



**FAO/GLOBAL ENVIRONMENT FACILITY
PROJECT DOCUMENT**



PROJECT TITLE: Integrated natural resources management in drought-prone and salt-affected agricultural production landscapes in Central Asia and Turkey ('CACILM2')

PROJECT SYMBOL: GCP/SEC/293/GFF

Recipient Country: Kazakhstan,

Kyrgyz republic, Tajikistan,

Turkmenistan, Uzbekistan and Turkey

Resource Partner: Global Environmental Facility (GEF)

FAO project ID: 635622

GEF Project ID: 9094

Government / other Counterpart(s):

Ministry of Agriculture of the Republic of Kazakhstan

Ministry of Energy of the Republic of Kazakhstan

Ministry of Agriculture and Reclamation (MAR) of Kyrgyz Republic

Committee of Environmental Protection under the Government of the Republic of Tajikistan

Ministry of forestry and water resources of the Republic of Turkey

Ministry of food, agriculture and livestock of the Republic of Turkey

State Committee of Environment Protection and Land Resources of Turkmenistan

Ministry of Agriculture and Water Resources of the Republic of Uzbekistan

Centre of Hydro-meteorological Services under the Cabinet of Ministers of the Republic of Uzbekistan

Expected OED (starting date): March 2017

Expected NTE (End date): Dec 2021

Contribution to
FAO's
Strategic Framework¹

a. Strategic objective/Organizational Result:

SO1: Contribute to the eradication of hunger, food insecurity and malnutrition

SO2: Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner

SO3: Reduce rural poverty

SO5: Increase the resilience of livelihoods to threats and crises

b. Regional Result/Priority Area, Central Asia:

Regional Priority 3: Natural resource management, including climate change mitigation and adaptation

c. Country Programming Framework Outcome

Kazakhstan CPF:

Priority area 3. Sustainable natural resources management (water, land and forestry management)

Outcome 1. Capacity of the national institutions, natural resources managers and agricultural producers supported for sustainable natural resources management

Output 1.3. Land degradation assessment supported and Sustainable Land Management (SLM) enhanced for increasing resilience of production systems to climate change.

Kyrgyzstan CPF:

¹ For country office operated projects, link projects in FPMIS at OR level.

<p>Priority area 3. Improved resilience in responding to climate change, crises and disasters</p> <p>Outcome 3. Climate change mitigation and adaptation in the agriculture and forestry sectors, and resilience in disaster and crises situations enhanced</p> <p>Output 3.3: Climate-smart-agriculture, including pasture, and Sustainable Land and Water Management in dry lands promoted</p> <p>Tajikistan CPF:</p> <p>Priority area B. Sustainable management of natural resources and improved resilience to climate change.</p> <p>Output 2.1. strengthening the policy-enabling environment along with strategies and investment programmes to combat land degradation, with emphasis on a landscape approach, and taking gender-equality aspects into consideration.</p> <p>Output 2.2. promoting innovative and multi-sectoral approaches and gender-sensitive practices and technologies in selected production landscapes for sustainable and integrated natural resources management and improved resilience to climate change.</p> <p>Turkmenistan CPF:</p> <p>Priority Area B: Sustainable natural resource management, climate change mitigation and adaptation.</p> <p>Output 1.2. Support for improving agricultural water management provided, particularly for increasing water use efficiency (i.e. promotion of irrigation water saving technologies) .</p> <p>Priority Area C: Increase the resilience of rural livelihoods to agriculture and food security threats and shocks</p> <p>Output 1.1. Formulation and implementation of policies, strategies and action plans to cope with extreme weather events such as drought with appropriate measures such as promotion of drought-tolerant crops and varieties supported.</p> <p>Uzbekistan CPF:</p> <p>Priority area E. Sustainable natural resources management and increasing the resilience to climate change</p> <p>Outcome 2. Promotion of sustainable land management and provision of the drought preparedness supported</p> <p>Output 2.1. Best practices on sustainable land management mainstreamed and up-scaled - best practices for DLDD and SLM (desertification, land degradation, drought and sustainable land management) assessed mainstreamed into national sector policies and programs and implemented in local sites for adoption by key stakeholders</p> <p>Output 2.2. Capacity development for drought and soil salinity monitoring and management and increase of the climate smart agriculture supported.</p>	
<p>GEF Focal Areas: Land Degradation, Climate Change Mitigation</p>	<p>GEF Strategic Objectives: [GEF-6] LD-1, Program1: Agro-ecological intensification & Program 2: SLM for climate-smart agriculture LD-3, Program 4: Scaling up SLM through the landscape approach LD-4, Program 5: Mainstreaming SLM in development CCM-2, Program 4: Promote conservation and enhancement of carbon stocks in forest, and other land use, reduce emissions from land degradation, and support climate smart agriculture</p>
<p>Environmental Impact Assessment Category (insert): Low risk</p>	

Financing Plan: GEF allocation (USD):	10,874,659
<u>Co-financing (USD):</u>	
Government of Kazakhstan	\$16,640,546
Government of Kyrgyzstan	
Government of Tajikistan	\$1,465,000
Government of Turkey	\$2,000,000
Government of Turkmenistan	\$6,000,000
Government of Uzbekistan	\$23,780,000
FAO	\$11,780,000
ICARDA	\$1,700,000
ICBA	\$560,000
GIZ	\$909,500
ZOI	\$50,000

Subtotal Co-financing:	64,885,046
Total Budget:	75,759,705

EXECUTIVE SUMMARY

The overall objective of the Project is to scale up integrated natural resources management (INRM) in drought prone and salt affected agricultural production landscapes in the Central Asian countries and Turkey. This will be done through scaling up of sustainable management practices that minimize pressures and negative impacts on natural resources that reduce risks and vulnerability and, enhance capacity of rural communities to cope with or adapt to drought and salinity. In particular, adoption of integrated landscape management approaches and INRM practices should help stabilize and even reverse trends of soil salinization, reduce erosion, improve water capture and retention, increase the sequestration of carbon, and reduce loss of agrobiodiversity, thereby reducing the desertification trend in terms of extent and severity. The project objective will be achieved during a five-year period through four project components. It is structured as a program with one multi-country component addressing shared priorities at multi-county level (Component 1), two components at national level ensuring national implementation in selected production landscapes/land use systems (Component 2 and Component 3), and one M&E component (Component 4). The needs of disadvantaged groups, gender and age issues will be given consideration throughout the Project's implementation, monitoring and evaluation, and are reflected in the Project design.

Component 1: Multi-country collaboration and partnership to foster the effective delivery of INRM. This multi-country component will bring together all target groups of the Central Asia region and Turkey under the auspices of ICSD and IFAS and provide a platform for:

INRM/SLM Strategic dialogue – will involve establishment of communities of practice with political and decision making representatives of Central Asian countries and representatives of main donor organizations, such as GIZ. It will garner strategic support for INRM/SLM at the regional and national levels and ensure integrated implementation by countries of international obligations under various international and regional conventions (UNCCD, UNBD, UNFCCC, Convention on SD in CA) and initiatives on issues related to SLM and climate change.

Enhanced synergies of INRM/SLM interventions in the region – will broaden the CACILM partnership and involve strengthening of synergies of INRM/SLM support from CA countries, donors, NGOs, civil society and the private sector across the region. It will support links and collaboration with the global Knowledge Management platform of the DS-SLM project, the Eurasia Soil Partnership, and other international partners, forums and processes, with a view to developing a multi-country process and program, with the participation of ICSD, the Central Asia Regional Environmental Centre (CAREC), international research centres, such as ICBA and ICARDA, and development agencies, such as GIZ, aimed at the restoration of degraded lands in Central Asia and Turkey.

Exchange of knowledge, information and data – is essential not only for monitoring of trends, but it will provide inputs for further interventions on scaling up and out of best practices, will assist in distribution of results of the interventions in understandable language and will provide the assurance that approaches are technically feasible and accepted by the counties. The component will establish an efficient multi-country SLM/INRM knowledge management platform that will support knowledge sharing at the regional level, and provide practitioners across the region with guidelines, advisory services and knowledge products for harmonized planning and scaling up of SLM/INRM for a wider range of land uses. International expertise on salinity control and drought risk management, which has remained insufficiently utilized by CA countries until now will be mobilized.

Component 2: Integration of resilience into policy, legal and institutional frameworks for INRM. This component will support Governments of Central Asian countries and Turkey to integrate resilience into policy, legal and institutional framework for INRM, to support the scaling up and adoption of climate-smart agriculture management practices along the most appropriate impact pathways, leading to enhanced management of resilience, adaptation and transitions in production systems and landscapes in the medium and long term. The GEF/STAP Resilience-Adaptation-Transformation-Assessment (RAPTA) tool will provide an overarching framework to integrate resilience into INRM and will help with identifying controlling variables and thresholds in drought prone and salinity affected production systems. It will also help identifying possible interventions and policy options to enhance resilience, adapt or transform agro-ecosystems depending on the circumstances. This will be combined with support to adoption of drought planning processes that go beyond the traditional crises management approach.

This component will also strengthen inter-sectoral coordination mechanisms on INRM/SLM at national level, including mainstreaming of NAPs into national budget sector allocation and investment processes, to enable the incorporation of climate change and variability considerations and align existing financial contributions in the land management and agricultural sectors to support uptake of INRM practices. Support will be provided in the development of incentives for climate-smart agriculture at national and sub-national levels.

Component 3: Upscaling of climate-smart agricultural practices in drought prone and/or salt affected production landscapes. This component will focus on scaling up INRM and SLM practices on-the-ground that generate both socio-economic benefits to local communities and global environmental benefits. The scaling up will be based on multi-stakeholder land-use plans with targeted investment for selected agricultural production landscapes/land use systems (e.g. pastoral, agro-sylvo-pastoral, tree-based, irrigated/small oases production, rainfed land and home gardens), as well as guidelines for the development/piloting of watershed/catchment salinity management plans including inter alia hydrological regulations and identification of

promising species/habitats for sustainable and biodiverse aquatic and terrestrial ecosystems. Enhancing coordination at the landscape level will facilitate the integrated management of production systems and the natural resources and ecosystem functions that underpin the delivery and resilience of ecosystem services underpinning all sectors. Scaling up will be based on effective extension /advisory services for enhancing skills of a wide range of stakeholders at all levels for wide adoption of innovative approaches for drought and salinity mitigation and INRM technologies that contribute to food and nutritional security. The component will not only consider increasing technical capacities of extension/advisory service providers of institutions but also the functional capacities (e.g. knowledge, partnership, communication, responsiveness to gender and other social inequalities, and implementation capacities, including resource mobilization) of the related institutions to promote sustainable transformations in the agriculture sector.

The component will contribute to increased area under sustainable land management in drought-prone and /or salt-affected production landscapes. It will increase irrigation efficiency and reverse the salinization trends in irrigated areas while increasing the value of marginal water and soils for alternative livelihood systems. It will support diversification of crops (e.g. drought tolerant crops, salt-tolerant crops and halophytes) for providing the necessary adaptability and resilience. It will ensure adoption of climate smart agricultural practices that simultaneously enhance resilience to climate change while mitigating its impacts through increasing carbon sequestration below and above ground (e.g. conservation agriculture, integration of fodder crops in crop rotation), and enhancing reliability of production and productivity per unit of land, as well as in terms of water, labour and energy.

Component 4: Monitoring and evaluation. To determine whether integrated approaches to natural resources management have a positive impact on ecosystem services and resilience, and livelihoods and food security, they need to be monitored, assessed and evaluated for their socio-economic and environmental impacts. The project will therefore undertake monitoring and evaluation of both implementation progress and project impacts. Evaluation and monitoring methods will be gender-sensitive and data and indicators will be sex-disaggregated to the extent possible.

FAO/GLOBAL ENVIRONMENT FACILITY PROJECT DOCUMENT

Table of Contents

GLOSSARY OF ACRONYMS.....	III
SECTION 1. RELEVANCE (STRATEGIC FIT AND RESULTS ORIENTATION) 2	
A. GENERAL CONTEXT	2
B. SECTOR GOVERNANCE AND STAKEHOLDERS.....	8
C. RATIONALE.....	20
D. FAO's COMPARATIVE ADVANTAGE	28
E. LINKS TO NATIONAL DEVELOPMENT GOALS, STRATEGIES, PLANS, POLICY AND LEGISLATION, GEF/LDCF/SCCF AND FAO'S STRATEGIC OBJECTIVES	29
SECTION 2. PROJECT FRAMEWORK AND EXPECTED RESULT.....	34
A. PROJECT STRATEGY (OBJECTIVE, OUTCOMES, OUTPUTS)	34
B. GLOBAL ENVIRONMENTAL BENEFITS.....	65
C. COST EFFECTIVENESS (alternative strategies & methodologies)	66
SECTION 3. FEASIBILITY	68
A. ENVIRONMENTAL AND SOCIAL ASSESSMENT	68
B. RISK MANAGEMENT	69
SECTION 4. IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS..	71
A. INSTITUTIONAL ARRANGEMENTS	71
B. IMPLEMENTATION ARRANGEMENTS	73
C. FINANCIAL PLANNING AND MANAGEMENT	80
D. PROCUREMENT	82
E. MONITORING AND REPORTING.....	85
F. EVALUATION	88
G. COMMUNICATION AND VISIBILITY	89
SECTION 5. SUSTAINABILITY OF RESULTS.....	91
A. SOCIAL SUSTAINABILITY	91
B. ENVIRONMENTAL SUSTAINABILITY	91
C. FINANCIAL AND ECONOMIC SUSTAINABILITY.....	91
D. SUSTAINABILITY OF CAPACITIES DEVELOPED.....	91
E. APPROPRIATENESS OF TECHNOLOGY INTRODUCED	92
F. REPLICATION AND SCALING UP.....	92
ANNEXES.....	93
ANNEX 1: RESULTS FRAMEWORK	94

ANNEX 2: WORK PLAN (RESULTS BASED)	103
ANNEX 3: RESULTS-BASED BUDGET.....	107
ANNEX 4: INVENTORY OF INRM KNOWLEDGE AND DATA MANAGEMENT PLATFORMS IN CENTRAL ASIA	112
ANNEX 5: PROJECT ACTIVITIES IN PARTICIPATING COUNTRIES	115
ANNEX 6: TERMS OF REFERENCE FOR KEY PROJECT STAFF	125
ANNEX 7: PROJECT ENVIRONMENTAL AND SOCIAL (E&S) SCREENING CHECKLIST	130
ANNEX 8: TERMS OF REFERENCE FOR THE PROJECT STEERING COMMITTEE	133
ANNEX 9: E&S RISK CLASSIFICATION CERTIFICATION FORM.....	135
ANNEX 10: REPORT OF CARBON BALANCE ACCOUNTING	ERROR!
BOOKMARK NOT DEFINED.	

GLOSSARY OF ACRONYMS

AGL	Land and Water Division (of FAO)
AIS	Agricultural Innovation Systems
AWP/B	Annual Work Plan and Budget
BH	Budget holder
CA	Central Asia
CACILM	Central Asian Countries Initiative in Land Management
CAREC	Central Asia Regional Environmental Centre
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CCM	Climate Change Mitigation
CEO	Chief Executive Officer
CGIAR	Consultative Group for International Agricultural Research
CoP	Community of Practice
CPF	Country Priority Framework (FAO)
CSA	Climate-Smart Agriculture
CSO	Civil Society Organisations
CSR	Corporate Social Responsibility
CST	Committee on Science and Technology (of the UNCCD)
DLDD	Desertification, Land Degradation and Drought
DPSIR	Driving forces, Pressures, Impacts and Responses framework
DRM	Drought Risk Management
DRR	Disaster Risk Reduction
DSS-SLM	Decision Support for mainstreaming and scaling up Sustainable Land Management
EASP	Eurasian Soil Partnership
EC	European Commission
EEA	European Environment Agency
ELD	Economic of Land Degradation
EMG	UN Environmental Management Group
FA	Farmers' Association
FAO	Food and Agricultural Organization of the United Nations
FFS	Farmer Field School
FHH	Female Headed Household
FO	Field Office
FPMIS	Field Programme Management Information System
GAEZ	Global Agro-Ecological Zones
GCU	FAO GEF Coordination Unit in Investment Centre Division
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GLADIS	Global Land Degradation Information System
GSP	Global Soil Partnership
GWP	Global Water Partnership
HQ	Headquarter
ICARDA	International Centre for Agricultural Research in Dry Areas
ICBA	International Centre for Biosaline Agriculture
ICSD	Interstate Commission for Sustainable Development
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
IFAS	International Fund for Saving the Aral Sea

IFPRI	International Food Policy Research Institute
INRM	Integrated Natural Resources Management
IT	Information Technology
IW	Inception Workshop
IWMI	International Water Management Institute
JICA	Japan International Cooperation Agency
KAZ	Kazakhstan
KM	Knowledge Management
KYR	Kyrgyzstan
LADA	Land Degradation Assessment in Drylands
LD	Land Degradation
LDN	Land Degradation Neutrality
LoA	Letter of Agreement
LRIMS	Land Resources Information Management System
LTO	FAO Lead Technical Officer
LUS	Land Use Systems
M	Million
M&E	Monitoring and Evaluation
MAR	Ministry of Agriculture and Reclamation (KYR)
MASSCOTE	Mapping System and Services for Canal Operation Techniques
MEU	Ministry of Environment and Urbanization (Turkey)
MFWA	Ministry of Forestry and Water Affairs (Turkey)
MICCA	Mitigation if Climate Change in Agriculture
MSRI	Mountain Societies Research Institute
MTR	Mid-Term Review
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Action Program (of the UNCCD)
NBSAP	National Biodiversity Strategy and Action Plan
NCB	National Coordination Board
NCC	National Coordination Council
NCU	National Coordination Unit
NGO	Non-Governmental Organization
NMTPF	National Medium-Term Priority Framework (FAO)
NPC	National Project Coordinator
NPF	National Programming Framework
NPM	National Project Manager
NSEC	National Secretariat
OR	Organisational Requirements
PCS	Priority Core Strategy
PES	Payment for Ecosystem Services
PIR	Project Implementation Review
PMU	Project Management Unit
PPCR	Pilot Project for Climate Change Research
PPP	Public Private Partnership
PPR	Project Progress Reports
PRA	Participatory Rural Appraisal
PSC	Project Steering Committee
PTF	Project Task Force (FAO)
QA	Questionnaire Approaches (WOCAT)
QM	Questionnaire Mapping (WOCAT)
QT	Questionnaire Technologies (WOCAT)
RAPTA	Resilience, Adaptation and Transformation Assessment
RCC	Regional CACILM Council
RF	Project's results framework
RIMA	Resilience Index Measurement and Analysis

RPC	Regional Project Coordinator
SAEPF	State Agency on Environment Protection and Forestry (KYR)
SHARP	Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists
SD	Sustainable Development
SDG	Sustainable Development Goal
SEC	Sub-Regional Office for Central Asia (of FAO)
SFM	Sustainable Forest Management
SLM	Sustainable Land Management
SO	Strategic Objective
SPEM	State Committee on Nature (UZ)
SRAP	Sub-Regional Action Program (of the UNCCD)
STAP	Scientific and Technical Advisory Panel (of the GEF)
STAR	System for Transparent Allocation of Resources
TAGEM	General Directorate of Agricultural Research and Policies (Turkey)
TAJ	Tajikistan
TCI	The FAO Investment Centre Division
TCP	Technical Cooperation Project (FAO)
TEVAB	Technical Expert and Valuation Board
TIIMI	Water Saving Irrigation Technologies Research Centre
TIKA	Türk İşbirliği ve Koordinasyon Ajansı Başkanlığı
TKM	Turkmenistan
ToR	Terms of Reference
TT	Tracking Tool (GEF)
TUR	Turkey
UCA	University of Central Asia
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States Dollar
UZB	Uzbekistan
UZPCA	Uzbekistan Scientific Production Centre of Agriculture
WB	World Bank
WFP	World Food Programme
WMO	World Meteorological Organization
WOCAT	World Overview of Conservation Approaches and Technologies
WUA	Water User Association

SECTION 1. RELEVANCE (STRATEGIC FIT AND RESULTS ORIENTATION)

A. GENERAL CONTEXT

General Development Context Related to the Project

Central Asia is a core region of the Eurasian continent, which includes Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan countries (hereinafter referred to as, CA). Within the region, the Aral Sea Basin is an extensive area of 1-7-1.8 million Km², which feed two major river basins, the Amu Darya and the Syr Darya. It is an arid to semi-arid region, where the majority of the area (68%) is occupied by sparsely vegetated deserts and grass/scrublands. The major agro-ecological regions for crop production include irrigated cropland (10.2 M ha.), rain-fed cropland (20.2 M ha.), and pastures (72.3 M ha), steppes (213.7 M ha) and mountains (10.3 M ha).

In the last 50 years, the population of the Central Asian region has tripled. The population is estimated at 69.5 million and more than half (about 58%) of the population is considered rural and dependent on agriculture for their livelihoods (FAOSTAT, 2013). The Central Asian region is facing serious food security challenges with the need to feed larger number of people amongst increasingly limited water resources and highly variable climatic conditions. In several countries, growing urban areas are also taking priority over the scarce freshwater resources, leaving agriculture to use low-quality brackish and salty water with adverse effects on agricultural productivity. Adding to the complexity, climate change projections for the region indicate considerable negative impact on productivity of farmland and pasture land. Grasslands, for example, are at risk of desertification due to higher temperatures and decreasing rainfall, which will directly impact livestock productivity.

Owing to its geographical and climatic characteristics, aggravated by impacts of climate change and anthropogenic pressures, Central Asian countries and Turkey are severely affected by desertification, land degradation and drought (DLDD). In Kazakhstan, 66 percent of the land area is affected while, in Turkmenistan and Uzbekistan, this figure is as high as 80 percent. Between 40-80 percent of irrigated lands in the region are salt-affected and/or waterlogged (Qadir, et al. 2008, Toderich et al. 2013); most affected countries include Turkmenistan (68%), Uzbekistan (51%), Kazakhstan (20%) and, Turkey (30%) (Aquastat, 2012). Permanent pasture land which occupies 77-95 percent of the agricultural area is not properly managed. Erosion affects over 88 percent of arable land in Kyrgyzstan and 97 percent of agricultural land in Tajikistan. GLADIS reference base (FAO LADA, 2005) confirms that the Central Asian drylands are very prone to land degradation, in particular water and soil erosion, due to low vegetation cover. In Turkey, the majority of soils (76.5%) are very susceptible to erosion risk due to steep slopes (>6%), and 72% of the soils are affected to some extent of erosion by water and wind due to inadequate land use/management systems. It is estimated that 59% of Turkey's agricultural fields and 64% of its pastures are prone to erosion. High land fragmentation also makes it difficult to cultivate agricultural land efficiently.

Over the past thirty years, DLDD have become more severe and concern has grown about the significant economic and social impacts on agriculture and related sectors in CA and Turkey. Agricultural yields in the five Central Asian countries are reported to have declined by 20–30% across the region since independence, causing annual losses of agricultural production.

Regional losses from salinization alone have been estimated to be at least \$2 billion per year (some 5% of the region's gross domestic product (GDP) (CACILM NPF, 2006). The land and water users most affected by salinization are concentrated downstream of the Amu Darya and Syr Darya River basins where water is unsuitable for agriculture and municipal needs. In these lower parts of the Aral Sea basin, many private farms and vulnerable groups have no choice but to use degraded natural resources with negative impacts on the ecosystems and increased vulnerability to food insecurity. Droughts in Central Asia are also having significant direct economic costs due to loss of agricultural production (e.g. US\$800,000 million during 2000-2001). Desertification processes, degradation of natural resources and land use change/fragmentation have also caused biodiversity loss and rendered extensive areas incapable of fulfilling important ecosystem functions such as carbon storage/sequestration.

The causes of land degradation are multiple, complex, and vary across these countries, but are largely attributed to over-exploitation and deterioration of the natural resource base, particularly through inefficient irrigation and unsustainable agricultural and grazing practices (e.g. mono-cropping of cotton, inappropriate use of fertilizers and pesticides, inadequate soil management, overgrazing of pastoral lands), aggravated by increased frequency and intensity of climate related disasters (e.g. droughts, floods and landslides). Poor irrigation practices and degraded infrastructure have largely contributed to the salinization and/or waterlogging of irrigated lands. In Central Asia, since the 1970s, the level of salts in both the Syr-Darya and Amu-Darya has increased steadily. More than 70 percent of the salts carried by the rivers of Central Asia originate from drainage systems, which discharge 10 to 25 percent of the water in the canals back into the river systems (the remainder goes into large "sinks" in the desert) (Bucknall, et al., 2003). Fires, deforestation and mining have also severely affected the degradation of natural resources and impacted land use in CA. These significant environmental stressors on agricultural lands are leading to declining productivity of agro-ecosystems and reduced livelihood security in production landscapes.

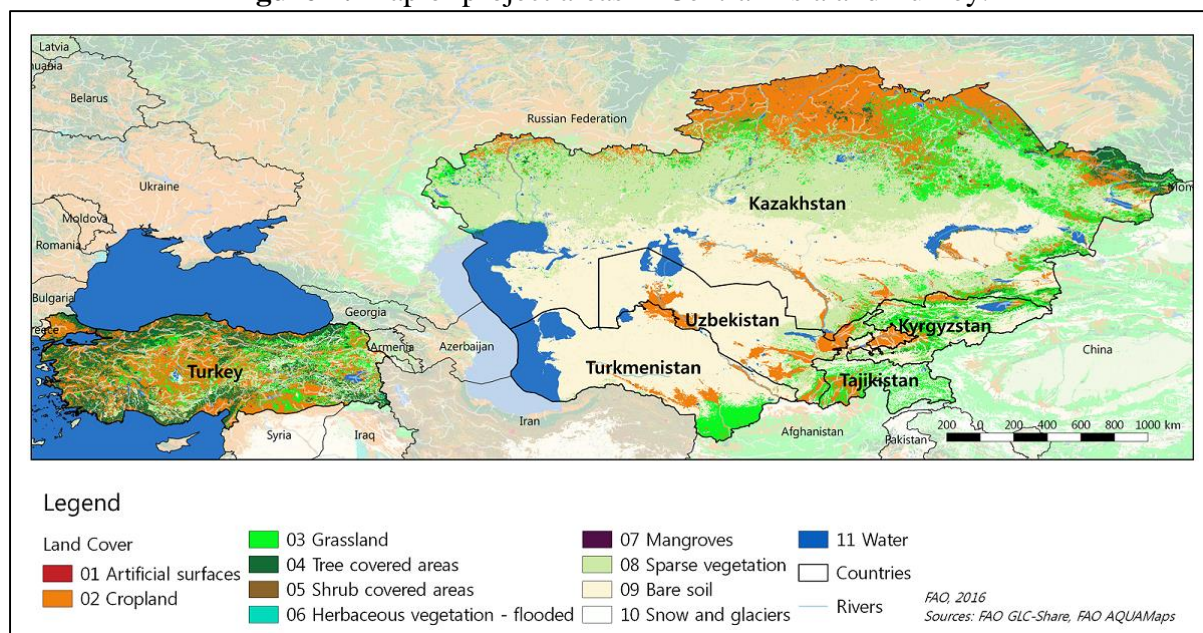
Central Asia is a region with a very high pressure on its water resources, mostly due to high water withdrawals for irrigated agriculture, deteriorating water quality, and uneven distribution of water resources. Demographic trends, rising demand for energy and food, economic development, environmental degradation and climate change are increasing pressure on all the region's finite common property resources (e.g. water, soil and forestry). The absence of multi-country cooperation for the socio-economic development of the Aral Sea Basin leads to fragmented national and regional policies, with risks of increasing competition over natural resources while worsening their degradation, and lack of exchange of knowledge and experiences within and outside the region that impedes the scaling up of integrated and sustainable natural resource management practices.

Project areas

Central Asia (Figure 1) is one of the world's most vulnerable regions to current climate variability and to the impacts of future climate change. Climate change is likely to manifest in CA as: i) increasing temperatures; ii) changing rainfall patterns; iii) increasing aridity; (iv) increasing frequency of extreme weather events (such as dust storms, heavy rainfall, haze, heat waves and heavy winds); and v) increasing frequency and intensity of climate-related disasters (such as floods, droughts, mudslides, avalanches and landslides). Climate change signals also demonstrate significant differences in different climate regions across Turkey. Temperature projections indicate that average temperatures in the region by the end of 21st century will tend to be 2-6 degrees C higher than the average temperatures experienced in 20th century. The

precipitation patterns by the end of 21st century, in comparison to current precipitation, also indicate seasonal and regional differences. Indeed, trends over the last few decades indicate that these predicted changes are already being experienced in CA countries, and current climate variability is already adversely impacting agricultural development. The sites selected for the CACILM-2 project represent a range of representative agro-ecosystems and landscapes in Central Asia and Turkey where impacts of climate change are already leading to more droughts and problems with soil salinity.

Figure 1: Map of project areas in Central Asia and Turkey.



Barriers to Integrated Natural Resources Management (INRM) in CA and Turkey

There are multiple barriers to the scaling up of INRM in Central Asia. Some are related to limited access to up-to-date knowledge on the latest approaches and technologies in INRM, including drought-risk and salinity management, others to weak policy, regulatory and institutional frameworks that are poorly coordinated and implemented, and do not take into consideration management of uncertainty in the face of climate change and changing social and economic conditions. The key barriers that will be addressed by the project are summarized below:

Inadequate sharing of knowledge at regional level and lack of evidence-based decision-making. In Central Asian countries and Turkey, there are major knowledge gaps related to the costs and benefits of various INRM practices and the values/impacts (direct and indirect) of preventing or mitigating degradation, sustaining or/enhancing ecosystem services and adopting drought preparedness planning. Absence of a regional mechanism for generating and sharing evidence-based knowledge on the costs and benefits of traditional and innovative technologies across landscapes and production systems, makes it difficult to make a convincing case to policy makers on the importance of designing efficient policy instruments, investing in preventing land degradation (including soil and water salinization) and promoting sustainable land management. In addition, lessons learned from CACILM-1 indicate the need to harmonize SLM knowledge dissemination platforms building on the WOCAT database and strengthen the

capacity of competent regional centres for ensuring knowledge dissemination and supporting advisory/climate information services across CA countries and Turkey in the long term.

In the emerging Knowledge Economy, the capacity of institutions and countries to create, manage and transmit knowledge is key to their potential to innovate and their future success. No single set of features distinguishes successful initiatives, but most include features, such as cooperation, resilience, flexibility and interoperability. They do not use predefined templates or structures but enable integrated contents retrieval. The idea of creating such a Knowledge Network for Central Asia has been around for well over 50 years. Thus, way back in the 1950's a number of Soviet scholars proposed the creation of a database and a series of maps of all the existing knowledge concerning the history and people of Central Asia, which was to be linked to all data on natural resources. This idea gave rise to a number of publications concerning in particular ethnographic and archaeological material. It is also reflected in the research concerning Natural Resources in both published and unpublished reports, which was largely coordinated by the Academy of Sciences of the different Republics. However, the failure of the Soviet Union to grasp the potential of personal computers for data management meant that the overall project was abandoned.

The situation has been compounded from 1991 onwards, by the economic crisis, which hit Central Asia and meant that money for data management dramatically was cut back, affecting not only ongoing research projects but also the upkeep of records and the very existence of the research institutes. Furthermore, the ties, which linked the different specialists together across the Soviet Union weakened and in some cases disappeared, whilst foreign scholars starting new projects in Central Asia usually had little or no prior knowledge of previous Soviet work. Today, researchers spend up to 90 per cent of their time simply searching for data and even after years of study, part of the existing data will escape their attention because it is so difficult to find. The situation is similar if one turns to practitioners such as NGO's and local authorities. All have difficulties accessing knowledge, all face the problem of belonging to different institutional and cultural backgrounds and, although they sometimes have the same long-term goals, they rarely share immediate concerns. Additionally, the region has limited official data relevant to the agricultural sector which is disaggregated by sex, age, territory and other variables, and only a few small-scale research projects on gender themes (for example, resilience to climate change), which means that there is an inadequate knowledge base about the roles of women and men in natural resources management. In a situation such as this developing the collaboration between research centres (not only academics, but also research centres, analytical studies and statistical data providers, etc.) and practitioners seems to be of paramount importance.

Inadequate integration of resilience into policy and decision-making. In Central Asia, one of the challenges is to anticipate, plan and manage transitions (centrally planned economy to market based economy, male-headed households to female-headed households in the rural areas, etc.) successfully for building greater resilience in the medium term and long term. Policy, legal and institutional framework are currently inadequate for managing these transitions and ensuring that INRM practices are scaled up and applied for increasing resilience of vulnerable sectors, communities and regions/basins. Evaluation of results and lessons learned of CACILM-1 has also revealed that there is a need for further strengthening of cross-sectoral coordination mechanisms at national level and, enhancing capability of national institutions for the formulation and implementation of drought preparedness plans and land use plans.

Current administrations have limited experience in designing and implementing climate smart land-use initiatives, and they have even less experience with the adoption of relevant gender-sensitive approaches and mechanisms to improve women's access to knowledge, resources and services, despite the feminization of agriculture in rural areas due to a number of factors, including male out-migration. There is a general inability of public policies and institutions to facilitate access to productive assets resources and opportunities, such as land, finance and markets. All tiers of institutions need exposure to international practices of integrated landscape management and resilience planning in which attention to the empirical and technical foundations of proposed interventions is supplemented by an understanding of the social context, gender issues, appreciation of the role of financial and non-financial incentives, capacity to work with multiple partners, and experience of project monitoring and evaluation.

Absence of strategy for scaling up of INRM. Despite the efforts of national governments and international donors, limited access to financial resources for scaling up INRM is a serious constraint in all Central Asian countries. Most of the SLM/INRM practices that are already being applied in Central Asia and Turkey need to be more widely adopted. Provision of adequate advisory/extension services to the agricultural sector remains constrained by several factors, such as lack of knowledge and skills of local authorities, farmers, agro-pastoralists and land users to select cost-effective and low-risk innovative approaches and technologies, low capacity of recipients to prepare soils salinity evaluation and monitoring plans, lack of credit and long-term finance sources, and complexity of INRM scaling up across salt affected landscapes and ecosystems vulnerable to salinity (FAO, 2013, UNEP, 2000, Toderich et al., 2010, Touge et al., 2015). Advanced agronomic practices (crop diversification, mixed farming, agroforestry, pasture improvement, water saving, salinity management, etc.) demonstrated at pilot/experimental farms, confirm their high efficiency and benefits for small farms on salt-affected and degraded soils.

Climate-related interventions are often implemented as ad hoc disaster risk reduction measures, which prevent a more systematic identification of strategic priorities, hampering the scope for upscaling and policy impact. Therefore, pilot demonstrations of SLM/INRM approaches and drought and salinity mitigation interventions in arid landscapes are often not replicated outside project areas. Wider dissemination and adoption of these practices and methods, including those building on the indigenous knowledge of both women and men, are restricted by a range of technical, organizational and institutional constraints that are aggravated by the complexity of biophysical and socio-economic attributes of drylands and climate change challenges. A comprehensive strategy at agricultural systems level that combines policy and institutional considerations with technical and financial for identification of INRM implementation and upscaling pathways is hence lacking.

Weak technical and functional capacities of institutions, agricultural extension and advisory services. The institutional capacity and technical expertise in land degradation assessment, sustainable technologies and climate change resilience are still insufficient. Weak institutional facilities (specialized geospatial software, equipment, methods, etc.), and information exchange between institutions constrain possibilities to assess, plan and implement activities to support INRM upscaling. In particular, principles for drought risk management and planning are not well known in the region, including the cross-sectoral nature of climate change impacts and potential drought risk management options. Hazard warning and monitoring systems and hydro-meteorological data are inadequate, and there is little incentive to share data across institutions and ministries due to limited knowledge of the importance of climate data for development. There is also limited knowledge about best management

practices for bio-saline agriculture and bioremediation of salinity, although successful pilots that have increased land productivity have been implemented by e.g. the International Centre for Biosaline Agriculture (ICBA).

Guidelines and extension products are inadequate for ensuring that INRM practices are scaled up and applied at a wider scale. There are also insufficient knowledge, awareness and skills of private and civil society and vulnerable groups to apply and adapt new and innovative approaches and technologies to salinity and drought risk management, and climate smart agricultural management practices on the ground due to weak national agricultural extension systems and a general lack of quality advisory services in rural areas. Many practitioners in the field of natural resources management have limited access to integrated land use planning tools, and lack of coordination at the landscape/catchment level hampers the integrated management of production systems and the natural resources that underpin the delivery and resilience of ecosystem services needed for all sectors. Country-specific threats and barriers are summarized in Table 1 below:

Table 1. Status and threats to land resources and barriers to INRM in participating countries.

