gender equality and women's empowerment

As part of the implementation of the OP8 Strategy, the GEF Small Grants Programme in the Kyrgyz Republic emphasizes an inclusive and transformative approach that ensures the participation of women, youth, persons with disabilities, and representatives of traditional communities in all stages of the project cycle—from planning to monitoring.

1. Gender Equality and Women's Empowerment

In the selected focus area—the Central and Inner Tien Shan and adjacent mountainous and border regions (Naryn, Issyk-Kul, Osh, and Batken provinces)—women play a key role in agriculture, seed conservation, handicrafts, wild plant collection, child and elder care, and the transmission of traditional knowledge. However, they often face limited access to land, finance, markets, technology, and decision-making.

The GEF SGP approach includes:

- Appointing a member of the SGP NSC for gender inclusion and incorporating social justice expertise at all levels.
- Establishing a target: at least 40% of projects should be initiated by women and/or contain a clear women's empowerment component.
- Supporting **women's cooperatives** in organic farming, processing, ecotourism, beekeeping, eco-product production, and sewing.
- Supporting **training programs** on fundraising, sustainable business, project management, and participation in dialogue with government agencies.
- Supporting **women's leadership** in natural resource management, ICCA, community conservancies, and local committees.

2. Supporting Traditional Communities and ICCAs

Traditional mountain and nomadic communities have a unique knowledge system regarding the management of pastures, forests, and biodiversity. In this strategy, we use the term "local communities". **Local communities** are groups of people permanently residing in a given territory and united by shared living conditions and natural resource use (land, pastures, forests, water), stable social ties, and local self-governance institutions (formal and informal). In the context of the Strategy, local communities are **key participants** in natural resource management and biodiversity conservation, including participation in decision-making, monitoring, and implementation of measures, based on the principles of inclusiveness, transparency, and free, prior, and informed consent (FPIC) where applicable.

The GEF SGP will:

- Promote the recognition and institutionalization of **ICCAs** (community-conserved areas), including through pilot projects, legal analysis, and participation in protected area reform.
- Develop **ethnobotanical projects**, schools of traditional knowledge, and Kyrgyz-language publications.
- Support microgrants for young leaders from traditional communities.

3. Empowering Youth

In the country's mountainous regions, young people face limited access to education, digital skills, employment, and participation in natural resource management.

The GEF SGP will:

- Support **school and youth initiatives**: school nurseries, eco-teams, and local wildlife monitoring posts, including snow leopard monitoring.
- Engage **youth in projects** on reforestation, biodiversity, digital monitoring, and citizen science.
- Promote the creation of **youth cooperatives and start-ups** in renewable energy, processing, agribusiness, and ecotourism.

4. Participation of Persons with Disabilities (PWDs)

Although the involvement of PWDs in environmental projects in the country is still limited.

The GEF SGP plans to:

- Support **inclusive pilot projects**—for example, social reserves where PWDs participate in tree planting, biodiversity monitoring, and product manufacturing.
- Conduct **inclusive trainings and events**, ensuring the accessibility of information, venues, and materials.
- Promote the **participation of people with disabilities in environmental education** and digital tools (e.g., mobile apps, audio formats).

Mainstreaming of social inclusion in all projects

Each project proposal will be assessed against **social inclusion criteria**, which will be integrated into the application, monitoring, and reporting forms. All partners will undergo **training on inclusion and gender**, and the NSC will include experts in this field. Thus, the GEF SGP approach will ensure not just participation, but active co-authorship of women, youth, traditional communities, and vulnerable groups in environmental and climate solutions, which will enhance the sustainability and legitimacy of these solutions in the long term.

4.4 Knowledge Management

As part of the implementation of OP8, the GEF Small Grants Programme in the Kyrgyz Republic will prioritize knowledge management, ensuring the transformation of local experience into systemic solutions, access to knowledge for a wide range of stakeholders, and the scaling up of successful practices.

Creating a knowledge collection and translation system

The GEF SGP will use a multi-level knowledge management model, which includes:

- **Systematic documentation** of all SGP projects (cases, lessons, results, methods, maps, photos, and videos).

- Support for **research and evaluation initiatives** at the project and landscape levels, including monitoring biodiversity, land degradation, social impacts, etc.
- Integration of **local and traditional knowledge**, including from ICCA, farmers, women, elders, and practitioners.

All materials will be aggregated into a single digital platform of the GEF SGP KR, openly accessible to all stakeholders—NGOs, local governments, ministries, researchers, donors, and others.

Knowledge Management Products

The program plans to develop and disseminate the following types of products:

- **Case studies and video documentation** of projects in Kyrgyz, Russian, and English.
- **Methodological manuals** and guidelines (e.g., on pasture restoration, renewable energy installations, ICCA management, the CBA approach, bioengineering measures, etc.).
- **Infographics, maps, and databases** on biodiversity, projects, degraded lands, and monitoring.
- **Policy briefs** and recommendations for the Ministry of Natural Resources, the Ministry of Emergency Situations, the Ministry of Agriculture, and local authorities.

Demonstration Sites and Knowledge Hubs

In the key region (Central and Inner Tien Shan), the GEF SGP plans to support **demonstration sites** where participants can:

- Learn about successful local practices (forest restoration, renewable energy, ICCA management),
- Conduct **excursions, on-site trainings, and workshops**,
- Demonstrate technologies and approaches to local governments, farmers, and youth.

It is also planned to establish **regional resource centers or knowledge hubs** where NGOs and communities can receive mentoring, training, and methodological support.

Experience Exchange and Dialogue

The program will continue to develop internal and regional exchange formats:

- **South-South Cooperation**: field trips and online sessions with colleagues from Kazakhstan, Uzbekistan, and Tajikistan on pastures, biodiversity, ICCA, and reforestation.
- **Forums and knowledge fairs**: annual or thematic events with the participation of NGOs, the Ministry of Natural Resources, local governments, and scientific organizations.
- **Partnership dialogues:** to transfer best practices into NBSAPs, NDCs, and other national processes.

Integrating knowledge into policy and scaling up

The GEF SGP will use project knowledge and experience to:

- **Influence policy** – through participation in working groups, submitting recommendations, and dialogues with ministries;
- **Scale up successful solutions** – through local budgets, co-financing, and donor programs;
- **Strengthen the sustainability of the project portfolio** – through data accessibility, training new NGOs, and youth engagement.

Thus, knowledge management in OP8 will become the link between communities and government, between pilot projects and scale-up, and between local knowledge and global goals, ensuring sustainable impact and transformational change.

5. COMMUNICATION PLAN

Under OP8, the GEF Small Grants Programme in the Kyrgyz Republic, the **communications strategy** will be aimed at promoting the SGP's contribution to achieving national sustainable development priorities, GEF programs, and UNDP strategies, as well as strengthening the participation of key stakeholders and civil society organizations (CSOs) at all levels.

Communications plan objectives:

1. Raise awareness of the importance of global environmental conservation and sustainable development.
2. Promote partnership, participation, and dialogue between communities, NGOs, government agencies, and the private sector.
3. Demonstrate the SGP's contribution to areas such as biodiversity conservation, climate change adaptation, sustainable land use, inclusiveness, and the support of traditional knowledge.
4. Support transparency, accountability, and sustained motivation of local project implementers.
5. Facilitate resource mobilization and the scaling up of successful practices.

Key target audiences:

- Communities and local NGOs, especially in target landscapes.
- Government agencies (Ministry of Natural Resources, Ministry of Agriculture, local governments, etc.).
- Scientific and educational institutions.
- Youth, women, and vulnerable groups.
- National and international partners, donors, media.

Communication tools and channels:

- **Creation of visual and multimedia materials:** videos, infographics, photo stories about projects and results, including materials in the Kyrgyz language.
- **Development of a branded SGP KR platform** (website or section on the UNDP KR portal), with a project map, news, publications, and feedback forms.
- **Active management of social media** (Facebook, Instagram, YouTube) with the publication of success stories, interviews with participants, project results, and opportunities for participation.
- **Newsletters and reports** – to regularly inform partners, SGP NSC members, government agencies, and donors.
- **Events:** annual conferences, project fairs, exhibitions, roundtables, visits to demonstration sites.
- **Promotion of SGP cases and lessons through the media**, including regional television channels and radio in pilot areas.

Integration into global strategies:

The communications plan will be aligned with the **GEF SGP global communications strategy**, including the development of key messages aimed at:

- Strengthening the SGP's image as an effective mechanism for sustainable development and community participation.

- Presenting the SGP as a platform for integrating local solutions into national and global processes (NBSAPs, NDCs, COPs, SDGs).
- Motivating new partners and communities to participate in projects.

Thus, the SGP communications plan will become not only a means of disseminating information, but also a key tool for engaging, dialogue, and consolidating the efforts of all stakeholders to achieve a transformational effect on the ground.

6. RESOURCE MOBILIZATION AND PARTNERSHIP PLAN

Under PF8, the GEF Small Grants Programme (GEF SGP) in Kyrgyzstan aims to enhance the sustainability and impact of projects through strategic resource mobilization and building sustainable partnerships with government agencies, donors, NGOs, research institutions, and the private sector. The plan includes four key areas: 1) secured and planned cofinancing; 2) mobilization of additional resources; 3) institutional sustainability and overhead cost sharing; 4) opportunities for scaling up through partnership programs.

a) Secured and planned cash and in-kind co-financing

GEF SGP projects are traditionally implemented with high levels of community-based co-financing (ranging from 1:1 to 1:3), including labor, materials, land, facilities, and services from local authorities and supporting organizations. Pilot initiatives on forest restoration, pasture management, sustainable tourism, and renewable energy, implemented with the support of UNDP, GIZ, the Ilbirs Foundation, RDF, and other partners, have demonstrated the potential to provide up to 50–70% of the project cost in kind.

At the focal landscape level (Central and Inner Tien Shan), inter-project and inter-sectoral co-financing will be envisaged, involving forestry enterprises, pasture committees, local administrations, NGOs, and the private sector.

At the national level, the Ministry of Natural Resources has expressed its willingness to integrate the SGP into policy implementation within the framework of the NBSAP, NDC, and the Climate Change Strategy, including the provision of data, methodological recommendations, expert support, and participation in coordination mechanisms, which will also count as a contribution to co-financing.

b) Co-financing opportunities

- **From GEF and non-GEF resources (multilateral, bilateral, foundations):**
  The GEF SGP will actively coordinate with the UNDP, GEF-7/GEF-8 portfolios, and utilize mechanisms for synergy with FAO programs and projects on biodiversity, sustainable land management, climate, and ICCA+.
- **Mechanisms for covering a share of overhead costs:**
  The possibility of attracting UNDP resources and the participation of national NGOs in the coordination and methodological support of projects is considered one of the tools for ensuring sustainability.
- **Mechanisms for co-implementing other programs through the SGP:**

Given its recognized expertise and community-based approach, the GEF SGP can become a platform for the implementation of additional donor initiatives (in the areas of ICCA, CBA, renewable energy, biocorridors, ecotourism, and pasture management). Opportunities for scaling up the SGP models through the programs of UNDP, GIZ, CAREC, and IUCN will be systematically explored.

7. PARTNERSHIP OPPORTUNITIES

Under OP8, the GEF SGP team in Kyrgyzstan, including the National Steering Committee (NSC) and Technical Advisory Groups (TAGs), will play an active role in expanding access for civil society and civil society organizations (CSOs) to additional funding and technical assistance programs. While funding may not be provided directly through the SGP, such activities are seen as an important contribution to resource mobilization and increased sustainable impact at the local and national levels.

Specific approaches include:

- **Mentoring and application support:**
  NSC and TAG members will be engaged to assist in the preparation of project proposals for submission to other donor programs (FAO, GIZ, UNDP, EU, WB, GEF, etc.), particularly for strong pilot NGOs that have demonstrated successful results under the SGP.
- **Coordination and Joint Consultations:**
  Regular consultation sessions and thematic webinars for NGOs and communities on funding opportunities are planned, including an overview of requirements, application logic, the logical framework approach, and co-financing requirements.
- **Creation of a Knowledge and Experience Platform:**
  A database of successful project applications, templates, common mistakes, and recommendations will be created through an online resource or regional hubs (e.g., in Naryn, Batken, and Issyk-Kul), including application models for ICCA+, CBA, EU, the Green Climate Fund, the Green Energy Fund, and other programs.
- **Exchange of Experience between NGOs and Consortia:**
  The SGP will encourage the creation and support of thematic coalitions or consortia (e.g., on sustainable tourism, ICCA, reforestation, and Zero Waste) that can jointly develop applications and act as strong applicants for funding under multilateral and bilateral programs.
- **Linkage with National and Regional Initiatives:**
  Through participation in NBSAP updates, NDC implementation, the promotion of ICCA legal mechanisms, and other policy processes, the GEF SGP will ensure that NGO proposals are taken into account and supported at the national level, opening access to programmatic funding from ministries and intergovernmental structures.

Thus, the GEF SGP will not only serve as a funding platform for small initiatives but also as a mechanism for accelerating NGO and community access to larger resources, strengthening the impact and sustainability of environmental protection and sustainable development actions in Kyrgyzstan.

8. RISK MANAGEMENT PLAN

During the implementation of the GEF SGP Country Program Strategy (CPS) under OP8, Kyrgyzstan is expected to face a number of potential risks related to social, environmental, climatic, institutional, and political aspects. The key risks, their level and likelihood, and proposed mitigation and monitoring measures are presented below.

Risk Monitoring and Review:

Risks will be monitored during CPS8 implementation through Annual CPS Reviews, the preparation of the Annual Monitoring Report (AMR), and consultations with the NSC and key partners. If necessary, the level and likelihood of risks may be revised, new risks may be added, and mitigation measures may be updated.

Table 3. Description of risks identified in OP8

Describe identified risk	Degree of risk (low, medium, high)	Probability of risk (low, medium, high)	Risk mitigation measure foreseen
Violation of the rights of vulnerable groups or deterioration of the environment as a result of improperly planned project activities.	Medium	Medium	Conducting a pre-implementation assessment according to the UNDP Safeguards; incorporating social inclusion and community participation components.
Increased frequency and intensity of climate events (droughts, floods) affecting target areas.	High	Medium	Selecting climate-resilient solutions and integrating adaptation measures into each project; partnering with NGOs and government agencies on CBA.
Changes in legislation (e.g. in the management of protected areas or pastures) that affect the implementation of ICCA and CSO initiatives.	Medium	Medium	Active participation of the GEF SGP and the NSC in policy dialogues and strategic processes (NSAPs, NDCs); legal expertise.
Increased external or internal conflicts, economic crises that	Medium	Low	Diversification of partners and co-financing; flexible budget planning;

reduce partner involvement and funding.			strengthening the sustainability of projects.
Earthquakes, landslides, heavy rains in mountainous areas leading to the destruction of project infrastructure.	Medium	Medium	Selection of resilient locations; inclusion of restoration measures; cooperation with the Ministry of Emergency Situations, the Ministry of Natural Resources, and the SGP in other countries.
Lack of human resources among local NGOs and weak grant administration.	Medium	Medium	Conducting training on project management, monitoring and reporting; support and mentoring from the NSC.

9. MONITORING AND EVALUATION PLAN

9.1 Monitoring approaches at project and country levels

Monitoring and evaluation (M&E) under the GEF SGP Country Program in Kyrgyzstan will be conducted in accordance with the program's global guidelines, ensuring transparency, data reliability, and stakeholder participation.

Project-Level Progress Tracking
Each project will have its own data recording system, including a results logical framework with indicators, targets, and verification tools. Grant recipients will be required to submit quarterly progress reports and annual results reports, accompanied by photographic, video, and geographic evidence (e.g., GPS coordinates and maps). To ensure data quality, a three-tier verification process will be used: 1) grant recipient self-verification; 2) verification by the national SGP team; and 3) periodic audits by a third-party organization or monitoring partners (e.g., universities, the GEF, or UNDP).

Aggregation and Analysis of Portfolio-Level Results
At the country level, project results will be aggregated in a single SGP database (Global SGP Database), where all key indicators—environmental, socioeconomic, and institutional—are systematically recorded. The database will be updated **on an ongoing basis** as project data are received, and a consolidated analysis will be conducted **semiannually**. The SGP team will ensure regular comparison of results with the NBSAP, NDC, and SDG indicators, enabling the SGP to track its contribution to achieving national targets of 30% coverage by sustainable ecosystems and increased community participation.

M&E Program and Grantee Capacity Building

To enhance grantee capacity, an **introductory meeting on the M&E** program will be held. This meeting will focus on training in data collection, processing, and presentation methods, including working with geographic information, biodiversity indicators, and social metrics. Additionally, it is planned to create **cluster monitoring groups** to unite projects operating in the same ecosystem or thematic area. Monitoring visits will be conducted **at least once during the project lifecycle**, with cluster-based group visits (2-3 projects per visit) being used to enhance efficiency. **Joint monitoring** with other grantors, research institutes (e.g., UCA, AUCA, KNU), and international organizations (GIZ, WWF, UNDP) is possible to optimize costs and improve the quality of independent evaluation.

Ethical Principles and Participatory Monitoring

All M&E activities will be carried out in accordance with the **"do no harm"** principle and adherence to the **principles of free, prior, and informed consent (FPIC)**. Local communities, including women, youth, and persons with disabilities, will be involved in monitoring through **participatory observation methods**—joint discussions, regular meetings, and **public reporting**. Accountability to communities will be ensured through the public presentation of interim results, a feedback mechanism, and the participation of community representatives in assessing project success. Progress reports will be submitted **quarterly**, and upon project completion, a final analytical report will be prepared assessing the achieved results, sustainability of impacts, and lessons learned for future cycles.