Country	Status and threats	Barriers
Kazakhstan	<ul style="list-style-type: none"> 66% of the national territory is prone to desertification 43% of irrigated land requires reclamation Economic losses caused by degradation of pastures, soil erosion and secondary salinization are considerable Land productivity is 3-4 times lower than in many other comparable countries 	<ul style="list-style-type: none"> Weak institutional and legal framework for INRM/SLM Inadequate data and knowledge, and poor access to information Poor access to markets and credit Lack of experts at all levels, especially at local level Gender inequalities, such as women's more limited access to agricultural resources and more vulnerable economic position
Kyrgyzstan	<ul style="list-style-type: none"> Average arable land area per farm is only 2.7 ha and 1.9 ha for irrigated land Deficiency of livestock fodder of 20% in spring-fall Up to 70% of irrigation water is wasted Up to 30% of post-harvest losses Conflict over water at all levels 	<ul style="list-style-type: none"> Lack of integrated national policy in the area of land management Weak institutions and personnel, and unclear areas of authority Limited access to markets and credit Lack of agricultural machinery Unavailability of information services Weak value chains for agricultural products
Tajikistan	<ul style="list-style-type: none"> The country is highly mountainous and only 7% is covered by plains and suitable for cultivation. Widely developed degradation and desertification process due to high relief and drought 	<ul style="list-style-type: none"> Weak institutional, policy and regulatory framework for INRM/SLM, and weak intersectoral coordination between water and agricultural sectors Low level of knowledge and human capacity in INRM/SLM Lack of investments in INRM and access to credit
Turkey	<ul style="list-style-type: none"> 65% of the national territory is arid, semi-arid or sub-humid 59% of agricultural land, 64% of pastures and 54% of forest land are prone to different types of soil erosion Unsustainable land use 	<ul style="list-style-type: none"> Lack of necessary knowledge and capacity at institutional level and at farmer level to implement SLM and climate-smart agriculture

Turkmenistan	<ul style="list-style-type: none"> • 15% of the irrigated area is salinized • Other land degradation problems include water and wind erosion • Climate change impacts are expected to result in reduction of river runoff of up to 50% in some basins 	<ul style="list-style-type: none"> • Some provisions of the Land Code/Act do not incorporate the principles of SLM
Uzbekistan	<ul style="list-style-type: none"> • 82% of the national territory is affected by DLDD, including loss of productivity • 50.3% of irrigated lands are affected by salinization • Over 50% of farmland suffers from wind and water erosion • 3% of GDP is lost annually due to inefficient water resources management. The annual decrease in agricultural production is estimated to be USD2 billion (as of 2006) 	<ul style="list-style-type: none"> • INRM/SLM is not fully integrated into national strategies, policies and legislation, and inter-sectoral coordination is weak • Limited access to knowledge, best practices and research outcomes • Land tenure arrangements do not incentivize farmers to implement INRM/SLM • Systems for agricultural extension/provision of rural advisory services have not been sufficiently developed

B. SECTOR GOVERNANCE AND STAKEHOLDERS

Legislation and Policies

The Project is in full accordance with the objectives of the Central Asia Countries Initiative for Land Management (CACILM I) in five countries of Central Asia. CACILM is a multi-country and multi-donor, long-term program in the spirit of UNCCD aimed at restoring, maintaining and enhancing productive functions of land in the CA countries. The priority areas of sub-regional cooperation in the SRAP/UNCCD include: (i) monitoring and evaluation of desertification processes and drought mitigation; (ii) improvement of water use in agriculture; combating erosion, salinization, and swamp formation; (iii) agroforestry and management of forest resources and watersheds; (iv) pasture management; (v) conservation of biodiversity and nature protection; development of eco-and ethno-tourism, and (vi) economic capacity building of local communities.

The project also takes into account the specific recommendations of the Member Countries of the 29th FAO European Regional Conference on drought risk management and priorities for collaboration on natural resources management defined in the Country Programming Frameworks (CPFs) between FAO and the Government of each participating country, that are aligned with national plans and programmes, in support of national agriculture, rural development and food security development objectives.

Reviews of the legislative and policy frameworks for INRM in each country were undertaken as part of project preparation and links to the main national laws and policies are summarized below.

Table 2. List of key national laws and policies related to INRM

Kazakhstan	
LEGISLATION	
Constitution of the Republic of Kazakhstan (1995)	Stipulates the state ownership of all kinds of natural resources; aims to protect environment favourable to human life and health; obliges citizens of the Republic of Kazakhstan to preserve nature and to treat natural wealth with care.
Civil Code of the Republic of Kazakhstan (1999)	Regulates the commodity-monetary and other property relations, as well as related and unrelated private non-property relations, including sites of biological diversity.
Land Code of the Republic of Kazakhstan (2003)	Regulates land relations in order to ensure its sustainable use and protection, recovery of soil fertility, conservation and improvement of natural habitat; assigns land use categories based on intended purposes.
Water Code of the Republic of Kazakhstan (2003)	Regulates relations in terms of lands, forests, flora and fauna, open air that develop from the use and protection of water bodies.
Law on Peasant Households (2012)	Provides legal, organizational and economic frameworks for the creation and functioning of peasant households and farms in the Republic of Kazakhstan.
Law on State Regulation on the Development of Agribusiness and Rural Areas" (2013)	Provides legal, organizational, economic and social frameworks for enforcing the government regulation on the development of agribusiness and rural areas in the Republic of Kazakhstan.
Law on Specially Protected Areas (2015)	Regulates social relations pertaining to the creation, expansion, protection, restoration, sustainable use and management of specially protected natural areas and sites of national natural reserves that are of particular environmental, scientific, historical and cultural interest and recreational value, and that are part of the national, regional and global environmental network.
POLICIES	
"Concept for conservation and sustainable use of biological diversity of the Republic of Kazakhstan until 2030"	Will contribute to the development and adoption of an activity plan, to the execution of concrete steps in incorporating the provisions of the Protocol into the legislation and the system for managing biological resources. The Concept is the only document that offers an integrated sectoral approach to the planning of biodiversity issues and remains consistent with international and global obligations.
Concept of State Forest Policy of Kazakhstan until 2030	Defines objectives, goals, main areas and mechanisms for sustainable and interrelated development of the forest sector that includes forestry, greening and afforestation activities, timber and wood processing industry as the structural pieces of a single timber cluster (complex).
Concept for transition of the Republic of Kazakhstan towards a green economy	According to the Concept, a shift to a green economy will be done through sustainable use of water, sustainable and highly-efficient agriculture, energy saving and enhanced energy efficiency, power industry, waste management system, reduced air pollution, and conservation and effective management of ecosystems. Issues related to transition to a green economy will be regulated by statutes of the Republic of Kazakhstan on transition to a green economy.
"2050 Strategy" (2012)	In December 2012, the Head of the State announced the Kazakhstan's 2050 Strategy. Its primary objective is to create a society based on a strong state, a developed economy with universal labor opportunities, and to position Kazakhstan among the top 30 global economies. To achieve this objective, the 2050 Strategy has the following priorities relevant to CACILM: (i) Economic policy of the new course is an integrated economic pragmatism based on the principles of profitability, return on investment and competitiveness; (ii) Comprehensive support to entrepreneurship as a leading force of the national economy; (iii) New principles of social policy are social guarantees and personal responsibility; (iv) Knowledge and professional skills are key landmarks of the modern education, training and retraining system; and (v) Further strengthening of the statehood and development of the Kazakhstan democracy

“100 concrete steps to implement the 5 institutional reforms”	The 85 and 89 steps are about the Patriotic Act named “Mangilik Yel” (the eternal nation). It is a task to draft a patriotic act and introduce the values of “Mangilik Yel” into existing formal educational programmes. The idea of the “Mangilik Yel” was announced in an extended format in December 2012 by the President, Nazarbayev, during his address to the nation outlining the “2050 Strategy”.
Kyrgyzstan	
LEGISLATION	
Law on farmer’s household (economic unit) (1999)	The law provides definition of farmer’s economic unit (household) and defines legal bases, order of creation and operation of peasant or farm economic units, their rights and obligation; aimed at the creation of conditions of the equal development of them together with other forms of economic activities.
Land Code of Kyrgyz Republic	Regulated the land tenure relations in Kyrgyz Republic, including establishment, procedures of realization and conclusion of land tenure rights and its registration. It is also aimed at the promotion of market relations within state, municipal and private land ownership; at the rational use of the land and its conservation. The regulates the land tenure, but briefly touches pasture tenure issues: it defines state property over the pastures resources and forms of economic activities in agricultural lands.
Law on pastures (2009)	The main objective is to provide the guaranteed, economically viable and sustainable use of pasture resources. The approach to the management is based on participation of local communities in pasture management and on promotion of their participation. The law is the legal basis for sustainable pasture management, elimination of three level management of the pastures and transfer of all functions and authorities on management to local government.
Law On protection of soil productivity on agricultural lands (2012)	The law regulates relations in the field of soil conservation, soil fertility, conservation of the quality and protection from degradation and other negative impacts, related to the ownership, use, disposal of agricultural lands. It is extremely important document defining, in the absence of the appropriate policies, the main directions of the national soil policy (Article 3)
Forestry Code of Kyrgyz Republic (8/07/1999, No. 6)	The Code establishes legal framework for the rational use, protection, conservation and replenishment of the forests, improvement of their ecological and resource capacity, their rational use, as well as regulates the land use within the State Forest Fund (SFF). The Code includes norms, according to which legal or private entities, whose activities have an impact on condition or reproduction of forests, are obliged to continuously inform state forest management bodies regarding the condition of the protection and conservation of forest cover, as well as to perform agreed with local governments and local state administration, state forestry management bodies and state protection agencies, all technological, sanitary and other activities aimed at protection of forests
Law on Environmental Protection (June 16, 1999 No. 53)	The law establishes the basic principles of environmental protection and legal authorities regarding the provision of the quality of the environmental, creation of required protected areas, publicity of rules and procedures of the use of natural resources, creation of the system of environmental monitoring and control, defining procedures for natural disaster management. Besides this law regulates relations between public organizations and different state bodies, their rights and obligations. The law also confirms the right of every citizen or legal entity to have an access to the environmental information.
Water Code of KR (12/01/2005, Decree No. 8)	The Water Code combines principles of the integrated water resources management and defines water relations, including a number of important ones for sustainable land and forest management.
On management of Agricultural lands	Regulates legal relation on agricultural land management and aimed at the provision of effective and safe use of lands at population’s interests. It defines in detail the legal status of agricultural lands, regulates legal relations of agricultural land management, conditions and order of transactions with agricultural lands (lease, exchange, purchase and sale, pledge, inheritance and endowment).
POLICIES	
National strategy of sustainable development of Kyrgyz	The strategy recognizes that processes of degradation of croplands and pastures presently are the main threat to food security and to the sustainable development of the country.

Republic for 2013-2017	
Concept of development of the forestry for the period till 2025 (Order № 256 from 14.04.2004r.)	<p>Concept defines the strategy of development of forestry sector till 2025. Concept defines three goals:</p> <ul style="list-style-type: none"> • Provision of the sustainable development of the forestry sector • Involvement of the population and local communities into joint forestry management <p>Increase of the role of the state in development of forestry sectors</p>
Program and action plan on climate change adaptation of the sector “Forestry and biodiversity” for 2015-2017	For realization of the priority directions for adaptation in the sector “Forestry and biodiversity”
Priority directions of adaptation to climate change in Kyrgyz Republic till 2017	Includes adaptation measures in main sectors: water resources, agriculture, health, climatic disasters, forestry resources and biodiversity
Concept of national security of Kyrgyz Republic	In the short term (till 2020) the document defines main directions of the state policy in the field of the environmental protection rational use of the natural resources in the context of sustainable development
Program of food security and nutrition of Kyrgyz Republic for 2015-2017	The programme aims at the provision of the food security, physical and economic accessibility of the food, provision of the food quality, diversity and nutrition, provision of the control and supervision for food safety
Order “On approval of the national action plan for development of organic agriculture in Kyrgyz Republic” (to be approved)	Published for public discussion at www.agroprod.kg
National Action Plan for implementation of UNCCD provisions in Kyrgyz Republic (2015-2020)	The plan has activities to combat desertification, land degradation. It was approved at the level of the ministry of agriculture and melioration.
National Framework Programme on land planning (2006-2016)	The Programme is the set of projects and programs, aimed at the solution of the issue of land degradation and at needs of rational use of land, water and other natural resources, including pastures and forests.
National strategy of the integrated safety of the population and territories of Kyrgyz republic from emergencies	Strategy defines the state policy, guaranteeing the protection of the population by territories within the acceptable risks
National Strategy on Gender Equality to 2020 and National Action Plan on Gender Equality for 2013-2017	The strategy and NAP are structured around four core priorities, two of which are: “women’s economic empowerment” and “developing a system of functional education” (‘functional education’ refers to adult life-long education that supports the creation and strengthening of the skills that are needed to improve women’s and men’s quality of life.) Special attention in national policy is devoted to strategies for improving rural women’s non-formal education, especially building information technology (IT) skills and the use of information and communications technologies to prepare them to take advantage of new employment and business opportunities.
Tajikistan	
LEGISLATION	
Land Code (1996)	Regulates the land relations and aimed at the creation of conditions for the rational use and protection of lands, reproduction of soil fertility, conservation and improvement of the environment, for equal development of all economic entities

Water Code (2000)	The main objectives of the Water Code are the protection of the state water fund and lands of the state water fund for the improvement of social conditions of the population and the environment, protection of the water from pollution, contamination, depletion, prevention and elimination of the harmful impacts of waters, improvement of the condition and protection of water bodies, strengthening the rule of law and protection of the rights of physical and legal entities in the water use.
Forest Code (1993)	Regulates forest-related relations and aimed at the creation of conditions for rational use of forests, the conservation and protection, conservation and improvement of the environment, production of the forest and agricultural production.
Law "On food security" (2010)	Defines main directions of the state policy in the field of food security as the integral part of the state' security, in accordance with the generally-accepted international principles and norms.
Law "On pastures" (2013)	The law regulates public relations, associated with the use of pastures.
Law "On environmental protection" (2011)	Defines legal bases of the state policy in the field of environmental protection and aimed at the provision of the sustainable social economic development, guarantee of human rights for healthy environment, strengthening the rule of law, prevention of negative impacts of economic and other activities on the environment, organization of the rational use of nature resources and provision of environmental security.
Law "On soil protection" (2009)	The law defines the main principles of the state policy, legal bases of activities of state bodies, physical and legal entities with the aim of the rational and cautious use of soils, preservation of the quality, fertility and protection of soils from the negative events and regulates the complex of relations associated with the protection of soils.
POLICIES	
National programme to combat desertification in Tajikistan (2000)	Long term complex programme to combat desertification, mitigating the effects of drought and desertification through effective actions at all levels and for achieving the sustainable development of the country.
National strategy and action plan on the rational use of biodiversity (2003)	Long term programme, allowing to lay foundations for sustainable development of the environment and the society, defines the main direction of activities of the state and non-state organizations in tackling problems of the biodiversity conservation. Contains national measures to solve the main problems of the biodiversity./
National plan of action on climate change mitigation and adaptation (2003)	The single framework document, regulating issues of the climate change. The Action plan defines the main direction and priorities of the state policy in the field of reduction of greenhouse gas emission and adaptation to climate change, provides the information on issues of the harmful impacts of the climate change on natural resources, economic and public health.
State Programme to Ensure Equal Rights and Opportunities for Men and Women in the Republic of Tajikistan for 2001-2010	The strategy pays particular attention to supporting rural women and families of labor migrants.
Program of the food security of Republic of Tajikistan for the period till 2025	The programme is aimed at the defining socially acceptable, economically effective, as well as financially and technically feasible measures to achieve the food security.
Programme of reforming the agricultural sector of Tajikistan for 2012 – 2020	The objective of the program is the Development of productive and profitable agriculture on the bases of the sustainable use and management of the natural resources.
Turkey	
LEGISLATION	
Agricultural Law (2006)	The law is the main document establishing the principles, objectives and priorities of agricultural policies and relevant extension services for key personnel and farmers. The law also defines the main approaches on conserving genetic resources and mainstreaming the biodiversity into agricultural practices.

Organic Farming Law (2004)	Organic Farming Law ensures well establishment and sustainability of organic farming in Turkey. It identifies a set of principles and procedures to ensure consumer health.
Forest Law (No: 6831, 1956)	It sets forth the basic forestry legislation. The boundaries of protected forests are determined and declared to the surrounding villages. The conditions, principles and periods of designation of such forests and management, development, improvement and utilization principles and decisions are decided by the MFWA. Livestock grazing on the state forestlands should be done according to the plans and permission of the forestry administration.
Regulation on Good Agricultural Practices (2010)	This regulation identifies the procedures and principles that conserves natural resources and prevent harm to environment, humans and animal health.
Soil Conservation and Land Use Law (2005)	This is a key legislation setting the principles for conserving soil and other natural terrestrial resources and preparing land utilization plans.
Pasture Law (1998)	The Pasture Law regulates the policies and approaches regarding the allocation of pastures for use by villages and municipalities. According to the law, utilization of the state-owned pastures is given to the local communities on an annual base through province level commissions led by the governor's office.
POLICIES	
10th Development Plan (2014 -2018)	This is the highest policy setting and planning document of Turkey. The combat against degradation in natural resources, erosion and water is set as priority.
Rural Development Plan (2009)	This is the main document setting the principles of removing poverty in the rural regions. It includes conserving agricultural areas and pastureland as well as soil and water resources.
National Strategy and Action Plan for Combatting Desertification (2015-2023)	The NAP is aiming to establish partnerships and increase synergies between relevant institutions in Turkey that are working towards combating land degradation. The NAP is Turkey's response to 10-Year Strategic Plan and Framework of UNCCD.
National Climate Change Strategy (2010-2020) and National Climate Change Action Plan (2011-2023)	Turkey describes its approach to combating climate change through this strategy and action plan documents. Ministry of Environment and Urbanization is the focal point of UNFCCC. Mitigation through land management is a key approach set in the document.
National Strategy and Action Plan for the Conservation of Biological Diversity (2007 onwards).	This strategy and action plan describes Turkey's approach to conserving biodiversity. This is the national plan for CBD. Mainstreaming biodiversity into the production landscapes and sectors is one of the approaches identified in action plan.
Turkmenistan	
LEGISLATION	
Constitution of Turkmenistan (26/09/2008)	According to this legal act, the state is responsible for environmental protection. The Article 11 provides that "the State is responsible for the preservation of the natural environment. This includes all the objects of nature: earth, minerals, water, forests, flora and fauna, air, climate and others. The state exercises control over the management of natural resources in order to protect and improve living conditions, as well as to protect and to restore the environment (Article 36). The harmonious system of environmental legislation, whose main task is the legal provision of the state environmental policy aimed at protecting the environment, natural resource management and environmental improvement, including land and water resources, is created in accordance with the Constitution.
Land Code (2004)	This is the main law which is directly related to the use and protection of land resources and which are touching upon specific issues, related to the land issues. In many other laws on economic sectors there are references to this law. There is the number of bylaw for this legislation. The code contains 21 chapters and 122 articles. There are many references to bylaws many of which are not yet adopted.
Water Code (2004)	Its main task is regulation of water relations with the aim of scientifically sound, rational use of water for the needs of the population, economic sectors and the environment,

	protection of the water from pollution, contamination and depletion, improvement of water objects, prevention and liquidation of negative impacts of the water as well as the protection of rights of legal and private entities, strengthening law enforcement in the field of water relations.
Forest Code	The Code regulates the relationships in regard to the sustainable forest management, i.e. its preservation, protection, use, reproduction as well as increasing its ecological and economic potential on the territory of Turkmenistan. The document defines various types of forests, describes in detail leasing arrangements, identifies permitted uses of forests
Law of farmer's associations	The law defines the economic, legal and social bases for the creation and functioning of farmers' associations. The law regulates the structure, the rights and responsibilities and relations between Fas and other entities in the country.
POLICIES	
National program of social economic development till 2030	<p>One of the priority directions highlighted is the development of agriculture. The national program emphasizes on improving the efficiency of agricultural production through the use of modern technologies for land processing, the use of drought-resistant and high-yielding varieties of main crops, while minimizing the water consumption. Priority issues in the area of protection of land resources of Turkmenistan are:</p> <ul style="list-style-type: none"> • combat of soil salinization, associated with the anthropogenic factors • combat land desertification and degradation of pasture areas • combat wind and water erosion. <p>The program takes into account measures aimed at SLM. On the basis of this program the investment program of development of Turkmenistan had been developed. This investment program specifies and provides details of the National Program to the level of specific projects.</p>
National strategy of Turkmenistan on Climate Change (2013)	<p>The complex of adaptation measures in agriculture includes: optimized placement, distribution of facilities of agricultural production; specialization of agricultural production; performing selection work to grow drought-resistant and salt-tolerant crops; introduction and strict adherence to pasture rotation, creating protection vegetative zones; development of grazing livestock; introduction of methods and practices for several crops harvests per year.</p> <p>For the adaptation of soil and land resources: conducting the detailed inventory of soil and land resources; prevention of pasture degradation – the major sinks of greenhouse gases; combat of soil salinization, desertification and degradation in pasture areas; monitoring of construction of engineering objects, destroying the fertile layer of soil; implementation of measures to improve the use of land, improvement of farming culture</p>
National forestry program for 2013-2020 (2012)	<p>The program's main objectives are:</p> <ul style="list-style-type: none"> • Introduce new innovational technologies into production in order to implement large-scale works on turning the country into blossoming gardens • Plant a forest zone on the coastal area of the Aral Sea of Turkmenistan in order to lower the damage caused by salt coming from the dry areas of the Aral Sea • Continue the work on planting trees at the "Awaza" National Tourism zone and turning it into a forest area; • Stabilize moving sands and plant forests in the deserts in order to enrich the flora of the Garagum desert and to prevent desertification process • Plant protected forest zones in agricultural field areas to safeguard the agricultural production in the face of climate change and improve the quality and quantity of harvests • Plant and grow enough quantities of flowering and decorative trees and plants in order to provide for the prosperity and beautification of the towns and villages; • Improve the registration system for forestry in order to sustainably manage the forestry of Turkmenistan as well as to develop this area <p>The programme identifies specific measures (in hectares of tree to be planted, by year and regions) of development of forestry sector in Turkmenistan. It also identifies laws and other legislation to be developed.</p>
Uzbekistan	
LEGISLATION	

Law on Water and water use №837-XII from 6/05/1993	The main objective is regulation of water relations. Tasks include provision of rational use of the water for population's needs and for economic branches, protection of water from pollution, contamination and depletion, prevention and elimination of the harmful impacts of water, improvement of condition of water bodies, as well as protection of rights and legal interests of enterprises, institutions, organizations, peasant and dekhkan farms and citizens in water relations.
Land code of Republic of Uzbekistan (1998)	The main objectives of land legislation include the regulation of land relations to ensure the benefit of present and future generations from science-based, rational use and protection of lands, reproduction and improvement of soil fertility, preservation and improvement of the natural environment, creating conditions for equal development of all forms of economic activities, the protection of legal entities and individuals in relation to land ownership, as well as the strengthening of the rule of law in this area.
Law On State Land Cadaster (№666-I from August 28, 1998)	The purpose of this law is to establish the legal framework for state land cadaster, to use the data from cadaster for the sake of economic development, to guarantee rights to land, sustainable use, restoration and protection of land.
Order of the Cabinet of Ministers of Republic of Uzbekistan On Program of Action of the Republic of Uzbekistan for protection of the environment for 2013-2017»	The present programme is designed to implement a set of measures to achieve the guaranteed level of quality of the environment, the rational use of natural resources, the improvement and introduction of effective economic methods of environmental management, the development of industries based on environmental priorities, the creation of conditions promoting the sustainable development of the country, promotion of environmental science and implementation of education for sustainable development, wide propaganda for environmental awareness, as well as increase of the environmental culture.
Law On Agricultural Cooperative (Shirkat) № 600-I (April 30, 1998)	The law defines legal bases for the creation, operation, reorganization and liquidation of agricultural cooperatives (Shirkats), regulates their rights and responsibilities, regulates relations with other legal entities and individuals.
POLICIES	
Uzbekistan on the way to 2030: Main directions of the transfer to the resource-effective model (2015)	<p>The main measures to improve agricultural infrastructure and to transfer to the intensive methods of land and water use for the period until 2030:</p> <ol style="list-style-type: none"> 1. Measure on amelioration: changing the cropping patterns, agronomic and agro-technical measures and the introduction of the modern agricultural technologies. 2. Efficient use of water resources: significant expansion of water-saving irrigation methods by 2030; improvement of the efficiency of irrigation systems up to 0.74 and support of the sustainable use and maintenance of the irrigation and drainage infrastructure; 3. Institutional measures: reform of institutional and optimization of farm size in agricultural sector; to promote greater independence of farmers by reducing government interference of farmers by reducing government interference and to create incentives for long-term investment and the introduction of partial compensation mechanism for water supply costs for agricultural producers
State program to improve of ameliorative conditions of irrigated land and rational use of water resources for the period of 2013-2017 (2013)	<p>The program defines the complex of measures to improve ameliorative condition of irrigated lands and to ensure the rational use of water resources for the period 2013 – 2017 years, including:</p> <ul style="list-style-type: none"> • Improvement of the legal base for ameliorative improvement of the state of irrigated lands, irrigation and rational use of water resources, • Introduction of drip irrigation systems and other water-saving technologies, • Improving systems of water monitoring, irrigated land and soil fertility, • Strengthening the material-technical base of operational water management and contracting organizations, specialized in the implementation of ameliorative and other water works as well as water users' associations <p>It establishes the procedure, according to which, starting from May 1, 2013, lease agreements for the provision of land for the production of fruit and vegetables, wine-growing and melon production, concluded between the local authorities and agricultural producers, as a rule, provides investment commitments of the latter to introduce the system of drip irrigation and other water-saving irrigation technologies.</p>

All countries give high priority to reforms in the agricultural and water resources management sectors in order to raise living standards and reduce poverty. However, priorities of the NAPs of the UNCCD as well as drought risk management have been insufficiently mainstreamed into sector policies and integrated into issues such as water security, food security, energy security and human health. There is also a general lack of normative and regulatory documents which support land and water codes. For instance, procedures of transfer of the land from one category into another is not defined, as well as the procedures of provision of pastures for use and leasing. Some of the provisions of the Land Codes do not respond to the principals of INRM/SLM. The Water Codes also needs changes including introduction of INRM principles, and definitions of “watershed management” into legislation. The institutional arrangement for monitoring of conditions of land resources required to provide timely information of the land quality and recovery measures are also weak.

Agencies and Stakeholders

A large number of stakeholders were consulted during the preparation of the Project, both at regional, national and local levels, including at the Project sites. Building on CACILM-1 results and achievements, national partners welcomed the continued participation and support from international and regional organisations and initiatives, such as CAREC, GIZ, ICARDA, ICBA, Bioversity International, SIC, UCA, WOCAT, ZOI, EASP, GWP, as well as ICSD and IFAS. The following stakeholders have been identified as key actors in the Project:

Table 3. Project Stakeholders

Stakeholders	Roles in Project Implementation
Regional Institutions and Mechanisms	
Interstate Commission for Sustainable Development (ICSD)	The ICSD provides the political support for the initiative at the multi-country level and will provide one of the platforms for promoting sustainable agricultural practices in the region. More specifically, it (through its Secretariat) will participate in and closely cooperate with the project's Regional Steering Committee. It will contribute to (i) organization and coordination of the regional sustainable development and environment protection strategy for Central Asia; (ii) management of regional environment and sustainable development programs , action plans and projects; (iii) coordination of activities related to fulfilment of CA countries' obligations related to environmental conventions and transboundary nature; (iv) support to harmonization of environmental legislation and methods; and (vi) support to regional information exchange and establishment of a regional database on environment and sustainable development.
Bioversity International	<p>Bioversity is a global research-for-development organization that delivers scientific evidence, management practices and policy options to use and safeguard agricultural biodiversity to attain global food and nutrition security, working with partners in low-income countries in different regions where agricultural biodiversity can contribute to improved nutrition, resilience, productivity and climate change adaptation. Bioversity is a member of the CGIAR Consortium and has a regional office in Central Asia.</p> <p>Bioversity will be involved in implementation of activities under component 3 related to agroforestry, distribution and multiplication of the local drought resistant species, and creation of nurseries for larger distribution of trees.</p>
Central Asia Regional Environmental Center (CAREC)	<p>Was founded by the governments of the five Central Asian countries, and the European Union and UNDP. It was created as a cooperation platform for sustainable development. The organization was vested with the authority to develop and implement the Central Asian Initiative on Sustainable Development. The EU and other international organizations supported the Centre's evolution as a regional platform for environmental cooperation.</p> <p>CAREC will support the project as it will most likely host the K-Link platform.</p>

International Center for Biosaline Agriculture (ICBA)	Is an international, non-profit agricultural research center headquartered in Dubai. Originally focused on the problems of salinity and using saline water for irrigated agriculture, ICBA's focus has shifted to research innovations in the assessment of natural resources, climate change adaptation, crop productivity and diversification, aquaculture and bio-energy and policy analysis. It will support the project through its Central Asia office in Tashkent through support to crop diversification and use of more salt tolerant crops as well as use of halophytes in crop mixtures in areas with extreme salinization.
International Center for Agricultural Research in Dry Areas (ICARDA)	Focuses on resource-poor farmers related and their access to knowledge and new innovations related to: water harvesting – supplemental irrigation and water-saving irrigation techniques; conservation agriculture methods to reduce production costs and improve sustainability; diversification of production systems to high-value crops – horticulture, herbal and medicinal plants; integrated crop/rangeland/livestock production systems including non-traditional sources of livestock feed; and empowerment of rural women – support and training for value-added products. It will support the project through its Central Asia office in Tashkent.
International Water Management Institute (IWMI)	IWMI is a non-profit, scientific research organization focusing on the sustainable use of water and land resources in developing countries. It is headquartered in Colombo, Sri Lanka, with regional offices across Asia and Africa. IWMI works in partnership with governments, civil society and the private sector to develop scalable agricultural water management solutions that have a real impact on poverty reduction, food security and ecosystem health. IWMI, through its office in Uzbekistan, will support introduction of water-saving technologies in selected production landscapes and work with improving water management at demonstration sites.
University of Central Asia (UCA)	Is Central Asia's first regional university was founded with support from the Aga Khan Development Network. UCA's mission is to promote the social and economic development of Central Asia, particularly its mountain societies, while at the same time helping the different peoples of the region to preserve and draw upon their rich cultural traditions and heritages as assets for the future. It will support the project through its research programs and campuses in the region and through linkages with WOCAT.
National Ministries/Agencies/Groups	
Lead National Ministries/ Institutions	The lead national institutions are the ministries/institutions of Agriculture and/or Water Resources (Kyrgyz Republic, Uzbekistan and Kazakhstan); the Ministries of the Environment and/or Natural Resources (Tajikistan, Turkmenistan) and the Ministry of Forestry and Water Affairs (Turkey).
Other National ministries /Institutions	These groups involved in the project are: basin water authorities, agricultural departments, irrigation and water management divisions, soils divisions or soil science societies, scientific research, monitoring, finance and economics and nature protection, etc. They have diverse roles in their respective ministerial and departmental bodies and in different countries.
National Academic and educational institutions	Research, universities, training centres and other institutions that train in agriculture, INRM approach, SLM policy, regulation and innovative practices and technologies, and conduct research, in particular participatory research and transfer and dissemination of technologies with local communities, women and other local stakeholders.
Government institution responsible for issues concerning women and/or gender equality	Kazakhstan: National Commission for Women, Family and Demographic Policy Kyrgyzstan: National Council on Gender and Development Tajikistan: Committee on Women and Family Affairs Turkmenistan: Women's Union of Turkmenistan Uzbekistan: Women's Committee of Uzbekistan
NGOs/CSOs/Local Level Agencies	
Non-Governmental Organizations (NGOs)	The project will work with a range of NGOs in CA including CAMP Alattoo, Sarob, Rural Training Alliance, Ecoforum, etc.

Civil Society Organizations (CSOs)	The number and areas of interest of the public sector is diverse. They include a host of community based organizations (CBOs) such as water users associations, pasture users associations, forestry community, watershed /catchment committees, community-based seed enterprises and small machinery entrepreneurs, women initiative groups, etc.
Local Land User / Indigenous Organizations	There is a diversity of land user organizations in the participating countries. These include agriculturalists, forests owners/users, private farmers, livestock farmers, fishing and hunting farms, local self-governing structures, households and resource-poor small farm-holder communities in the harsh agro-climatic environments of the targeted countries.
Provinces, District and Local Governments in each country	Sub-national administrative regions and rural citizens' assemblies/councils will support the implementation of the project in their respective local government areas. They are expected to provide an enabling framework for project implementation and monitoring to be successful at the local level and sustain local results after the end of the project.
Women's groups	Each country has a diversity of women's groups, including: national level NGOs as Business Women' Associations (Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan), with long and intensive experience of working with rural women; local civil society organizations that represent the interests of and work with rural women, women's rural collectives and cooperatives, female farmers' organizations and rural women's self-help groups, teachers unions in rural areas (which have a majority female membership), microcredit organizations that target female borrowers.
Private Sector	
Private agricultural farms and enterprises	Both partners and targets of the project, private agricultural enterprises will play a crucial role both scaling up technologies on the larger scale and strengthening the provision of necessary inputs for new technologies to be spread out in the region. They will host demonstration sites, thus securing the sustainability, and will provide investments into new crop varieties or production methods, as well as into new business resulting from introduction of non-traditional crops.

Gender and vulnerabilities of rural communities

Agriculture and the rural sector in general play an important role in the economy of the Central Asian countries for sustainable poverty reduction, food and nutrition security, and national economic growth. Despite its large land surface, Central Asia makes up only 2 percent of the world's arable land. Compared to the world share of the rural population at 49 percent, Central Asia has a greater proportion at 58 percent. Although agriculture accounts for a relatively small portion of the GDP in each Central Asian country, it remains a major employer for the rural population (for example, in Kyrgyzstan, around a third of the working population is employed in the agricultural sector; the figure is over 40 percent in Tajikistan).

Women in Central Asia play an essential role in agricultural production and make up a substantial part of the agricultural labour force. In some countries, agriculture is the only labour market available to rural women and they are represented in greater numbers than women working in other sectors. However, despite women's important contributions to agriculture, they face a number of disadvantages as compared to men. Rural women typically work as unpaid family workers, performing tasks both within their households and on family farms or household plots. Their contribution is invisible in official statistics and is often undervalued by women themselves as they perceive it as continuation of their 'natural' role. Women also work

as hired employees on smallholder farms, but are often paid only in-kind for their labour (for example, in by-products from agricultural production).

In part due to high levels of male labour migration from Central Asia, a large number of women who remain behind have become *de facto* household heads and farm managers, and yet they generally lack the legal status of farm owners (farms, livestock and agricultural equipment are typically registered to male family members). While women undertake much of the day-to-day farm work, they are generally not recognized as the key decision-makers and often have very limited access to information and knowledge concerning farming practices. The project will address these challenges and contribute to four of the five objectives of the FAO gender policy:

1. Women participate equally with men as decision-makers in rural institutions and in shaping laws, policies and programs.
2. Women and men have equal access to and control over decent employment and income, land and other productive resources
3. Women and men have equal access to goods and services for agricultural development and to markets
4. Women's work burden is reduced by 20% through improved technologies, services and infrastructure

The project is also consistent with the GEF Policy on Gender Mainstreaming (PL/SD/02. May 1, 2012). As noted in the attached work plan, a full gender analysis will be carried out during the project inception phase to reveal key gender disparities in access to critical resources, knowledge, opportunities and markets. Gender analysis will also inform specific recommendations and action for how to mainstream gender in planned interventions, to ensure that women and men benefit equally from the overall project, and gender-specific interventions, where necessary. Preliminary and rapid gender analysis has suggested the following actions and interventions that will be expanded during project design:

- Special actions will be taken to ensure the inclusion of women who face particular disadvantages (such as women in female-headed households) among project beneficiaries.
- Selection of agricultural production landscapes/land use systems include home gardens to ensure potential impacts of the project on household food security/nutrition and increase women's access to knowledge.
- Gender will be mainstreamed in the management arrangements of the project (for example, by introducing gender competency requirement into the TORs of the project personnel; inviting qualified female candidates; recruiting specialized staff with gender expertise; providing initial sensitization and awareness training at the project orientation stage, etc.) to advance women's equal voice and representation in relevant institutions engaged with project preparation and ensure gender sensitivity and responsiveness.
- Multi-country collaborative work will include partnerships with regional, national and local organizations that are engaged in work to support rural women, through policy-making or direct support (Component 1).
- Efforts will be made to bridge the gap between existing national gender equality policy and strategy and policy, legal and institutional frameworks on INRM through an approach to resilience that takes gender differences into consideration (Component 2).

- During the process of up-scaling climate-smart agricultural practices, attention will be given to ensuring women's equal participation in local planning processes, the selection of innovative approaches that are accessible to women as well as men, and measures to remove any impediments that female farmers may face in accessing advisory and extension services (Component 3).
- Gender sensitive indicators have been chosen for each project outcome/outputs and fully incorporated into the M&E system (Component 4).

C. RATIONALE

Baseline Initiatives and Investments

CACILM-1 baseline activities

Since land degradation and drought are cross-border threats requiring joint action, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan agreed in 2003 to address them at multi-country level. As a result of this agreement, a Sub-Regional Action Program for the CA countries to Combat Desertification (SRAP/CD, 2003) was developed and a 10-year multi-country program "Central Asian Countries Initiative on Land Management (CACILM I)" was launched and implemented during the period 2006-2010 within the UNCCD context. Recognizing the importance of integrated processes and approaches developed within CACILM-1, the governments of CA countries and Turkey agreed to make commitments to support the next phase of this program.