Thus, the GEF SGP M&E system in Kyrgyzstan will be **integrated, transparent, and adaptive**, integrating data quality standards, stakeholder participation, and the use of digital tools. This will provide a reliable basis for decision-making, improve investment effectiveness, and demonstrate the program's contribution to achieving national and global biodiversity conservation and sustainable development goals.

Table 4. M&E Plan at the Country Programme level

M&E Activity	Purpose	Responsible Parties	Budget Source	Timing
Country Programme Strategy elaboration	Framework for action including identification of community projects	NC, NSC, country stakeholders, grantees	A SGP planning grant to engage consultants may be used to update OP8 CPS	At start of OP8
As part of NSC meetings, ongoing review of project results and analysis. This includes an Annual CPS Review	Assess effectiveness of projects, country portfolio; learning; adaptive management	NC, NSC, UNDP Country Office. Final deliberations shared/ analysed with CPMT colleagues	Staff time, Country Operating Budget	At least one annual CPS review to ensure OP8 CPS is on track to achieve its results and make timely and evidence-based

M&E Activity	Purpose	Responsible Parties	Budget Source	Timing
				modifications to CPS as may be needed[3]
Annual Monitoring Report Survey[4]	Enable efficient reporting to CPMT and GEF. It serves as the primary tools to record and analytically present results to donors	NC/PA in close collaboration with NSC. CPMT provides technical guidance support and receives final country submission for further action	Staff time	Once per year in June-July
Country Portfolio Review	Methodological results capture of the portfolio at a given point to note impact level change as well as broader adoption. The goal is to support reporting to stakeholders, learning, and support to strategic development/ implementation of CPS	NC, NSC	SGP planning grant to engage consultants may be used to undertake previous operational cycles impact review and utilize lessons for both OP8 CPS development and its implementation Global technical M&E support can be expected	Once per operational phase
SGP Database	Ensure recording of all Project and Country Programme inputs in SGP database	NCs, PAs,	Staff time	Throughout the operational phase. Ensure quality assurance and completion of data prior to annual monitoring

[3] It is recommended that the Annual CPS review is done close to AMR submissions for both processes to benefit from each other (suggested timeframe is May- July). Note that OP8 CPS will be regarded as a dynamic document and can be updated by the SGP country team and NSC on a periodic basis to reflect any necessary adjustments to ensure maximum impact.

[4] Timely and quality country level submissions to Annual Monitoring Process are mandatory. As a Global Programme, it enables aggregated reporting by CPMT to GEF, UNDP and other stakeholders.

M&E Activity	Purpose	Responsible Parties	Budget Source	Timing
				cycle (May- June of every year)
Audit	Ensure compliance with project implementation/management standards and norms	External/independent auditors. NC/ PA to provide requisite support.	Global Operating Budget	Annually for selected countries on risk-assessment basis

9.2 CPS Results Framework

Table 5: Results Framework of SGP OP8 Country Programme Strategy

Alignment with SDGs 1. No Poverty 3. Good Health and Well-Being 5. Gender Equality 6. Clean Water and Sanitation 7. Affordable and Clean Energy 8. Decent Work and Economic Growth 10. Reducing Inequality 11. Sustainable Cities and Communities 12. Responsible Consumption and Production 13. Climate Action 14. Life on Water 15. Life on Land 17. Partnerships for Sustainable Development
Synergy with UNDP Country Programme Document (CPD): The CSP will be aligned with the following UNDP CDP outcomes: - Outcome 2.1: Policies and mechanisms to ensure equal access to finance and decent employment are in place and create opportunities, particularly for women, youth, and other vulnerable groups. - Outcome 3.1: National and regional authorities have strengthened their capacity to implement low-carbon, people-centred climate change mitigation and adaptation actions, leveraging measures to improve access to clean, sustainable energy and water. - Outcome 3.2: National and local mechanisms and systems are in place to implement solutions to improve biodiversity conservation and natural resource management. - Outcome 3.3 National institutional, legal, and policy frameworks are in place for risk-informed development and building resilience to disasters and climate risks, including through cross-border cooperation

- Outcome 4.3 Civil society and vulnerable groups, particularly women, youth, and people with disabilities, benefit from enhanced and inclusive social dialogue and have the opportunity to participate equally in decision-making and development at the national and local levels, promoting resilience to crises.		
OP8 SGP Programme Goal: Engage local CSOs/CBOs in landscape-seascape approaches across the world, providing them access to knowledge and information, capacitating them through learning-by-doing, skills development, and delivering technical and grant assistance for interventions that enhance wellbeing and socioeconomic conditions and generate global environmental benefits.		
1 **OP8 SGP CPS Strategic Initiatives**	**2** **CPS Indicators and Targets**	**3** **Means of Verification**
Strategic Initiative 1: **Community-based conservation of threatened ecosystems and species** *1)* ● *Establishment and support of **community nature conservancies** and public protected areas.* ● *Implementation of an **ecosystem approach** in areas with high conservation value (Issyk-Kul and Naryn provinces).* ● *Ensuring the **participation of local governments, forestry enterprises, and pasture organizations** in resource management.* ● *Supporting mechanisms for **participation and transparency in protected area management**, including zoning and community engagement.* ● *Supporting research on **wild animal and tree diseases**, as well as genetic resources.* *2)* ● *Development of **ecotourism** as a sustainable source of income.* ● *Implementation of **sustainable agricultural practices**, including organic farming, sustainable beekeeping, and pasture management.* ● *Supporting **the creation of nurseries with native tree and shrub species** in climate-vulnerable areas, as well as the development of agroforestry and silvopastoralism.* ● *Developing **green solutions** to combat mudflows and land degradation, including planting trees and shrubs.* ● *Supporting **value chains** (prunes, cheese, felt, nuts, honey) and green marketing.*	500 hectares of **community nature conservancies** and public protected areas established and supported 7000 hectares of landscapes under improved practices (excluding protected areas) (GEF core indicator 4.1 and 4.3) 4000 hectares of marine protected areas created or under improved management (GEF core indicator 2) 2000 hectares of marine habitat under improved practices (GEF core indicator 5)	Individual project reporting by SGP country teams (as part of midterm and final Progress reports) Baseline assessment comparison variables (use of conceptual models and partner data as appropriate) Annual Monitoring Report (AMR), SGP global database Country Programme Review

● *Establishing **community conservancies to protect rare species** (monitor lizards, Central Asian tortoises, red deer).* ● *Implementing programs for the **reintroduction and monitoring of rare species.*** *3)* ● *Conducting a **biodiversity inventory and establishing a monitoring system** in protected areas.* ● *Developing **behavioural programs for local populations** aimed at discouraging poaching and participating in the conservation of rare species.*		
Strategic Initiative 2: **Sustainable agriculture and fisheries, and food security** *1)* ● *Support **organic agriculture** and promote **local value chains** (prunes, honey, cheese, felt, sea buckthorn and apple products).* ● *Develop **agritourism and organic products** as a sustainable approach for mountainous regions (Issyk-Kul and Naryn regions).* ● *Improve **product quality and safety** through improved logistics, certification, and market access (including piloting FSC certification in forestry enterprises).* ● *Implement **resource-saving technologies**, including drip irrigation, biofertilizers, and eco-friendly greenhouses.* ● *Support the **fishing industry**, including monitoring and restoring populations of native species (chebak, chebachok) in Issyk-Kul.* *2)* ● *Developing **alternative and sustainable income sources** in rural communities: beekeeping, handicrafts, guesthouses, sewing and cheese-making workshops, and poultry hatcheries.* ● *Training farmers and women entrepreneurs in **sustainable farming and food processing skills**, including gender-sensitive approaches.* ● *Supporting **information and financial services** (financial literacy, access to microfinance, digital solutions).* ● *Promoting **social entrepreneurship**, especially among women and youth in remote areas.* *3)*	8000 hectares of land and ecosystems under restoration (GEF core indicator 3.1) 10 partnerships to advance sustainable agriculture and fisheries and/or food security (such as diversification, sustainable intensification, sustainable fisheries management, agroecological farming practices, climate-smart agriculture, certification programmes, local sourcing initiatives, waste reduction and circular economy, etc.) 500 hectares of degraded agricultural land restored (GEF Core Indicator 3.1) 1000 smallholder farmers supported in achieving national land degradation neutrality (LDN) targets	Individual project reporting by SGP country teams (as part of midterm and final Progress reports) Annual Monitoring Report (AMR), SGP global database Country Programme Review Socio-ecological resilience indicators for production landscapes (SEPLs)