A significant contribution was made to enhance multi-country collaboration through knowledge sharing. Key knowledge products include the Atlas of Natural Resources of Central Asia, Economic Analysis of Sustainable Land Management Options in Central Asia (IFPRI and ICARDA) and over 25 best practices documented in the WOCAT Data Base (English and Russian). However, additional technical and financial assistance is required to strengthen capacity across the region to address the causes of and mitigate the economic losses of land degradation and to monitor and assess regional impacts of INRM and climate-smart agriculture to feed lessons back to policy and decision makers.

An enabling environment for sustainable land management was created, particularly in relation to the legal and economic frameworks. During the four years, 88 environmental legislative documents were elaborated in CA countries and key national CACILM stakeholders contributed to the review of the legislation process such as the Pasture Law (KAZ, KYR). Five National Integrated Financial Strategies were developed for mobilizing resources for SLM interventions and measures while three countries (KYR, TUR and UZB) succeeded to increase the state budget allocation to SLM. National baseline data and base maps (e.g. land / use cover maps, water management maps, soil maps and climate maps) were compiled by SLM Information System National Teams but need to be made accessible and used for planning climate-smart agricultural practices and salinity mitigation technologies. In addition, a national coordination council (NCC) and a national secretariat (NSEC) were established in each country and such coordination mechanisms would need to be revitalized.

Best SLM practices have been demonstrated in various parts of CA and Turkey, drawing on the global WOCAT database for SLM technologies and approaches, by GEF and non-GEF funded projects. The WOCAT database is used for the UNCCD reporting on Best Practices. Important efforts have been made for applying and adapting soil and water conservation approaches and technologies in various ecosystems, including 220 000 ha of irrigated lands (TAJ+UZB), 600 000 ha of desert and steppe pastures (UZB+KYR+KAZ), 200 ha of stabilization of moving sands (TUR+UZB) and 226 ha forest (TAJ+TUR). In addition, 300 governmental officials at different levels and 2 850 local land users were trained on various aspects of SLM. Community-based organizations, including WUAs, Public Association of Pasture Users, Local Committees, etc. were established. However, salinity management has been a relatively neglected issue considering the severity and implications of this pervasive problem in CA.

FAO baseline activities

FAO's intergovernmental process, its Technical Divisions and its Investment Centre based in FAO's Headquarters and the Sub-regional Office for Central Asia (SEC) provide a solid baseline and a unique opportunity to support the implementation of this Project to facilitate the scaling up of INRM, as it brings various key UNCCD and CACILM-2 partners together, and its guidelines, tools and methods (LADA-WOCAT, RIMA, CSA, SFM, sustainable pasture management, watershed management etc.) enable an harmonized and rigorous analysis of the effects and benefits of SLM and INRM best practices and their impacts on ecosystem services and production landscapes at wider scale. The work program for the partnership includes collecting and harmonizing available best practices from FAO or from Central Asia available in the WOCAT Global Database on Sustainable Land Management according to the UNCCD Strategy priorities and indicators. Under the Global Soil Partnership (GSP), the Eurasian Soil Partnership (EASP), established in November 2013, forms an important baseline for enhanced multi-country collaboration and information sharing to scale up INRM. In the context of this project, as defined during first plenary meeting in September 2014 in Uzbekistan, the EASP should facilitate links with regional, national and local soil management institutions, programs and activities with a view to sharing data and information on DLDD and strengthening responses on sustainable soil management (SSM), concentrating collaborative efforts on soil salinization and salinity management issues across sectors at wide scales. The Healthy Soils Facility mobilizes resources for implementing the GSP, including supporting the EASP in moving into concrete field action at regional, national and local levels. Additional baseline activities include FAO's Land and Water Division's (AGL) ongoing and future commitments on decision-support activities related to the management of land resources (e.g. Geonetwork, Global Land Cover Network, Agro-MAPS, LRIMS and GAEZ).

All five Central Asian countries and Turkey have prepared National Action Programs to Combat Desertification (NAPs). In 2009, NAPs were updated to include climate change, biodiversity and food security. Although most CA countries have developed plans, such as the NAPs, and significant progress have been made to integrate drought management issues in some sectoral strategies, 'full-fledged' policies and related drought preparedness plans are insufficient, if not absent, in most countries. Therefore, during the 38th Session of the FAO Commission on Agriculture for Europe and Central Asia in April 2014, government representatives recommended that FAO, together with UNCCD and WMO, supports member countries for developing and implementing action plans on drought risk management at national level. Since 2001, FAO has been developing regional synthesis, guidelines and related training modules to support the drought planning process in the Near East and Central Asia.

FAO has also developed several specific knowledge products and tools for mitigating salinity in salt-affected production landscapes, including the MASSCOTE (Mapping System and Services for Canal Operation Techniques) approach to plan the modernization of irrigation and drainage systems and Aquacrop 4.0, a crop water productivity model, for stimulating soil salinity stress and crop response and guiding farm level management strategies accordingly. In the context of climate change mitigation, a baseline is provided by some of FAO's knowledge products such as the Climate Smart Agriculture (CSA) sourcebook (<http://www.fao.org/3/a-i3325e.pdf>, FAO 2013), the EX-Ante Carbon Balance Tool (EX-ACT), and relevant FAO's projects such as the project on 'Mitigation of Climate Change in Agriculture (MICCA)' which has developed methods and tools for helping countries to monitor and assess greenhouse gas (GHG) emissions, improve knowledge on mitigation potential in agriculture and support countries on developing NAMAs (<http://www.fao.org/climatechange/micca/en/>) and the project 'Save and Grow' which contributes to more sustainable, productive and climate resilient agricultural practices in both Southern Africa and Central Asia. The Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP) developed by FAO will be an important tool for local-level resilience assessment.

In addition, through its field program, FAO has been promoting the diversification of crops (e.g. access of small-scale farmers to drought-tolerant seed varieties) and good agronomic techniques (e.g. conservation agriculture and integrated pest management), the sustainable management of pastures, the modernization of irrigation systems and water saving technologies for sustainably increasing agricultural productivity and incomes, enhancing resilience of smallholders to climate change and reducing and/or removing greenhouse gases emissions in selected land use systems (e.g. pastoral, agro-sylvo-pastoral, tree-based, irrigated, rainfed, home gardens).

CGIAR baseline activities

Partnerships at various levels with scientific and research bodies, including the Centers of the Consultative Group for international Agricultural Research (CGIAR) help to increase the scientific knowledge content and strengthen outreach to smallholders through development of customized tools by national research and training institutions. Therefore, the baseline will build on the CGIAR Research Program on Dryland Systems led by the International Center for Agriculture in Dry Areas (ICARDA), focusing on both improving and sustaining the productivity of marginal water / lands in irrigated farming and pastoral systems in the Aral Sea Basin (Uzbekistan, Turkmenistan and Kazakhstan). One of the core components of ICARDA is to work through strengthening national institutions in the region. ICARDA carries this out through its regional office for Central Asia and the Caucasus together with its extensive partnership network with national institutions in the region. In summary, ICARDA brings the following baseline to CACILM-2:

Comprehensive partnership. Since 1998, ICARDA leads a Consortium of national agricultural research systems (NARS) from 8 countries in the Central Asia and the Caucasus and 8 CG centers (i.e. IWMI, Bioversity, IFPRI, CIMMYT, CIP) and three advanced international institutions (i.e. ICBA, WorldVeg). Expanded its partnership with governmental (GO) and non-governmental (NGOs), seed associations, water users' associations (WUA), seed growers, farmers organizations, private farms. Universities, and development and donor agencies such as FAO, ADB, IDB, IFAD, GIZ, IDB, CCAFS, Russian Federation funding.

Knowledge base through implemented projects. Over the past 18 years ICARDA implemented more than 40 projects in the region. The outcomes include knowledge management (KM) on sustainable land management, water management, resource conservation technologies and conservation agriculture, livestock and rangeland improvement and management, improved, high quality, and stress (drought, salinity, heat, frost and disease and pest) tolerant crops of cereals and legumes and crop diversification.

Drought and salinity tolerant crop varieties. Improved germplasm (barley, chickpea and lentil) contributed by ICARDA and wheat provided jointly by ICARDA and CIMMYT has resulted in release of more than 55 varieties of different crops in the region. These varieties, occupying over 2,000,000 ha, include many varieties resistant to salinity and drought which can directly be out-scaled within the framework of CACILM-2 initiative.

Innovation Platforms and Data Management. Innovation Platform is a tool for stakeholder dialogue, analysis and engagement established in the framework of Dryland Systems CRP and other CGIAR Research Programs that are being implemented in Central Asia. Key purpose is to facilitate outscaling of impacts delivered by the joint research activities.

Knowledge Sharing Platform. ICARDA established a knowledge sharing platform (www.cacilm.org) aimed at collection, sharing, development, and promotion of Sustainable Land Management (SLM) technologies and practices that help to adapt to changing environmental conditions.

Similarity and Suitability Analysis. For selected SLM technologies and approaches, similarity maps are developed at the regional scale for Central Asia. Similarity maps identify locations/ecosystems where a particular SLM has the potential to be outscaled based on environmental criteria. Suitability analyses mean fine-tuning of similarity analyses with more specific data that result in classifying areas/land as highly, moderately, or marginally suitable for a particular SLM, especially when linked with institutions capacity building, training and methodology transfer for young professionals and students.

Understanding of Climate Change Data. Based on collaboration with national institutions, ICARDA has obtained experience in translating climate specific data to be used, including procedures for calibration of downscaled global models to the regional or country level and demonstration of modeling tools to evaluate the impact of climate change on formulating adaptation strategies.

The International Center for Bio-saline Agriculture (ICBA), which has been working towards promoting innovative bio-saline agriculture for improving agricultural and pastoral practices at the household and community level, provides important baseline data for the proposed project. ICBA's work in the CA countries spans more than a decade and ICBA in partnership with the NARS of CA countries has developed successful models related to:

- a. Enhancing crop diversification and identification of better adapted crops to climate change impact through the introduction of summer and winter crops that fill gaps in diversification and lack of forages. Adapted varieties of pearl millet, sorghum, triticale, canola, safflower, fodder beet and others were introduced and countries like Uzbekistan and Kazakhstan were able to release local varieties.

- b. The potential of high value crops like quinoa for enhancing farm productivity, nutritional status of rural families and income generation in marginal farming systems in CA is underway with great initial success and demands by local farmers and NARS.
- c. Technological packages and guidelines for the sustainable utilization of non-conventional water resources and salt-affected lands available under marginal environments were developed and scaled up in limited number of farms.
- d. Develop and disseminate packages of forage production and utilization technologies under marginal conditions to resources poor farmers.
- e. Integrated Management Packages for enhanced livestock production in marginal environments.
- f. Enhance farmers', technical and extension staff knowledge and skills in farm management under marginal conditions

The impact generated by such production models, the wide interest by farmers, NARS and the official agricultural sector, demands further support to scale up to a sizable number of farmers in the targeted countries and regions and to empower the rural families in adoption of such models to enhance their livelihood and improve the sustainable management of natural resources. ICBA will provide an estimated in-kind co-financing for the proposed project through its programme activities on crop, livestock, rangeland and agroforestry systems for rural poor in dry areas affected by salinity and overgrazing in Central Asia, complemented by substantial in-kind inputs (e.g. field demonstrations, training, farm-fair) at national and regional levels, in collaboration with partners.

In addition to the above baseline activities, the proposed project will benefit from a close collaboration with the on-going project "ELD in Central Asia: A regional assessment of the Economics of Land Degradation" and the GIZ-funded on-going knowledge management initiative in Central Asia in the field of INRM and SLM, K-Link (<http://klink.asia/>), which is giving positive results in the direction of providing stakeholders with customizable and networked information management systems. The proposed project will also be closely linked with other ongoing activities supported by WB, IDB, GIZ, ICARDA, EC, IFAD, WFP, JICA, USAID, Mountain Partnership, TIKa, WMO.

Country baseline activities

Turkey has been very active in combating desertification, land degradation and drought, and mitigating climate change, through both national and international projects. The Government of Turkey prepared the National Action Program for Combating Desertification (UNCCD NAP) and the 'National Climate Change Action Plan'. Turkey has already gained significant experience on drought risk management with the establishment of the "Flood and Drought Management Planning Department" for the coordination of drought preparedness and response operations by relevant institutions, drafting of the national drought action plan and initiation of drought management plans for each watershed in the country. It has also completed salinity maps and established in-field sensor based irrigation systems for effective salinity management and monitoring.

The Government of Central Asian countries have always been very active in combating land degradation and desertification. Uzbekistan played a leading role within CACILM-1 for the preparation of national programmatic frameworks on SLM and the consolidation of national land use maps at sub-regional level. Tajikistan has gained its own relevant SLM experience within the first phase of the Pilot Program for Climate Resilience (PPCR), supported by the World Bank, which has documented 46 technologies and 24 approaches in the WOCAT online database. In Tajikistan, the concept of joint forest management has also been piloted via several projects. Turkmenistan brings its own research experience on the cultivation of halophytes on saline soils and the use of marginal quality water for agriculture in the drylands. Kyrgyzstan has developed a considerable number of efficient technologies and tools for improvement of pasture management. It has also supported seed production and a national register of approved seeds has been established as part of a drought risk management program. In Kazakhstan, an incentive system for sustainable agricultural production has been introduced that includes lending for agricultural machinery leas, reimbursement of fertilizers, dressers and herbicide costs of up to 40 percent, and partial compensation for water supply services to agricultural products manufacturers.

The Government of Turkey will contribute 2 000 000 USD (1 100 000 USD in cash and 900 000 USD in kind) as indicative co-financing for enhancing multi-country collaboration and partnership with CA countries through sharing its relevant knowledge and experience and supporting capacity development on drought risk management, salinity management and economics of land degradation. The Governments of Tajikistan, Turkey, Uzbekistan, Kazakhstan and Turkmenistan will contribute a total amount of USD \$49,885,546² as indicative co-financing for the upscaling of INRM in both salt-affected and drought-prone agricultural production systems. In Uzbekistan, the co-financing will include an in-kind co-financing of **USD 23 780 000** from the funds of the ministry of agriculture and water resources and Fund for Ameliorative Improvement of Irrigated Land of the Republic of Uzbekistan.

Incremental Reasoning (added value of the GEF financing)

Component 1: Multi-country collaboration and partnerships to foster the implementation of cost-effective INRM in drought- and salt-affected production landscapes. GEF support to this component under LD-4, Program 5 and CCM-2, Program 4 will ensure that knowledge is enhanced of the costs of land degradation and the benefits of INRM, including drought preparedness and biosaline agriculture, as well as of incentive mechanisms for scaling up, such as value chains and Payment for Ecosystem Services (PES). LD-4 funding will also provide catalytic support to strengthening multi-country collaboration and information sharing to promote scaling up across countries. CCM-2 funding will improve the access to tools to improve the accuracy of GHG emissions estimates from agriculture. This information is expected to ensure that valuation of ecosystem services takes account of the value of carbon sequestration and is linked with development policy and finance planning in the agricultural and natural resources management sectors. Valuation of ecosystem services should also inform the mainstreaming of NAPs into national sector budgets and investment processing for INRM scaling up (1.1.4) to provide positive incentives for conservation of ecosystem services, with a focus on carbon stocks, and for enhancing resilience to climate

² The Governments of Tajikistan, Turkey, Uzbekistan, Kazakhstan and Turkmenistan will contribute respectively \$ 1 465 000, \$2 000 000, \$ 23 780 000, \$ 16 640 546 and \$ 6 000 000

change and salinization. Total GEF financing to this component is expected to be USD1.75 million with co-financing from the baseline amounting to USD 5.7 million.

Component 2: Integration of resilience into policy, legal and institutional frameworks for INRM. Policy, institutional and governance reforms are a prerequisite for cross-sector engagement and up-scaling of INRM in Central Asian countries and Turkey. Under its objective LD-4, GEF will support the strengthening of intersectoral coordination mechanisms at national level to foster broad participation and investments in SLM from governments, development partners and the private sector, which includes support to development of decision-support tools and participatory processes and to the establishment of national CACILM boards. GEF funding from LD-4 will also be used to ensure that a. supportive policies and incentives are in place for integrated management of land, water and associated resources in smallholder agriculture, and that the public and private sectors support farmers to scale up best practices by adopting self-reliant approaches for managing climate variability and change as well as salinity in affected agro-ecosystems, not only to increase productivity and maintain a minimum level of income despite extreme weather events and resource degradation but also to generate a wide range of ecosystem services. Total GEF financing to this component is expected to be USD 3.9 million with co-financing from the baseline amounting to USD 17 million.

Component 3: Upscaling of climate-smart agricultural practices in drought-prone and/or salt-affected production landscapes. This component builds on planned and existing baseline initiatives in sustainable management of drought prone and/or salt-affected agroecosystems described above. GEF will support scaling up of integrated approaches that generate multiple environmental benefits from agro-ecosystems and rangelands through improved land and soil health and improved vegetation cover. This approach is fully in line with the objective of LD-1 and its programs 1 and 2. Incremental GEF funding will support upscaling of proactive drought management approaches and innovative INRM technologies, such as conservation agriculture, agroforestry, improved rangeland management, and integrated approaches to soil fertility and agricultural water management. GEF funding will also be used to enhance agroecosystem resilience and management of risks through, for example, diversification of crops and livestock, introduction of salt tolerant crops and species, and integration of tree-based practices. Under LD-3, GEF support will be used to scale up policies, practices and incentives for improving production landscapes in CA and Turkey that generate environmental benefits. It will encourage a cross-sectoral drought planning process and a multi-stakeholder land use planning for scaling up innovative practices and approaches contributing to increase of efficiency and value of resource use, and ensure downstream hydrological functions and long-term agroecosystem services.

Under the GEF-6 objective CCM-2, GEF will support scaling up of INRM practices, focusing on management practices in agriculture that reduce methane emissions, promote carbon sequestration above and below ground to protect and enhance carbon pools, and reduce salinity in soils and water resources in production landscapes in CA and Turkey. Climate-smart agricultural practices that will receive support for up-scaling include: conservation agriculture, such as minimum tillage and crop rotation (e.g. integration of fodder crops in the rotation), improved water-use efficiency in irrigation schemes, water harvesting, agroforestry; improved livestock and grazing management, and improved crop diversity to enhance resilience to drought and salinity. Total GEF financing to this component is expected to be USD 3.8 million with co-financing from the baseline amounting to USD 31.6 million.

Component 4: Monitoring and Evaluation. This component will draw on GEF funding across LD-1, LD-3, LD-4 and CC-2 to put in place an adaptive and results-based management, monitoring and reporting system to maximize the impact of the project and its visibility in CA and Turkey. Total GEF financing to this component is expected to be USD 0.7 million with co-financing from the baseline amounting to USD 4.5 million.

Lessons learned from past and ongoing efforts, including evaluations

Key inputs derived from FAO's experience from similar projects incorporated into project design include the following:

- i. The project should include a broad and diverse number of stakeholders with representatives of line ministries, the private sector and civil society, and when relevant, regional and international institutions;
- ii. Flexibility should be integrated into project design to allow for changing conditions that may occur between the design phase and actual implementation;
- iii. In regional projects, varying levels of country capacity needs to be taken into consideration during project implementation, and capacity development activities should target country specific needs.
- iv. Future projects supporting integrated natural resources management should adopt a holistic ecosystem based approach and address the main barriers and associated economic and regulatory issues at the design stage;
- v. A phased approach to the testing and upscaling of new technologies is required (e.g. for drought risk management and salinity control) to inform the formulation of relevant policies and legislation;
- vi. Overly ambitious project design should be avoided and assumptions critically verified;
- vii. The use of business models for sustained action beyond the project cycle;
- viii. Given the significant differences between men and women involved in agricultural production and farming in terms of access to resources, knowledge and decision-making, a gender-sensitive approach that aims to mitigate historical inequalities is required in project design, implementation and M&E; and
- ix. Participatory design of an agreement on specific M&E plan elements and indicators is advisable.

Experiences from CACILM-1 confirm the importance of these lessons. CACILM-1 operated based on a heavy partnership framework that was too complex and involved too many agencies and management structures, such as multiple layers of steering committees, multi-country and national secretariats and national coordination councils. The CACILM-1 Partnership was not sufficiently country driven and closely linked to international funding priorities and availability. At the same time, local NGOs and civil society organizations were minimally

informed and involved in decision-making processes. The full dependency of the program on external support was a major cause of the lack of sustainability³. CACILM-2 intends to learn from these lessons to design a lighter and more function-oriented partnership hub with a strong focus on knowledge management that receives sustained support from the CA countries and Turkey.

D. FAO's COMPARATIVE ADVANTAGE

FAO Land and Water Division (AGL) assists member countries to create an enabling environment for sustainable development of land resources and food security in order to meet the ever increasing needs and demands of the world's rapidly growing population. It assesses the physical, socio-economic, institutional and legal potentials and constraints with respect to an optimal and sustainable use of land resources, and empowers people to make decisions about how to allocate those resources. In this context, AGL promotes a holistic, participatory and negotiated approach in land use planning and territorial development. This requires also the integration of legal property rights and gender equity in territorial issues. The participatory approach established by AGL also offers an important contribution to the resolution of conflicts over land in post-emergency situations, as well as to the implementation of the recently adopted Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests (FAO, 2012).

A major advantage of FAO is its multidisciplinary expertise and capacity. To ensure that this benefits the project, AGL will set up an informal working group/task force to facilitate involvement of all concerned Technical Divisions and the Sub-Regional Office for Central Asia (SEC) on integrated natural resources management and SLM. Its key task will be to facilitate the compilation, harmonization, targeting and making available existing FAO SLM knowledge, tools, and approaches, for capacity development, scaling up and mainstreaming so as to increase cost effectiveness and avoid duplication.

FAO has for many years developed a range of **integrated landscape and ecosystem approaches** to facilitate collaboration across sectors and scales so as to improve natural resources management, make best use of resources and inputs and optimize productivity. Technical and policy guidelines are available on integrated watershed or river basin management, mountain/ highland, wetland and coastal area management, conservation and sustainable use of agricultural biodiversity, agro-silvo-pastoral systems, and more recently climate smart agriculture, and the food, water, energy nexus. Under FAO's Strategic Objective 2, Major Areas of Work are being developed with a view to enhance resource use efficiencies, optimize the use of inputs and sustain the range of ecosystem functions (provisioning of food, fibre, energy, soil health, water quality, cultural values and conservation of biodiversity) and enhance climate change adaptation and mitigation.

FAO is also regularly providing technical advisory support to the UNCCD Committee on Science and Technology (CST) and to the UN Environment Management Group (EMG) on Land, through the preparation of SLM inputs into flagship reports. FAO is also active in strengthening UN inter-agency coordination for water issues, through UN-Water, and responds to calls by member states and civil society. FAO regularly advises and builds capacities of governments and other development partners, in the formulation and implementation of

³ K. Nuryngereyev, K. 2016: Preparation of Multi-Country Component 1, CCILM-2. PPG report prepared for FAO's Sub-Regional Office for Central Asia.

appropriate land use and sustainable land management policies, strategies, programs, tools, technologies and best practices.

E. LINKS TO NATIONAL DEVELOPMENT GOALS, STRATEGIES, PLANS, POLICY AND LEGISLATION, GEF/LDCF/SCCF AND FAO'S STRATEGIC OBJECTIVES

Alignment to National Development Goals and Policies

The Project is in full accordance with key priorities that were articulated in the UNCCD NAPs (1999-2002) and Sub-regional Action Programme for Combating Desertification (SRAP-CD, 2003), and the objectives of the Central Asia Countries Initiative for Land Management (CACILM-1) in five countries of Central Asia. In each participating country, National Programming Framework (NPF-2006, 2009) on Sustainable Land Management (SLM) forms its strategic basis. In addition, the project supports alignment of the Central Asian Countries NAPs to combat DLDD with the UNCCD 10-year Strategy (2008-2018). This Project will address the targets, defined in renewed NPF-2009 CACILM-1:

- (i) Capacity building – strengthening enabling environment, coordination and multisectoral interactions, adaptation and mitigation of climate change consequences;
- (ii) Capacity building – integration of SLM into land use planning, management and budgeting in conditions of climate change;
- (iii) Sustainable pasture and forest management and carbon sequestration;
- (iv) Integrated resource management; adaptation of agriculture to climate change (climate resilience management)
- (v) Environmental rehabilitation of vulnerable ecosystems in the disaster risk region of the former Aral Sea

The project also builds on and supports the key priorities identified by the National Communications to the UNFCCC, and the National Biodiversity Strategy and Action Plans (NBSAP) of the Central Asian countries, which emphasize reduction of GHG emissions from agriculture and other land uses, and the protection of all biological resources, including arable lands, pastures and forests, as well as the restoration of structures and functions of degraded and salt-sensitive ecosystems. The project will also directly contribute to a number of national and sub-regional policy documents, which emphasizes rural economic, water management and sustainable development, including national strategies and plans for poverty alleviation and the improvement of peoples' welfare.

The project is in full accordance with key national strategies of Turkey, such as the 10th Development Plan (2014-2018) that underlines the importance of conservation and management of natural resources, including soil and water. It also fully responds to priorities in the UNCCD NAP (2015-2023) that emphasizes the importance of intersectoral coordination and collaboration in implementation of INRM/SLM and in the pursuit of a land degradation neutral country. The National Climate Change Strategy (2020-2020) and climate change NAP prioritizes greenhouse gas emission control in relation to land use and agriculture.

Alignment with FAO Strategic Framework and Objectives

The Project is fully in line with FAO's Strategic Objectives (SOS) that provide the overall direction, goals and targets for the organization until 2018, specifically: SO1: Contribute to the eradication of hunger, food insecurity and malnutrition; SO2: Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner; SO3: Reduce rural poverty; SO5: Increase the resilience of livelihoods to threats and crises.

12. Strategic objective/Organizational Result

FAO has identified the key priorities on which it is best placed to intervene in order to help the member countries to meet the demands and challenges posed by major global trends in agricultural development (<http://www.fao.org/resources/videos/strategic-objectives/en/>). The strategic objectives were developed as a result of a comprehensive review of the Organization's comparative advantages, representing the main areas of work on which FAO will concentrate its efforts in striving to achieve its vision and global goals. The CACILM II project will contribute to specific outputs of the FAO strategic objectives.

SO1: Contribute to the eradication of hunger, food insecurity and malnutrition: The challenge is that there is sufficient capacity in the world to produce enough food to feed everyone adequately; nevertheless, and in spite of progress made over the last two decades, 793 million people still suffer from chronic hunger. FAO mandate is to support members in their efforts to ensure that people have regular access to enough high-quality food by supporting policies and political commitments that promote food security and good nutrition and by making sure that up-to-date information about hunger and malnutrition challenges and solutions is available and accessible. CACILM II will contribute to SO1 Output 1.1.4: "Improving capacity of governments and other stakeholders to enhance the adequacy, efficiency and effectiveness of public resource allocation and use for food security and nutrition". The project aims at enhancing knowledge of the costs of land degradation and benefits of INRM, drought preparedness and biosaline agriculture to national economies and the region as a whole, which will be used to inform policy and investment decisions at all levels, including NAP processes (CACILM outcome 1.1).

SO2: Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner: Some of the world's highest rates of population growth are predicted to occur in areas that are highly dependent on the agriculture sector (crops, Livestock, forestry and fisheries). Growth in the agriculture sector is one of the most effective means of reducing poverty and achieving food security. Innovative approaches are needed across the agricultural sector to increase productivity, conserve natural resources, and use inputs sustainably and efficiently. The project will support this through the contribution to SO2 Output 2.1.1: "Innovative practices for sustainable agricultural production (including traditional practices that improve sustainability) are identified, assessed and disseminated and their adoption by stakeholders is facilitated" and to SO2 Output 2.1.2: "Integrated and multi-sectoral approaches for ecosystem management, restoration climate change adaptation and mitigation are identified, assessed, disseminated and their adoption by stakeholders is facilitated". CACILM II will contribute to these outputs through the efforts to mainstream incentives for climate-smart agriculture at national and sub-national levels (CACILM outcome 2.2), and through the efforts to adapt and upscale a proactive approaches to manage drought risk and salt-affected production landscapes using innovative integrated natural resources management (INRM) technologies (CACILM outcome 3.1 and 3.2).

SO3: Reduce rural poverty: Most of the world's poor live in rural areas and suffer from hunger and food insecurity. FAO strives to help smallholders improve farm productivity whilst aiming to also increase off-farm employment opportunities and, through social protection, find better ways for rural populations to manage and cope with risks in their environments. The project will contribute to SO3 Output 3.1.2: "Support to the promotion and implementation of pro-poor approaches to policies and programmes which improve access to and sustainable management of natural resources" and SO3 Output 3.1.3: "Support to improve access of poor rural producers and households to appropriate technologies and knowledge, inputs and markets". To enhance access of poor rural producers and households to knowledge and innovative technologies, CACILM will strive to achieve an enhanced multi-country collaboration and information sharing to promote investment for INRM scaling up (CACILM outcome 1.2).

SO5: Increase the resilience of livelihoods to threats and crises: Each year, millions of people who depend on the production, marketing and consumption of crops, livestock, fish, forests and other natural resources are confronted by disasters and crises (such as earthquake or drought-flood cycles). These emergencies threaten the production of, and access to, food at local, national and, at times, regional and global levels. FAO's mission is to help countries govern, prevent and mitigate risks and crises and support them in preparing and responding to disasters. The project will specifically contribute to SO5 Output 5.3.1: "Improving capacities of countries, communities and key stakeholders to implement prevention and mitigation good practices to reduce the impacts of threats and crises" and SO5 Output 5.3.2: "Improving capacities of countries and key stakeholders to reduce vulnerability and strengthen resilience of communities at risk of threats and crises". CACILM will strive to integrate resilience across natural resources management (NRM) sectors and production landscapes (CACILM outcome 2.1).

Moreover, FAO supports the Sustainable Development Goals (SDG) process by strengthening the countries' capacities in choosing and developing indicators tailored to national circumstances (FAO 2016: FAO's role in monitoring the SDGs). FAO is increasing the level of investment to support countries in the monitoring over 20 SDG indicators, the following targets are particularly relevant to this project:

- Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

b. Regional Result/Priority Area, Central Asia:

These overall Soss are reinforced by strong alignment with the Regional Strategic Priority Areas for the Central Asia region, in particular with Regional Priority 3: Natural resource management, including climate change mitigation and adaptation. This regional priority was

ratified by the FAO Regional Conference for Europe and Central Asia held in May 2016 and considered a key area of action in the medium and long term. Water management and land degradation were also ratified as key areas of work for FAO in the region. In the region, water management requires attention in relation to sustainable land management practices such as conservation agriculture as well as climate conditions, since parts of the region face arid climatic conditions, and thus have low rainfall and are prone to droughts. Maintaining biodiversity and reducing over-exploitation of soils should be addressed as major factors contributing to environmental sustainability. Also important in the region is the integration of the forestry sector with agriculture to decrease land degradation and improve pasture and range management. Climate-smart agriculture is a key element to address these challenges by increasing sustainable productivity and income growth, supporting adaptation across the region's agricultural sector to cope with expected changing climatic conditions and build improved resilience of production systems and local communities to adverse and extreme weather conditions, as well as to develop the potential for reducing GHG emissions and increasing carbon sequestration from agriculture compared to past trends.

CACILM II addresses all the areas mentioned above as it focuses specifically on improving natural resources management in landscapes that make a large proportion of the total area in the participating countries and that sustain a large population.

c. Country Programming Framework Outcome

As part of its programme planning and development, FAO regularly identifies jointly with its country members the priority areas in which FAO focuses its efforts in supporting the government. The document containing this information is the Country Programming Framework (CPF). CACILM II project supports the areas prioritised by the governments in the following manner:

Kazakhstan CPF:

Priority area 3. Sustainable natural resources management (water, land and forestry management)

Outcome 1. Capacity of the national institutions, natural resources managers and agricultural producers supported for sustainable natural resources management

Output 1.3. Land degradation assessment supported and Sustainable Land Management (SLM) enhanced for increasing resilience of production systems to climate change.

Kyrgyzstan CPF:

Priority area 3. Improved resilience in responding to climate change, crises and disasters

Outcome 3. Climate change mitigation and adaptation in the agriculture and forestry sectors, and resilience in disaster and crises situations enhanced

Output 3.3: Climate-smart-agriculture, including pasture, and Sustainable Land and Water Management in dry lands promoted

Tajikistan CPF:

Priority area B. Sustainable management of natural resources and improved resilience to climate change.

Output 2.1. strengthening the policy-enabling environment along with strategies and investment programmes to combat land degradation, with emphasis on a landscape approach, and taking gender-equality aspects into consideration.

Output 2.2. promoting innovative and multi-sectoral approaches and gender-sensitive practices and technologies in selected production landscapes for sustainable and integrated natural resources management and improved resilience to climate change.

Turkmenistan CPF:

Turkmenistan CPF:

Priority Area B: Sustainable natural resource management, climate change mitigation and adaptation.

Output 1.2. Support for improving agricultural water management provided, particularly for increasing water use efficiency (i.e. promotion of irrigation water saving technologies) .

Priority Area C: Increase the resilience of rural livelihoods to agriculture and food security threats and shocks

Output 1.1. Formulation and implementation of policies, strategies and action plans to cope with extreme weather events such as drought with appropriate measures such as promotion of drought-tolerant crops and varieties supported.

Uzbekistan CPF:

Priority area E. Sustainable natural resources management

Outcome 2. Promotion of sustainable land management supported

Output 2.1. Best practices on sustainable land management mainstreamed and up-scaled – best practices for DLDD and SLM (desertification, land degradation, drought and sustainable land management) assessed mainstreamed into national sector policies and programs and implemented in local sites for adoption by key stakeholders

Output 2.2. Capacity development for soil salinity monitoring and management supported.

Alignment with GEF Focal Areas

In working towards its overall objectives, the project will contribute to achieving the GEF goals and targets for the Land Degradation as well as Climate Change focal areas:

Under the objective of LD-1: *Maintain and improve flow of agro-ecosystem services to sustain food production and livelihoods* and its programs on 1: *Agro-ecological Intensification*, and 2: *SLM for Climate-Smart Agriculture*. Incremental GEF funding will support upscaling of proactive drought management approaches and innovative INRM technologies, such as conservation agriculture, agroforestry, improved rangeland management, and integrated approaches to soil fertility and agricultural water management.

Under LD-3: *Reduce pressures on natural resources by managing competing land uses in broader landscapes* and its Program 4: *Scaling up sustainable land management through the landscape approach*, GEF support will be used to scale up policies, practices and incentives for improving production landscapes in CA and Turkey that generate environmental benefits. It will encourage a cross-sectoral drought planning process and a multi-stakeholder land use planning for scaling up innovative practices and approaches contributing to increase efficiency and value of resource use, ensure downstream hydrological functions and maintain long-term agroecosystem services.

Under LD-4: *Maximize transformational impact through mainstreaming of SLM for agro-ecosystem services*, Program 5: *Mainstreaming SLM in Development*, GEF will support the strengthening of intersectoral coordination mechanisms at national level to foster broad participation and investments in SLM from governments, development partners and the private sector, which includes support to development of decision-support tools and participatory processes.

Under the GEF-6 objective CCM-2: *Demonstrate systemic impacts of mitigation options*, Program 4: *Promote conservation and enhancement of carbon stocks in forest, and other land*

use, and support climate smart agriculture, GEF will support scaling up of INRM practices, focusing on management practices in agriculture that reduce methane emissions, including livestock management, and promote carbon sequestration above and below ground to protect and enhance carbon pools in production landscapes in CA countries and Turkey.

The project will also foster the establishment of best practices in the management of dryland ecosystems and natural resources that will generate both global environmental benefits as well as socio-economic benefits for local communities.

SECTION 2. PROJECT FRAMEWORK AND EXPECTED RESULT

A. PROJECT STRATEGY (OBJECTIVE, OUTCOMES, OUTPUTS)

The overall objective of the Project is to scale up integrated natural resources management (INRM)⁴ in drought prone and salt affected agricultural production landscapes in the Central Asian countries and Turkey. This will be done, through mechanisms for overcoming the above-mentioned barriers to scale up sustainable management practices that minimize pressures and negative impacts on natural resources that reduce risks and vulnerability and, enhance capacity to cope with or adapt to drought and salinity. In particular, adoption of integrated landscape management approaches and INRM practices should help stabilize and even reverse trends of soil salinization, reduce erosion, improve water capture and retention, increase the sequestration of carbon, and reduce loss of agrobiodiversity, thereby reducing the desertification trend in terms of extent and severity. The project's theory of change can be visualized as follows:

⁴ **Integrated Natural Resources Management** can be defined as “the responsible and broad-based management of the land, water, forest and biological resources base (including genes) needed to sustain agricultural productivity and avert degradation of potential productivity” (Technical Advisory Committee / Science Council Secretariat, FAO, September 2003). <http://www.fao.org/wairdocs/tac/y5313e/y5313e02.htm#fn3>

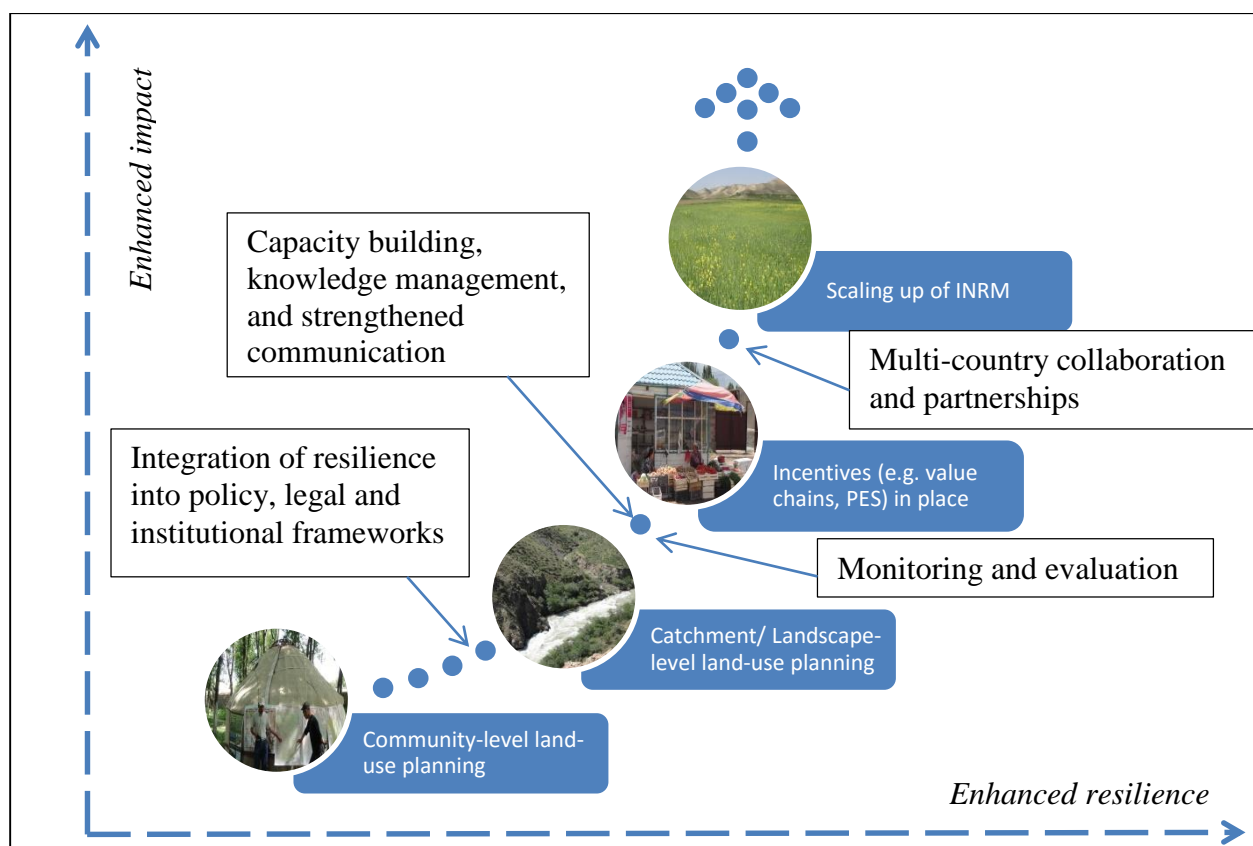


Figure 2. The project's theory of change.

The project objective will be achieved during a five-year period through four project components. It is structured as a program with one multi-country component addressing shared priorities at multi-country level (Component 1), two components at national level ensuring national implementation in selected production landscapes/land use systems (Component 2 and Component 3), and one M&E component (Component 4). Country STAR allocation specifically distributed to Components 2 and 3 will directly support national activities in the respective country.

Component 1: Multi-country collaboration and partnership to foster the effective delivery of INRM. This multi-country component will bring together all target groups of the Central Asia region and Turkey under the auspices of ISDC and IFAS and provide a platform for:

INRM/SLM Strategic dialogue – will involve establishment of communities of practice with political and decision making representatives of Central Asian countries and representatives of main donor organizations, such as GIZ. It will garner strategic support for INRM/SLM at the regional and national levels and ensure integrated implementation by countries of international obligations under various international and regional conventions (UNCCD, UNBD, UNFCCC, Convention on SD in CA) and initiatives on issues related to SLM and climate change.

Enhanced synergies of INRM/SLM interventions in the region – will broaden the CACILM partnership and involve strengthening of synergies of INRM/SLM support from CA countries, donors, NGOs, civil society and the private sector across the region. It will support links and collaboration with the Knowledge Management platform of the DS-SLM project, the Eurasia Soil Partnership, and other international partners, forums and processes, with a view to developing a multi-country process and program, with the participation of ICSD, the Central

Asia Regional Environmental Centre (e.g. CAREC), international research centers, such as ICBA and ICARDA, and development agencies, such as GIZ, aimed at the restoration of degraded lands in Central Asia and Turkey.

Exchange of knowledge, information and data – is essential not only for monitoring of trends, but it will provide inputs for further interventions on scaling up and out of best practices, will assist in distribution of results of the interventions in understandable language and will provide the assurance that approaches are technically feasible and accepted by the counties.

More specifically, the component will generate policy relevant knowledge on the costs of land degradation and the benefits of INRM/SLM through collaboration with the Economics of Land Degradation (ELD). The ELD methodologies will be harmonized across countries for valuation of ecosystem services at various scales. Total economic valuation will consider the externalities associated with land degradation (such as loss of productive land and productivity, loss of biodiversity and reduced CO₂e mitigated and increased vulnerability to drought), exacerbating the direct negative effects of land degradation. Awareness among national planners and decision-makers in CA countries and Turkey and identification of incentives to scale up INRM, such as environmental/watershed funds, insurance schemes to reduce risk of change, Payment for Ecosystem Services (PES) schemes, are essential for reversing the trend of land degradation and achieving global, national and local benefits.

The component will establish an efficient multi-country INRM/SLM knowledge management platform that will be owned by the countries and support knowledge sharing at the regional level through communities of practice. It will provide practitioners across the region with guidelines, advisory services and knowledge products for harmonized planning and scaling up of INRM/SLM for a wider range of land uses. International expertise on salinity control and drought risk management, which has remained insufficiently utilized by CA countries until now will be mobilized. Strong partnerships will be built with other international processes, such as the UNCCD and WOCAT and CA regional programs (e.g. Aral Sea Basin program-3 and Central Asian Initiative on Sustainable Development) on combating desertification and climate change, as well as on food and water security, biodiversity conservation and sustainable rural livelihoods. These initiatives will provide the basis for country-driven shifts in national paradigms from unsustainable to sustainable land use by Government's agriculture, water resources and environmental sectors. The component includes two outcomes with associated outputs:

Outcome 1.1. Enhanced knowledge of the costs of land degradation and benefits of INRM, drought preparedness and biosaline agriculture to national economies and the region as a whole informs policy and investment decisions at all levels, including NAP processes (linked to 2.1). The Economics of Land Degradation (ELD) methodology will be used that links the benefits of SLM to decision making through a multi-level approach for quantitative assessment of the economic benefits derived from adopting sustainable land management practices. In Central Asia, ELD is led by ICARDA that will play a lead role for this sub-component to build the capacities of CA countries in economic assessment of SLM/INRM. Enhanced knowledge of the costs of land degradation will increase the awareness in the region of the total value of land and its related ecosystem services.

The assessment of the economic losses caused by drought and salinity problems will be tested for the various agricultural production landscapes/land use systems in the demonstration areas and valuation of economic benefits of INRM, drought risk management and biosaline

agriculture will be carried out. Results of the assessment will be communicated to high-level decision makers, land and natural resources users and other stakeholders and used to support an investment framework to be financed by international financial institutions and other funding sources. All countries will be supported to target investment for coping with water scarcity as a means of building resilience to drought through the selection of a wide range of policy and management options (e.g. supply enhancement, demand management, waste reduction in the food chain and shifts in diets) adapted to local conditions.

1.1.1 Harmonized approach across countries for valuation of ecosystem services at various scales. Capacity development of decision-makers and land users in CA will use innovative approaches to adapt and build their knowledge into national frameworks and action on the ground that support livelihoods while enhancing natural capital, ecosystem services, and resilience and to climate change. Turkey will contribute to develop the methodology. The main steps involve:

Step 1: Inception, the identification of the scope, location, spatial scale, and strategic focus of the ecosystem services valuation, based on stakeholder consultations and the preparation of background materials on the socio-economic and environmental context of the assessment.

Step 2: The assessment of the quantity, spatial distribution and ecological characteristics of land cover types, categorized into agro-ecological zones (see 1.2.2).

Step 3: The analysis of ecosystem services based on the four ecosystem service categories provided by the Millennium Ecosystem Assessment, for each land cover category.

Step 4: The role of the assessed ecosystem services in the livelihoods of communities living in a previously delineated land cover area, and for the overall economic development in the study zone.

Step 5: The identification of land degradation patterns and pressures on the sustainable management of land resources, including their spatial distribution and the assessment of both biophysical and socio-economic drivers of degradation (see 1.2.2).

Step 6: The assessment of sustainable land management options that have the potential to reduce or remove degradation pressures, including the analysis of their economic viability and the identification of the locations for which they are suitable.

Key project activities will include the following:

- Development of a unified methodology – Sharing outputs from ELD-Central Asia
- Results of analysis summarized in the country studies as well as in the regional report under project “ELD in Central Asia” implemented by ICARDA in cooperation with ELD Secretariat and GIZ FLERMONECA project will be used as background documents for developing a unified methodology to value ecosystem services. The existing methodologies vary country by country, and application of the nationally accepted/used approaches in assessment of ecosystem services lead to results that vary significantly depending on the methods used. In this regard, it is crucial that there is a newly developed and internationally accepted methodology agreed among all countries of the region. Such approach in valuation would lead to more accurate, homogeneous and, most importantly, comparable indicators on ecosystems and relevant services.

- Development of the regional database facilitated by K-Link and linked to the following platforms:
- Functioning Knowledge Platform (www.cacilm.org) aimed at collection, sharing, development, and promotion of Sustainable Land Management (SLM) technologies and practices that help to adapt to changing environmental conditions;
- Innovation Platform and Data Managements through (www.drylandsystems.cgiar.org) established in the framework of Dryland Systems CRP and other CGIAR Research Programs that are being implemented in Central Asia.
- Capacity building and training at national and regional levels – Develop new and share available training packages

1.1.2 Identification of incentives to scale up INRM (e.g. PES schemes, insurance, etc.). Based on an improved understanding of the value of ecosystem services and the costs of continued loss of natural capital, incentives for scaling up INRM to address drought risk and salinity problems in Central Asia will be identified in close collaboration with ELD and its Central Asian host, the Interstate Commission on Sustainable Development (ICSD). Examples of policy instruments to enable the adoption of sustainable land management and INRM that will be considered are summarized in Table 4 below based on the ‘The Value of Land’ (ELD Initiative, 2015).

Table 4. Instruments to enable the adoption of sustainable land management and INRM

Bans: Bans restrict the use of products proven to be harmful for the environment or public health, such as certain pesticides.	Payments for ecosystem services: Land owners are rewarded for the provision of certain ecosystem services by the beneficiaries of these services. To this end, ecosystem service providers close a deal either with a private company, the government, or a nongovernment organization. Globally, the REDD scheme has gained wide attention in its effort to compensate developing countries for the preservation of forests and the carbon stored therein, as well as for the enhancement of forest carbon stocks (“REDD+”).
Conservation banking or offsets: Conservation offsets aim at compensating for environmental damage caused by land development. Developers can source conservation credits through a market mechanism to offset the loss of ecosystem services at one site, with conservation gains elsewhere.	Permanent conservation easements: Permanent conservation easements are voluntary, legally binding agreements by which certain land usages are prohibited. They serve to protect the ecological or aesthetic values of land. National parks are one example.
Contract farmland set-asides: Land owners abandon the right to use parts or all of their farmland to foster the delivery of environmental benefits, and receive a payment in return.	Taxes and environmental fees: Environmental taxes and fees aim to raise the cost of production or consumption of environmentally damaging goods so as to limit their demand. One example is the eco-tax on plastic-based products in Europe through which the recycling of plastic is being funded.
Eco-labels and certification: Eco-labels are a form of sustainability measurement for food and consumer products with the aim to facilitate the purchase of eco-sensitive commodities. Eco-labels result from a standardized certification process controlled by bodies such as the International Organization for Standardization (ISO),	Trading of emission reductions: A pollution goal or allowance is set and pollution permits are distributed which can thereafter be traded. Several emissions trading schemes have been established globally (e.g., EU Emissions Trading System), yet with limited success so far.

FairTrade® Foundation, or Forest Stewardship Council (FSC).	
Insurance schemes: In the US, Canada, and India, the governments provide insurance against crop losses due to weather extremes or declines in global commodity prices. If crop yields at the end of a cropping season are lower than a pre-established reference amount, farmers receive compensation.	Transferable development rights: These allow for the development of a certain area of land on the condition that land of a comparable type and quality is restored as a compensation measure.
Microfinance: Microfinance is a specific form of credits that support the establishment of local, small-scale businesses. Micro-credits are provided at a lower interest rate than those offered by traditional banks and have helped to reduce poverty at the individual and village levels in many developing countries such as Bangladesh. In providing for easily accessible start-up capital, micro-credits are a particularly well suited tool to facilitate livelihood diversification. Global and regional practice has also shown that microfinance is usually more accessible to women, including rural women, than other financial products.	Voluntary carbon offsets: On a voluntary basis, individuals, governments or companies can purchase carbon offsets to compensate for greenhouse gas emissions caused by electricity use or transportation (e.g., personal air travel).
Payments for conservation investments: Certain investments into sustainable land management are financially rewarded by the government. Agri-environmental measures by the EU are one example.	

ICSD through its regular processes will support the SLM/INRM strategic dialogue on incentives for scaling up INRM across CA. The project will also develop country-specific recommendations for introduction of incentives for the transfer of agricultural production to the more sustainable climate-smart agricultural (CSA) practices both at the national and the local (farmer's) level. At the national level, the recommendations will specifically be aimed at the development of tools for the specific project areas, including (but not limited to):

KAZ: introducing the CSA principles to financial schemes of the agricultural support

KYG: development of proposal for green banking finance based on transfer to CSA

TAJ: development of proposals for subsidizing the introduction of CSA activities and practices among farmers

TKM: development of justifications and methods for the switch to less input depended agriculture in the specific project areas

UZB: the same as in TKM

Turkey's experiences will be used in the development of incentives for scaling up of INRM practices through regional training, exchange visits and capacity building.

Outcome 1.2. Enhanced interstate dialogue, multi-country collaboration and information sharing to promote investment for INRM scaling up, focusing on drought prone and/or salinity affected production landscapes. The approach proposed is a multi-center knowledge management orchestrator that builds on four features:

- Cooperation and competition between the participants. The fundamental issue is the sharing of contents, however the contents remain under the physical control of different institutions

and international agencies can opt for alternative options to share their data and knowledge. This will favor the institutions with more flexibility in sharing contents;

- Resilience. Distributed systems are more resilient. If one institution has problems and can no longer guarantee the sustainability of a project, the system will not collapse and others institutions will be able to absorb the data of the problematic one. On the contrary, in a centralized system, a single problem could block the entire project.
- Flexibility. A distributed system allows the creation of different levels of complexity, solving different problems. The system could include simple digital libraries as well as semantic content management and very complex expert systems.
- Interoperability. A distributed system doesn't need the use of predefined templates or structures.

This approach will promote the building of networked institutional memories and INRM/SLM communities of practice (CoP) by providing stakeholder organizations with Information and Communication Technology (ICT) tools for enhancing cooperation and developing organizational capacities. It will be implemented in close cooperation with GIZ and its ongoing support to knowledge management in CA, CAREC, WOCAT and ZOI.

1.2.1 Multi-country platform for knowledge consolidation and harmonization on INRM/SLM. The KM platform will build on existing databases and knowledge sources. Links will be established to the new WOCAT database which will be launched in the beginning of 2017, the Eurasia Soil Partnership (EASP), the global Economics of Land Degradation Initiative (ELD), CACILM-1 KM website (hosted by ICARDA), and CAREC supported initiatives, to support national advisory and climate information services, including early warning systems and drought preparedness.

Practitioners in the field of INRM and SLM in Central Asia are faced with the challenge of combining information from a vast variety of small and scattered platforms that are mostly not interlinked, neither locally nor within the region. Platforms relevant for the field are hosted mainly by international NGOs; by bilateral and multilateral organizations; as well as by research centers and universities. The widest coverage is provided by the World Overview of Conservation Approaches and Technologies (WOCAT) and the Consultative Group on International Agricultural Research (CGIAR). Another complex approach is offered by the European Environmental Agency (EEA) and FAO. Bilateral donor agencies, like USAID, often run their own portal, collecting their experience on an international level (www.rmportal.net).

Many social and environmental issues require the availability of cross-border information. However, knowledge management on a regional level in Central Asia remains limited. Few web resources and databases in Central Asia provide contents that cover more than one country. Trans-national collaboration of universities in Central Asia is limited. An approach that aims at closing the gap of a knowledge management platform for Central Asia is the Mountain Societies Research Institute's (MSRI) Knowledge Hub (<http://msri-hub.ucentralasia.org/>). NGOs and donor agencies have established four regional databases that deal with specific cross-border issues: the Portal for Knowledge on Water and Environmental Issues (www.cawater-info.net), the UNDP-initiated Digital Network on Environmental and Sustainable Development Practice in Central Asia and Russia (www.caresd.net) and the Central Asian Countries Initiative for Land Management repository (<http://www.cacilm.org/en/main>). Databases focused on risk management like the Central Asian Climate Risk Management Knowledge Platform (ion.gateway.bg) and the Central Asian DRR Knowledge Gateway (www.drrgateway.net/content/central-asia-drr-knowledge-

network) are no longer on line. Most databases found provide content that is focused on one country. In the analysis in Annex 4, 28 platforms were included. 13 are from the academic sector, 15 run by NGOs or initiated by international organizations. Building sustainable INRM knowledge management platform in Central Asia will include the following main activities:

Step 1: Organizational and Informational needs assessment

This requires deep analysis of users' needs, negotiation processes with them to participatory discuss the eligible computational solutions to be potentially adopted, to organize training and collect feedback, etc. Technology stewards are exactly professionals with enough experience of the workings of a community to understand its technology needs, and enough experience with technology to take leadership in addressing those needs in the communities. According to them, the typical duty of a technology steward is thus the selection and configuration of technology, as well as supporting its use in the practice of the community. Ideally a technology steward should be a national consultant backed up by international knowledge management experts. Main aim here is the capacity development at the target institutions level in the direction of moulding knowledge analysis and technology transfer skills. The main activities that should be carried out in each (or in a subset) of the CACILM-2 stakeholders organization by technology stewards with the support of international experts as backstopping services providers are:

Requirements analysis

1. Analysis of the technical infrastructure from internet connection availability to power outages frequency;
2. Analysis of the technical capacity of the institutions, from basic skills in digital technology use to software maintenance;
3. Analysis of information bases and databases, schemas, dictionaries, classification criteria available in the stakeholder organizations and performing interviews to reach a complete understanding of information and related architectural and management rules;
4. Organizational requirements (OR) analysis, which surveys the opinion of information users and administrators to identify quality issues and set new quality targets;
5. Identification of critical areas, which selects the most relevant information bases and flows to be assessed quantitatively;
6. Process modeling, which provides a model of the processes producing or updating information.

Depending on the specific stakeholder organizations, each of the above activities can be performed both as a global step on the whole set of organizational units of the inter-organizational information system, and as a specific step performed autonomously by a local organizational unit in an intra-organizational information system.

Improvement and sustainability analysis

The steps of the improvement analysis phase are:

1. Evaluation of costs, which estimates the direct and indirect costs of information management adoption and definition of a business plan for its maintenance.
2. Planning the active involvement of both academics and private sector for triggering knowledge transfer processes;
3. Assignment of process responsibilities, which identifies the process owners and defines their responsibilities on information production and management activities;
4. Assignment of responsibilities, which identifies the information owners and defines their data management responsibilities;

5. Identification of the causes of errors, which identifies the causes of information management problems;
6. Selection of strategies and techniques, which identifies all the information improvement strategies and corresponding techniques, that comply with contextual knowledge, quality objectives, and budget constraints;
7. Design of information improvement solutions, which selects the most effective and efficient strategy and related set of techniques and tools to improve information management;
8. Process control, which defines checkpoints in the information production processes, to monitor quality during process execution;
9. Improvement management, which defines new organizational rules for information quality.
10. Improvement monitoring, which establishes periodic monitoring activities that provide feedback on the results of the improvement process and enables its dynamic tuning.

Step 2: Information management system

Most of the computer-based information (Word, Excel, PowerPoint documents, e.g.) in stakeholder organizations are typically stored either on personal computers or on shared drives and are often shared between employees by email. An Information Management System for stakeholder institutions in INRM and SLM domain should:

1. Prevent users from using their personal computer as the only ‘repository’ of working documents (such as table to be corrected);
2. Provide advanced search functionalities to access documents;
3. Allow the implementation of policy for shared folder access and working groups;
4. Provide features to manage the versioning of documents and MS Excel tables;
5. Simplify the folders structure;
6. Simplify the dissemination of information;
7. Provide legal support for knowledge sharing.

Step 3: Information sharing and Orchestration of existing platforms

Central Asian NGOs, implementing agencies, and research institutions in any field are interested in increasing their visibility on local, regional, and global levels. Hence, by publishing information on the web, they achieve two goals: 1) knowledge discovery on the topic, and 2) increased visibility for donors, institutions, and individual researches with similar interests. In the figure below a general schema to clarify the basic functioning of an orchestrator of existing platforms is represented.

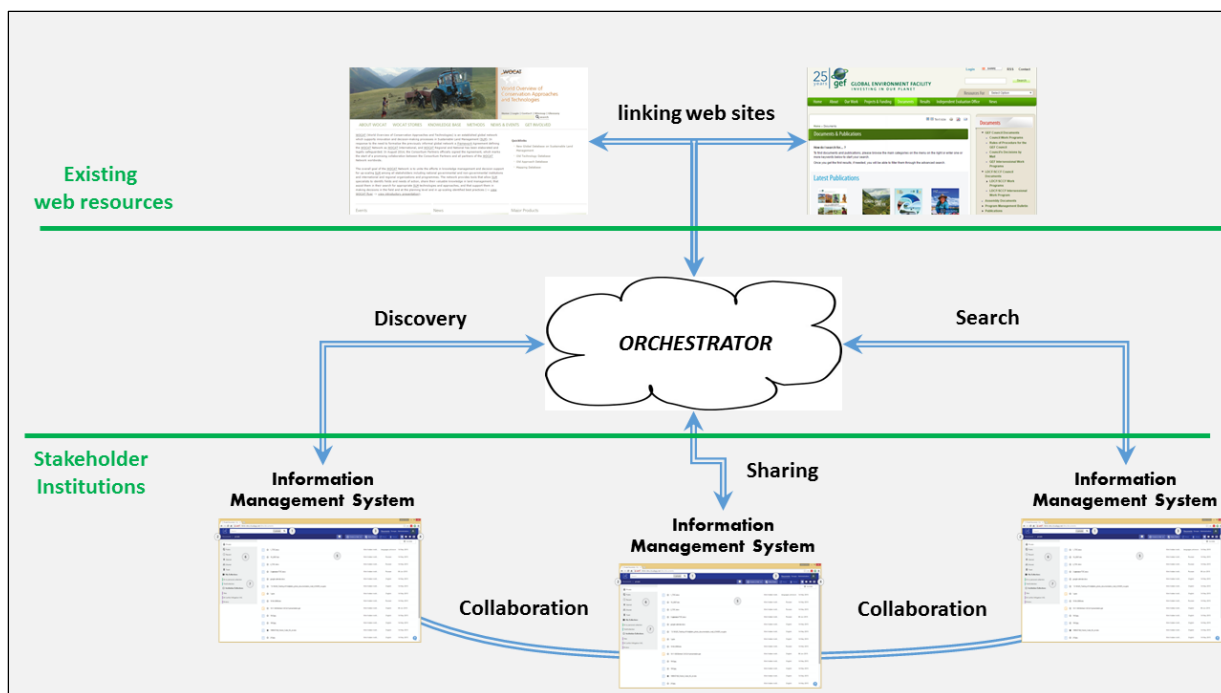


Figure 3. CACILM-2 information management system.

At the stakeholder institutions level information management systems are provided as described in the previous sections. The orchestrator is a software component that allows a) different information management systems to be networked b) different web resources (web sites like WOCAT) to be directly and easily queried by the information management systems. The entry point for institutions is given by the Information Management System module. It is expected to improve the steering process and monitoring of the project implementation avoiding sending documents through email and overloading outlook. Once a project ends a quality committee – decided by the project management staff – it is expected to select the useful documents to be upload to the network (blue arrows from the information management system to the orchestrator). The added value of the approach is to speed up the process of uploading documents in the network and to implement policy for their quality checking. The connection to and the alignment of the Information Management System with existing web sites will increase information access and discovery.

An on-going knowledge management initiative experience in Central Asia in the field of INRM and SLM, <http://klink.asia/> is giving positive results in the direction of providing stakeholders with customizable and networked information management systems. The K-Link will most likely be hosted by the Central Asian Regional Environmental Center (CAREC), based in Almaty, who will work with the project to further develop. The K-Link aims at promoting the building of networked institutional memories and INRM/SLM CoPs. The information sharing and dissemination process is allowed without the need to store documents in a central hub. The KM platform is expected to become a useful tool for agricultural service providers in Central Asia that will get improved access to information on INRM and SLM. Within CACILM2 project, the information sharing platform will be tested on national and local organizations supporting scaling up under component 2 and 3 of the project. Moreover, through them and directly, the project will involve farmers from the target groups of the component 3 of the project, first of all, to pilot the system and, secondly, to provide the access to the information resources to relevant stakeholders. The project will work with the CAREC to develop the strategy to sustainably provide the access to the platform. One of the options to ensure

sustainability of the KM platform is to create a ‘knowledge market’ whereby the buyers of information, private as well as public service providers, will be charged a small fee.

K-Link will be linked to CASCAD (Network of Agricultural Universities in Central Asia). Turkey will ensure that also its key institutions and cross-sectoral information network (agriculture, water, forestry and environment) are part of K-Link. These practitioners will receive training under sub-components 3.1.2 and 3.2.2 on how to turn this information into messages easily accessible to farmers and herders in the region. The translation process from a collection of relevant information and documents into products guiding and serving practitioners needs to be guided and moderated by experts, and here regional SLM think tanks, such as MSRI/UCA are well placed to take this role and ensure a systemic approach will be applied which is going beyond simplistic ‘pressure-response’ actions.

1.2.2 Multi-scale and participatory approaches in place for assessing land degradation and SLM trends, and for assessing/monitoring of impacts of management practices on ecosystem services, biodiversity, and livelihoods (vulnerability).

The latest tools and methods for monitoring and assessing land degradation and trends in SLM, with special focus on drought risk and salinity management, will be made available to all countries through the Multi-country Platform on INRM. Turkey and FAO will support Regional Training/Experience sharing event on the use of the LDN/LADA. Synergies and collaboration will be established with the FAO/GEF project on Decision Support for mainstreaming and scaling up SLM (DS-SLM) and the FAO Global Soil Partnership. Links to the Land Degradation Neutrality (LDN) concept will be established through the help of Turkey and its LDN experience. The main activities will include:

Step 1: Land-use /management systems (LUS) will be characterised and mapped at sub-national level taking into account administrative units and landscape components (by a competent institution with GIS/RS expertise).

Step 2: A national training/ assessment workshop (5 workshops) will be organized to build capacity of key sectors/stakeholders in the conduct of a participatory assessment and use of analytical tools and methods:

(a) The practical LD and SLM assessment will be conducted by a multidisciplinary team using the WOCAT mapping questionnaire (QM) and a rapid, systematic DPSIR and livelihoods analysis for each main LUS unit on the map (on- and off-site pressures due to human activities, land resources status, drivers of change and impacts on ecosystem services).

(b) Assessment results will be analysed by stakeholders to identify: i) main constraints/barriers and opportunities for INRM/SLM scaling up; ii) effectiveness of existing responses, and iii) required responses for encouraging wide INRM/SLM adoption (i.e. knowledge, policy, institutional/financial, legal, organizational aspects to address drought and salinity problems and scale out and mainstream INRM).

(c) Local sites and potential INRM/SLM best practices will be identified for each LUS, in particular for the demonstration areas (i.e. priority areas for intervention to address drought risk and salinization problems).

Step 3: A multidisciplinary team will be set up and trained in each priority/demonstration area to conduct local field diagnostic and DPSIR analysis, to assess and document INRM/SLM best practices on the ground.

(a) A local LD and SLM assessment (using a simplified LADA-Local process) will be conducted on the ground for selected land use systems and groups of LD/SLM practitioners on the ground to validate (ground truth) and further explore the DPSIR analysis, effectiveness of existing measures SLM practices and current policy/governance and institutional support.

(b) Selected INRM/SLM best practices will be assessed and documented on the ground (using WOCAT QT and QA) by a team of trained SLM experts.

(c) A local stakeholder workshop will be organised to review resulting qualitative and quantitative data and identify/select required local responses for wider INRM/SLM adoption by different land user typologies and for various intervention scales (i.e. a basket of options, including suitable technologies, approaches/ support measures to overcome barriers based on WOCAT methodology and on watershed / landscape approaches)

Step 4: The data on INRM/SLM practices will be uploaded in relevant national, regional and global databases (such as the global WOCAT database) and linked to the Multi-country Knowledge Platform and shared through K-link. This documentation will provide the basis for Component 2 on integration of resilience into policy, legal and institutional frameworks and can further feed into UNCCD reporting and national and national statistics and monitoring processes and FAO data and statistics (food, agriculture, natural resources monitoring and assessment).

1.2.3. Targeted knowledge and communication products prepared for wide dissemination on the required costs and multiple benefits of INRM in selected production landscapes. This project will prepare a regional communication and outreach plan, followed by knowledge and communication products in the area of drought risk and salinity management and disseminate them via the enhanced K-Link system described above. Close collaboration will be forged with WOCAT and ZOI that provide useful guidance on presentation of good practices and lessons learned, the questionnaires and database for practitioners working in the field as well as a series of written and audio-visual knowledge products for different target groups. Turkey will contribute its own publications, communication and extension services documents which could be applicable to CA countries. Expected improvements in the regional INRM/SLM practices databases will allow documented SLM options and possible solutions in national databases to be made available in attractive printed format, videos (e.g. <https://www.wocat.net/en/methods/slm-technologies-approaches/instructional-videos-manual.html>), social media, etc. Turkey will also share its communication-extension service documents in the field of INRM/SLM. In addition, the maps with similarity analysis (application of certain SLM practices to the specific agro-ecological zones), developed by ICARDA's CACILM project on knowledge management, will be further enhanced to be applicable and accessible for the countries.

Printouts, explaining selected practices, including the economic analysis of impacts will be distributed. These knowledge and communication products will also be used to facilitate resource mobilization efforts to attract additional funds to CACILM-2 to ensure sustainability of the SLM/INRM KM platform and the regional communities of practice.

Component 2: Integration of resilience into policy, legal and institutional frameworks for INRM. This component will support Government of Central Asian countries and Turkey to integrate resilience into policy, legal and institutional framework for INRM, to support the scaling up and adoption of climate-smart agriculture management practices along the most appropriate impact pathways, leading to enhanced management of resilience, adaptation and transitions in production systems and landscapes in the medium and long term. The GEF/STAP Resilience-Adaptation-Transformation-Assessment (RAPTA) tool⁵ will provide an overarching framework to integrate resilience into INRM and will help with identifying controlling variables and thresholds in drought prone and salinity affected production systems. It will also help identifying possible interventions and policy options to enhance resilience, adapt or transform agro-ecosystems depending on the circumstances. This will be combined with support to adoption of drought planning processes that go beyond the traditional crises management approach.

This component will also strengthen inter-sectoral coordination mechanisms on SLM/INRM at national level, including mainstreaming of NAPs into national budget sector allocation and investment processes, to enable the incorporation of climate change and variability considerations and align existing financial contributions in the land management and agricultural sectors to support uptake of INRM practices. Support will be provided in the development of incentives for climate-smart agriculture at national and sub-national levels. The component includes two outcomes with associated outputs:

Outcome 2.1. Resilience integrated across NRM sectors and production landscapes. This outcome will encompass a decentralized approach to integration that will be promoted across governance levels as well as sectors. It uses the RAPTA Guidelines and will involve the following key steps:

1. Further development of the theory of change of the project to determine what the key determinants and characteristics are of the drought and salinity affected production landscapes in Central Asia, including key drivers and thresholds
2. Development of a multi-stakeholder engagement plan
3. Detailed description of the key socio-ecological systems in CA, including the food security systems, and development of a conceptual model
4. Assessment of the systems, including general resilience and specified resilience, and identification of needs for adaptation and/or transformation
5. Identification of the most appropriate implementation pathways and actions on-the-ground that will inform interventions under Component 3.
6. Integration of changes into the legal, institutional and planning system through the wider consultations, involvement into discussions of the relevant authorities, academia and business circles.

Outputs include:

2.1.1 Review of national policies, legal and institutional frameworks and their application at different governance levels with the view to identifying gaps and potential opportunities for managing sustainable and productive transformations. This will build on an enhanced

⁵ O'Connell D. Walker B. Abel N. Grigg N. Cowie A. & Duron G. 2015. An introduction to the Resilience Adaptation Transformation Assessment (RAPTA) Framework. STAP, Washington DC.

understanding of the role of policies in instigating change and the extensive policy review conducted in each country in the PPG phase.

Table 5. Entry points for integration of resilience into national policies, legal and institutional frameworks.

Country	Main entry point(s) for integration of resilience
Kazakhstan	Land Code Water Code Forest Code (General lack of specific regulations under each act as well as mechanism for harmonization)
Kyrgyzstan	Land Code (1999) Forestry Code (1999) Water Code (2005) Laws on farming (1999) National Action Program of the UNCCD (2015-2020) National Strategy on Gender Equality to 2020 (Lack of integrated and multiscale national policy on land management)
Tajikistan	Land Code (1996) Water Code (2000) Forest Code (1993) Law “On soil protection” (2009) National Action Program of the UNCCD in Tajikistan (2000) National plan of action on climate change mitigation and adaptation (2003) State Program to Ensure Equal Rights and Opportunities for Men and Women in the
Turkey	Agricultural Law (2006) Forestry Law (1956) Regulation of Good Agricultural Practices (2010) Soil Conservation and Land Use Law (2005) Pasture Law (1998) The 11th Development Plan (2019-) (Better coordination needed between Ministry of Forestry and Water Affairs and Ministry of Food Agriculture and Livestock)
Turkmenistan	Land Code (Sectoral regulations are missing and certain provisions of the Act do not relate to the principles of SLM and the latest reforms in the agricultural sector) National Action Plan for Combating Desertification (NAPCD) needs to be revised Integration of sustainable NRM into regional, sub-regional and sectoral plans and programs. The National Program on Social and Economic Development (2011-2030) The National Strategy on Climate Change The Presidential National Program on Reformation of Social Conditions in Rural Areas, Cities, District Towns and District Centres (for the period up to 2020) The Program on Efficient Use of Water Resources and Increase of Water Capacity of the Kara Kum River (2015-2020) National Action Plan of Gender Equality (2015)
Uzbekistan	Land Tax (1998) Farming Code (2004) Mountain Code (1998) Water and Water Use Code (1993) (Legislation tends to be ineffective and resource preservation issues are not fully integrated)

2.1.2 Formulation, review or update of national drought policies, strategies and guidelines for drought preparedness planning. In Central Asia and Turkey, drought has historically been

managed using a crisis management approach. In this reactive approach, ad-hoc emergency measures are often implemented in response to drought conditions. It has been found that these measures often result in ineffective, poorly coordinated, and untimely outcomes and do little to reduce the underlying vulnerabilities that cause drought impacts. In fact, although relief measures do provide immediate benefits, they can also cause increased dependencies, which increase long-term drought vulnerability. Therefore, during the last two decades, there has been an increasing shift in focus towards drought risk management that seeks to increase the capacity of individuals, organizations and society as a whole to reduce the likelihood of experiencing the effects of droughts, by focusing on drought preparedness plans and coordinated measures that should be planned proactively and implemented before, during and after droughts. These measures can be identified by carrying out a drought planning process and implemented through the resulting drought plan. Support to adoption of drought planning processes will include:

- a) formulation, review or update of national drought policies, strategies and guidelines for preparedness plans, and
- b) strengthening of monitoring and early warning systems.