● *Implementing **reforestation measures** (including walnut-fruit, riparian, and coniferous forests).* ● *Using **bioengineering solutions against erosion and landslides**, including planting trees, shrubs, and grasses.* ● *Supporting **sustainable pasture management**, including digital tracking (electronic pasture maps).* ● *Reducing **pressure on forests and shrubs** by introducing alternative heating methods.* ● *Implementing **green technologies and long-term monitoring of land restoration**, including the involvement of communities and youth.*		
Strategic Initiative 3: **Low-carbon energy access co-benefits** *1)* ● ***Installation of solar panels, solar systems, and heat pumps** for households, schools, and first aid stations in remote and high-altitude areas.* ● ***Expanding pilot solutions for energy-efficient heating** and hot water supply (e.g., solar collectors) in areas with harsh climates.* ● ***Supporting sustainable production** using energy-efficient technologies in agricultural processing (e.g., dryers, cheese factories, etc.), especially in women's cooperatives and NGOs.* ● ***Training and engaging local specialists and entrepreneurs** in the installation and maintenance of renewable energy equipment (job creation, on-site technical support).* *2)* ● ***Implementation of autonomous energy systems based on solar and wind energy** in isolated villages or those with unstable electricity connection.* ● ***Supporting "energy cooperatives"** for joint management of community energy supply as a sustainability model.* ● ***Lighting public buildings** (medical centres, schools, community centres) using autonomous renewable energy solutions.* ● *Conducting **educational campaigns and demonstration projects** to encourage the transition to renewable energy among the population and small businesses.*	200 tons of greenhouse gas emissions mitigated/avoided (GEF core indicator 6) 100 kW increase in installed renewable energy capacity from community-scale systems (e.g., biomass, micro-hydro, solar, etc.) 100 locally adapted solutions promoting low-carbon technologies (such as new/modified biogas technology, locally developed energy-efficient stoves, innovative uses of solar/wind energy, etc.) 500 hectares of forest and non-forest lands with initiated measures to restore and increase carbon stocks	Individual project reporting by SGP country teams (as part of midterm and final Progress reports) Annual Monitoring Report (AMR), SGP global database Country Programme Strategy Review (NSC inputs)

Strategic Initiative 4: **Local to global coalitions for chemicals and waste management** *1)* ● *Support **local initiatives to reclaim burial sites containing DDT and other pesticides**, particularly in the Naryn region (Kochkor district) and other areas with vulnerable populations.* ● *Develop **environmental education projects** for local residents on the risks of chemical pollution, particularly in areas where burial sites have been opened.* ● *Assistance in creating a **national registry of chemically contaminated sites** and conducting an inventory in collaboration with the Ministry of Natural Resources and scientific organizations.* ● ***Pilot solutions** for the safe collection, temporary storage, and transportation of chemical waste, drawing on international experience (Cartagena Protocol, Basel and Stockholm Conventions).* *2)* ● *Projects to **reduce plastic pollution in natural areas**, particularly in Issyk-Kul (support for coastal cleanups, banning/reducing plastic, replacing packaging).* ● ***Developing waste reuse and recycling initiatives**—creating cooperatives, workshops, and incubators for craft and eco-businesses.* ● *Developing **local waste sorting and recycling systems** in partnership with local governments and businesses (including the participation of women and youth).* ● *Educational campaigns on **conscious consumption and zero waste** in tourism and communities near protected areas.* *3)* ● *Supporting **organic farming and biological plant protection** as part of sustainable agricultural practices.* ● *Implementing and demonstrating **alternative methods of soil fertility**, composting, and biofertilizers.* ● *Establishing **farmer schools** and conducting training for rural communities on the rejection of pesticides and chemical fertilizers, especially near protected areas and water bodies.* *4)* ● *Support the **participation of NGOs and research organizations in international**	5 policy recommendations or advocacy initiatives related to land-based pollution as a result of SGP project 2 local to global coalitions for chemicals and waste management strengthened and/or established 150 tons of solid and liquid persistent organic pollutants (POPs) and mercury-containing materials and products (GEF core indicator 9.6) were eliminated or recycled. 10 communities are working to raise public awareness for the effective management of chemicals, waste, and mercury.	Individual project reporting by SGP country teams (as part of midterm and final Progress reports) Strategic partnership with IPEN and Mercury GOLD country partners Annual Monitoring Report (AMR), global database Country Programme Review

***alliances**, conferences, and networks (e.g., the Cartagena Protocol).* *● Create **open platforms for sharing knowledge**, results, and best waste management practices between projects, ministries, local governments, and NGOs.*		
Strategic Initiative 5: **Catalysing sustainable urban solutions** *1)* *● Urban greening and creation of green belts – **with the planting of adapted and native tree species** recommended by the scientific community.* *● **Ecological reconstruction of ravines, rivers, and streams** in urban and suburban environments (e.g., in the Chui Valley), including flood protection and biodiversity restoration.* *● Implementation of **green barriers and strips** in dusty, windy, and climate-vulnerable areas.* *2)* *● **Pilot solutions for increasing climate resilience in remote areas**, in conditions of irrigation water shortages, hot weather, and air pollution.* *● **Community participation in climate risk assessment and the design of adaptation measures**, including drainage, greening, housing adaptation, and sediment management.* *● Training of local governments, schoolchildren, and youth in **sustainable urban practices** – from composting to adaptation to heat and floods.* *3)* *● **Pilot projects** for the collection, recycling, and reuse of household and plastic waste, especially in suburban areas and areas with high pressure on ecosystems (near Lake Issyk-Kul, Son-Kul, etc.).* *● **Educational initiatives among residents and tourists** on proper waste management and the protection of urban water bodies and landscapes.* *● **Cleanup of areas and elimination of illegal dumps**, especially in nature conservation areas*	5 community-based sustainable solutions in urban landscapes (e.g., transport, biodiversity conservation, chemical and waste management, energy efficiency, watershed protection, etc.) 5 projects with targeted urban solutions focus	Individual project reporting by SGP country teams Annual Monitoring Report (AMR), SGP global database Country Programme Review

and protected areas (Issyk-Kul, Son-Kul, Chon-Kemin).		
Strategic Initiative 6: **CSO-Government-Private Sector Policy and Planning Dialogue Platforms** ● *Establishment/support of regular multi-stakeholder dialogue platforms on biodiversity, climate adaptation, and sustainable development.* ● *Support for the participation of local NGOs and communities in the development and implementation of national strategies (NBSAP, climate, protected areas, etc.).* ● *Support for bottom-up policy analysis and recommendations from local projects into government policy.* ● *Strengthening the role of NGOs and local communities in monitoring the implementation of policies, protected areas, climate measures, biodiversity, etc.*	3 CSO-government-private sector dialogues formed or strengthened 3 high-level policy changes associated with increased community participation in multi-stakeholder dialogue platforms 600 representatives from social inclusion group (local communities, women, youth, persons with disability, farmers, other marginalized groups) meaningfully engaged in multi-stakeholder dialogue platforms Promoting 3 public-private partnerships on key global environmental issues.	Individual project reporting by SGP country teams Annual Monitoring Report (AMR), global database Country Programme Review
Strategic Initiative 7: **Enhancing social inclusion** *1)* ● *Promote the implementation of **inclusive, targeted initiatives**.* ● *Support **women's cooperatives** in ecotourism, wool processing, honey production, agroforestry, and organic farming.* ● *Train **young people and girls** in mountain and border areas in sustainable nature management skills, eco-business management, guiding, and environmental education.* *2)* ● *Mainstream **social inclusion into all projects** (e.g., women/girls, local communities, youth, and people with disabilities).* ● *Create **community conservancies** with the inclusion of people with disabilities in biodiversity monitoring and eco-product manufacturing.* ● *Use **inclusive digital platforms** (mobile apps for biodiversity tracking, survey participation, and environmental feedback).*	600 people benefitting from GEF-financed investments disaggregated by sex (GEF core indicator 11) 6 projects with focused interventions promoting gender equality and women's empowerment 6 projects that demonstrate models of engaging (a) local communities, (b) youth, and (c) persons with disabilities. 6 grants with targeted support for 1) women or women groups; 2) youth or youth-led	Individual project reporting by SGP country teams Annual Monitoring Report (AMR), SGP global database Country Programme Review