This will be followed by vulnerability assessment under output 2.1.3 below. Some of the important implications for drought management and planning in CA and Turkey can be summarized as:

Kazakhstan needs to improve its data collection, analysis, and dissemination of systematic surveys; its forecasting systems, modelling, and early warning information about emergency hydro-meteorological phenomena. In the short-term strengthening the sustainable provision of timely hydro-meteorological data would be a first step. The creation of a risk management system of drought occurrence would also be useful to manage risks. These recommendations should all be integrated and tied into the reconciliation of the legal and institutional framework. Contingency plans and water laws and guidelines on the possible actions in specific circumstances during drought years should be developed in order for quick action and relief. In order for these plans to be linked to the early warning systems, the development of triggers and drought thresholds will be critical. Contingency plans and possible actions also need feasibility studies such as the forecasting of future water use for distribution by zones so that interventions are made according to needs. Kazakhstan also need a revision of the NAP on combat desertification and update its law on pasture and sub-laws. Experiences of community-based land use planning, implemented under output 3.1.1., will be reflected in proposed institutional and legal changes, including

Kyrgyz Republic needs to conduct vulnerability assessments with recommendations to water users. This would be useful in providing early warning information to those affected by drought and also give the affected population ways to cope. Water scarcity is a recurring issue and so emphasis should also be placed on water conservation. In the short-term the use of water should be regulated to conserve water as much as possible. Incentives for investments in water-saving technologies should be promoted. In the short-term the monitoring and projection of water reservoir stocks could also provide insight into water availability so that courses of action could be taken in a timely fashion in event of low stocks. Kyrgyzstan also needs a revision of the UNCCD NAP and further develop its coordination mechanism for SLM/INRM based on the national UNCCD mechanism.

Tajikistan needs a system of long-term weather, climate risks, and crop yield projections. The early warning system on drought and other climate related disaster risks needs to be strengthened in order to ensure the availability and accessibility of seasonal weather

data/information. This information includes crop planting and yield projections, as this would help to stabilize the food security and long-term contracts at interstate level. Drought resilience planning should take place at both national and district levels through the mainstreaming of adaptation measures. Furthermore, capacity development is needed to enhance skills and knowledge on drought resilience in the agricultural sector. Tajikistan also needs a review of the UNCCD NAP as well as improvement of the sub-law and normative documents for the pasture law (integration of resilience into pasture management).

Turkmenistan needs monitoring and forecasting of precipitation, education, and awareness raising. The monitoring and forecasting of precipitation would provide the early warning information needed to facilitate early decision-making while education and awareness raising would prepare those vulnerable to drought to implement coping strategies. In order to set up these systems, harmonization of the legal and institutional frameworks is needed, especially revision of the UNCCD NAP, integration of drought and salinity resilience issues into the Water and Land Codes, and development of laws on soil and irrigated lands. Turkmenistan also needs recommendations on the transfer of agriculture to the CSA approach and on development of agricultural advisory services in Turkmenistan.

Uzbekistan needs development and introduction of modern methods of drought prognosis, innovative approaches in drought risk assessment, optimization of the system of drought monitoring with the aim to increase the flow of information and knowledge exchange within national efforts to develop and introduce the early warning and long-term warning systems. System of early warning will, therefore, provide the support to the process of decision making and will assist in the preparation of the drought preparedness plans for population and policy towards drought based on proactive approaches. Involvement of all stakeholders (and vulnerable groups), especially local population, farmers and peasants, by widening educational programs and outreach, compiling and disseminating successful examples and experience, as well as developing and implementing incentive mechanisms will lead to the increase of their interest and responsibility in introduction and implementation of activities to tackle and mitigate the impacts of drought. Uzbekistan is planning to develop the action plan for drought management (based on plans developed at the watershed level or areal plans). Integration of drought issues and salinity management issues into production plans and programs are also among the country's priorities.

2.1.3 Participatory resilience assessment and mapping, and livelihood diagnostics (to support evidence-based decision-making). This output will be generated using the Self-evaluation and Holistic Assessment of Climate Resilience of farmers and Pastoralists (SHARP) tool developed by FAO. It assesses the resilience of agro-ecosystems on the basis of 13 indicators disaggregated by agricultural practices using portable devices, such as iPads to address the needs of smallholder farmers and pastoralists (both men and women). SHARP will thus be applied in close coordination with Component 3 and upscaling of climate-smart agriculture on-the-ground. SHARP works through a participatory survey developed for Android tablets spanning environmental, social, economic, governance and general agricultural practices. The SHARP application produces a relative ranking of resilience priorities for each participating household. The results can then be discussed with female and male respondents, individually or in a group. In addition, all results are uploaded online and can be used for further analysis to understand resilience priorities, trends and determinants at a more aggregate level. It is possible to look at the resilience ranking holistically or in its individual components and then look deeper into the elaboration of the questions to better understand why land use—s - women and m—n - responded the way they did.

In addition, jointly with WMO and UNCCD, the project will support development of the regional drought vulnerability maps including capacity building at the regional level for long term drought prognosis, and regional cooperation on information exchange on snow cover at watersheds. Country specific support will involve:

Kazakhstan:

- Revision of legislation for distant monitoring (including review and update of the methodology)
- Introduction of methods of drought and salinity assessment, adoption of these methods
- Update of drought and salinity maps of KAZ
- Assistance in creation of Center to combat desertification in KAZ
- Implementation of land assessment in the country (update of salinity and drought maps)

Kyrgyzstan:

- Capacity building for distant monitoring plus improvement of technical capacity of land management authorities to monitor salinity
- Assessment of vulnerability to climate change of four agro-ecosystems and the level of preparedness to drought
- Development of data bases and available information sources on climate change, drought and salinity (link to K-link)/regional

Tajikistan (at the level of Yavan region):

- Capacity building for salinity monitoring, GIS monitoring
- Assessment of soils (salinity maps, degradation maps)
- Assessment of vulnerability to climate change

Turkey:

- Regional training on the use of the SHARP methodology in Turkey
- Provision/sharing of research results on the use of the methodology in Turkey to other Central Asian countries.

Turkmenistan:

- Capacity building for distant monitoring of conditions of water and land resources
- Assessment and mapping of land vulnerability to droughts
- Recommendations for land cadaster management

Uzbekistan:

- Assessment of factors contributing to droughts and salinity
- Development of standard approaches for vulnerability assessment and assessment of impacts of the drought
- Update and introduction of effective methods of drought monitoring and prognosis
- Update of the program of the agro-meteorological monitoring with the use of GIS (organization of test areas for calibrating of satellite data, introduction of new equipment for agrometeorological monitoring)
- Analysis and adaptation of the new methods of prognosis
- Update of large scale thematic maps
- Involvement of farmers (both women and men) into agrometeorological monitoring
- Capacity building of local (existing) advisory services for drought management at the local level
- Recommendation on management on drought-affected and salinized land
- Development of drought management action plans (based on watershed and area action plans). Attraction of donors /international financial institutions to implement action plans.

2.1.4 Strengthening of inter-sectoral coordination mechanisms at national level, including mainstreaming of NAPs into policies and legislation (informed by output 2.1.1) and national

sector budget allocations and investment processes for INRM scaling up (informed by Component 3). This will involve establishment of national CACILM boards that will also act as national steering committees for the project. They will consist of important stakeholders and decision-makers from all relevant sectors, such as environment, agriculture, livestock and water resources management, and be chaired by national UNCCD focal points. The national boards will provide guidance on mainstreaming of resilience into production sectors and development planning, and supervise national coordination efforts of the CACILM Secretariat. They will also provide strategic guidance on how to mainstream CACILM-2 objectives into national investment frameworks for future scaling up of successful experiences.

Country specific activities include:

KYG: Creation of coordination committees for budget distribution, and development of strategies for forage production;

TAJ: Creation of a mechanism to improve intersectoral coordination on water and land use (access to agro-meteorological data) and connection between academic institutions and scientific research institutions; involvement of NGOs for farmers' capacity building;

TUR: An SLM board will be established under the GEF project on Climate Friendly Agriculture and it will also serve as the CACILM Board in Turkey;

TKM: Creation of Coordination mechanism for cooperation and coordination of projects related to water and land resources; creation of the system of exchange of climatic data at the national and subnational levels and system of information exchange on conditions of land resources, and coordination mechanism for agricultural advisory services introduction;

UZB: Mainstreaming of salinity and drought issues into sectoral planning, specifically inclusion of activities aimed at the increase of water use efficiency and water management into programs of the Ministry of Agriculture and Water Resources, and integration of salinity management issues into programs of the Fund of Amelioration improvement of irrigated lands.

Outcome 2.2 Incentives for climate-smart agriculture in place at national and sub-national levels. This outcome will support the establishment of incentives at national level, and increased involvement of public sector, including community based organizations (CBOs), and the private sector for the integration and harmonization of food and feed value chain approaches with landscape-based management approaches to INRM. Financial incentives will be provided for various types of activities including: the selection of drought resistant crop species and salt tolerant crop species for drought prone and salt affected production landscapes, adoption of water saving technologies for high-value crops (e.g. drip irrigation systems for horticultural crops or orchards) as well as the establishment of related supply chains (from seed multiplication to distribution, from manufacturers to suppliers to retailers of water saving technologies). The outcome will be achieved through two outputs:

2.2.1 Increase in public and private sector entities (at least 5 different types of enterprise) supporting smallholder farmers to scale up best practices and adoption of self-reliant approaches for managing climate variability and change. The majority of farmers and pastoralists in Central Asia lack access to lending resources due to unclear land tenure, lack of access to credit and high interest rates. The project will therefore promote collaboration with micro-lending and micro-financing organizations to improve access to credit for farmers and pastoralists in all countries. For example, in Kazakhstan, links will be established with the Micro-Entrepreneurship Development Fund that is providing funding to agriculture and agricultural products processing. In Turkmenistan, implementation of provisions under Article 103 of the Land Code on economic incentives will be strengthened, including exemption of

payments for land tenure for land that is being reclaimed, partial compensation for forgone income and provision of credits at preferential rates.

Other country specific activities include:

KAZ: develop the programs of PPP in INRM (integration of INRM into procurement and state contracts); develop recommendations for effective financial support of farmers and small land holders, including integration of SLM into existing credit scheme mechanisms; state program to support the farmers investing in pasture improvement; development of program for subsidy and micro-crediting of small land owners.

KYG: Jointly with WFP, strengthening the information resource centers with courses on how to combat salinity (under farmers' union⁶).

TAJ: Strengthening the capacity of extension services providers in training for farmers at the project sites (Agricultural University and the union of farmers, Rushti Ustovor, Zan wa Zamin), including technical and methodological assistance in creation of advisory services centers, improvement of access to credit and other inputs;

TKM: Analysis of the financial mechanism for agriculture (credits) with introduction of indicators of productivity of natural resources in agricultural production, for instance water productivity); creation of the list of entrepreneurs, government organizations, supporting agricultural production, and capacity assessment and capacity building for CSA mainstreaming; working with UNDP-initiated project on agricultural credit to mainstream SLM practices (indicators) into developing agricultural credit mechanism;

UZB: Capacity assessment for introduction of INRM/SLM practices; analysis of implementation of programs in the field of ameliorative land improvement; capacity building of the selected organizations, such as farmers' unions; involvement of NGOs in training of farmers on SLM practices

2.2.2 At least 5 resource use efficient and biodiversity friendly food and feed value-chains strengthened. Central Asian countries have limited experience in promoting green and eco-friendly products, although there is great potential for organic farming. Support will therefore go to strengthening of value chains for products such as organic cotton, quinoa, pistachios and almonds, organic fruits and vegetables, and medicinal plants, as well as dairy products, such as the brynza goat cheese in Turkmenistan. Turkey will share its extensive experiences with pistachio value chains and other agroforestry products. Support will also go to rural crafts as a way to diversify income through off-farm activity (wool; felt; basketry; raw silk; etc.) as part of value chains critical for the well-being of rural communities and peoples (mostly women). This includes support to improve processing of products, and to establishment of agricultural cooperatives and women's groups.

KAZ: Livestock production and agroforestry, including the improvement of post-production processing and marketing (for livestock) and development of nurseries to scale up afforestation efforts; improvement of the capacity (skills training) for alternative income generating activities in project areas;

KYG: Livestock production (through forage production, organic production of forage and their seeds), including skills training on introduction of new varieties (storage) and marketing of

⁶ also including "other relevant organizations" that represent female farmers/pastoralists.

new forage products, development of recommendations on inputs market improvement, supporting the access improvement for seed and other input markets;

TAJ: Safflower has been selected as the preferred value chain to work on, which will include training on post-harvest processing, performing analysis and preparing recommendations for improvement of marketing; supporting the improvement of links between farmers and markets through joint fairs and other mechanisms in pilot areas;

TKM: Strengthening the value chains on Large Livestock production; Small Livestock production; production of almonds-pistachios; production of pulses (introduction into crop rotation), including the analysis and recommendations for improvement of herds, training on pasture management and herding issues; skill training on cheese production and marketing, skills training on technologies for new varieties of pulses (as a second crop), analysis and recommendations on pulses value chain improvement (marketing); activities to improve marketing of harvested goods in selected communities and at the national level;

TUR: Turkey will share its experience in pistachio growing and other income generating agroforestry products; including specialists visits to and training in selected relevant project areas in the Central Asian region, translation of materials into local Central Asian languages;

UZB: Support and development of nurseries for production of fruit tree saplings, including training of nursery holders on expanding operations, introduction of new tree species; production of pistachios on rain-fed lands (Kamashi region), including support of development of nurseries, training of farmers on new varieties; development of honey production to increase productivity of gardens (Chain: “Related siblings-honey-pistachios-fruits-juices”), including the support of expansion of honey production in extension areas through the improvement of access to the land and to the markets.

Component 3: Upscaling of climate-smart agricultural practices in drought prone and/or salt affected production landscapes. This component will focus on scaling up INRM and SLM practices on-the-ground that generate both socio-economic benefits to local communities and global environmental benefits. The scaling up will be based on multi-stakeholder land-use plans with targeted investment for selected agricultural production landscapes/land use systems (e.g. pastoral, agro-sylvo-pastoral, tree-based, irrigated/small oases production, rainfed land and home gardens), as well as guidelines for the development/piloting of watershed/catchment salinity management plans including *inter alia* hydrological regulations and identification of promising species/habitats for sustainable and biodiverse aquatic and terrestrial ecosystems. Enhancing coordination at the landscape level will facilitate the integrated management of production systems and the natural resources and ecosystem functions that underpin the delivery and resilience of ecosystem services needed for all sectors.

Scaling up will be based on effective extension /advisory services for enhancing skills of a wide range of stakeholders at all levels for wide adoption of innovative approaches for drought and salinity mitigation and INRM technologies that contribute to food and nutritional security. The component will not only consider increasing technical capacities of extension/advisory service providers of institutions but also the functional capacities (e.g. knowledge, partnership, communication, and implementation capacities, including resource mobilization) of the related institutions to promote sustainable transformations in the agriculture sector.

The component will contribute to increased area under sustainable land management in drought-prone and/or salt-affected production landscapes. It will increase irrigation efficiency and reverse the salinization trends in irrigated areas while increase the value of marginal water and soils for alternative livelihood systems. It will support diversification of crops (e.g. drought tolerant crops, salt-tolerant crops and halophytes) for providing the necessary adaptability and resilience, promote conservation of habitats (e.g. for harboring beneficial predators for integrated pest management and pollinator species) in agricultural production landscapes and INRM technologies. It will ensure adoption of climate smart agricultural practices that simultaneously enhance mitigation, adaptation and productivity through increasing carbon sequestration below and above ground (e.g. conservation agriculture, integration of fodder crops in crop rotation), reducing methane emissions (e.g. improved livestock management, balanced feeding for better waste management in intensive livestock systems) and enhancing reliability of production and productivity per unit of land, as well as in terms of water, labor and energy (e.g. through resource use efficient integrated farming systems such as crop-pasture-livestock integration, agroforestry, rotations, intercropping and sustainable use of agrobiodiversity). The component includes two outcomes with associated outputs:

Outcome 3.1 Up-scaling of a proactive drought risk management (DRM) approach and innovative INRM technologies in selected production landscapes/land use systems (e.g. pastoral, agro-sylvo-pastoral, tree-based, irrigated, rainfed land and home gardens). In Central Asia, there has largely been a centralized and response oriented approach to tackle the impacts of drought in the region. However, most countries are now aiming to incorporate drought risk management into agricultural, rural and food security strategies through dissemination of appropriate technologies, and through support to incentive measures to use land and water resources more rationally. There is also increasingly recognition of the fact that drought interventions should be designed through effective involvement of local communities to ensure sustainability. This can be achieved through use of drought committees at district level, as they are a useful interface between the government, community leaders and civil society organizations. The outcome will be achieved through three interlinked outputs on development of land-use plans, strengthening of advisory service providers, and upscaling of drought mitigation INRM technologies in selected production landscapes.

3.1.1 At least two multi-stakeholder land-use plans for selected production landscapes per country. Multi-stakeholder integrated land-use planning, although supported by the policy framework of several countries, is weak in Central Asia. Community-based land-use planning is increasingly supported by Farmers Associations and Pasture Committees, but it has been complicated by the loss of traditional knowledge, lack of integration of different land-use types and upstream and downstream areas, and poor access to rural advisory services. Changes in land use are approved by District and Regional Administrations, but changes of land categories (e.g. forest, agricultural land, protected area) is identified at the governmental level. The project will support strengthening of land-use planning at the community level working with district drought committees using e.g. SHARP and LADA-WOCAT tools (further developed under DS-SLM) to develop land-use plans that integrate drought risk and vulnerability and are ecosystem-based. Working at the community level will help to ensure women participate in a meaningful way in developing plans and in capturing their traditional knowledge. Training will be provided on use of rotational grazing and transhumance approaches, efficient fodder production that improves soil fertility and desalinizes soils, etc. This will be extended to the landscape scale at the project pilot sites of pastures and forest land. This output will be strengthened by support from Turkey that will share its experiences related to integrated catchment rehabilitation and also link it to achievement of the LDN goal of the SDGs (15.3).

Key regional activities supporting the development of land-use plans include: (i) regional expert meeting on development and introduction of approaches for large-scale drought risk mitigation in production landscapes together with the UNCCD, WMO and IWMI; (ii) regional training of specialists on development of integrated land-use plans (hosted by the Ministry of Agriculture in Turkey); (iii) regional symposium and training on use of GIS for drought and salinity management (hosted by Institute of Space Research in Kazakhstan); and (iii) regional experience sharing event on drought monitoring approaches (hosted by Uzhydromet, Uzbekistan). Detailed national activities to be supported by GEF STAR funding are found in Annex 5..

3.1.2 At least two specialized institutions/ advisory service providers per country having increased their capacities to enhance skills of a wide range of stakeholders at all levels **for wide adoption of a proactive drought risk management (DRM) approach and drought mitigation technologies.** In central Asia, agricultural advisory services are not sufficiently developed, although farmer associations sometime perform some of these functions, and larger agricultural businesses hire commercial consulting companies. However, for the majority of small farmers and livestock breeders, especially women, rural advisory services are not available, and there is a lack of access to knowledge and up-to-date approaches and technologies for DRM and drought mitigation. The project will therefore strengthen existing DRM and drought mitigation advisory services where possible, and promote engagement of new advisory service providers as appropriate. It will work with farmer associations in e.g. Kazakhstan, (where farmer associations already publish Agroinform and AgroInform Marketing magazines), Turkmenistan that does not have any advisory services for farmers, and Uzbekistan, to further strengthen the capacity to provide DRM advisory services. There will also be a focus on training of pasture committees, in e.g. Kyrgyzstan, to provide support to livestock breeders on DRM. Specialized institutions to be strengthened to provide rural advisory services will be provided with training on drought mitigation strategies and approaches, development of outreach material and publications, and establishment of demonstration sites and support to farmer/herder exchange visits. In Kyrgyzstan, in cooperation with the WFP climate change mitigation project, the existing information resources centers for farmers will be strengthened with the training programs on drought management.

The project intends to introduce the Agricultural Innovation Systems (AIS) perspective in Central Asia with a system approach, where rural advisory services (a term now preferred to ‘extension services’) are provided by multiple actors, including different types of private sector providers, NGOs and producers’ organization. The project will also support development of training modules to train farmers on issues of INRM and CSA. Different approaches to scale up support to advisory services for INRM that will be tested are summarized in Table 6 below:

Table 6. Different approaches to scaling up rural advisory services (FAO, 2016).

Approach	Characteristics
Farmer Field Schools (FFS)	FFS usually comprise a group of between 20 and 25 farmers who regularly meet over a defined period of time to study the ‘how and why’ of a situation in a given context under the guidance of a trained facilitator. Apart from technical issues, group dynamic exercises and sessions addressing the ‘topic of the day’ are integrated in the learning process. There is a good practice to organize FFS especially for women farmers/ women’s groups.

Participatory Technology Development (PTD)	PTD involves collaboration between researchers and farmers in the analysis of agricultural problems and testing of alternative farming practices. Participatory technology development is an approach that promotes farmer driven technology innovation through participatory processes and skills building involving experimentation to allow small scale farmers to make better choices about available technologies.
Participatory Learning and Action Approach (PLAR)	PLAR is a farmer based education approach centred on adult learning of 20 to 25 farmers, making use of experiences of the group members. The main goal of this approach is to encourage farmers to discover and come up with innovations as opposed to farmers being recipients of technologies. PLAR facilitation involves use of modules, curriculum and social setting to help farmers translate scientific understanding and technological options. Once farmers have the capacity to interpret these scientific technologies, the farmers' knowledge, motivation, capacity, interest and objectives are improved prompting a behavioural change towards sustainable natural resource management.
Farmer to Farmer Approach (F2F)	F2F extension is defined here as the provision of training by farmers to farmers, often through the creation of a structure of farmer promoters and farmer trainers.
The Catchment Approach for Soil Conservation	The Catchment Approach aimed to involve local communities in soil and water conservation. It is a focused approach to integrated land and water management, including soil and water conservation, where the active participation of the village-s - often organized through common interest gro-p - is central.
Landscape Approach and Integrated Landscape Management	All landscape approaches have five elements in common: 1) Landscape interventions are designed to achieve multiple objectives, including human well-being, food and fiber production, climate change mitigation, and conservation of biodiversity and ecosystem services. 2) Ecological, social and economic interactions among different parts of the landscape are managed to seek positive synergies among interests and actors or reduce negative trade-offs. 3) The key role of local communities and households as both producers and land stewards is acknowledged. 4) A long-term perspective is taken for sustainable development, adapting strategies as need to address dynamic social and economic changes. 5) Participatory processes of social learning and multi-stakeholder negotiation are institutionalized, including efforts to involve all parts of the community and ensure that the livelihoods of the most vulnerable people and groups are protected or enhanced.

Activities will lead to more efficient and effective collaboration for agricultural innovation linking research, advisory services and private sector with national demonstrations of DRM and INRM. Turkey will support these activities in CA together with IWMI and via a scholar scheme. The following service providers will be strengthened in the countries:

KAZ: Kazakh scientific research institute of soil sciences and agro-chemistry, Institute of Ecology and Sustainable development, Institute of grain production, Institute of fruits and grapes, Institute of space research, Farmers associations;

KYG: Agricultural Consultant's Services, NGO CAMP Alattoo, State institute for Land Use Planning (Giprozem);

TAJ: Agroservice, Howaling, association of farmers, NGO Genetic Resources, Agricultural College of Yavan region.

TKM: Capacity building for state and private centres to provide agricultural advisory services in Turkmenistan; modernization of the irrigation regime of agricultural crops using computer software Aqua Crop 5 in al¹ 5th districts (pilot in one region, then one district); introduction of the approach of joint technology development with farmers; development of FFS.

UZB: Increase of the capacity of selected agro-meteorological stations on the upscaling areas (Kashkadarya and Jizzak districts), including procurement of equipment and training for

improved quality and increase of the reliability of drought forecasting; distribution of knowledge, including early warning on predicted droughts, and distribution of the knowledge on methods and technologies to mitigate impacts of droughts through advisory services for farmers associations and farmers, with the involvement of the state organizations (Uzhydromet, Uzgip, CACILM board, Academy of science of Uzbekistan, Scientific production agricultural center, international research institutions).

3.1.3 Upscaling of 5-6 innovative drought mitigation and INRM technologies in selected production landscapes on some 240,000 ha of land (at least 15 drought-tolerant species and 5 habitats harboring beneficial species such as pollinators and predators, 10-15 % increase in tCO₂e captured/avoided, 15% increase in crop water productivity / irrigation efficiency). The Central Asian countries have identified a number of drought mitigation INRM technologies that will be demonstrated and upscaled in drought prone areas in the region. These technologies are summarized in Table 7 and include for example: introduction, production and distribution of drought resilient crops, introduction of water saving technologies, pasture afforestation and use of rotation, and introduction of participatory pasture management; introduction of drip irrigation in piedmont areas, establishment of fruit and nut tree nurseries for production of pistachios, almonds, pomegranate, nut, apples, persimmon, pears and grapes, and introduction of conservation tillage. Turkey will support integration of research results on good practices in selected areas in CA via research and exchange funds. Country specific activities in CA include:

KAZ: Innovative approaches: introduction of salt and heat resistant crops; development of seed production of drought resistant crops and perennial pasture crops resistant to trampling; agroforestry (almond/pistachios/Regel pear); introduction of water saving technologies;

KYG: Agroforestry (almond/pistachio/haloxylon), drip irrigation, afforestation of slopes; forage production and processing of the livestock produce (value chain); begin the process of quota distribution for pasture use; biological measures for land reclamation; production of drought resistant crops; crop production under plastic cover; organic agriculture; crop rotation of crops with perennial crops; water saving technologies; production of grass mixtures; and cultivation of forage crops between the rows in orchards.

TAJ: Diversification of drought resistant crops, fruit and nut trees; increase of the area with drought-resistant oil, fodder and grain crops (safflower, sorghum, Kochia, Aellenia) and non-traditional crops - millet, quinoa etc.; seed production of drought resistant crops; rain-fed gardens (with forage crops), grape production and pistachios on mountain slopes; plantations of drought-resistant crops on steep slopes and in gullies to stabilize them (hawthorn, wild almond, rose, Cercis, Spanish broom, etc.); scaling up the network of nurseries (state and private) for production of seedlings of drought-resistant fruit and nut trees as well as forest trees and shrubs.

TKM: introduction of winter wheat varieties with high productivity and quality and resistance to drought, salinity, heat, pests; development of models for improvement of pastures and pasture management principles with community participation; and agroforestry using pistachios, almonds, pomegranate, nut, apples, persimmon, pears and grapes, etc.

UZB: Development of schemes for integrated water resource use for the drought-affected watershed of Kashkadarya River at the area of 120 thousand ha; introduction of water collection for home gardens; agroforestry (almond/pistachios/haloxylon), including planting trees in eroded slopes; introduction of drip irrigation in mountain/pre-mountain areas (Kitab district/rayon); Development of nurseries for production of seedlings; introduction of biodiversity diversification in gardening as well as development of bee keeping and honey production.

Outcome 3.2. Adaptation and scaling up of technologies and approaches for management of salt-affected production landscapes (e.g. irrigated, pastoral and home gardens). Biosaline agriculture includes practices and technologies that sustainably increase productivity of marginal lands, support farmers' adaptation to climate change, and reduce levels of greenhouse gases. It can also help governments to achieve national food security and poverty reduction goals. Biosaline-based approaches include many diverse components from on farm to national and regional level techniques including improved land-use planning at the catchment level, and introduction of best management practices. Many innovative biosaline agriculture practices have been implemented in all CA countries with the capacity to increase productivity and build agriculture resilience. Yet they remain largely unknown at national and regional levels. These best practices are not only unknown, but their wide-scale up scaling and adoption remains a challenge especially amongst smallholder farmers in all Central Asian countries. The scaling up of best practices for management of salt-affected production landscapes will thus be achieved through development of catchment salinity management plans, strengthening of rural advisory services with respect to biosaline agriculture and on-the-ground demonstrations of innovative approaches and technologies.

3.2.1 Guidelines for watershed/catchment salinity management plans developed and piloted in each country, including inter alia, hydrological regulations and identification of promising species/habitats for sustainable and biodiverse aquatic and terrestrial ecosystems. Irrigated agricultural land in Central Asia is seriously affected by the increasing salinity levels in both soils and irrigation water. In order to tackle this, catchment-level land-use plans that focus on salinity management are needed as well as guidelines for their development. Turkey has valuable experiences to share in this area and will support development of such guidelines and provide training to Central Asian Countries and community-based associations, including Pasture Committees and Water Users Associations (WUAs), in demonstration areas on their application in the field, including identification of areas suitable for different mulching and irrigation techniques for salty soils as well as water harvesting. The project will also develop training modules based on the guidelines targeting different users, with particular attention to reaching female farmers, women's cooperatives, NGOs that work with rural women, women's self-help groups, and Farmer Field Schools (FFS). Catchment management plans will be developed at project demonstration sites of agricultural land and be linked to enhanced systems for provision of rural advisory services outlined in Table 6 above. Regional activities include creation of a regional platform for seeds of salt-tolerant non-traditional crop, and organization of the regional training on development of salinity management plans, supported by Turkey. Country specific activities include:

KAZ: Development of salinity maps based on landscapes; assessment of the functioning of the irrigation-drainage system and recommendations on its recovery/support; use of training modules on sustainable management of agricultural production landscapes at the farm level (7 modules); development of halophyte arid forage and livestock production; distribution of technologies of agroforestry on bio-drainage.

KYG: Will not participate in this sub-component.

TAJ: Awareness raising among farmers on causes of salinity and benefits of INRM/CSA/SLM practices; use of other countries' experiences in use of technologies to recover salinized lands; introduction of salt-resistant varieties (grain, forage, etc.); support of procurement of seeds of salt-resistant varieties; development of training modules for sustainable management of agro-landscapes; Training of Trainers and training courses to increase the capacity of various target groups; monitoring and assessment of soil salinity with the use of GIS and other innovative methods

TKM: Development of salinity manual for specialists and farmers at the regional (site) and national level; capacity building events at the field sites and at the national level; publication and distribution of technical methodical information on salinity issues; use new technologies for recovery of salinized lands (NTOZ 1,2); use of agrotechnical methods for increase of the soil productivity, soil enrichment by organic matters in irrigated and crop rotation schemes “cotton-winter wheat)

UZB: Development of salinity management plan at the level of sub-watershed (mid flow of Syrdarya River on the territory of Jizzak region), including i) development of the national action plan to prevent degradation and to promote the sustainable management of natural resources at sub-basin level; ii) specifying activities, including on reduction of the level of salinity (mineralization) of irrigated water, rehabilitation of drainage systems, improvement of drainage water flow and use of drainage water to support land and water ecosystems; iii) establishment of goals which should be reached till the end of the action plan (15-20 years) and for mid-term (3-5 years); iv) valuation of the costs of actions and benefits from its implementation (including socio-economic and environmental); v) agreeing with major stakeholders, ministries etc.; vi) integration of the developed activities into the program of the Fund of Ameliorative improvement of irrigated land for securing of their finance; vii) attraction of donors or financial institutions for implementation of the plan of salinity management; viii) implementation and monitoring.

3.2.2 At least two specialized institutions/ advisory service providers per country having increased their capacities to enhance skills of a wide range of stakeholders at all levels **for wide adoption of salinity mitigation approaches and technologies.** As mentioned under 3.1.2, agricultural advisory services are not sufficiently developed in Central Asia. Farmer associations sometime perform some of these functions, and larger agricultural businesses hire commercial consulting companies. With respect to advisory services for salinity mitigation approaches and technologies, expertise in the region is spread across scientific research organizations at national and regional levels, such as the International Center for Biosaline Agriculture (ICBA), Water Saving Irrigation Technologies Research Centre (TIIMI), Uzbekistan Scientific Production Centre of Agriculture (UzPCA), etc. The project will work with ICBA to enhance the capacity across the region in providing the latest scientific advice and technical know-how on salinity management and mitigation, for example at the Agricultural University and Agricultural College in Dashoguz District in Turkmenistan and the Union of Farmers and Agricultural University in Uzbekistan. This will include training of trainers in salinity management, establishment of demonstration sites, and establishment of FFS. Beside demonstration sites, the project will support agricultural multi-purpose cooperatives for distribution of technologies and knowledge on bio-saline agriculture. Turkey will also host a regional training/expertise sharing event on organization and development of extension services. Country specific activities in CA include:

KAZ: Creation of agricultural livestock multi-purpose mini-cooperatives as models for distribution of technologies and knowledge on bio-agriculture on saline lands. ICBA, scientific research institutes of rice, of crop production, of livestock, of water economy, Women Rural Alliance, Association of Water Users, Union of Farmers of Kazakhstan Field schools

KYG: Not participating in this sub-component.

TAJ: Strengthen of the capacity of institutions to provide agricultural advisory services: N–O - Association of farmers, NGO Sardob; Government-Tajik Academy of AgroScience, Agricultural University

TKM: Development of normative legal basis for agricultural advisory service providers; strengthening of Turkmen state university, Turkmen water project institute, national institute of deserts, flora and fauna, Aarhus Center in Turkmenistan to provide advisory services.

TUR: Support of the regional training/experience sharing event on organization and development of extension/agricultural advisory services

UZB: Strengthening the capacity of the fund on ameliorative improvement of irrigated lands, by development of the plan of the salinity management as a program of the fund; capacity strengthening of the district ameliorative expeditions (Jizzak region) by procurement of equipment, introduction of GIS for salinity monitoring, assessment of quality and quantity of drainage flow, assessment of the effectiveness of measures to combat salinity; capacity building of agricultural advisory service providers by the Tashkent Institute of Irrigation Melioration, including UZGIP, responsible for development of salinity management plans (training, internships), and the 15 Regional Centres for Capacity Building of Farmers created by the Cabinet of Ministers (Order No. 311); creation of advisory services centers based on agro-meteorological stations to provide farmers with relevant meteorological information.

3.2.3 Upscaling of 5-6 best practices for combating salinization, while ensuring biodiversity conservation and sustainable use on 100,000 ha of land (at least 15 salt-tolerant species, 10-15% increase in tCO₂e captured/avoided, 15% increase in crop water productivity /irrigation efficiency). Scaling up of best practices has been hampered by limited availability of genetic material and proper seed sources for genotypes adapted to salt stress. There has also been a lack of high quality local varieties of non-conventional crops and domesticated halophytes that are bred and multiplied locally. Interventions in mixed farming and pastoral systems will focus on biological approaches for reclaiming the root zone in soils, such as use of local and introduced germplasm for initially lowering water tables, followed by introduction of management practices for cultivation of salt tolerant forage and dual and/or multi-purpose crops and halophytes. A range of deep-rooted annual and perennial forage species, legumes, chenopod and tree species will also be used at demonstration sites. Seed production systems and local multiplication of improved varieties will also be supported at village level, with a special focus on training of women farmers to take the lead in this activity. Targeted crops include adapted varieties of pearl millet, sorghum, triticale, canola, safflower, etc. Afforestation using mainly native species will be supported on saline marginal land not suitable for other land uses, as re-vegetation of saline landscapes can deliver valuable products to farmers while lowering the elevated ground water table via bio-drainage.

The different country activities and field interventions to improve the productivity of drought and salt affected areas are summarized in Table 7 below. Salinity management approaches that will be promoted include introduction of biosaline agriculture and technologies related to agroforestry and bio-drainage systems, development of halophyte forage production, scaling up of cultivation of new salt-resistant varieties (crops, oil seeds, beans, fodder, etc.). ICBA and Bioversity International will support this sub-component as well as Turkey via research and exchange funds. Country specific activities in CA include:

KAZ: Introduction of highly effective technologies of using salinized lands (allowing to fully harvest (rice) at the first year without preliminary washing); introduction of tested technologies of growing corns in the salinized lands of South Kazakhstan district; Assessment of functioning of drainage system and preparation of the justification for its recovery.

KYR: Not participating in this sub-component.

TAJ: Complying with irrigation regime for each agricultural crop variety; timely cleaning of collector-drainage systems; wide introduction of bio-drainage technology; quality washing or

use of planning technologies reducing salinity; increase of the soil productivity by soil enrichment with organic matters (organic fertilizers, crop rotation with pulses); scaling up areas with salt-resistant crops and introduction of new varieties (grain, forage, cultivated, herbs); producing salt resistant varieties (halophytes) for biogas production; agroforestry on salinized lands - planting haloxylon. Field activities in Tajikistan will mainly be supported by co-funding, from e.g. GIZ.

TKM: Creation of information centers for exchange of innovative technologies in the field of climate change resilience and salinity impacts to support the program of ameliorative recovery of the land under the ministry of agricultural and water resources.

TUR: Provide results from research to be integrated into practices in selected areas of Central Asia, including selection of salt-resistant plant species, olive production and others.

UZB: Scaling up advanced technologies and agro-technical methods (deep tillage, laser leveling, drip irrigation) on selected sites; widening the distribution of the salt-resistant cotton varieties (Gulistan) on pilot areas (Zarbdarskiy rayon); diversification of agricultural practices with introduction of salt-resistant varieties of pulses, alfalfa, shrubs (haloxylon), and fruit trees.

Table 7: Project demonstration sites.