● *Projects on **reforestation**, degraded pastures, and wetland protection with the mandatory participation of **youth, women, and local communities.*** ● *Support for **youth and schoolchildren's initiatives** in environmental education, wildlife monitoring, and adaptation measures (e.g., school nurseries, local nature observation posts).* ● *Programs **on traditional pasture management and the integration of ethnobotanical knowledge** into biodiversity conservation.* ● *Training **traditional users of natural resources** in sustainable use methods, resource accounting and inventory, and collaboration with scientists and government agencies.* ● *Introducing **mandatory criteria for evaluating GEF SGP applications** on social inclusion.* ● *Conducting **special training and consultations** for NGOs on the implementation of inclusion components.*	groups; 3) local communities' groups $300 000 of total grant portfolio accessed by 1) women or women groups; 2) youth or youth-led groups; 3) local communities' groups	
Strategic Initiative 8: **Knowledge Management (KM)** **Results Management, Monitoring & Evaluation (M&E)** *1)* *Develop and launch an open **online portal or GEF SGP database**, which will systematically upload:* ● ***Descriptions of completed projects** (NGOs, government agencies, donors),* ● *Reports, maps, videos, methodologies,* ● *Research results, including inventories and monitoring of species and landscapes.* *2)* *Create **hubs or resource centres** in the regions where:* ● ***Trainings will be conducted for local NGOs and communities** on project management, environmental monitoring, social inclusion, and landscape approaches;* ● ***Visual and localized training materials** will be developed (in Kyrgyz and Russian);* ● ***Mentoring support** will be offered for new initiatives.* *3)* *Organization of **visits, summer schools, seminars, and exchanges** between environmental organizations from Kyrgyzstan,*	15 projects with meetings involving local CSOs/CBOs or communities to monitor project results, assess impacts, and identify lessons learned 15 knowledge exchange/sharing events with participation of local communities At least 1 online knowledge repository developed as a result of SGP project 2 country/cross-country impact reviews conducted with evidence of SGP impact and lessons learned. 2 South-South exchanges between communities, NGOs/CSOs, or other partners within or across countries to transfer knowledge, replicate technology, tools or	Individual project reporting by SGP country teams Annual Monitoring Report (AMR), SGP global database Country Programme Review

Kazakhstan, Uzbekistan, and Tajikistan on the following topics: *● Management of protected areas and forests (e.g., exchange with Kazakhstan on forest certification),* *● Sustainable livestock farming and agroforestry methods,* *● Use of SMART/MET, and community participation in nature conservation.* *● Funding applied research by NGOs and academic organizations with mandatory publication of open data (inventories, protected area zoning, vulnerable species and ecosystems).* *Develop a simple but effective **national monitoring and evaluation (M&E) strategy**, taking into account commitments under the CBD, NBSAP, and NDCs.* *The strategy should consider:* *● **Mandatory GEF and SGP OP8 indicators,*** *● **Local environmental and social indicators** (e.g., abundance of protected species, extent of pasture degradation, level of women and youth engagement),* *● **Incorporation of local community knowledge and practices** (engagement in M&E).* *In relevant projects, provide for **community participation in monitoring** through:* *● Basic monitoring training (e.g., SMART or MET),* *● Photo documentation,* *● Simple flora/fauna observation logs,* *● GPS tracking of changes,* *● Involvement of volunteer groups/youth.* *Develop a **unified online form** (e.g., via Google Forms, KoboToolbox, or a national platform) that will:* *● be submitted with the application (baseline indicators),* *● be updated every 6 months (current progress),* *● be used for the final report.* *For geographic tracking, free tools such as **QGIS, NextGIS, or MapHub** can be used (possibly with support from CAREC or CAIAG).* *Organize annual peer reviews (with the participation of the Ministry of Natural*	approaches on global environmental issues	

Resources, UNDP, GIZ, CAREC, universities, etc.) to: ● *analyse progress,* ● *identify duplications or gaps,* ● *provide recommendations for project improvement.* *In each project, allocate* ***5–10% of the budget for monitoring and evaluation****, including:* ● *community visits to collect data,* ● *training local partners/youth in M&E skills,* ● *visualization and publication of results.*		

10. NATIONAL STEERING COMMITTEE ENDORSEMENT

NSC members involved in OP8 CPS development, review and endorsement	Signatures
Aigul Akhmatova, Professor, Kyrgyz National University	
Anara Alymkulova, Chair, Executive director, Institute for the Sustainable Development Strategy	
Arstan Kadyrov, Expert/Chair, Green Alliance Kyrgyzstan	
Bermet Omurova, Head of International Cooperation Department, Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic	
Bermet Tursalieva, Executive director, Ormon Agency	
Enver Abdiev, Disaster Risk Management Consultant, Public Organization “Agency for Modernization and Development"	
Jarkyn Samanchina, Country Director, Kyrgyzstan branch for Fauna and Flora International	
Lira Zholdubaeva, Programme Specialist, Team Leader – Climate Change, Energy & Environment, UNDP	
Kuban Matraimov, National Expert, Regional Environmental Center for Central Asia	
Sarygul Alchinbaev, Executive Director, Public Foundation “Tolesfor”	

11. ANNEX 1: LANDSCAPE BASELINE ASSESSMENT PROCESS (I.E. SUPPORTING MATERIALS, INCLUDING UPDATES FROM OP7)

To better understand climate and vegetation trends in the region, we analyzed annual average trends in NDVI, land surface temperature, and precipitation using open-source remote sensing data.

For the NDVI and land surface temperature analysis, we used MODIS data (MODIS/061/MOD13A3 and MODIS/061/MOD11A2), respectively, with a spatial resolution of 1000 m. For precipitation analysis, we used ERA5-LAND data (ECMWF/ERA5_LAND/MONTHLY_AGGR), with a spatial resolution of 11132 m. All this data was obtained from the Google Earth Engine platform and normalized to annual averages for the period 2000–2024. This resulted in regular annual time series of spatial data, which was used to calculate annual average linear trends in these variables using the ordinary least squares method. Calculations were performed for each pixel separately in SAGA GIS 9.9.1 using the "Cellwise Trend for Grids" module.

As a result, we obtained maps showing long-term average annual trends in variables reflecting vegetation development, temperature, and precipitation. The largest areas showing negative NDVI trends are located around the towns of Kazarman, Naryn, At-Bashi, and along the Torugart highway, as well as around the towns of Kochkor and Jumgal, and near the western and eastern ends of Lake Issyk-Kul (Figure 7). Thus, negative NDVI trends, which indicate a decline in plant biomass, are associated with populated areas, indicating the degradation of pasture resources in these areas.

Hoppe et al. (2016) assessed pasture degradation in the Naryn region of Kyrgyzstan using vegetation and soil indicators. The results showed that intensive grazing significantly alters vegetation composition, reducing the proportion of valuable forage species and increasing the presence of low-nutrient or toxic plants. Soil analysis revealed compaction of the topsoil, decreased organic matter content, and decreased water permeability in areas with high grazing pressure. Combining flora and soil data allowed us to classify areas by degree of degradation and confirmed that high-altitude and arid zones, where vegetation restoration is slower, are the most vulnerable. The authors emphasize that the integrated use of biotic and abiotic indicators is an effective tool for monitoring pasture conditions and developing sustainable management strategies.

Levine et al. (2019) examine perceptions of pasture degradation in Kyrgyzstan from the perspectives of different groups—the scientific community, official leaders, and local herders. The results show that there is very little consensus among these groups on what constitutes a "degraded" pasture. Local residents lack a single metric for "good pasture," but rely on practical attributes such as the presence of high-quality grass, access to water, and open spaces. The authors emphasize the effectiveness of visual tools (photos, videos) for engaging local communities and the need for dialogue platforms between experts and communities to develop a consistent system for assessing ecosystem health. The article concludes that successful restoration and sustainable pasture management are only possible with consideration of local perceptions, the joint development of indicators, and the active participation of communities in monitoring.

The combination of traditional knowledge and modern pasture management methods (planned grazing, rotational grazing, and livestock management) contributes to the restoration of degraded lands and

increased productivity. A key factor is the participation of local communities and pasture organizations, which ensure compliance with regulations and the equitable distribution of resources. Improving pasture conditions increases livestock productivity and farmer incomes, reducing pressure on ecosystems. The effectiveness of these measures is enhanced by infrastructure improvements (watering troughs, water supply, roads) that ensure uniform grazing. Sustainable results require comprehensive monitoring, combining field data, satellite observations, and socioeconomic indicators, taking into account the interrelationships between environmental and social factors (Azarov et al., 2025).

At the same time, almost the entire territory shows a positive trend in land surface temperature (Figure 8). Negative trends are primarily associated with high-mountain plateaus, such as the Sarychat-Ertash Nature Reserve, or river floodplains, such as around the town of Kazarman or in the Ak-Sai River valley. Thus, floodplains or tugai forests play a significant role in shaping the local microclimate.

The results of an assessment of the condition of the Naryn River floodplain forests revealed that riparian zones are significantly impacted by anthropogenic factors, including agriculture, grazing, and logging, leading to vegetation degradation and biodiversity loss (Betz et al., 2016). The study identified areas with the highest levels of degradation, allowing for the recommendation of priority zones for restoration and protection. The authors emphasize that the integration of GIS and remote sensing data enables effective monitoring of ecosystem conditions and can form the basis for long-term natural resource management in the Naryn River basin.

Missall et al. (2022) present the results of a study of floodplain forest use in Central Asia, using the example of Ak-Tal village in the Naryn region of Kyrgyzstan. The authors found that local residents employ mixed forest use strategies, including timber harvesting, forage collection, grazing, fruit collection, and medicinal plant harvesting, which are related to both household needs and restrictions imposed by forestry enterprises. The study found that the intensity and type of forest management depend on socioeconomic status, access to alternative sources of income and resources, and seasonal factors. Local practices, while providing significant support for local livelihoods, can in some cases contribute to forest degradation. The authors emphasize the need for a more flexible and participatory management system that combines ecosystem protection with support for sustainable livelihoods for local communities.

Precipitation, as the main source of moisture for glacier accumulation and river feeding in the selected area (important for agriculture), as well as the main source of ecosystem viability, exhibits diverse annual trends in the region (Figure 9). For example, the high-mountain areas of Khan Tengri and the Kakshaal-Too Range along the southern state border show positive annual precipitation trends, while areas along the Naryn River demonstrate negative trends. Other areas show virtually no trend.

The results of an assessment of the impact of climate change on the energy and moisture balance in the Naryn glacial basin (Central Tien Shan) showed that significant warming and a decrease in snow cover are expected in the future (2021–2050), leading to a shift in the precipitation phase toward rainfall and a shortening of the seasonal snow accumulation period (Sadyrov et al., 2025). This will lead to an increase in the share of rainfall runoff and a decrease in glacial feeding of rivers in the summer. The energy balance will change due to increased incoming longwave radiation and turbulent flows, accelerating ice and snow melting. The water balance will be characterized by reduced spring and summer runoff and increased

winter runoff, posing risks to water supply during the growing season. The authors note that such changes will require adaptive measures in water resource management to minimize negative impacts on ecosystems and agriculture in the region.

The article (Gan et al., 2015) examines the impact of projected climate change on glaciers and runoff formation in the Naryn River basin (Central Asia). Using hydrological modeling and climate scenarios, the authors found that significant ice cover reduction is expected in the future, leading to changes in seasonal runoff distribution. In the short term (mid-21st century), runoff may increase due to accelerated ice melt, but in the long term (late 21st century), a decrease in water resources is projected due to glacier depletion. The study highlights the need for adaptive water management strategies to minimize the negative impacts of climate change on the region's hydrological regime.

The article (Hill et al., 2017) assesses Kyrgyzstan's water resources in the context of climate change and socioeconomic factors. The authors use an integrated approach combining hydrological modeling, climate scenario analysis, and water use assessment. The results show that glaciers melt and changes in precipitation patterns significantly impact river runoff, especially during the growing season, when water demand is highest. Modeling indicates a possible reduction in summer runoff and an increase in winter runoff, posing risks to irrigation and water supply. It is also emphasized that population growth and economic development are increasing pressure on water resources, requiring adaptive management measures. The authors recommend developing integrated water resources management, improving water-saving technologies, and incorporating climate scenarios into strategic planning.

The article by Tomaszewska & Henebry (2018) examines changes in snow cover seasonality in the mountainous regions of Kyrgyzstan. The authors used MODIS satellite data for 2000–2016 to assess the duration of the snow season, the onset and end dates of snow cover, and trends in its dynamics. The analysis revealed that most high-mountain regions are experiencing a shortening of the snow season, particularly due to earlier snowmelt in spring. These changes are associated with rising air temperatures and changing precipitation patterns. The shortening of the snow season potentially impacts water resources, agriculture, and ecosystems in the region, requiring adaptation measures in natural resource management.

A cumulative analysis of research across Central Asia and Kyrgyzstan demonstrates that the region's ecosystems (pastures, mountain forests, glaciers, and riverine zones) are under significant pressure from climate change, land degradation, and unsustainable natural resource management practices. Snow cover and glaciers are declining, altering the water balance and increasing risks to agriculture and biodiversity. Increased anthropogenic impacts (overgrazing, deforestation, poaching, and unsustainable farming) are leading to habitat loss for rare species and reduced ecosystem productivity. At the same time, the effectiveness of local and landscape-based solutions has been demonstrated: community participation in resource management, the introduction of rotational grazing, forest and wetland restoration, ecotourism, and the integration of traditional knowledge and modern monitoring technologies. Mechanisms that improve data accessibility, intersectoral collaboration, a gender-sensitive approach, and the involvement of local NGOs in national strategies are crucial.

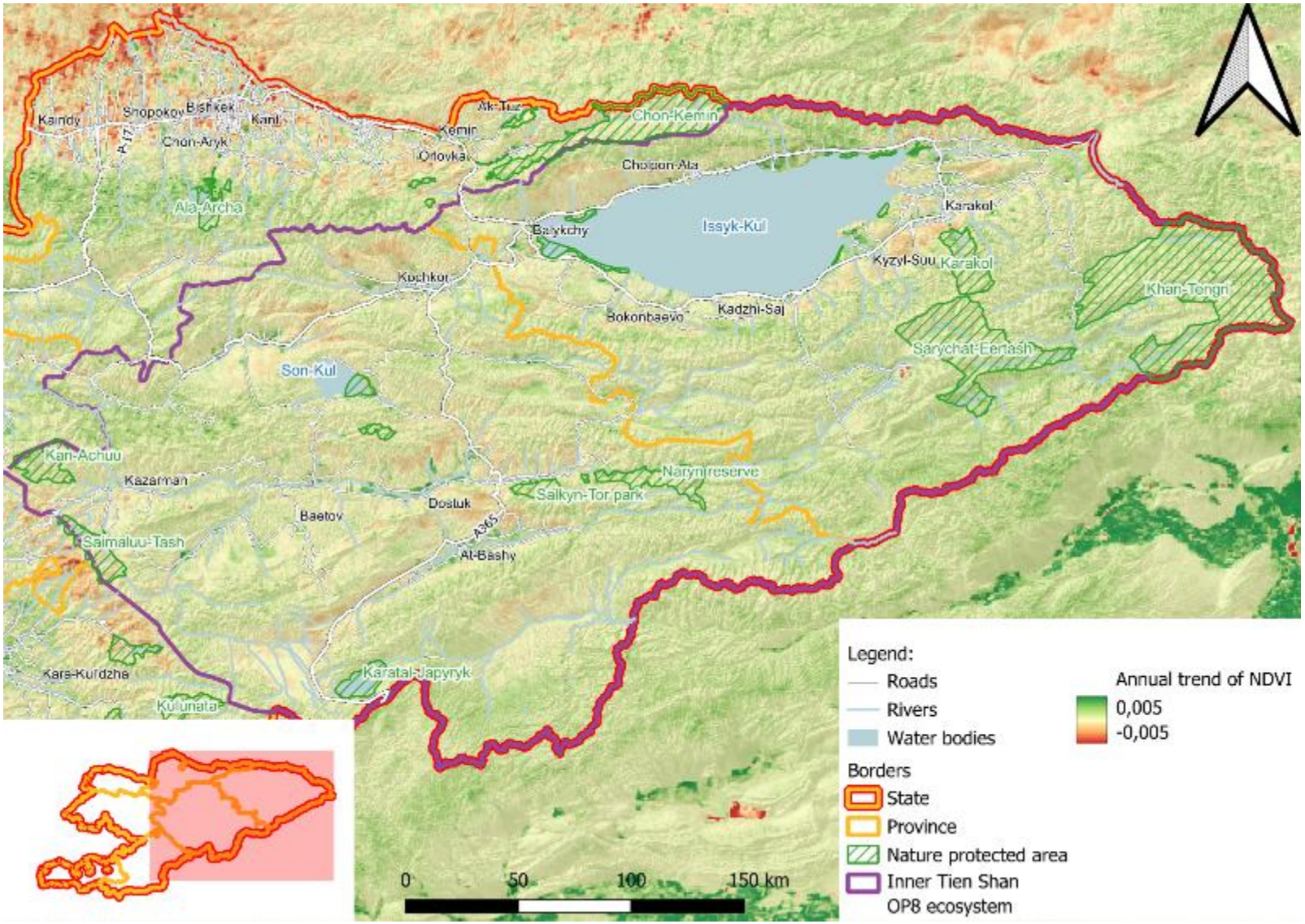

Fig. 7 Map of annual trend of NDVI of Central and Inner Tien Shan ecosystem.