Country/ Province	Name of demonstration site	Size of demo area (ha)/ # of people	Implementati on phase(years)	Capitalisati onn phase (years)	Duration of accounting (sum Imp. And Cap ph)	General Balance (tCO ₂ -e)	Balance per year (tCO ₂ -e)	Land use	Proposed INRM interventions by the project	STAR and/or co-financing (USD)
Kazakhstan	Talgar and Turgen branches	50 000 ha /1 500 people	2	18	20	-3,454,244	-172,712	Wild fruit trees Transhumance & forage Irrigated lands	<ul style="list-style-type: none"> • Intensification of forage production • Salinized areas recovery • Water use and salinity management 	1 801 248
	Ili River	20 000 ha/1 000 people	2	18	20	-794,278	-39,714	Pastures and meadows Haloxylon forest	<ul style="list-style-type: none"> • Improved pasture management 	
	Desert Sary-Esik-Atyrau, Taukumy	50 000 ha/500 people	2	18	20	-431,062	-21,553	Pastures	<ul style="list-style-type: none"> • Improved pasture management 	
Kyrgyz Republic	Pilot watersheds in Naryn, Suusamy, Chuysk and Batkent regions	100/60 people	1	19	20	-13,262	-663	Irrigated land	<ul style="list-style-type: none"> • Fodder production (forage) 	180,125
Tajikistan	Yavan, Bokhtar, Vakhsh, Abdurakhman Jami regions of Khatlon district	10 ha	1	19	20	-2,701	-135	Irrigated land	<ul style="list-style-type: none"> • Improved salinity management 	268,846 (Co-financed by GIZ)
		5 ha	1	19	20			Gardens	<ul style="list-style-type: none"> • Introduction of salt-resistant and salt-absorbing varieties 	
		5 ha	1	19	20			Forests (desert forests)	<ul style="list-style-type: none"> • Crop rotation technologies with introduction of pulses • Drip irrigation for gardens 	

Country/ Province	Name of demonstration site	Size of demo area (ha)/ # of people	Implementati on phase(years)	Capitalisati onn phase (years)	Duration of accounting (sum Imp. And Capph)	General Balance (tCO2-e)	Balance per year (tCO2-e)	Land use	Proposed INRM interventions by the project	STAR and/or co-financing (USD)
Turkey	Central and Eastern Anatolia regions	20 000-30 000 ha						Semi-arid climate with mixed land uses	<ul style="list-style-type: none"> Micro-catchment land-use planning: demonstrating and sharing good practices with CA countries 	178,975 (Co-financed by Turkey)
Turkmenistan	Konegumbez mountain village	44 / 100	3	17	20	-8,686	-434	Agroforestry	<ul style="list-style-type: none"> Agroforestry based on horticulture, e.g. plantation of pistachio and almond trees, fruits trees such as pomegranates, apples, pears, persimmon and grapes Irrigation of trees 	2 688 464
	Central Kara kum	11 000 /50	2	18	20	-167,559	-8,378	Desert pastures	<ul style="list-style-type: none"> Planting of perennial and annual shrubs Seeding of pastures Rotation of pastures 	
	Gurbansoltan Eje, Dasoguz District	25 000 / 8750	2	18	20	-817,525	-40,876	Irrigated agriculture	<ul style="list-style-type: none"> Application of new technology for recovery of salinized lands Water saving irrigation technology Enrichment of soils with organic fertilizers 	

Country/ Province	Name of demonstration site	Size of demo area (ha)/ # of people	Implementati on phase(years)	Capitalisati onn phase (years)	Duration of accounting (sum Imp. And Cap ph)	General Balance (tCO2-e)	Balance per year (tCO2-e)	Land use	Proposed INRM interventions by the project	STAR and/or co-financing (USD)
Uzbekistan	Kashkadarya River Basin, Kitab and Kamashi tumans (districts)	120 000/ 642 700	2	18	20	-2,904,860	-145,243	Irrigated agriculture	<ul style="list-style-type: none"> Improved integrated watershed management 	4 062 907
	For trees need more time to grow, so Imp.ph have to be longer	100/ 9 960	3	17	20	-15,212	-761	Irrigated agriculture	Improved gardening	
	For trees need more time to grow, so Imp.ph have to be longer	40/30	3	17	20	-10,330	-516	Agroforestry	<ul style="list-style-type: none"> Agroforestry 	
		1500/100	2	18	20	-21,990	-1,100	Pasture	<ul style="list-style-type: none"> Pasture improvement 	
	Jizzak region, Zarbdar tuman (district)	450/600	2	18	20	-12,064	-603	Irrigated agriculture	<ul style="list-style-type: none"> Salinity management 	
TOTAL:		298 254 ha/ 665 294 people				-8,653,773	-432,689			

Component 4: Monitoring and evaluation. To determine whether integrated approaches to natural resources management have a positive impact on ecosystem services and resilience, and livelihoods and food security, they need to be monitored, assessed and evaluated for their socio-economic and environmental impacts. The Project will therefore undertake monitoring and evaluation of both implementation progress and Project impacts. The component includes one outcome with associated outputs:

Outcome 4.1. Project implementation based on adaptive results-based management, monitoring, and reporting for enhanced visibility. This outcome will contribute to the GEF portfolio monitoring - lessons learned and continuous learning from national resilience assessments and INRM demonstration activities on the ground which will lead to adaptation and further improvement of the tools and methodologies and inform GEF's SLM portfolio monitoring, and design and application of GEF tracking tools, and resilience assessment tools.

4.1.1 M&E system established to measure project progress and impacts in terms of multiple global environmental benefits (GEBs), social and economic benefits. Baseline and targets for project indicators will be refined and used for monitoring project progress and impacts and reporting through 5 annual project reports (PIRS) submitted to GEF Secretariat and 12 half yearly project progress reports submitted by CACILM Secretariat/PCU to LTU and FAO/GEF unit.

4.1.2 Midterm and terminal evaluations carried out and reports available. A mid-term evaluation will be carried out with field visits to selected national components (at least 3) and consultation with regional and national project partners. A final evaluation will also be conducted and will include review of project reports, web-based information, and field visits to selected countries, with recommendations for ensuring sustainability of Project outcomes.

B. GLOBAL ENVIRONMENTAL BENEFITS

The Project will generate global environmental benefits in the Land Degradation as well as Climate Change focal areas, which will be underpinned by socio-economic benefits to local communities at the selected Project sites. Key benefits are summarized in the table below:

Table 8. Global and socio-economic benefits of the project.

Global Environmental Benefits	
Indicator	Target
Land under integrated management (ha) ⁷	298 254 ha of demo areas 2 590 770 ha of upscaling area
GHG emissions avoided or reduced (tons CO _{2e})	Demo areas: 8.65 million tons CO _{2e} over a 20 years capitalization phase; or 29.0 tons CO _{2e} per hectare ⁸ Upscaling area: 69.7 million tons CO _{2e} ;

⁷ This indicator refers to areas under land use plans that take an INRM approach.

⁸ According to the GEF CC-M Tracking tool, for LULUCF projects, lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate.

	or 26.9 tons CO _{2e} per hectare
Area with improved irrigation efficiency (ha)	146 050 ha of demo area 1 215 605 of upscaling area
Socio-economic benefits	
Indicator	Target
Beneficiaries in pastoral, agro-sylvo-pastoral, tree-based, irrigated and, rainfed systems	665 294 people in demo areas 2 661 380 people in upscaling areas
Improvement in incomes from INRM (disaggregated by gender)	25%

GHG emission reduction estimates have been obtained using the FAO EX-Ante Carbon balance Tool. The project will have direct impact on 298,254 ha (demo areas) and could foresee a net carbon balance of -2.78 t CO₂-eq per hectare per year that are sequestered as opposed to the status quo. Over 20 years - when a new equilibrium in terms of soil and biomass carbon stocks will likely be reached – total benefits may account for 8.65 million tons of CO₂-equivalent. The main contribution comes from improved carbon stocks in agroforestry systems (around 3.5 million tCO₂-eq), mixed systems (2.9 million tCO₂-eq), pastures (1.4 million tCO₂-eq), and cropland (0.8 million tCO₂-eq). Estimates will be revised during project inception as project beneficiaries are selected in each of the areas of intervention. The table above briefly summarizes main project impacts obtained using EX-ACT. Full details are available as a separate report which is available upon request.⁹

C. COST EFFECTIVENESS (alternative strategies & methodologies)

Support to multi-country collaboration and partnerships on INRM/SLM in Central Asia will build on the experiences from CACILM-1 and work with some of the same partners, but this project will take a more decentralized approach to knowledge production and sharing of information, and avoid building expensive management structures that cannot be maintained after project completion. In addition, Turkey is joining CACILM-2 and will bring to the fore its extensive experiences on drought risk and salinity management in Anatolia and train CA countries in the latest planning and management techniques. This is a very cost-effective approach to update the knowledge and skills of practitioners in CA on INRM/SLM.

CACILM is also taking a novel and cost effective approach to establishing an INRM/SLM knowledge platform for INRM/SLM in Central Asia by working with a multi-center knowledge management orchestrator (i.e. K-Link) that aims to promote the building of networked institutional memories and INRM/SLM CoPs. In such as system, the information sharing, discovery and dissemination process is allowed without the need to store documents in a central hub. FAO/LADA and WOCAT are important sources of information on INRM/SLM for such a platform and can provide expertise, tools, and databases, which also make the approach cost effective for FAO that is already hosting or partnering with these programs, compared to establishing an entirely new system. The knowledge platform will also establish links synergies with partner organizations and institutions, such as ELD, CGIAR, CAREC, etc., as well as with UNCCD processes.

⁹ Report was prepared by Ms. Olga Golubeva as part of the project preparation process. Table 7 above summarizes the results from EX-ACT estimations by country and type of intervention.

Moreover, for upscaling of INRM/SLM and climate-smart agriculture, economies of scale will be realized by countries working together on implementing INRM/SLM and new approaches to drought risk management and salinity control. Central Asian countries were long depended on highly mechanized, input-heavy production of crops, which, at the drop of sector investments and removal of price subsidies for inputs, resulted in reduced production due to higher costs. The project promotes the introduction of climate friendly approaches which reduce the inputs costs at by two and increase the attractiveness of the agricultural production through increased soil productivity. In addition, mainstreaming of resilience to climate induced shocks and other stressors into national policies and legislation, strategies and action plans, will also contribute to cost-effective upscaling of best practices for INRM. Countries and other partners that already have significant expertise in areas of INRM, such as Turkey, ICBA, ICARDA, etc. will train the other countries in common approaches for INRM that can be shared across countries through transfer of knowledge and capacity from one country to another. This is a much more cost-effective and efficient way of quickly building up new country capacities in INRM and climate-smart agriculture than each country working in isolation, which is often the case in Central Asia.

SECTION 3. FEASABILITY

A. ENVIRONMENTAL AND SOCIAL ASSESSMENT

Annex 7 provides a full environmental and social screening of the Project. Below follows a short summary of potential risks for unintended environmental and social impacts for each project outcome that raised a potential risk according to FAO's Environmental and Social Guidelines.

Table 9. Key safeguards triggered

Safeguard	Risk level	Comment
1. NATURAL RESOURCES MANAGEMENT 1.5. Would this project aim at improving an irrigation scheme (without expansion)?	Low	<p>The project will work on existing irrigation systems as established in Annex 5. The project will focus on planning existing systems and new systems are foreseen (see Kazakhstan). These systems will be implemented together with the introduction of native species resistant to drought and higher levels of salinity. In some countries (Uzbekistan, Tajikistan, Kyrgyzstan) the project will implement pilot activities including drip irrigation at the household level.</p> <p>During final design of project interventions with local communities and stakeholders, and if FAO technical staff consider it necessary, the ICID-checklist will be included, as well as appropriate action within the project to mitigate identified potential negative impacts, if any. In addition, projects aiming at improving water efficiency will carry out thorough water accounting in order to avoid possible negative impacts such as waterlogging, salinity or reduction of water availability downstream.</p>
Water quality	Low	Even though the area of project intervention is known for having problems with water quality, the proposed activities are not expected to have a negative impact on water quality.
3. PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE 3.4. Would this project establish or manage planted forests?	Low	<p>As discussed in the project activities and Annex 5, the project will work in pilot areas with almond and pistachio trees to recover degraded terrains and protect exposed slopes. This work will be done within the framework of local development plans and will adhere to existing national forest policies, forest programmes or strategies.</p> <p>The project will also adhere to FAO guidance regarding planted forests. This is:</p> <ul style="list-style-type: none"> • The observance of principles 9, 10, 11 and 12 of the Voluntary Guidelines on Planted Forests suffice for indigenous forests but must be applied in full compliance with ESS 9- Indigenous People and Cultural Heritage. • Planners and managers must incorporate conservation of biological diversity as fundamental in their planning, management, utilization and monitoring of planted forest resources. • In order to reduce the environmental risk, incidence and impact of abiotic and biotic damaging agents and to maintain and improve planted forest health and productivity, FAO will work together with stakeholders to develop and derive appropriate and efficient response options in planted forest management

The project will undertake monitoring and evaluation (M&E) at the site, district/oblast and national levels. This will include full monitoring of ecological, social and economic variables. The project will develop and implement participatory monitoring. The outcomes of this monitoring will be fed up to national stakeholders to inform decision-making. Overall, this will support national capacity to monitor environmental and social impacts of integrated natural resources management activities.

B. RISK MANAGEMENT

Risks and Mitigation measures

The Project's potential risks, the risk rating and the mitigation strategy are provided in the table below as well as in Annex 7:

Table 10. Risk assessment.

Risk	Level	Mitigation measure
1.No alignment of views and priorities between institutions and the main beneficiaries of current land and water resource use systems, with limited political support to advance women's and men's equal voice and access to resources and services in rural areas	Low	The establishment of mechanisms for INRM planning and SLM scaling up that incorporating the full range of land-use trade-offs, will inevitably reveal some initial divergence of views. FAO will provide a neutral and distributed platform for multi-stakeholder and cross-sectoral dialogue with project partners, e.g. FAOSEC, ICBA, ICARDA, CAREC and CACILM-2, to reach consensus on key issues, and provide guidelines, extension materials, etc. The enabling environment for INRM will be strengthened to promote joint decision making across sectors. It will facilitate cooperation between national institutions and local communities, and strengthen the relevance, efficiency and effectiveness of institutions to adopt gender-sensitive approaches and promote gender-sensitive technologies.
2.Building of sufficient capacity and capability of existing national and regional institutions and local authorities will take too long to allow project sustainability	Low/ Medium	Need for strengthening cross-sectoral coordination and institutional capacity have been revealed in the CACILM and other projects in Central Asia for the last ten years. A novel approach to sharing of information and knowledge will be therefore promoted that will not require that a central hub be maintained, but will promote the building of networked institutional memories and INRM CoPs.
4. The catalytic effect of the project on SLM upscaling and investments at regional and national level is limited	Low	Linking a decentralized approach to multi-stakeholder INRM and SLM use plans and with incentive mechanisms, such as more inclusive value chains, PES schemes, etc. can catalyze investments from multiple sources, including local communities, national governments, NGOs, and international institutions.

<p>5. Climate change impacts on land resources and management systems makes land degradation assessment and INRM/SLM Best Practices knowledge platforms quickly outdated.</p>	<p>Low</p>	<p>Climate change resilience measures will be included in national integrated NRM and SLM scaling up plans in terms of multi-criteria selection of SLM best practices for scaling up in each country using the RAPTA approach (component 2) complemented with the SHARP tool at the field and community level. In addition, the KM platform will be based on knowledge sharing and orchestration of existing platforms using new IT for enhancing cooperation and developing organizational capacities. The approach does not require the maintenance of a central knowledge hub, and the KM platform will be automatically updated as key partners gather and store new knowledge in their respective systems.</p>
---	------------	---

SECTION 4. IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

A. INSTITUTIONAL ARRANGEMENTS

General Institutional Context and Responsibilities

The lead government agencies with responsibility for INRM and UNCCD NAP implementation in each country include:

Kazakhstan:

- The Ministry of Environment Protection that is responsible for the implementation of the UNCCD and other environmental conventions. The Department Director is the national coordinator of the UNCCD;
- The Agency for Land Management that is responsible for productivity and fertility of land resources. A number of specialized organizations work under the auspices of the agency; and
- The Ministry of Agriculture that is responsible for use of agricultural lands and forest.

Kyrgyzstan:

- The Ministry of Agriculture and Reclamation (MAR) and its specialized Department on Water Management and Reclamation; and
- The State Agency on Environment Protection and Forestry (SAEPF) that supervises and coordinates implementation of environmental legislation related to forestry and pasture management.

Tajikistan:

- State Committee on Environmental Protection under the government of the Republic of Tajikistan is responsible for implementation of UNCCD and other environmental conventions. The chairman of the committee is the UNCCD NFP and represents the country at the ICSD. The committee will also be the main project partner, will represent the country at the CACILM Steering committee/council.
- Ministry of agriculture

Turkmenistan:

- The State Committee on Environment Protection and Land Resources is national focal point for UNCCD convention and responsible for its obligations. It represents the country at ICSD and will provide the coordination of the project at the national and the regional level through its subsidiaries, including the National Institute of Deserts, Flora and Fauna;
- Ministry of Agriculture and Water Economy, the FAO's main partner and national focal point will provide the strategic guidance and support in national implementation of the project

Turkey:

- Ministry of Forestry and Water Affairs (MFWA) that is the main management authority for forests and pastures, combating desertification and land degradation, management and

planning of water resources, protected areas and wetlands. The General Directorate of Combating Desertification and Erosion (CEM) is the focal point for UNCCD;

- Ministry of Food, Agriculture and Livestock (MFAL) that is organizing, coordinating and guiding the conservation of soils and agricultural lands, including pastures, and prevention of soil and land degradation and loss of soil and water resources. The General Directorate of Agricultural Research and Policies (TAGEM) has several research institutes that conduct demonstrations related to agriculture in drought and salinity prone areas; and
- The Ministry of Environment and Urbanization (MEU) that is the focal point for the UNFCCC and also responsible for environmental impact assessment. The Department of Climate Change of the General Directorate of Environmental Management and the General Directorate of Spatial Planning are other key bodies relevant to this project.

Uzbekistan:

- Ministry of Agriculture and Water Management (surface water) will be the key partner in implementing the CACILM2 project through its subsidiaries, including
- Center of Hydro-meteorological services under the Cabinet of Ministers of the Republic of Uzbekistan (Uzhydromet) is the government body, specifically authorized to solve issues in the field of hydrometeorology and climate, including hydro-meteorological provision of economic sectors and the country's population. By the decision of the government, Uzhydromet is entitled to provide the fulfilments of obligations under UNCCD and UNFCCC, as well as for coordination within the CACILM programme in Uzbekistan.
- The State Committee on Land Resources, Geodesics, Cartography and the State Cadaster that is the major authority responsible for implementation of integrated government policy and control of land use and protection;
- The State Committee on Nature (SPEM) that is responsible for environmental monitoring.

The lead regional agencies for implementation and coordination of the CACILM platform include:

The Interstate Commission for Sustainable Development (ICSD) that is a body of the International Fund for the Aral Sea established by the presidents of the Central Asian countries. Its main functions include (i) organization and coordination of the regional sustainable development and environment protection strategy; (ii) management of regional environment and sustainable development programs, action plans and projects; (iii) providing expertise and project development; (iv) coordination of activities related to Central Asian countries obligations under transboundary environmental conventions; and (vi) support to regional information exchange and establishment of a regional database and information system on environment and sustainable development. ICSD comprises three representatives from each country (Ministers of Environment, Deputy Ministers of Economy, and representatives of scientific agencies and other sectors). It is chaired by the Ministers of Environment on a two-year rotation basis;

Central Asia Regional Environmental Centre (CAREC) that was founded by the governments of the five Central Asian countries, and the European Union and UNDP. It was created as a cooperation platform for sustainable development. The organization was vested with the authority to develop and implement the Central Asian Initiative (CAI) on Sustainable Development. The EU and other international organizations supported the Centre's evolution as a regional platform for environmental cooperation;

International Centre for Biosaline Agriculture (ICBA) that is an international, non-profit agricultural research center headquartered in Dubai. Originally focused on the problems of salinity and using saline water for irrigated agriculture, ICBA's focus has shifted to research innovations in the assessment of natural resources, climate change adaptation, crop productivity and diversification, aquaculture and bio-energy and policy analysis. It will support the project through its Central Asia office in Tashkent.

International Centre for Agricultural Research in Dry Areas (ICARDA) that focuses on resource-poor farmers related and their access to knowledge and new innovations related to: water harvesting - supplemental irrigation and water-saving irrigation techniques; conservation agriculture methods to reduce production costs and improve sustainability; diversification of production systems to high-value crops – horticulture, herbal and medicinal plants; integrated crop/rangeland/livestock production systems including non-traditional sources of livestock feed; and empowerment of rural women – support and training for value-added products. It will support the project through its Central Asia office in Tashkent.

Bioversity International is a global research-for-development organization that delivers scientific evidence, management practices and policy options to use and safeguard agricultural biodiversity to attain global food and nutrition security, working with partners in low-income countries in different regions where agricultural biodiversity can contribute to improved nutrition, resilience, productivity and climate change adaptation. Bioversity is a member of the CGIAR Consortium and has a regional office in Central Asia. Bioversity will be involved in implementation of activities related to agroforestry, distribution and multiplication of the local drought resistant species, and creation of nurseries for larger distribution of trees.

University of Central Asia (UCA) is Central Asia's first regional university was founded with support from the Aga Khan Development Network. UCA's mission is to promote the social and economic development of Central Asia, particularly its mountain societies, while at the same time helping the different peoples of the region to preserve and draw upon their rich cultural traditions and heritages as assets for the future. It will support the project through its research programs and campuses in the region.

B. IMPLEMENTATION ARRANGEMENTS

a) Roles and responsibilities of Government partner.

The Food and Agriculture Organization of the United Nations (FAO) will be the GEF Agency responsible for supervision and provision of technical guidance during project implementation. In addition, FAO will act as financial and operational Executing Agency, and will deliver procurement and contracting services to the project using FAO rules and procedures, as well as financial services to manage GEF resources through an agreement with the government.

Main project partners: The national lead institutions (Table 11) will be the centre of the project's work and operations as described below. They will be the lead government counterpart and the Project Executing Partners in close consultation with other line ministries, and district/oblast governments participating in field activities. As such, they will have lead technical responsibility for the project, with FAO providing administrative and procurement support to them.

Table 11. Lead national institutions for CACILM-2.

Country	Lead institution
Republic of Kazakhstan	Ministry of Agriculture Ministry of Energy
Kyrgyz Republic	Ministry of Agriculture and Reclamation (MAR)
Republic of Tajikistan	Committee of Environmental Protection
Republic of Turkey	Ministry of forestry and water resources Ministry of food, agriculture and livestock
Turkmenistan	State Committee of Environment Protection and Land Resources
Republic of Uzbekistan	Ministry of Agriculture and Water Resources Centre of Hydro-meteorological Services under the Cabinet of Ministers

The national lead institutions will carry out their responsibilities to support Project execution through the National Project Coordinator (NPC). The NPC will be a senior staff member designated by the national lead institutions, and will be the lead person responsible for ensuring smooth execution of the project on behalf of the Government for each country. The NPC is not financed by the Project. The NPC is responsible to the Government for the successful implementation of the Project and the Project's impacts. The duties of the NPC include (i) acting as the responsible focal point at the political and policy level within the national lead institutions, and (ii) ensuring all necessary support input from Government personnel are provided by national lead institutions to enable the project to implement all of the proposed component activities; and (iii) reviewing and providing input to annual work plans and budgets in consultation/collaboration with the FAO representative; (iv) and to participate in the selection of recruitment of consultants. The Terms of Reference for the NPC can be found in Annex 5.

Regional CACILM Council (RCC): The RCC will act as the project steering committee and will be comprised of the GEF Focal Points and UNCCD Focal Points from all five CA countries and Turkey as well as FAO, represented by the FAO Lead Technical Officer. The Steering Committee may invite representatives from other organizations such as GIZ, ICARDA, ICBA, CAREC, WOCAT and UCA, among others, to participate in the meetings. The RCC will provide policy guidance, review results-based Annual Work Plans and Budgets and provide recommendations for resolving any constraints faced by the project. The RCC will be critical to ensuring:

- Close linkages between the Project and other ongoing projects and programmes relevant to the project;
- Sustainability of key Project outcomes, including up-scaling and replication; and,
- Effective coordination of other Government and regional partners work under this Project.

CACILM Secretariat: The CACILM Secretariat will function as the project coordination unit. The CACILM Secretariat will be based in Almaty, Kazakhstan, as agreed during the validation workshop carried out in October 2016. It will also act as secretariat to the RCC. The CACILM Secretariat will consist of the Regional Project Management Unit (PMU), the National Coordination Units, and the National CACILM Board.

The CACILM Project Management Unit will be led by the Regional Project Coordinator (RPC), a full-time Project position. The Secretariat will be comprised of a small core group of operational and technical staff, namely: the RPC; finance and administrative assistant, an M&E and communication and outreach expert. It will also include experts on policy and institutions, INRM, and gender and livelihoods on a part-time basis. One full time staff member will also

serve as the Deputy RPC. The CACILM Secretariat staff will be recruited by the project and report to the BH, and will carry out its functions in line with FAO rules and regulations.

The following are some of the key functions of the CACILM Secretariat:

- to technically identify, plan, design and support all activities;
- to liaise with government and regional agencies and to advocate on behalf of the Project;
- to prepare the Annual Work Plan and Budget (AWP/B);
- to be responsible for day-to-day implementation of the project in line with the AWP;
- to ensure a results-based approach to project implementation, including maintaining a focus on project results and impact as defined by the RF indicators;
- to coordinate project interventions with other ongoing activities;
- to monitor project progress;
- to be responsible for the elaboration of FAO PPRs and the annual GEF PIR, and;
- to facilitate and support the midterm review and final evaluation of the Project.

The CACILM Secretariat will also be supported by a series of international consultants to provide short term inputs to the Project. These will be finalised during the project implementation, and are tentatively identified as:

- 1 International INRM expert (for integrating resilience into policies and practices)
- 1 Drought risk management expert
- 1 Salinity management expert
- 1 international expert on valuation of ecosystem services
- 1 International gender expert
- 1 Livelihood & socio-economic expert
- 1 M&E expert
- 1 Value-chain expert

National Coordination Units (NCUs) will be responsible for policy mainstreaming in all participating countries and demonstration site activities where appropriate, and work under supervision of the regional CACILM Secretariat. The NCUs will work closely with local communities and other local stakeholders at demonstration sites. The NCUs will be supported by National CACILM Boards that will function as national steering committees. They will be chaired by the UNCCD focal points and include representatives from key participating sectors, such as agriculture, NGOs and other donors.

Each NCU will consist of the National Project Coordinator (NPC) funded by the government, as well as a Field Officer (FO) funded by GEF (full time in Kazakhstan, Turkmenistan and Uzbekistan, part-time in Tajikistan and Kyrgyzstan), other specialised national consultants that support demonstration site activities and local district/oblast staff seconded to the project. The FOs report to the Regional CACILM Secretariat.

Regional Project Coordinator (RPC) will lead the CACILM Secretariat, be paid by the Project and work closely with the NPCs. The RPC reports to the BH on operational issues and to the LTO on technical issues. The RPC is a full-time position. The RPC will lead and organize the day-to-day execution of the project. The RPC will take the lead in communications with government and regional agencies, and advocacy. The RPC will also be responsible for providing technical advice and guidance in his/her area of technical expertise. The RPC will report on Project progress to RCC meetings, and will develop and submit semi-annual PPRs and annual PIRs. In addition to technical and substantive duties, the RPC will:

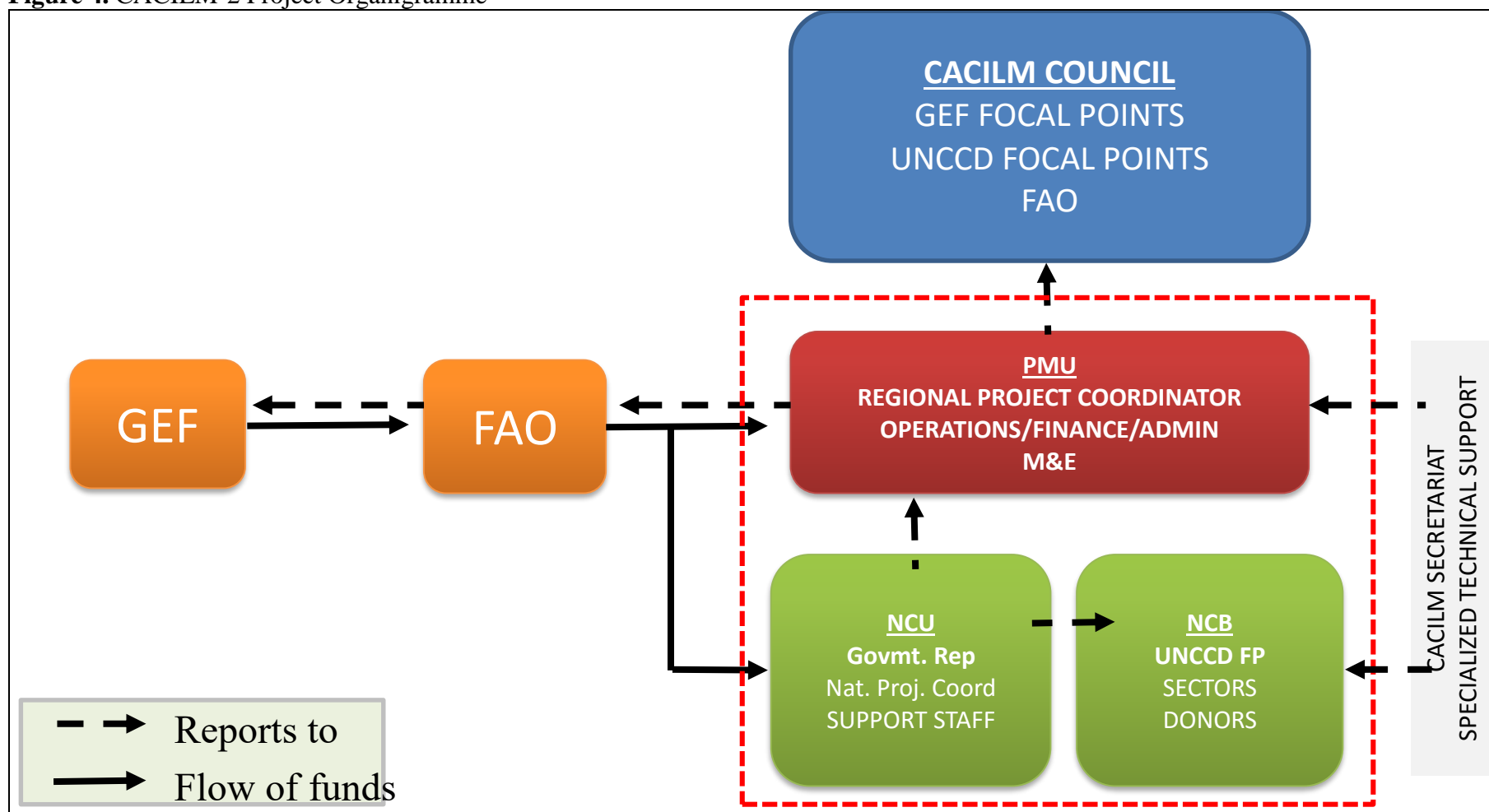
- Oversee creation of a participatory monitoring and evaluation system for the Project's work;
- Ensure real-time monitoring of Project progress and the alerting of the NPCs, BH and the LTO to potential problems that could result in delays in implementation;
- Help identify consultant candidates and work with the BH to ensure their timely recruitment;
- Ensure the Project's effective and efficient work with stakeholders in the pilot areas;
- Help organize and supervise consultant inputs;
- Oversee creation of the Project's approach to managing and sharing knowledge, and to identifying and disseminating lessons learned;
- Communicate, advocate and engage in policy dialogue.

Field Officers (FO) will be responsible for the coordination and planning of all activities at the demonstration sites. The FOs are the Project's key strategic mechanism for working with local communities and for building the capacity at district/oblast level. The FOs will take the lead in communicating with local governments, advising on the preparation of local workplans, designing and running trainings for district officers and local communities, and other local-level stakeholders, designing local-level activities, trouble shooting at the local level, ensuring Project inputs are delivered effectively to local governments.

Other key partners. Other partners supporting the execution will work closely with the national lead agencies through their nominated technical focal points at the national and district levels. These other key partners include: ICSD, Bioversity, CAREC, ICBA and ICARDA, as well as other CGIAR centres as required, WOCAT, UCA, ZOI, and the concerned Oblast Governments.

One important vehicle for collaboration will be through Letters of Agreement (LoA) that will be elaborated and signed between FAO and the respective collaborating partners. This will include government and civil society organizations, as well as regional and international organizations. Funds received under an LoA will be used to execute Project activities in conformity with FAO's rules and procedures.

Figure 4. CACILM-2 Project Organigramme



- b) *FAO's role and responsibilities, both as the GEF Agency and as an executing agency, including delineation of responsibilities internally within FAO*

FAO will be the GEF implementing and executing agency. As the GEF Agency, FAO will be responsible for Project oversight to ensure that project implementation adheres to GEF policies and criteria, and that the Project efficiently and effectively meets its objectives and achieves expected outcomes and outputs as delimited in the Project document. FAO will report on Project progress to the GEF Secretariat and financial reporting will be to the GEF Trustee. FAO will closely supervise and provide technical guidance to the Project by drawing upon its capacity at the global, regional and national levels, through the concerned units at FAO-HQ, the Sub-Regional Office for Central Asia (SEC) and the FAO Representation in CA countries and Turkey.

At the request of the Governments of Central Asian Countries and Turkey, the project will be executed by FAO via its Direct Execution (DEX) modality in close consultation with national lead agencies and regional partners. FAO, in consultation with the RPC and NPCs, will deliver procurement and contracting services to the project using FAO rules and procedures, as well as financial services to manage the GEF resources. For more detail, please see description below.

Executing Responsibilities (Budget Holder): Under FAO's Direct Execution modality, the FAO Representation for Central Asia will hold the budget and operational responsibilities for this project. The budget holder (BH) will schedule the technical backstopping and monitoring missions as required. The FAO Representative will ensure timely operational, administrative and financial management of the Project's GEF resources, including the disbursement of funds. The BH will, in consultation with the NPCs and the RPC,; (i) review and clear annual work plans and budgets and monitor them once approved; (ii) review procurement and subcontracting material and supporting documentation and obtain internal FAO approvals; (iii) schedule technical backstopping and monitoring missions; (iv) participate in project supervision missions; (v) prepare financial and monitoring reports (see section "Financial management of and reporting on GEF resources" below); (vi) provide operational oversight to contracted activities carried out by the Project partners; and (vii) prepare budget revisions; (viii) be accountable for safeguarding resources from inappropriate use, loss, or damage; (ix) be responsible for addressing recommendations from oversight offices, such as Audit and Evaluation; and (x) establish a multi-disciplinary FAO Project Task Force to support the project.

Operations and reporting. including the procurement of goods and contracting of services for Project activities - will be done in accordance with FAO rules and procedures. As such, FAO will, in close coordination with the NPCs, be responsible for the timely recruitment of key project posts listed above such as the RPC, and the FOs. In accordance with FAO rules and procedures, final approval of the use of GEF resources rests with the FAO Sub-Regional Office for Central Asia (SEC).

The FAO HQ Technical Office. The FAO AGL will be the HQ Technical Office within FAO for this Project and will provide overall technical guidance to its implementation. AGL may delegate the responsibility for direct technical supervision to the FAO Sub-Regional Office for Central Asia (SEC) as required.

FAO Lead Technical Officer (LTO) The Senior Land and Water Officers of AGL and SEC will be the LTOs for the Project and will have primary accountability for the timeliness and quality

of the technical services provided throughout project execution. The LTOs will work in close collaboration with the National Project Coordinators (NPCs) and Regional Project Coordinator (RPC). The LTOs will provide technical guidance to the Project team to ensure delivery of quality technical outputs. The LTOs will coordinate the provision of appropriate technical backstopping from all the concerned FAO units represented in the Project Task Force. The Project Task Force is thus composed of technical officers from the participating units (see below), operational officers, the Investment Centre Division/GEF Coordination Unit and is chaired by the BH. The primary areas of LTO support to the project include:

- i. Review and ensure clearance by the relevant FAO technical officers of all the technical Terms of Reference (TOR) of the project team and consultants;
- ii. Ensure clearance by the relevant FAO technical officers of the technical terms of reference of the Letters of Agreement (LoA) and contracts;
- iii. In close collaboration with national lead agencies and NPCs, lead the selection of the project staff, consultants and other institutions to be contracted or with whom an LoA will be signed;
- iv. Review and clear technically reports, publications, papers, training material, manuals, etc.;
- v. Monitor technical implementation as established in the project RF;
- vi. Review the Project Progress Reports (PPRs) and prepare the annual Project Implementation Review (PIR);
- vii. Represent FAO in the RCC;
- viii. Provide technical support to the Regional Project Coordinator;
- ix. Provide technical inputs to procurement and contract documentation;
- x. Review and clear final technical products delivered by consultants and contract holders financed by GEF resources before the final payment can be processed;
- xi. Support the CACILM Secretariat in preparing the AWP/B, with support from the Budget Holder and clearing it prior to submission to the RCC.

FAO Project Task Force (FAO-PTF). The FAO-PTF will be led by the Budget Holder and include the LTO and the Funding Liaison Officer, TCI. Other members will be added as needed. The main role of the task force is to provide technical guidance to the LTO and the CACILM Secretariat for the implementation of the project, contribute to specific project activities as required, and troubleshoot should implementation issues arise.

Participating units from across FAO will be involved in supporting the Project's work and in ensuring that the Project stays on track to achieve its overall objectives and indicators of success. When appropriate, these units within SEC or HQ will provide technical support in areas such as: land and watershed management, innovative funding mechanisms, gender, and climate change resilience. The FAO-GEF Coordinating Unit of the FAO Investment Centre Division will provide adaptive management support and results-based management oversight and guidance to the LTO and the participating units.

FAO GEF Coordination Unit in Investment Centre Division (GCU) will review and approve PPRs, annual PIRs and financial reports and budget revisions. The GCU will undertake supervision missions if considered necessary in consultation with the LTO and the BH. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the GCU. The GCU will ensure that the project's mid-term review and final evaluation meet GEF requirements by reviewing evaluation ToRs and draft evaluation reports. Should the PIRs or mid-term review highlight risks affecting the timely and effective implementation of the

project, the GCU will work closely with the BH and LTO to make the needed adjustments in the project's implementation strategy.

The FAO Finance Division will provide final clearance of any budget revisions, provide annual Financial Reports to the GEF Trustee and, in collaboration with the GCU, will call for project funds on a six-monthly basis from the GEF Trustee.

C. FINANCIAL PLANNING AND MANAGEMENT

Financial Plan - by Component

Total project funding amounts to US\$ 75,749,705 of which 14.4% is provided by GEF and 85.6% is co-financing from central and district governments, FAO, ICBA, ICARDA, GIZ, and Zoi. Total project GEF and co-financing is summarized in Table 12.

Table 12. Project financing

Name of Co-financier	Amount (\$)	
Government of Kazakhstan	16,640,546	22.2%
Government of Kyrgyz Republic		
Government of Tajikistan	1,465,000	1.9%
Government of Turkey	2,000,000	2.6%
Government of Turkmenistan	6,000,000	7.9%
Government of Uzbekistan	23,780,000	31.4%
ICARDA	1,700,000	2.2%
ICBA	560,000	0.7%
Zoi	50,000	0.1%
GIZ	909,500	1.2%
FAO	11,780,000	15.5%
Subtotal Cofinancing	64,885,046	85.6%
Subtotal GEF Funds	10,874,659	14.4%
Total project financing	75,759,705	

GEF Inputs

The GEF funds will finance inputs needed to generate the outputs and outcomes under the Project. These include: (i) local and international consultants for support to regional capacity building in DRM and salinity management, as well as strengthening of local livelihoods and mainstreaming of gender in project activities, and project M&E; (ii) technical support to upscaling of climate-smart agriculture (iii) support to regional information and knowledge management; (vi) LoA/contracts with technical institutions and service providers supporting the delivery of specific project activities on the ground; (v) international flights and local transport and minor office equipment; and (vi) training and awareness raising material. Total GEF funding to the Project amounts to US\$ 10,874,659.

Government Inputs

The government of Kazakhstan will provide in-kind contribution in the amount equal to USD 16,640,545.9 (15,127,769 Euro). The government of Tajikistan will provide in-kind co-finance in amount of USD 1,465,000. The government of Turkey will provide the co-finance in amount of USD 1,100,000 in cash and USD 900,000 in in-kind through the ministry of forestry and water affairs and through the ministry of food, agriculture and livestock. The government of Turkmenistan will provide the co-finance through the implementation of the State programme of the development of districts (namely “Improvement of ameliorative condition of lands in Dashoguz region” in the amount of USD 6,000,000. The government of Uzbekistan will provide its contribution through the implementation of the regular activities of the ministry of agriculture and water resources and the fund of ameliorative improvement of irrigated lands, including the specific projects implemented in Jizzak and Kashkadarya regions, in a total of USD 23,780,000.

FAO and other Partner Inputs

FAO will provide technical assistance, backstopping, training and supervision of the execution of activities financed by GEF resources. In addition, FAO will provide cash co-financing in the form of programs and projects being implemented by the Subregional Office for Central Asia, by FAO Technical Cooperation Program and by other donors’ trust fund arrangements for an amount equal to USD 11,780,000.

Other co-financiers include GIZ (USD 909,500), ICARDA (USD 1,700,000), ICBA (USD 560,000) and Zoi (USD 50,000). These funds will support the implementation of component 1 and to some extent component 3.

Financial Management of, and Reporting on GEF Resources

Financial Records: As per normal FAO practice, FAO shall maintain a separate account in United States dollars for the Project’s GEF resources showing all income and expenditures. Expenditures incurred in a currency other than United States dollars shall be converted into United States dollars at the United Nations operational rate of exchange on the date of the transaction. FAO shall administer the Project in accordance with its regulations, rules and directives.

Budget Revisions: Budget revisions will be prepared by the BH in accordance with FAO standard guidelines and procedures as needed. The budget revision will take into consideration the status of the implementation of the project activities towards achieving specific outputs and outcomes. The budget revision will be submitted by BH through FPMIS. The budget revision should be prepared on the basis of field needs and the agreed AWP (the AWP is normally prepared by the CACILM Secretariat/guided and cleared by LTO). The CACILM Secretariat normally prepares the draft budget revision proposal to BH and LTO for their reviews, then BH will submit the budget revision to FAO-GEF Coordination Unit for approval. Budgets are the costed equivalent of the work plan in that they foresee the transformation of inputs into activities and activities into outputs. Budget management, monitoring and revision are the responsibility of the Budget Holder and constitute a substantive, integral and essential component of project management. Project Budget Holders are required to carry out at least two budget revisions per year in full consultation with the PTF: i) one in March following the corporate equalization process (explained in the following paragraph) and; ii) one in September/October to support work-planning for the following year, to ensure that expenditures that have occurred in the year are adequately covered by the corresponding budget.

Financial Reports: The BH shall prepare six-monthly project expenditure accounts and final accounts for the project, showing amount budgeted for the year, amount expended since the beginning of the year, and separately, the un-liquidated obligations as follows:

- **Annually:** Details of project expenditures on a component-by-component and output-by-output basis, reported in line with project budget codes as set out in the Project document, as at 30 June and 31 December each year.
- **Final report:** Final accounts on completion of the Project on a component-by-component and output-by-output basis, reported in line with project budget codes as set out in the Project document.
- **A final statement** of account in line with FAO Oracle Project budget codes, reflecting actual final expenditures under the Project, when all obligations have been liquidated.

Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the GEF Financial Procedures Agreement and submitted by the FAO Finance Division.

Responsibility for Cost Overruns: The BH is authorized to enter into commitments or incur expenditures up to a maximum of 20 percent over and above the annual amount foreseen in the Project budget under any budget sub-line provided the total cost of the annual budget is not exceeded.

Any cost overrun (expenditure in excess of the budgeted amount) on a specific budget sub-line over and above the 20 percent flexibility should be discussed with the GCU/TCIB with a view to ascertaining whether it will involve a major change in Project scope or design. If it is deemed to be a minor change, the BH shall prepare a budget revision in accordance with FAO standard procedures. If it involves a major change in the Project's objectives or scope, a budget revision and justification should be prepared by the BH for discussion with the GEF Secretariat.

Savings in one budget sub-line may not be applied to overruns of more than 20 percent in other sub-lines even if the total cost remains unchanged, unless this is specifically authorized by the GCU upon presentation of the request. In such a case, a revision to the Project document amending the budget will be prepared by the BH. Under no circumstances can expenditures exceed the approved total Project budget or be approved beyond the NTE date of the project. Any over-expenditure is the responsibility of the BH.

Audit: The Project shall be subject to the internal and external auditing procedures provided for in FAO financial regulations, rules and directives and in keeping with the Financial Procedures Agreement between the GEF Trustee and FAO. The audit regime at FAO consists of an external audit provided by the Auditor-General (or persons exercising an equivalent function) of a member nation appointed by the Governing Bodies of the Organization and reporting directly to them, and an internal audit function headed by the FAO Inspector-General who reports directly to the Director-General. This function operates as an integral part of the Organization under policies established by senior management, and furthermore has a reporting line to the governing bodies. Both functions are required under the Basic Texts of FAO which establish a framework for the terms of reference of each. Internal audits of accounts, records, bank reconciliation and asset verification take place at FAO field and liaison offices on a cyclical basis.

D. PROCUREMENT

Procurement. Careful procurement planning is necessary for securing goods, services and works in a timely manner, on a “Best Value for Money” basis. It requires analysis of needs and constraints, including forecast of the reasonable timeframe required to execute the procurement process. Procurement and delivery of inputs in technical cooperation projects will follow FAO’s rules and regulations for the procurement of supplies, equipment and services (i.e. Manual Sections 502 and 507). *Manual Section 502*: “Procurement of Goods, Works and Services” establishes the principles and procedures that apply to procurement of all goods, works and services on behalf of the Organization, in all offices and in all locations, with the exception of the procurement actions described in Procurement Not Governed by Manual Section 502. *Manual Section 507* establishes the principles and rules that govern the use of Letters of Agreement (LoA) by FAO for the timely acquisition of services from eligible entities in a transparent and impartial manner, taking into consideration economy and efficiency to achieve an optimum combination of expected whole life costs and benefits.

As per the guidance in FAO’s Project Cycle Guide, the BH will draw up an annual procurement plan for major items, which will be the basis of requests for procurement actions during implementation. The first procurement plan will be prepared at the time of project start-up, if not sooner, in close consultation with the CTA/NPC and LTO. The plan will include a description of the goods, works, or services to be procured, estimated budget and source of funding, schedule of procurement activities and proposed method of procurement. In situations where exact information is not yet available, the procurement plan should at least contain reasonable projections that will be corrected as information becomes available.

The procurement plan shall be updated every 12 months and submitted to FAO BH and LTO for clearance, together with the AWP/B and annual financial statement of expenditures report for the next instalment of funds.

The BH, in close collaboration with the CTA/NPC, the LTO and the Budget and Operations Officer (if in place) will procure the equipment and services provided for in the detailed budget in Appendix 3, in line with the AWP and Budget and in accordance with FAO’s rules and regulations.

The Budget Holder for extra budgetary funds is responsible for development and submission of a Procurement Plan for use of the extra budgetary funds based on reasonable estimates of annual requirements or as soon as possible after identifying new requirements (which may be at the time of finalization of the project documents).

The Procurement Plan should be prepared using the proposed [template](#), and at a minimum shall include the following:

- description and quantities of the goods, works or services to be procured (i.e. specifications for goods, TORs for services and BoQ for works);
- the correct FAO Category Codes for goods or services;
- proposed buyer (i.e. CSAP, Decentralized Offices, Procurement Mission, other UN Entities);
- estimated budget and source of funding (if available);
- schedule of procurement activities (i.e. the date of tender launch, tender closing date, the targeted date of contract award);
- targeted date of delivery;
- delivery terms and destination;

- proposed method of solicitation; and
- proposed method of procurement.

(Note: Additional information may be included as required. A Procurement Plan should be updated on a regular basis)

E. MONITORING AND REPORTING

Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the project Results Framework (RF) (Annex 1 and described below). The project Monitoring and Evaluation Plan has been budgeted at USD 260 000 (see Table 12). Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines. Integrated into all Outcomes, the Project monitoring and evaluation approach will also facilitate learning and mainstreaming of project outcomes and lessons learned into international good practice as well as national and local policies, plans and practices.

Oversight

Project oversight will be carried out by the Project Steering Committee (PSC), i.e. the Regional CACILM Council (RCC), the FAO GEF Coordination Unit and relevant Technical Units in HQ. Oversight will ensure that: (i) project outputs are produced in accordance with the project results framework and leading to the achievement of project outcomes; (ii) project outcomes are leading to the achievement of the project objective; (iii) risks are continuously identified and monitored and appropriate mitigation strategies are applied; and (iv) agreed project global environmental benefits/adaptation benefits are being delivered.

The FAO GEF Unit and HQ Technical Units will provide oversight of GEF financed activities, outputs and outcomes largely through the annual Project Implementation Reports (PIRs), periodic backstopping and supervision missions.

Monitoring

Project monitoring will be carried out by the Project Management Unit/CACILM Secretariat and the FAO budget holder. Project performance will be monitored using the project results matrix, including indicators (baseline and targets) and annual work plans and budgets. At inception the results matrix will be reviewed to finalize identification of: i) outputs ii) indicators; and iii) missing baseline information and targets. A detailed M&E plan, which builds on the results matrix and defines specific requirements for each indicator (data collection methods, frequency, responsibilities for data collection and analysis, etc) will also be developed during project inception by the M&E specialist.

Reporting

Specific reports that will be prepared under the M&E program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) annual Project Implementation Review (PIR); (v) Technical Reports; (vi) co-financing reports; and (vii) Terminal Report. In addition, assessment of the GEF Monitoring Evaluation Tracking Tools against the baseline (completed during project preparation) will be required at midterm and final project evaluation.

Project Inception Report. It is recommended that the CACILM Secretariat prepare a draft project inception report in consultation with the LTO, BH and other project partners. Elements of this report should be discussed during the Project Inception Workshop and the report subsequently finalized. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may

affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan. The draft inception report will be circulated to the RCC for review and comments before its finalization, no later than one month after project start-up. The report should be cleared by the FAO BH, LTO and the FAO GEF Coordination Unit and uploaded in FPMIS by the BH.

Results-based Annual Work Plan and Budget (AWP/B). The draft of the first AWP/B will be prepared by the CACILM Secretariat in consultation with the FAO Project Task Force and reviewed at the project Inception Workshop. The Inception Workshop (IW) inputs will be incorporated and the CACILM Secretariat will submit a final draft AWP/B within two weeks of the IW to the BH. For subsequent AWP/B, the CACILM Secretariat will organize a project progress review and planning meeting for its review. Once comments have been incorporated, the BH will circulate the AWP/B to the LTO and the GEF Coordination Unit for comments/clearance prior to uploading in FPMIS by the BH. The AWP/B must be linked to the project's Results Framework indicators so that the project's work is contributing to the achievement of the indicators. The AWP/B should include detailed activities to be implemented to achieve the project outputs and output targets and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B should be approved by the Regional CACILM Council (RCC)/Project Steering Committee and uploaded on the FPMIS by the BH.

Project Progress Reports (PPR): PPRs will be prepared by the CACILM Secretariat based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework (Annex 1). The purpose of the PPR is to identify constraints, problems or bottlenecks that impede timely implementation and to take appropriate remedial action in a timely manner. They will also report on projects risks and implementation of the risk mitigation plan. The PPR will be submitted to the BH and LTO for comments and clearance. The BH will upload the PPR on the FPMIS.

Annual Project Implementation Review (PIR): The LTO (in collaboration with the CACILM Secretariat) will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the BH and the TCI GEF Funding Liaison Officer (FLO) for review and approval no later than (check each year with GEF Unit but roughly end June/early July each year). The FAO GEF Coordination Unit will submit the PIR to the GEF Secretariat and GEF Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. PIRs will be uploaded on the FPMIS by the TCI GEF Coordination Unit. Key milestones for the PIR process:

- Early July: the LTOs submit the draft PIRs (after consultations with BHs, project teams) to the GEF Coordination Unit (faogef@fao.org , copying respective GEF Unit officer) for initial review;
- Mid July: GEF Unit responsible officers review main elements of PIR and discuss with LTO as required;
- Early/mid-August: GEF Coordination Unit prepares and finalizes the FAO Summary Tables and sends to the GEF Secretariat by (date is communicated each year by the GEF Secretariat through the FAO GEF Unit);
- September/October: PIRs are finalized. PIRs carefully and thoroughly reviewed by the GEF Coordination Unit and discussed with the LTOs for final review and clearance;

- Mid November 17: (date to be confirmed by the GEF): the GEF Coordination Unit submits the final PIR reports -cleared by the LTU and approved by the GEF Unit- to the GEF Secretariat and the GEF Independent Evaluation Office.

Technical Reports: Technical reports will be prepared by national, international consultants (partner organizations under LOAs) as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by the CACILM Secretariat to the BH who will share it with the LTO. The LTO will be responsible for ensuring appropriate technical review and clearance of said report. The BH will upload the final cleared reports onto the FPMIS. Copies of the technical reports will be distributed to project partners and the RCC/Project Steering Committee as appropriate.

Co-financing Reports: The BH, with support from the CACILM Secretariat, will be responsible for collecting the required information and reporting on co-financing as indicated in the Project Document/CEO Request. The CACILM Secretariat will compile the information received from the executing partners and transmit it in a timely manner to the LTO and BH. The report, which covers the period 1 July through 30 June, is to be submitted on or before 31 July and will be incorporated into the annual PIR. The format and tables to report on co-financing can be found in the PIR.

GEF Tracking Tools: Following the GEF policies and procedures, the GEF Land Degradation and Climate Change tracking tools for full sized projects will be submitted at three moments: (i) with the project document at CEO endorsement; (ii) at the project's mid-term review/evaluation; and (iii) with the project's terminal evaluation or final completion report. The TT will be uploaded in FPMIS by the GEF Unit. The TT is developed by the Project Design Specialist, in close collaboration with the FAO Project Task Force. It is filled in by the CACILM Secretariat and made available for the mid-term review and again for the final evaluation.

Terminal Report: Within two months before the end date of the project, and one month before the Final Evaluation, the CACILM Secretariat will submit to the BH and LTO a draft Terminal Report. The main purpose of the Terminal Report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the project, and to provide the donor with information on how the funds were utilized. The Terminal Report is accordingly a concise account of the main products, results, conclusions and recommendations of the project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results.

Monitoring and Evaluation Plan Summary

Table 13: Summary of the main M&E reports, responsible parties, timeframe and costs.

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs
Inception Workshop (IW)	CACILM Secretariat, supported by the LTO, BH, and GCU	Within three months of project start up	USD 50 000
Project Inception Report	CACILM Secretariat, LTO, BH, and GCU	No later than one month post IW.	USD 10 000

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs
Field based impact monitoring	CACILM Secretariat, NCUs and other relevant agencies to participate.	Periodically - to be determined at inception workshop.	USD 100 000
Supervision visits and rating of progress in PPRs and PIRs	LTO, other participating units and GCU	Annual or as required	The visits of the LTO and the GCU will be paid by GEF agency fee. The visits of the NCUs and RPC will be paid from the project travel budget
Project Progress Reports	CACILM Secretariat, with inputs from NCUs, RCC and other partners	Semi-annual	USD 0 (as completed by the CACILM Secretariat)
Project Implementation Review report	CACILM Secretariat supported by the LTO and cleared and submitted by the GCU to the GEF Secretariat	Annual	Paid by GEF agency fee
Co-financing Reports	CACILM Secretariat, NCUs	Annual	0 (as completed by the CACILM Secretariat)
Technical reports	CACILM Secretariat, LTO& Participating Units	As appropriate	-
Mid-term Review	External Consultant, FAO Office for Evaluation in consultation with the project team including the GCU and other partners	At mid-point of project implementation	USD 50,000 for independent consultants and associated costs. In addition the agency fee will pay for expenditures of FAO staff time and travel
Final evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the CACILM Secretariat and other partners	At the end of project implementation	USD 50,000 for external, independent consultants and associated costs. In addition the agency fee will pay for expenditures of FAO staff time and travel
Terminal Report	LTO, TCSR Report Unit	At least two months before the end date of the Execution Agreement	0 (as completed by LTO)
Total Budget			USD 260 000

F. EVALUATION

For full-sized projects, a Mid-Term Review/Evaluation will be undertaken at project mid-term to review progress and effectiveness of implementation in terms of achieving the project objectives, outcomes and outputs. Mid-term Reviews are encouraged for medium sized projects. Findings and recommendations of this review/evaluation will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term. FAO will arrange for the mid-term review/evaluation in consultation with the project partners. The evaluation will, inter alia:

- (i) review the effectiveness, efficiency and timeliness of project implementation;
- (ii) analyze effectiveness of partnership arrangements;

- (iii) identify issues requiring decisions and remedial actions;
- (iv) propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and
- (v) highlight technical achievements and lessons learned derived from project design, implementation and management.

It is recommended that an independent Final Evaluation (FE) be carried out three months prior to the terminal review meeting of the project partners. The FE will aim to identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This evaluation will also have the purpose of indicating future actions needed to sustain project results and disseminate products and best-practices within the country and to neighbouring countries.

G. COMMUNICATION AND VISIBILITY

The Project will enhance communication and visibility at three levels:

1. At the regional level, lessons and experiences in designing well targeted interventions to mitigate drought and salinization with multiple environmental benefits (e.g. increasing area under sustainable land management while reducing pressure on water resources, conserving agrobiodiversity and mitigating climate change) will be widely disseminated and shared through the distributed multi-country knowledge management platform and communities of practice that will be established by the project. Standard reporting templates, such as WOCAT best practices summaries will be used that have also been adopted by the UNCCD for best practices reporting. Outreach and knowledge sharing will also be established with other programs and platforms on SLM/INRM in drylands.
2. National level through support to dissemination of best practices and lessons learnt under Component 4 from this as well as baseline projects, supported by systematic data collection, development of the project's communication and awareness raising strategy, and provision of information with appropriate communication tools (e.g. a web portal, audio-visuals, project newsletters, social networks, etc.) on lessons learned and best practices related to INRM.
3. Field level through support under Component 3 to demonstrations of INRM related to drought risk management and salinity control. This component will support community exchange visits through e.g. Farmer Field Schools, and access to improved market information on value-chains, etc.

In summary, proposed tools for enhancing visibility include:

- **General aspects** – the CACILM Secretariat will ensure that general aspects of project visibility are fulfilled, such as: (i) visual identity of project and partners; (ii) highlighting the project's partners in media interviews, press releases, etc.); (iii) supporting documents such as photos of logos in the field, photos of activities, copies of press released will be included in the progress and final reports.
- **Basic visibility at field level** – At this level visibility strategy will consider: (i) signboards, display panels and banners; (ii) operational publications and materials such as training manuals and posters; (iii) supplies and equipment.
- **Printed publications** – Brochures, leaflets, flyers, newsletters and other publications to project activities and results.

- **Website, webpage and social network pages** – This will include: (i) partnerships and links; (ii) project information (objectives, activities, expected results, etc.).
- **Audio-visuals** – (i) Films for distribution by the media (mainly for television, campaigns and Internet); (ii) operational films (films to provide technical information and practices to local population, project partners and authorities).
- **Public events** – Many types of events are possible and attracting media interest will always be a key consideration in making the events cost-effective. Press release will be an integral part of the events.

FAO and GEF logos will be used, along with government logo, in all knowledge products and in any communication materials developed (such as posters, pamphlets etc.)

SECTION 5. SUSTAINABILITY OF RESULTS

A. SOCIAL SUSTAINABILITY

This Project will contribute to socio-economic sustainability at demonstration sites in CA countries through activities that will lead to:

- Sustained livelihoods for people dependent on natural resources management in drought prone and salinity affected areas. The project will pay special attention to identifying gender sensitive interventions in terms of INRM technologies and approaches that are generating increased income and are benefiting men and women equally throughout the value-chain.
- Improved food security and nutrition in demonstration areas, with a particular focus on provision of ecosystem services supporting agricultural production.

B. ENVIRONMENTAL SUSTAINABILITY

The multi-country approach linking the experiences of Central Asian countries with the expertise of Turkey in SLM and INRM and micro-catchment land-use planning in similar types of agro-ecosystems will contribute to the sustainability of the project interventions. It will ensure that best practices on salinity control and drought risk management are more widely adopted across drylands and will ensure that practices for INRM that generate multiple global environmental and socio-economic benefits will be taken to scale. Integration of resilience into policy, legal and institutional frameworks to enhance the capacity of individuals, organizations and the society as a whole to plan and manage the threats of drought and salinization successfully will also enhance environmental sustainability.

C. FINANCIAL AND ECONOMIC SUSTAINABILITY

Mainstreaming of integrated approaches to drought risk management and salinity control into country sector budgets, will contribute to financial sustainability of project interventions. Increased access to finance for dryland agriculture through mechanisms such as micro-lending, as well as introduction of incentives, such as tax reductions, PES, etc. will also contribute to economic sustainability. The strengthening of food and feed value chains can contribute to guidelines for certification of selected crops, animal, wildlife, fish, etc., which in the long-term will promote improved access to high-value markets as well as sustainable use of dryland ecosystems in Central Asia and Turkey. Finally, the creation of a ‘knowledge market’ for agricultural service providers will contribute to the sustainability of the INRM/SLM knowledge management platform that will be established by the project.

D. SUSTAINABILITY OF CAPACITIES DEVELOPED

Capacity development is at the core of the upscaling strategy of climate smart-agricultural practices and will ensure its sustainability. The project management arrangements strengthen existing institutional capacities within countries and support the establishment of a knowledge hub orchestrated by a competent regional centre (e.g. Central Asia Regional Environmental Centre) for ensuring knowledge management and dissemination across CA countries and Turkey in the long term. Partnership with representatives of UNCCD and other relevant

conventions strengthen the science-policy interface on sustainable land management for guiding policy reforms and evidence based investments. At the local level, the Project is designed to enhance the capacity of communities dependent on natural resources in drylands to access new knowledge and implement best management practices. These capacities will be sustained through establishment of national multi-agency coordination platforms that will have close links with communities through outreach and dissemination systems embedded in the CACILM structures.

E. APPROPRIATENESS OF TECHNOLOGY INTRODUCED

The selection of the INRM/SLM best practices for demonstration and upscaling on e.g., integrated land and water management, agroforestry conservation agriculture, etc. will be documented and analyzed using already existing WOCAT tools and methods to assess their environmental and socio-economic sustainability and appropriateness for different types of land-use systems and socio-economic contexts. Moreover, the final fine-tuning of INRM interventions will be undertaken in close consultation with local stakeholders, including local communities and individual farmers, NGOs, etc. depending on the type and nature of the technology, using decision support methods and tools from e.g. DS-SLM.

F. REPLICATION AND SCALING UP

The project is designed as an example of cross-sectoral and multi-disciplinary approach to addressing drought and salinity problems in drylands through integrated natural resources management. The establishment of a regional multi-agency coordination mechanism will help ensure replication and scaling up. This approach to upscaling will be embedded within national operational strategies for upscaling that supports scaling through support to policy and institutional reform across sectors. Out-scaling or replication will be driven by spontaneous adoption and replication, by individuals and communities participating in INRM practices that are seen as viable and effective by them through e.g. Farmer Field Schools. The participatory land-use planning and methodologies adopted for demonstration sites in partnership with communities will also support continuity of the process. Further, the adaptation of technologies to local realities and enhancement of their resilience via experimentation and innovation by the beneficiaries themselves will also help sustain adoption and replication. Finally, the promotion of innovative funding mechanisms and incentives, such as PES schemes, etc. will further support the scaling up INRM in Central Asia and beyond.

ANNEXES

Annex 1: Results Framework

Annex 2: Work Plan (results based)

Annex 3: Results-Based Budget

Annex 4: Inventory of INRM knowledge and data management platforms in Central Asia

Annex 5: Project activities in participating countries

Annex 6: Terms of Reference for Key Project Staff

Annex 7: Project environmental and social (E&S) screening checklist

Annex 8: Terms of Reference for Project Steering Committee (PSC)

Annex 9: E&S Risk Classification Certification Form

Annex 1: Results Framework**Project Objectives:**

Objectives	Outcome/impact indicators	Baseline	Mid-project Target	End of Project Target	Means of Verification and Responsible Entity
Project Objective: Scale up integrated natural resources management in drought-prone and salt-affected agriculture production landscapes in Central Asia and Turkey	Area (ha) of drought-prone and salt-affected agriculture production landscapes under sustainable management practices	INRM approaches and technologies for drought risk and salinity management are not well known in CA due to poor access to new knowledge and underdeveloped rural advisory services.	298 254 ha of demonstration areas under integrated management	298 254 ha of demonstration areas under integrated management upscaled to 2 590 770 ha land	GEF LD and CC Tracking Tools, PIRs, PPRs, Midterm and Final Evaluations (FAO SEC)
	Number of women and men with improved food security		665 294 beneficiaries, including 331 783 women, with improved food security in pastoral, agro-sylvo-pastoral, tree-based, irrigated and, rainfed demonstration areas	665 294 beneficiaries, including 331 783 women, in pastoral, agro-sylvo-pastoral, tree-based, irrigated and, rainfed demonstration areas, and 2 661 380 people in upscaling areas, including 1 473 713 women	District-level land management plans District level statistical reports
	GHG emissions avoided or reduced (tons CO ₂ e)	Carbon sequestration is not optimized or quantified in drought and salinity affected lands in CA	3 million tons CO ₂ e	8.6 million tons CO ₂ e	

Outcomes and outputs per component:

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
Component 1: Multi-country collaboration and partnership to foster the implementation of cost-effective INRM, focusing on drought-prone and salt-affected production landscapes						
Outcome 1.1: Enhanced knowledge of the costs of land degradation and benefits of INRM, drought preparedness and baseline agriculture to national economies and the region as a whole informs policy and investment decisions at all levels, including NAP processes	Information on the costs of DLDD and benefits of INRM (ELD) informs at least one national policy in each country	Some ad hoc calculations of the costs of DLDD exist, but no coherent estimates of the benefits of INRM/SLM are available. Lack of harmonized approach across the region.	Information on the costs of DLDD and benefits of INRM available for the main land-use systems in Central Asia	ELD for Central Asia informs INRM policies in 5 CA countries	ELD reports Policy documents PIRs, PPRs	High-level political support for CACILM is maintained throughout the project, and the ICSD provides a regional platform for policy dialogue and harmonisation
Output 1.1.1: Harmonized approach across countries for valuation of ecosystem services at various scales	Harmonized approach for valuation of ecosystem services for CA available	No harmonized approach available	Harmonized approach developed and published	Harmonized approach developed and published	ELD publications PIRs, PPRs	ELD support to methodology development is forthcoming
Output 1.1.2: Identification of incentives to scale up INRM (e.g. PES schemes)	X number of incentives relevant to CA identified	Incentive mechanisms for upscaling of INRM/SLM in CA are underdeveloped	5 different incentives relevant to CA identified	5 different incentives relevant to CA identified	Project reports PIRs, PPRs	Information in relevant public and market-based incentive mechanisms accessible
Outcome 1.2: Enhanced interstate dialogue, multi-country collaboration and information sharing to promote investment for INRM scaling up	Sustainable mechanism for regional collaboration in place Decentralised KM system functioning Regional INRM/SLM community of practice	Multi-country collaboration on INRM/SLM has weakened since end of CACILM-1 and a more decentralised and sustainable approach for regional collaboration and KM needs to be developed	CACILM-2 management structures and a decentralised KM platform in place and functioning Regional INRM/SLM community of practice in place	CACILM-2 management structures and a decentralised KM platform functioning and sustainable Regional INRM/SLM community of practice supports science-practitioners-policy/decision makers dialogue	Meeting minutes from Regional CACILM Council and ICSD INRM/SLM KM platform PIRs, PPRs	Policy-makers, planners, private sector, farmer groups and others make use of and benefit from the available information and integrate it into strategies, plans, and programmes targeting management of environmental risk
Output 1.2.1: Multi-country platform for knowledge consolidation	Decentralised KM system with central orchestrator in place and technically	Knowledge on INRM/SLM best practices and climate	Decentralised KM system with central orchestrator in place	KM platform support national advisory and climate information	Web-based KM platform with K-link software adopted by	Key national, regional and international institutions willing to

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
and harmonization on INRM/SLM to support national advisory and climate information services, including early warning systems	functioning Number of institutions that are using the distributed knowledge platform Regional INRM/SLM community of practice	data to support decision making in CA is extremely difficult to access, as it is scattered across numerous national, regional and international institutions, provided in different languages and often found in grey literature	and at least one - *institution per country, and four more regional and/or international institutions networked to the platform forming a community of practice	services, and supports policy and decision making processes in CA	the central orchestrator and other network partners Website statistics PIRs, PPRs	become KM network partners and adopt new software and information management approaches
1.2.2 Multi-scale and participatory approaches in place for assessing land degradation and SLM trends, and for assessing/monitoring impacts of management practices on ecosystem services, biodiversity, and livelihoods (vulnerability)	The latest tools and methods for monitoring and assessing land degradation and trends in INRM/SLM available to CA countries and used in assessing the economics of DLDD and INRM Number of persons in key institutions per country using assessment and best practices tools	Tools and methods for monitoring and assessing DLDD and INRM/SLM in CA are not up-to-date nor are they harmonized making, which makes it difficult to use the generated data for valuation of ecosystem services (see 1.1.1)	All CA countries trained in the use of up-to date tools for land degradation and INRM assessment (# persons disaggregated by gender)	Tools for DLDD/INRM assessment used for assessing impacts on ecosystem services	Reports from training events and participants lists Tools uploaded to the KM platform PIRs, PPRs	Key stakeholders have the interest and capacity to access and internalise new knowledge on DLD/INRM assessment
Output 1.2.3: Targeted knowledge and communication products prepared for wide dissemination on the multiple benefits of INRM in selected production landscapes	Communication and outreach plan Project newsletters and other outreach materials, such as audio-visuals, social media and project website uploads, developed and made available Knowledge market created for INRM/SLM	0	Communication and outreach plan available At least 3 Newsletters published and available on project website and in social media At least two audio-visuals developed Agricultural service providers willing to pay to access up-to-date INRM/SLM knowledge	At least 7 Newsletters published and available on project website and in social media At least three audio-visuals developed Resources mobilised through the establishment of a knowledge market for INRM/SLM	Newsletters Videos Statistics of project website and social media visitors Income generated from INRM/SLM Knowledge market PIRs, PPRs	The CACILM Secretariat is functioning and has adequate capacity in KM and communication Service providers willing to pay for up-to-date INRM/SLM knowledge

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
Component 2: Integration of resilience into policy, legal and institutional frameworks for integrated natural resources management (INRM)						
Outcome 2.1: Resilience integrated across natural resources management (NRM) sectors and production landscapes	Resilience principles integrated into national agricultural, water resources management and environmental plans and investment frameworks, policies and programs	CA countries traditionally takes a crises management approach to address drought impacts, and don't take a holistic systems approach to enhance long-term resilience at multiple scales	Resilience integrated into key national policy frameworks and productive sectors in all CA countries using the RAPTA approach.	Resilience integrated into key national policy frameworks and productive sectors in all CA countries using the RAPTA approach.	Minutes from National CACILM Boards Documented policy revisions in 5 countries PIRs, PPRs	National line ministries and productive sectors committed to policy reform and integration of resilience
Output 2.1.1: Review of national policies, legal and institutional frameworks and their application at different governance levels with the view to identify gaps and potential opportunities for managing transformations	Number of national reviews and gap analysis	There are no comprehensive policy reviews available in CA on how resilience has been addressed.	All CA countries have completed policy reviews and gap analysis	All CA countries have completed policy reviews and gap analysis	Review reports PIRs, PPRs	National line ministries and productive sectors collaborate to support the policy review of resilience
Output 2.1.2: Formulation, review or update of national drought policies, strategies and guidelines for drought preparedness planning	Number of new and/or updated national drought policies, strategies and guidelines	National drought policies in CA, if they exist at all, are incoherent and don't take a systems approach to management of resilience	At least 4 new and/or updated national drought policies, strategies and guidelines	At least 6 new and/or updated national drought policies, strategies and guidelines	Project reports Minutes of NCBs PIRs, PPRs	National line ministries and productive sectors committed to policy reform and integration of resilience
Output 2.1.3: Participatory resilience assessment and mapping, and livelihood diagnostics (i.e. SHARP) to support evidence-based decision-making	Number of SHARP assessments at project demonstration sites and selected production landscapes Improved regional drought vulnerability maps	0 0	At least 6 SHARP assessments At least one improved drought vulnerability map for each CA country	10 SHARP assessments 5 maps of drought vulnerability	Project reports SHARP Assessment reports SHARP website Drought vulnerability maps	FAO continues to be committed to build capacity and support application of the SHARP tool Existing drought vulnerability developed with support from ICRDA