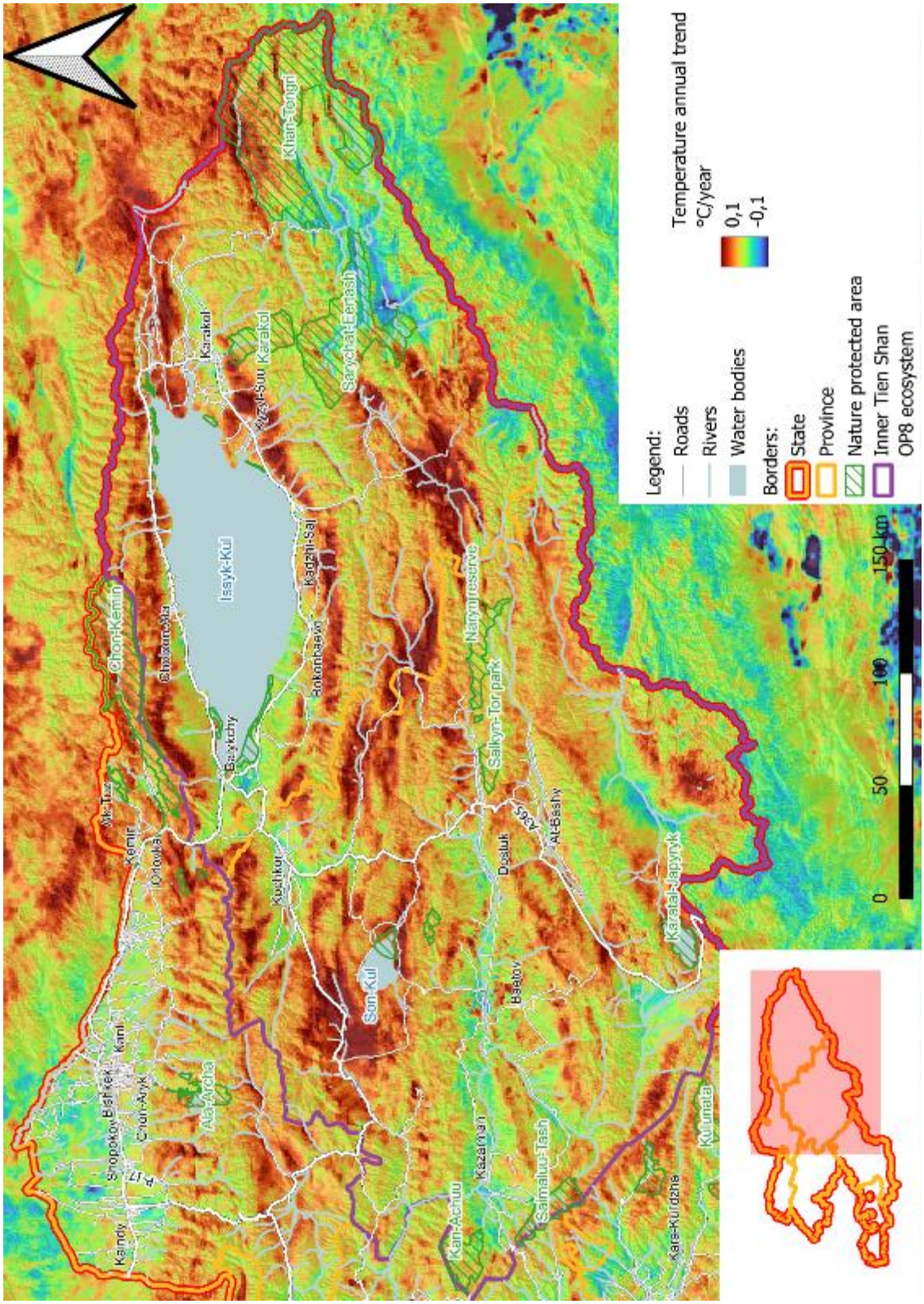

Fig. 8 Map of the annual trend of monthly mean land surface temperature of Central and Inner Tien-Shan ecosystem.

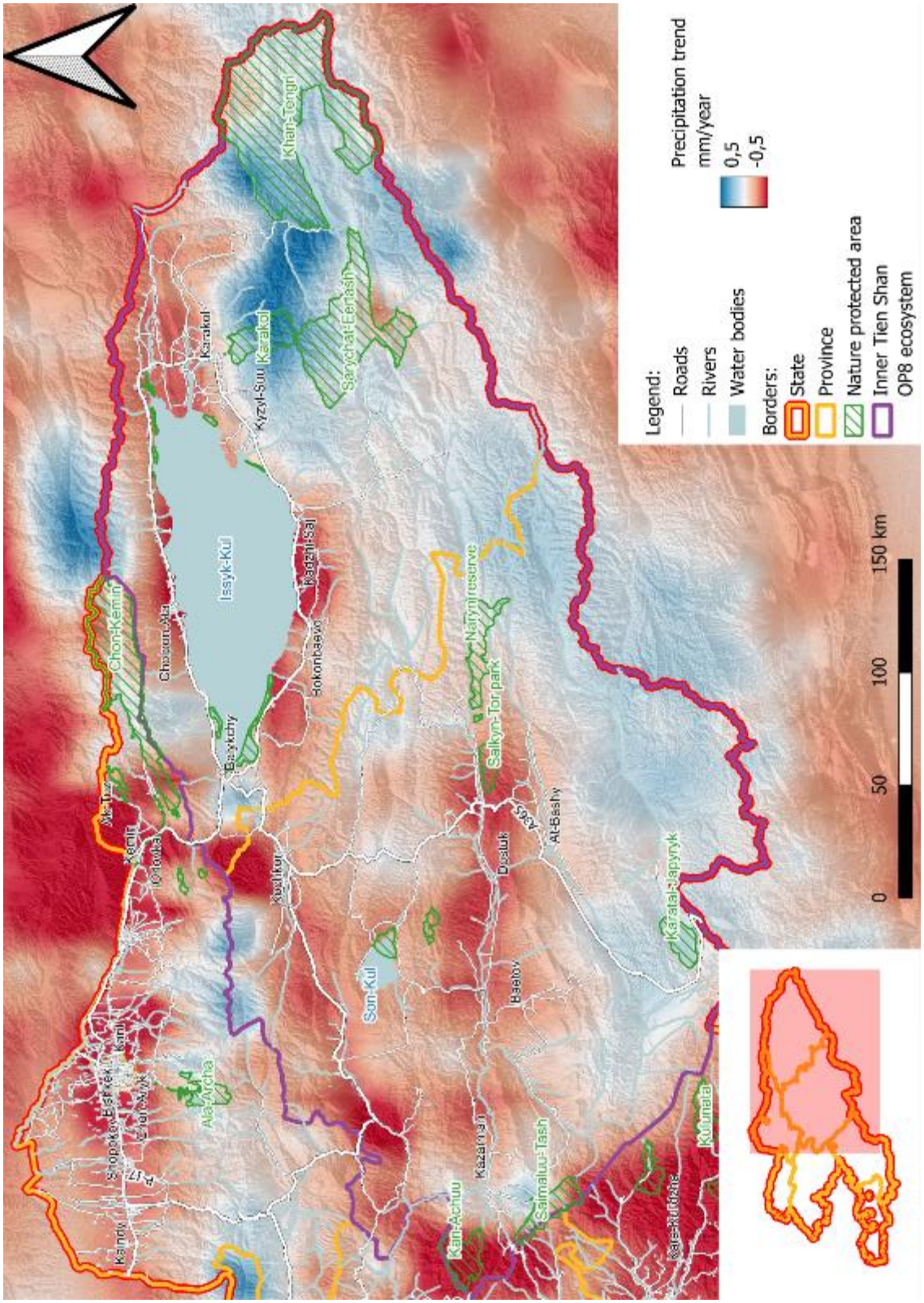

Fig. 9 Map of the annual trend of monthly sum of precipitation of Central and Inner Tian Shan ecosystem.

12. ANNEX 2: COUNTRY STRATEGY DESCRIPTION FOR PARTICIPATION IN THE GLOBAL CO-FINANCING PARTNERSHIP WITH THE GLOBAL ICCA SUPPORT INITIATIVE (GSI) PHASE 2 FUNDED BY THE GERMAN BMUKN IKI IN LINE WITH THE GLOBAL BIODIVERSITY FRAMEWORK (GBF) TARGETS 3, 21, 22 AND 23 (2023-2028).

This national strategy represents a comprehensive plan for Kyrgyzstan's participation in the **Global ICCA Support Initiative (GSI) Phase 2**, funded by the German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (**BMUKN**) through the International Climate Initiative (IKI). Building on the achievements of ICCA-GSI Phase 1—which demonstrated that territories and areas conserved by Indigenous Peoples and local communities (ICCAs) are globally extensive, ecologically healthy, and critically important for biodiversity—Phase 2 continues to pursue the core objective of improving the recognition and overall effectiveness of ICCAs for biodiversity conservation, sustainable livelihoods, and resilience to climate change.

With the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF) at CBD COP15, the global conservation agenda increasingly acknowledges the central role of Indigenous Peoples and local communities in voluntarily conserving biodiversity beyond formal protected areas. ICCA-GSI Phase 2 directly contributes to the GBF 2030 Targets by supporting the protection and restoration of ecologically important territories, strengthening community governance systems, and promoting rights-based, inclusive, and culturally grounded approaches to conservation.

To ensure full coherence and to maximize synergies with the GEF Small Grants Programme, the priority landscape for ICCA-GSI Phase 2 in Kyrgyzstan will be the same as that selected under the OP8 Country Programme Strategy—**the Central and Inner Tien Shan**. This shared landscape focus will allow both programmes to reinforce each other by integrating community-conserved territories into a broader landscape-level conservation framework. This will strengthen biodiversity outcomes, enhance sustainable livelihoods, and support the long-term resilience of ecosystems and communities across one of Kyrgyzstan’s most ecologically important mountain regions.

The strategy is based on achieving four key GBF goals:

Goal 3 – Conserving 30% of the country's land, water, and marine areas by 2030
By 2030, at least 30% of the country's land and inland waters will be effectively conserved, with priority given to areas with high conservation value (Central and Inner Tien Shan ecosystems, the Issyk-Kul Basin, walnut forests, tugai, and alpine ecosystems). GSI Phase 2 will create a supportive environment for recognizing and integrating ICCA areas and other effective conservation measures (OECMs) into national and local plans, including biocorridors and micro-reserves, ensuring their ecological connectivity and equitable management.

Goal 21 – Access to and Use of Knowledge for Biodiversity Management

The strategy envisages the creation of a national ICCA data and knowledge platform, including monitoring results, maps, reports, and the integration of traditional knowledge, while respecting the principle of **free, prior, and informed consent (FPIC)**. This platform will be used for decision-making, planning, education, and research, and will ensure access to information for local communities, government agencies, and NGOs.

Goal 22 – Participation, Access to Information, and Protection of Rights
Full, equal, and gender-sensitive participation of all stakeholders (including women, youth, and persons with disabilities) in decision-making, planning, monitoring, and management of ICCA will be ensured. Participatory governance and transparency mechanisms will be implemented, as well as support for environmental human rights defenders and bottom-up initiatives.

Goal 23 – Gender Equality and Women's Inclusion
The strategy will be implemented using a gender-sensitive approach, emphasizing women's and girls' equal rights to land, natural resources, and participation in governance, as well as their leadership at all levels of decision-making. Particular attention will be paid to women's cooperatives, eco-businesses, and training women in sustainable nature management.

The strategy covers the following areas:

- Establishment and legal recognition of ICCA and OECM, integrating them into the national system of protected areas;
- Institutional strengthening and skills development for staff in these areas;
- Implementation of the ecosystem approach and preservation of the ecological connectivity of areas;
- Support for alternative livelihoods compatible with nature conservation;
- Development of a national monitoring and evaluation system with community participation;
- Strengthening the role of science and education in biodiversity management;
- Ensuring social inclusiveness and gender equality.

Logical Framework for National Participation Strategy for GSI Phase 2 (2023–2028):

Level	Description
Impact	By 2030, Kyrgyzstan will ensure effective conservation and sustainable management of at least 30% of the country's territory through the protected areas, ICCA, and OECM systems, integrating the rights of local communities, gender equality, and access to knowledge, in accordance with the GBF.
Outcomes	1) Legally recognized and functioning ICCA and OECM, integrated into national and landscape plans. 2) A national knowledge management system for ICCA, accessible to all stakeholders. 3) Increased participation of women, youth, and vulnerable groups in biodiversity management. 4) Strengthened institutional and technical capacity of communities.

Outputs	- Legal and policy mechanisms for recognizing ICCA have been developed and adopted. - A national registry and geoportal for ICCA have been created. - At least 30 training sessions have been conducted for communities and NGOs on ICCA management, monitoring, and gender inclusiveness. - At least 10 exchange visits and regional dialogues have been organized. - At least five sustainable income models for ICCA have been developed. - Co-management and transparency mechanisms have been developed.
Activities	- Identification and mapping of ICCA. - Preparation and approval of legal acts. - Creation of a database and online platform. - Conducting trainings, seminars, and schools. - Support for pilot projects on sustainable income. - Implementation of a community-based monitoring system. - Conducting awareness-raising campaigns.
Indicators	- Area of officially recognized ICCA and OECM territories (hectares). - Number of communities participating in ICCA governance. - Proportion of women and vulnerable groups in ICCA governance bodies (%). - Number of open data uploaded to the platform. - Number of experience sharing events held. - Increased income from environmentally friendly production and sustainable activities (%).
Partners	Ministry of Natural Resources of the Kyrgyz Republic, UNDP, GIZ, FFI, CAREC, IUCN, SLT, WWF, RDF, BI NAS KR, women's and youth NGOs, local governments, pasture organizations.

Monitoring and Evaluation (M&E)

Monitoring and Evaluation of ICCA-GSI Phase 2 implementation in Kyrgyzstan will be guided by the Logical Framework for the National Participation Strategy (2023–2028) and implemented in full coherence with the GEF Small Grants Programme (SGP) OP8 Monitoring and Evaluation framework, the ICCA-GSI global M&E system, and UNDP corporate results-based management standards. The M&E system is designed to track progress toward the 2030 GBF targets, particularly Target 3 (30 by 30), and to ensure accountability, learning, data quality, and community ownership of results.

Progress will be monitored across all logframe levels: **impact, outcomes, outputs, and activities** using a structured indicator framework aligned with ICCA-GSI Phase 2 and OP8 SGP indicators:
Impact level monitoring will assess Kyrgyzstan's contribution to the effective conservation and sustainable management of at least 30% of national territory through protected areas, ICCAs, and OECMs, with attention to rights-based governance, gender equality, and access to knowledge.
Outcome-level indicators will track legal recognition and functionality of ICCAs and OECMs; establishment and use of a national ICCA knowledge management system; participation of women, youth, and vulnerable groups in governance; and strengthened institutional and technical capacity of custodian communities.

Output-level indicators will monitor delivery of legal and policy instruments, operational registries and geoportals, capacity-building events, exchange platforms, sustainable livelihood models, and co-management mechanisms.
Activity-level monitoring will ensure timely implementation of mapping, legal processes, training, pilot initiatives, community-based monitoring, and awareness-raising actions.

Two mandatory ICCA-GSI tools will be applied across all supported initiatives. The ICCA-GSI Project Management Tool (PMT) will be used to capture quantitative and qualitative progress against logframe indicators, including:

- area (ha) of recognized ICCAs and OECMs;
- number of participating communities;
- participation of women and vulnerable groups;
- livelihood and income improvements;
- knowledge-sharing and policy integration outcomes.

These indicators are aligned with GBF Targets 3, 21, 22, and 23 and harmonized with GEF core and standard SGP indicators, enabling aggregation at portfolio and global levels.

The Resilience and Security Index (RSI) will be used to assess changes in the socio-ecological health, governance strength, and resilience of ICCAs, directly supporting logframe outcomes on community capacity and long-term stewardship. RSI assessments will be conducted at baseline and endline, and where relevant at mid-term, following ICCA self-strengthening methodology.

The National Coordinator (NC) holds overall responsibility for M&E implementation and reporting. Where applicable, a National Catalytic Organization (NCO) supported by a grant (up to $50 000) will support data collection and analysis under the supervision of the NC. Following training by the ICCA-GSI Project Management Unit (PMU), the NC and Programme Associate/Assistant will build national capacity on the PMT and RSI.

Data quality will be ensured through:

- standardized indicators and reporting templates derived from the logframe;
- capacity-building of community partners and NCOs;
- validation of all project data by the NC prior to submission to PMU/CPMT;
- triangulation of community-generated data with field observations, documentation, and spatial data.

Data entry into the SGP global database will be conducted as a continuous process throughout the project lifecycle. Project-level data will be aggregated annually at the national portfolio level, enabling assessment of progress against the logframe, OP8 SGP results framework, and national biodiversity targets. This will support adaptive management, learning, and reporting to UNDP, CPMT, and the donor.

Monitoring will be embedded within the Self-Strengthening Process (SSP), ensuring that communities play a central role in defining outcomes, assessing change, and reviewing progress. All M&E activities will comply with Free, Prior and Informed Consent (FPIC) and the principle of “do no harm”, with explicit

attention to gender equality, youth participation, and inclusion of vulnerable groups as reflected in the logframe indicators.

Where communities consent, ICCAs documented through the programme may be registered in the **Global ICCA Registry** and, where appropriate, in the **Protected Planet databases (WDPA / WD-OECM)**. Tools such as **Mapeo for ICCAs** will be promoted to support community-owned mapping, monitoring, and data sovereignty, while contributing to national and global reporting on area-based conservation.

Annual portfolio reviews will synthesize lessons learned across ICCA-GSI and OP8 SGP projects operating in the same landscape. Joint monitoring visits and learning exchanges with OP8 partners, academic institutions, and other donors may be undertaken to enhance efficiency and coherence. Where required, third-party or thematic evaluations may be commissioned in consultation with CPMT.

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