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
					PIRs, PPRs	accessible to the project
Output 2.1.4: Strengthening of inter-sectoral coordination mechanisms at national level, including mainstreaming of NAPs into national sector budget allocations and investment processes for INRM scaling up (informed by Component 3)	Number of National CACILM Boards (NCBs) and number of participating sectors	CACILM-1 structures at national level are defunct and a more flexible and cost-effective approach is needed	6 NCBs with a minimum of 3 sectors participating in place and functioning	6 NCBs with a minimum of 3 sectors participating in place and functioning	NCB meeting minutes and participant lists	National line ministries and productive sectors collaborate in the implementation of INRM
Outcome 2.2: Incentives for climate-smart agriculture in place at national and sub-national levels	Number and types of incentives supporting smallholder farmers to scale up best practices	Incentives mechanisms for scaling up INRM are generally weak in CA, especially market-based mechanisms	At least 7 different types of incentive mechanisms supporting smallholder farmers to scale up best practices in place in CA countries	At least 10 different types incentive mechanisms supporting smallholder farmers to scale up best practices in place in CA countries	Project reports PIRs, PPRs	The public sector, NGOs, private sector and research institutions are capable and incentivized to support smallholder farmers
Output 2.2.1: Increase in public and private sector (at least 5 different types of enterprises) supporting smallholder farmers to scale up best practices and adoption of self-reliant approaches for managing climate variability and change	Number and types of enterprise supporting smallholder farmers to scale up best practices	Rural advisory services in CA are weak or non-existent	At least 5 different types of enterprises supporting smallholder farmers to scale up best practices	At least 5 different types of enterprise supporting smallholder farmers to scale up best practices	Project reports PIRs, PPRs	NGOs, private sector and research institutions are capable and incentivized to support smallholder farmers and herders in CA with advisory services
Output 2.2.2: At least 5 resource use efficient and biodiversity friendly food and feed value-chains strengthened	Number of resource use efficient and biodiversity friendly food and feed value-chains strengthened	Value-chains are generally neither efficient or environmentally friendly	At least 2 resource use efficient and biodiversity friendly food and feed value-chains strengthened	At least 5 resource use efficient and biodiversity friendly food and feed value-chains strengthened (e.g. almond-pistachio, forage-livestock, fruit	Project reports PIRs, PPRs	NGOs, private sector and research institutions are capable and incentivized to support smallholder farmers and herders in

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
				trees, pulses)		CA with strengthening value-chains
Component 3: Upscaling of climate-smart agricultural practices in drought-prone and/or salt-affected production landscapes						
Outcome 3.1: Upscaling of a proactive drought risk management (DRM) approach and innovative integrated natural resources management (INRM) technologies in selected production landscapes / land use systems (e.g. pastoral, agro-sylvo-pastoral, tree-based, irrigated, rainfed, home gardens)	Improved DRM approaches and INRM technologies/best practices applied on xx ha Number of people (#) with improved income (at least 25%) from improved practices	0	152 204 ha 84,657 (Optional to add, "... for demonstration areas")	1 375 165 ha 169,755 (Optional to add, "... for demonstration areas, 785,941 for upscaling areas")	NCB annual monitoring reports Land use /development plans PIRs/PPRs Mid-term and final evaluations Sites visits and experts' reports	Land users with support of rural advisory services are capable and incentivized to adopting improved DRM and INRM practices
Output 3.1.1: At least 2 multi-stakeholder land-use plans for selected production landscapes per country	Number of multi-stakeholder land-use plans	0	At least 10 multi-stakeholder land-use plans	At least 10 multi-stakeholder land-use plans	Land-use plans National monitoring reports PIRs, PPRs	National inter-sectoral coordination functioning and supporting planning processes at national and sub-national levels
Output 3.1.2: At least 2 specialized institutions / advisory service providers with increased capacities to enhance skills of stakeholders for wide adoption of proactive risk management approach and drought mitigation technologies	Number of different kinds of DRM and INRM approaches included in the training curricula; Number of national and regional-level training events and workshops support by the project	DRM and INRM are not widely used approaches in CA and not included in training curricula 0	Training curricula with at least 10 different DRM and INRM approaches	Training curricula with at least 10 different DRM and INRM approaches	Curricula documentation Training manuals and material and training participation lists	Agricultural advisory service providers are interested in strengthening their skills and knowledge on DRM and up-scaling of INRM
Output 3.1.3: Upscaling of 5-6 innovative drought mitigation technologies in selected production landscapes on 239,500 ha	Number of multi-stakeholder land-use plans and best DRM & INRM practices being implemented in selected	0	At least 3 multi-stakeholder land use plans and 3 DRM and INRM technologies	At least 5 multi-stakeholder land use plans and 6 DRM and INRM technologies	National monitoring reports PIRs, PPRs	Agricultural service providers have the capacity so support smallholder farmers in

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
of land (at least 15 drought-tolerant species and 5 habitats, xx tCO ₂ e, 15 % crop water productivity / irrigation efficiency)	production landscapes Area (hectares) with introduced drought mitigation technologies		71 850 ha	239 500 ha		CA to upscale best practices
Outcome 3.2: Adaptation and scaling up of technologies and approaches for management of salt-affected production landscapes (e.g. irrigated, pastoral, agro-sylvo-pastoral, tree-based, home gardens)	Improved salinity management and INRM technologies/best practices applied on XX ha Number of people (#) with improved income (at least 25%) from improved practices	0	146 050 ha 81,234 (Optional to add, "... for demonstration areas")	1 215 605 ha 162,892 (Optional to add, "... for demonstration areas, 694,749 for upscaling areas")	NCB annual monitoring reports	Improved salinity management and INRM technologies/best practices applied on xx ha
Output 3.2.1: Guidelines for development of catchment salinity management plans developed and piloted in each country for sustainable and biodiverse aquatic and terrestrial ecosystems	Number of guidelines	0	4 guidelines (Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan)	4 guidelines (Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan)	Published guidelines PIRs, PPRs	CACILM partners have the skills, knowledge and resources to support the development of guidelines for catchment salinity management plans
Output 3.2.2: At least 2 specialized institutions / advisory service providers with increased capacities to enhance skills of stakeholders for wide adoption of salinity mitigation approaches and	Number of different kinds of salinity management and INRM approaches included in the training curricula; Number of national and regional-level training events and workshops	Salinity management and INRM are not widely used approaches in CA and not included in training curricula 0	Training curricula with at least 10 different salinity management and INRM approaches	Training curricula with at least 10 different salinity management and INRM approaches	Curricula documentation Training manuals and material and training participation lists	Agricultural advisory service providers are interested in strengthening their skills and knowledge on salinity management and up-scaling of INRM

Results chain	Indicators	Baseline	Mid-Project Target	End of Project Target	Means of Verification and Responsible Entity	Assumptions
technologies	support by the project					
Output 3.2.3: Upscaling of 5-6 best practices for combating salinization, while ensuring biodiversity conservation and sustainable use on 95,500 ha of land (at least 15 salt-tolerant species, xx tCO ₂ e, 15% crop water productivity / irrigation efficiency	Number of salinity management plans INRM best practices being implemented selected in production landscapes Area (hectares) under best practices for combating salinization	0	At least 3 catchment salinity management plans and 3 INRM technologies 28 650 ha	At least 5 catchment salinity management plans and 6 INRM technologies 95 500 ha	National monitoring reports PIRs, PPRs	Agricultural service providers have the capacity so support smallholder farmers in CA to upscale best practices
Component 4: Monitoring and evaluation and adaptive learning						
Outcome 4.1: Project implementation based on adaptive results-based management, monitoring, and reporting for enhanced impact and visibility	M&E system is in place to support adaptive results-based management and monitoring of upscaling resulting from the project.	No system in place	Implemented project based on adaptive results based-management	Project delivers expected results and shares best practices	GEF LD and CC Tracking Tools, PIRs, PPRs Midterm Review and Final Evaluation	National lead agencies and other stakeholders support M&E processes, and are committed to continuous learning and exchange of knowledge on INRM
Output 4.1.1: M&E system established to measure project progress and impacts in terms of multiple global environmental benefits (GEBs), social and economic benefits	Baseline and targets for global project indicators refined Annual project implementation review (PIR) reports submitted to GEF Secretariat Six monthly project progress reports	0 0	3rd and 4th six-monthly progress reports	Project M&E system delivers expected reports and informs project management	GEF LD and CC Tracking Tools, PIRs PPRs, Midterm Review and Final Evaluation	Regional CACILM Secretariat functioning and adequate funding allocated to M&E
Output 4.1.2: Midterm review and final evaluations carried out and reports available	Mid-term and final evaluation reports	0	Mid-project review recommendations implemented		Evaluation reports (FAO evaluation office)	Adequate funding allocated to evaluations

February, 2017

Annex 2: Work Plan (results based)

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Multi-country collaboration and partnership to foster the implementation of cost-effective INRM, focusing on drought-prone and salt-affected production landscapes																						
Output 1.1.1: Harmonized approach across countries for valuation of ecosystem services at various scales	Activity 1: Development of a unified methodology	ICARDA/FAO																				
	Activity 2: Development of the regional database	ICARDA/FAO																				
	Activity 3: Capacity building and training at national and regional levels	ICARDA/FAO																				
Output 1.1.2: Identification of incentives to scale up INRM (e.g. PES schemes)	Activity 1: Introducing CSA principles into financial schemes for agricultural support	FAO/ICARDA																				
	Activity 2: Development of proposal for green banking finance based on transfer to CSA	FAO																				
	Activity 3: Development of justifications and methods for the switch to less input depended agriculture at project sites	FAO																				
Output 1.2.1: Multi-country platform for knowledge consolidation and harmonization on INRM/SLM to support national advisory and climate information services, including early warning systems	Activity 1: Organizational and Informational needs assessment	GIZ/UCA																				
	Activity 2: Establishment of information management system based on K-Link	GIZ/CGIAR																				
	Activity 3: Information sharing and Orchestration of existing platforms	CAREC/FAO																				
Output 1.2.2: Multi-scale and participatory approaches in place for monitoring of ecosystem services	Activity 1: Land-use/management systems (LUS) characterised and mapped in selected production landscapes	WOCAT/UCA/FAO																				
	Activity 2: A national training/assessment workshop (5 workshops)	WOCAT/UCA/FAO																				
	Activity 3: Multidisciplinary assessment team set up and trained in each demonstration area	WOCAT/UCA/FAO																				
	Activity 4: Assessment results uploaded in relevant national and regional databases and linked to the	WOCAT/UCA/FAO																				

[illegible]

[illegible]

[illegible]

Annex 3: Results-Based Budget

Oracle Code and Description				BUDGET in USD					
				Compon ent 1:	Compon ent 2:	Compone nt 3:	Compone nt 4	PM	Total
				Total	Total	Total	Total		GEF
5300 Salaries professionals									
Administrative & Operations Officer (3%)		1	330,584	0	0	0	0	330,584	330,584
5300 Sub-total salaries professionals				0	0	0	0	330,584	330,584
5570 Consultants									
5542 International Consultants									
1 International INRM expert (for integrating resilience into policies and practices)	days	50	500	0	25,000	0	0		25,000
1 Drought risk management expert	days	40	500	0	20,000	0	0		20,000
1 Salinity management expert	days	20	500	0	0	10,000	0		10,000
1 international expert on valuation of ecosystem services	days	40	500	20,000	0	0	0		20,000
1 International gender expert	days	40	500	0	0	20,000	0		20,000
1 Livelihood & socio-economic expert	days	40	500	0	20,000	0	0		20,000
1 M&E expert	days	40	500	0	0	0	20,000		20,000
1 Value-chain expert	days	40	500	0	20,000	0	0		20,000
Sub-total international Consultants				20,000	85,000	30,000	20,000	0	155,000
5543 National consultants									
Regional Project Coordinator	month	60	7,825	93,900	93,900	93,900	93,900	93,900	469,500
Project finance and admin assistant	month	60	1,556	0	0	0	0	93,360	93,360
Field Officer Kazakhstan	month	60	1,546	0	0	92,760	0		92,760
Field Officer Turkmenistan	month	60	1,138	0	0	68,280	0		68,280
Field Officer Uzbekistan	month	60	1,641	0	0	98,460	0		98,460

National Policy and Institutional Experts (5)	month	25	1,600	0	40,000	0	0		40,000
Drought management expert	month	24	1,600	0	38,400	0	0		38,400
Salinity management expert	month	24	1,600	0	0	38,400	0		38,400
Gender & livelihood expert	month	60	1,600	0	96,000	0	0		96,000
Land Management		12	1,600		19,200				19,200
Data and information management expert	month	48	1,600	0	0	0	76,800		76,800
M&E and Communication & outreach expert	month	60	1,600	96,000	0	0	0		96,000
Field assistants (5)	month	240	1,000	0	0	240,000	0		240,000
Rural Advisory Services expert	month	48	1,600	0	0	76,800	0		76,800
Sub-total national Consultants				189,900	287,500	708,600	170,700	187,260	1,543,960
5570 Sub-total consultants				209,900	372,500	738,600	190,700	187,260	1,698,960
5650 Contracts (LoAs)									
Valuation of ecosystem services of selected landscapes and agro-ecosystems (ELD/ICARDA)	Lump sum	1	338,917	338,917	0	0	0		338,917
Multicountry platform for knowledge management on INRM (CAREC)	Lump sum	1	400,000	400,000	0	0	0		400,000
Regional communication and outreach plan	Lump sum	1	50,000	50,000	0	0	0		50,000
Assessment and mapping of DLDD and SLM (WOCAT)	Lump sum	1	225,000	225,000	0	0	0		225,000
Guidelines for food and feed value-chain analysis	Lump sum	1	150,000	0	150,000	0	0		150,000
Development of participatory land use plans (NGOs) in each country	Lump sum	8	45,000	0	0	360,000	0		360,000
Guidelines for development of catchment salinity management plans and support to field implementation (ICBA)	Lump sum	2	226,000	0	0	452,000	0		452,000
Capacity development of service providers in proactive risk management and drought mitigation (WMO)	Lump sum	1	100,000	0	0	100,000	0		100,000
Development of outreach material on INRM practices in CA (print, audio-visuals, etc. (ZOI+local partners)	Lump sum	1	125,000	0	0	125,000	0		125,000
Introduction of water-saving technologies (IWMI)	Lump sum	1	150,000	0	0	150,000	0		150,000
Technical Support and capacity building for implementation of conservation agriculture (ICARDA)		1	125,000	0	0	125,000			125,000

Establishment of seed systems and tree nurseries for drought tolerant varieties (ICARDA/Bioversity/ICBA)	Lump sum	1	250,000	0	0	250,000	0		250,000
Mid-term review and Final Evaluation	Lump sum	2	50,000	0	0	0	100,000		100,000
5650 Sub-total Contracts				1,013,917	150,000	1,562,000	100,000	0	2,825,917
5900 Travel									
CACILM Secretariat (National, local and int. incl DSA)	Lump sum year	5	100,000	0	0	0	500,000		500,000
Local travel (field Offices, DSA)	Lump sum year	5	100,000	0	0	250,000	250,000		500,000
National policy coordination meetings	Lump sum	30	5,000	0	150,000	0	0		150,000
Regional exchange visits by land users to demonstration sites	Lump sum	5	60,000	0	300,000	0	0		300,000
Postgrad students for field work (UCA and national universities)	lump sum	13	10,000	0	0	130,000	0		130,000
International consultants' travel	Trips	20	8,051	0	161,016	0	0		161,016
5900 Sub-total travel				0	611,016	380,000	750,000	0	1,741,016
5020 Training and workshops									
Regional annual work planning meetings and Technical Working Group meetings	Meetings	5	40,000	0	0	0	200,000		200,000
National CACILM Board coordination meetings	Meetings	5	10,000	0	0	0	50,000		50,000
National training workshops on drought preparedness planning	WS.	5	50,000	0	250,000	0	0		250,000
Field training on use of SHARP tool	WS.	5	40,000	0	200,000	0	0		200,000
Training in value-chain analysis	WS.	5	35,000	0	175,000	0	0		175,000
Training in opportunities for women in drought prone and salinity affected production systems	WS.	5	40,000	0	200,000		0		200,000
Training of land users in collective action e.g. forming associations	WS.	5	35,000	0	175,000	0	0		175,000
Training on climate-smart agriculture (hosted by Uzbekistan)	WS.	1	78,870	0	0	78,870	0		78,870
Regional training workshop on use of satellite remote sensing and GIS for drought risk monitoring and preparedness	WS.	1	75,000	0	0	75,000	0		75,000

Regional exchange and learning workshops salinity management	WS.	1	75,000	0	0	75,000	0		75,000
5020 Sub-total training				0	1,000,000	228,870	250,000	0	1,478,870
6000 Expendable procurement									
Brochures design and printing	Copy	10	2,000	0	0	20,000	0		20,000
Six-monthly project news letter	Issue	9	500	0	0	0	4,500		4,500
Best practices and lessons learned publications	Publication	3	25,000	0	0	0	75,000		75,000
Bi-annual status reports	Report	9	1,000	0	0	0	9,000		9,000
Posters	Poster	7	2,000	0	0	0	14,000		14,000
Material for INRM in drought prone areas (e.g. drought resistant seeds, etc.)	Lump sum	3	200,000	0	0	600,000	0		600,000
Materials for INRM in salinity affected areas (salinity tolerant seeds, etc.)	Lump sum	3	200,000	0	0	600,000	0		600,000
Materials for home gardens	Lump sum	2	200,000	0	0	400,000	0		400,000
Field-offices expendables (3)	Lump sum	3	100,000	0	0	300,000	0		300,000
Regional office expendables	Lump sum	1	120,000	0	0	0	120,000		120,000
Software & licenses	Lump sum	1	5,000	0	0	0	5,000		5,000
Billboard signs -info and demarcation	Signs	10	2,000	0	0	0	20,000		20,000
6000 Sub-total expendable procurement				0	0	1,920,000	247,500	0	2,167,500
6100 Non-expendable procurement									
Vehicle	Vehicle	4	26,000	0	0	104,000	0		104,000
Seeding cleaner (Kyrgyzstan)		3	15,000	0	0	45,000	0		45,000
Smartphone/tablet/data recorder	handset	12	500	0	0	6,000	0		6,000
Small field implements	Lump sum	1	50,000	0	0	50,000			50,000
Router, etc.		1	5,000	0	0	0	5,000		5,000
Computer server		1	5,000	0	0	0	5,000		5,000
LDC projector	Projector	1	2,500	0	0	0	2,500		2,500
Laptops	Laptop	7	2,000	0	0	14,000	0		14,000
Color printer/photocopier/scan	C Printer	1	1,512	0	0	0	1,512		1,512
Desktop computer	Desktop	6	2,000	0	0	0	12,000		12,000
Agrometeorological instruments	Lumpsum	3	75,000	0	0	225,000	0		225,000
Planters for no-till agriculture	Planter	3	15,000	0	0	45,000	0		45,000

February, 2017

Tools for salinity measurement and management		1	20,000	0	0	20,000	0		20,000
Land laser levelling equipment		3	7,000	0	0	21,000	0		21,000
6100 Sub-total non-expendable procurement				0	0	530,000	26,012	0	556,012
6300 GOE budget									
Miscellaneous	Lumpsum	1		19,000	19,000	19,000	18,800		75,800
6300 Sub-total GOE budget				19,000	19,000	19,000	18,800	0	75,800
TOTAL				1,242,817	2,152,516	5,378,470	1,583,012	517,844	10,874,659

SUBTOTAL Comp 1	1,242,817	11.4%
SUBTOTAL Comp 2	2,152,516	19.8%
SUBTOTAL Comp 3	5,378,470	49.5%
SUBTOTAL Comp 4	1,583,012	14.6%
Subtotal Comp 1 to 4	10,356,815	
SUBTOTAL Project Management	517,844	5.0%
TOTAL GEF	10,874,659	99.0%



BUDget CALCIM II -
resubmission_23jan

Annex 4: Inventory of INRM knowledge and data management platforms in central Asia

Major international databases relevant for NRM in Central Asia.

Platform	URL
Global Agricultural Research Partnership (CGIAR Library)	http://www.cgiar.org/resources/cgiar-library/
European Environmental Agency	http://www.eea.europa.eu
International Union for Conservation of Nature	http://www.iucn.org
WOCAT Knowledge base	https://www.wocat.net/en/knowledge-base.html https://qcat.wocat.net/
Global Environmental Facility	http://www.thegef.org/gef/publist
USAID Natural Resource Management and Development Portal	http://rmportal.net
Regional Ecological Center of Central Asia	http://www.climateadapt.asia/
Pastoralist Knowledge Hub	http://www.fao.org/pastoralist-knowledge-hub/pastoralist-networks/thematic-working-groups/en/
FAO Family Farming Knowledge Platforms	http://www.fao.org/family-farming/detail/en/c/396435/

Regional databases

Platform	URL
Regional Ecological Centre of Central Asia	http://www.carecnet.org/publications-library/
MSRI SLM Knowledge Hub	http://msri-hub.ucentralasia.org/
Central Asian DRR Knowledge Gateway	http://www.drrgateway.net/content/central-asia-drr-knowledge-network
WWF Russian and Central Asia	http://www.wwf.ru/about/where_we_work/asia/model_econet/eng
CAREC website	http://www.carececo.org/
Ecoportal	http://www.ecoportalca.kz/en/

Regional Pasture Network	https://eba.klink.asia/dms/projects/pasture-network/en
Natural Resources Central Asia	http://www.naturalresources-centralasia.org/
CACILM Knowledge Sharing Platform by ICARDA	English: http://www.cacilm.org/en/ Russian: http://www.cacilm.org/

Platforms hosted by academic institutions limited to one country

Country	Platform	URL
KG	Scientific Digital Library	http://library.knau.kg
KG	Virtual Science Library, CRDF global	http://www.kyrgyzstanvsl.org
KG	AUCA Library	http://library.auca.kg
KG	Science Library	http://oel.bik.org.kg
KG	Online Library of Theses	http://nakkr.kg
KG	Scientific-Technical Portal of the Kyrgyz Republic	http://www.nauka.kg
KG	Association Library-Information Consortium	http://bic.org.kg
KG	Climate Network of Kyrgyzstan	http://infoik.net.kg/
KZ	Digital Library of Universities of the Kazakh Republic	http://www.rmeb.kz
KZ	United Digital Library	http://www.elibrary.kz
KZ	Kazakh National Digital Library	http://www.kazneb.kz
UZ	Information and Resource center of Tashkent IT University	http://library.tuit.kz
TJ	Tajikistan Climate website	http://iqlim.tj

Platforms hosted by NGOs/donors limited to one country

Country	Platform	URL
---------	----------	-----

KG	Ecological Information Service	http://www.ekois.net
KG	Independent Ecological Expertise	http://eco-expertise.org
KG	National Certification Commussion	http://nakkr.kg/lib/index.html
KG	Camp Alattoo	http://camp.kg/en/
KG	Training Advisory and Innvoation Centre	http://www.taic.kg/
KG	Agro-Asia	http://lib.agro-asia.com
KG	BIOM	http://www.biom.kg/our-work/
KG	Civic Foundation Unison	http://unison.kg
KZ	KazAgroInnovation	http://agroextension.kz
KZ	Association for the Conservation of Biodiversity of Kazakhstan (ACBK)	http://www.acbk.kz
KZ	Econavigator	http://econavigator.com
TJ	NGO „Hamkori Bahri Tarakkiyot“	http://www.cdpt.tj
TJ	Mountain Ungulates Project	http://www.wildlife-tajikistan.org
UZ	UNDP Uzbekistan	http://www.undp.uz/en/projects/
UZ	Ecological Movement of Uzbekistan	http://www.eco.uz

WebGIS platforms in Central Asia

Platform	URL
Mountain Societies Research Institute, University of Central Asia	http://cde-ca-webgis.unibe.ch/
Austria-Central Asia Centre for GIS-Science, Kyrgyz State University	https://sites.google.com/a/aca-giscience.org/aca/
Portal of Knowledge for Water and Environmental Issues in Central Asia	http://cawater-maps.net
Central Asian Institute of Applied Geosciences	http://178.217.169.220/GetGDBfile/GetGDBItems.jsp

Annex 5: Project activities in participating countries

Country	Intervention domain	Project activity	Location	Lead partner	STAR funding (USD)
Kazakhstan	Upscaling of climate-smart agricultural practices in drought-prone production landscapes I. Development of land use management plans for two regions, including: <i>In North (Kostanay district):</i> Irrigated agriculture <ul style="list-style-type: none"> - Assessment of soil and climatic conditions - Creation of the data at the farm level based on innovative technologies (GIS, RS with land assessments) - Development of and adoption of the action plan to adapt drought risk management technologies <i>In South (Almaty district):</i> Pasture <ul style="list-style-type: none"> - Development and implementation of the action plan on pasture management, including rotational 	3.1.1.	Two specific sites: South Kazakhstan <ul style="list-style-type: none"> • Private seed producing farm TURGEN (5 villages) • Sarygach limited • Nursery Zher Sny • Production unit Gamburg North Kazakhstan: <ul style="list-style-type: none"> • Agricultural firm Dievskaya (Kostanay District) • Farmer 2002 • Dostykov farm • Scientific production center agricultural farm after Barayev (under research institute) 	National:? Regional: ICARDA?	CC: 900 624
	II. Strengthening the capacity of local institutions, including Institute of crop production named after Borayev, Institute of ecology and sustainable development, Institutes of fruits and grapes, of rice, of forestry; Institute of Space Research, Farmers' association: <ul style="list-style-type: none"> - Short-term training courses for farmers - Exchange visits - Publication of materials 	3.1.2.			
	III. Scaling up innovative approaches in selected areas of the country: Irrigated agriculture: <ul style="list-style-type: none"> - Introduction and distribution of drought resilient crops - Introduction of selection and seed production of drought resilient crops and feed crops Introduction of water saving technologies	3.1.3.			

	Pasture production: <ul style="list-style-type: none"> - Pasture afforestation Forestry: <ul style="list-style-type: none"> - Scaling up the production of pistachios and almonds, Regel pears (<i>Pistacia vera</i> L., <i>Amygdalus communis</i> L., <i>Pyrus regelii</i> Rehd.) 				
Kazakhstan	Introduction of salinity management approaches in Central Asian region <ol style="list-style-type: none"> Development of salinity maps by landscapes <ul style="list-style-type: none"> • Salinity maps through soil and ameliorative mapping • Agricultural chemical maps through soil-mapping Assessment of work of collector and drainage system and development of action plan for its recovery Development of training modules on sustainable management of agricultural landscapes at the farmers' level <ol style="list-style-type: none"> Adaption of salinity management courses and development training materials (in local language) Introduction of courses (ToT) in selected institutions (Women rural alliance, Union of farmers, Association of water users) Organization of training courses for farmers at selected institutions and through farmers' field schools to cover scaling up territories Training and capacity building of partner institutions to support the introduction of SLM practices (KAZ scientific research institutes of crop production, rice production, forestry and water economy) Introduction of SLM best practices in Kyzylorda region <ul style="list-style-type: none"> • Diversification of salt-resistant crops • Introduction of bio-saline agriculture and technologies of agro-forestry on bio-drainage system • Development of halophyte forage production 	2.1.3./3.1.1. 2.1.3./3.1.1. 3.2.1. 3.2.3.	Kyzylorda district South Kazakhstan district	National:? Regional: ICBA?	LD: 900 624

	<ul style="list-style-type: none"> Support of agricultural multi-purpose cooperatives for distribution of technologies and knowledge on bio-saline agriculture Specific activities might include: <ul style="list-style-type: none"> introduction of highly effective technologies of rice production in salinized lands (Kyzylorda district) introduction of technologies of corn production on salinized lands (South Kazakhstan district) 				
Kyrgyzstan	<p>Upscaling of climate-smart agricultural practices in drought-prone production landscapes</p> <p>I. Development of management plan for Kochkor River watershed (Naryn oblast), including</p> <ul style="list-style-type: none"> Long-term climate change impact assessment Participatory planning approach Cost benefit analysis of applicability of various SLM tools Capacity building on pasture condition monitoring (capacity, seasonality, level of degradation, water availability, vulnerability to climate change) <p>II. Development of capacity of local organizations (NGO Agrolead, Pasture Association, Local pasture committees, National Institute of Soil and Feed, Services of Agricultural Consultants, NGO CAMP Alatau) on drought monitoring</p> <ul style="list-style-type: none"> Strengthening the capacity of local training institutions in provision of specific training course on drought and salinity management in selected areas (jointly with WFP project) Training workshops on participatory climate risk assessment at the national and local levels Support of development of the capacity to provide seeds for fodder production (creation of revolving seed fund) at the selected area, including: procurement of seeding equipment, training on selection, planting and processing forage seeds (Jointly with/for IFAD) <p>III. Scaling up approaches (to be co-financed)</p> <p>Pasture management:</p> <ul style="list-style-type: none"> Feed production and processing of livestock productions (value chains) 	<p>3.1.1.</p> <p>2.1.3.</p> <p>3.1.2.</p>	Kochkor region, Naryn district	National:? Regional: ICARDA?	LD: 180 125

	<ul style="list-style-type: none"> - Improved pasture management including use rotation <p>Agroforestry:</p> <ul style="list-style-type: none"> - Afforestation with almand/ pistachio/ haloxylon - Drip irrigation 	3.1.3.			
Tajikistan	<p>Upscaling of climate-smart agricultural practices in drought-prone production landscapes</p> <p>I. Integrated plan of the management of rain-fed areas, including the programme of crop diversification in selected areas of Khatlon district, including</p> <ul style="list-style-type: none"> - Crop diversification with the use of drought resistance fruit, nuts and tree varieties - Increase of areas under drought resistance oilseed, feed and crop varieties (<i>safflower, sorgo, Kochia, Aellenia</i>, less traditional <i>millet, quinoa</i>) - Strengthening the programme of crop diversification <p>II. Strengthening the capacity of local organizations to support the introduction of SLM practices:</p> <ul style="list-style-type: none"> - Support of the expansion of the network of state and private nurseries for production of seedlings of drought resistant fruit and nut trees - Support of development of two capacity building “chains”, including development of proper training materials, technical capacity for training and equipment for monitoring of drought/salinity: <ol style="list-style-type: none"> 1- state consulting centers working on issues of drought and salinity (based on one of the following: Institute of Crop production, Institute of Soils; Agricultural University) 2- consulting centers based on NGO (Farmers Association, Water Users Association, NGO Sarob, Rushti Ustovor) - Development of training modules in local language for IMNR and CSA 	<p>3.1.1.</p> <p>3.1.2.</p>	Yavan, A.Jami, Bohtar and Wakhsh regions		LD: 268 846

	<ul style="list-style-type: none"> - Strengthening academic institutions with the training programme/materials on drought and salinity management, including monitoring, forecast, planning etc. <p>III. Scaling out best SLM practices activities (to be co-financed):</p> <p>Agroforestry (rain-fed):</p> <ul style="list-style-type: none"> - Afforestation on mountain slopes with fruit and nut trees (pistachios/almonds/other) <p>Irrigated:</p> <ul style="list-style-type: none"> - Crop rotation with the use of new drought resistant crops - Increase of areas of zero-till - Increase of drip irrigated areas (at the level of households) 	<p>Might go to 1.2.3.</p> <p>3.1.3.</p>			
Tajikistan	<p>Introduction of salinity management approaches in Central Asian region</p> <p>I. Monitoring and assessment of soil salinity with the use of GIS/RS and other innovative methodology</p> <p>II. Development of capacity of local farmers to implement SLM practices</p> <ul style="list-style-type: none"> - Development of training module on SLM - Building capacity of local institutions in training farmers, including Farmers' association, NGO Sarob, Agricultural University - Implementation of training course for different stakeholder groups <p>III. Raising capacity of seed provision for salt-resistant varieties, including non-traditional salt-resistant crops</p> <p>IV. Scaling up SLM practices in selected areas:</p> <ul style="list-style-type: none"> - Scaling up of new salt-resistant varieties (crops, beans, oil, feed and other) - Introduction of crop diversification in certain areas - Improved irrigation regime management (ground water level monitoring, using bio-drainage, quality washing) - Agroforestry on salinized lands 	<p>3.2.1./2.1.3.</p> <p>3.2.2.</p> <p>3.2.2./2.2.2.</p> <p>3.2.3.</p>			
Turkey	Will support regional knowledge exchange on INRM with CA countries, contribute to capacity building, etc.				LD: 178 975

Turkmenistan	<p>Upscaling of climate-smart agricultural practices in drought-prone production landscapes</p> <p>I. Development of integrated land use plan at the region's (etrap, rayon) level:</p> <p>Irrigated agriculture</p> <ul style="list-style-type: none"> • Development and adoption of methodology of participatory land use planning • Training of national and local specialists • Ground trothing work and development of LU action plan with modeling of optimized agricultural production placement • Introduction and implementation of LU plan at region's level, including water use monitoring at the district level, <p>II. Capacity building for improved drought risk management:</p> <ul style="list-style-type: none"> - Strengthening the capacity of selected institutions to provide the training and other support to farmers in selected areas (Agricultural University in Dashoguz area, Local Agricultural College, Livestock association specialists) - Supporting the modification of the demonstration fields on the bases of Agricultural university - Testing and introduction of AquaCrop at the region's level, including training of relevant specialists, translating and distribution of awareness and training materials - Further promotion of AquaCrop to other places in the country <p>III. Scaling up best SLM practices across the selected areas using the approach of the joint development of the technology with farmers, actively using Farmers' Field School approach, including but not limited to:</p> <p>Irrigated:</p> <ul style="list-style-type: none"> - Mulching the soil with plastic wrap - The introduction of water-saving irrigation techniques (MSE sprinkling irrigation) - Introduction of winter wheat varieties, resilient to drought, salt, heat and pests 	<p>3.1.1</p> <p>3.1.1.</p>	Dashoguz district, Gurban-sultan-eje region	LD: 2 688 464
--------------	--	---	---	---------------

	Pasture <ul style="list-style-type: none"> - Inventory of pastures and identification of ways pasture watering - Introduction of participatory pasture management principles 				
Turkmenistan	Introduction of salinity management approaches in Central Asian region <ol style="list-style-type: none"> Development of district-regional level salinity management <ul style="list-style-type: none"> Development of participatory-based salinity management plan Capacity building of national and local authorities Development of guidance for salinity management for the district level (irrigated area) Creation of information-resource centers for exchange of innovation technologies within the Agricultural University and Agricultural college in Dashoguz district Development of the structure, legal and regulatory bases and strategy for the development of agricultural consulting services <ul style="list-style-type: none"> Development of structure, changes in legal and regulatory documents Development of Piloting the agricultural consulting services in project site Development and implementation of SLM best practices activities in salinized lands of Dashoguz district: <ul style="list-style-type: none"> - Introduction of SLM practices salinized lands - Integration of salinity-related activities into the country's Program of ameliorative recovery lands of the ministry of agriculture and water economy Support of agricultural multi-purpose cooperatives for distribution of technologies and knowledge on bio-saline agriculture (jointly with ICBA co-finance) 	3.2.1. 3.2.2. 3.2.2./2.1.2. 3.2.3. 3.2.3./ 2.1.4. 3.2.3.	Dashoguz district, Gurban sultan eje region		
Uzbekistan	Upscaling of climate-smart agricultural practices in drought-prone production landscapes		Mid-flow of Syr-darya River, Jizzak district		LD: 1 455 424

<p>I. Development of land use plans for mountain agroecosystem (Kitab region, Kashkadarya district), rain-fed (Kamashi region, Kashkadarya district) based on:</p> <ul style="list-style-type: none"> - biophysical, suitability, social economic assessments - drought risk assessment and management approaches - developed mechanisms of drought risk insurance - developed scenarios based on assessments and prognosis - cross sector and participatory approaches - (experience of other countries, e.g. Turkey, on planning, capacity development and training) - Documenting the methodologies - Providing capacity building of relevant government national and local institutions and other stakeholders on planning methodology - Land use plan should include the development of the scheme of the complex use of water resources for drought prone Kashkadarya watershed (jointly 3.2.1.) for 120 ths hectare 	3.1.1.	Zarbardar and Jizakh districts	3.1.2.	Possible could be
<p>II. Strengthening the capacity of state institutions (UZGIP, Uzhydromet, local governments) and farmers' organizations (Farmers councils), including</p> <ul style="list-style-type: none"> - Training on drought mitigation strategies and approaches - Training and developed materials, including in local languages, on drought resilient technologies - Development and support of introduction of demonstration field on water technologies in Kashkadarya district (with WMO, IWMI) <p>III. Development of the capacity for drought monitoring, including:</p> <ul style="list-style-type: none"> - Development of national programme of drought monitoring and piloting at the level of selected project's areas (Kashkadarya and Jizak districts) - Improved technical capacity of selected agro-meteorological stations (Kashkadarya and Jizak districts) - Training of local specialists in drought monitoring and application for agricultural production - Awareness building and knowledge sharing on methods and technologies on drought mitigation through existing extension services 	3.1.2.		Possible could be	

[illegible]

	<p>3. Implementation and monitoring, including attraction of donors for co-finance</p> <p>4. Preparation of guidelines on salinity management planning for watersheds in Uzbekistan</p> <p>5. Assessment and capacity building for the use of the guideline (Amelioration Fund and UZGIP)</p> <p>II. Generation of the capacity of local farmers' institutions (Union of Farmers and Agricultural University):</p> <ol style="list-style-type: none"> 1. Training courses on salinity management introduced and ToT for trainers is performed 2. At least one demonstration site is organized to spread knowledge on best practices (used in 3.2.3) 3. Relevant training programme developed to cover farmers from all area covered by the project and beyond <p>III. Scaling up advanced technologies and farming practices:</p> <ul style="list-style-type: none"> - Distribution of salt-resistant cotton varieties (Gulistan) (Zarbardar and Jizakh region) - Crop diversification with introduction of salt-resistant pulses, alfalfa, trees, fruit trees 	<p>3.2.2.</p> <p>3.2.3.</p>	<p>Zarbardar and Jizakh district</p>	<p>Hectares of the land</p> <p>Personnel is trained</p> <p>Courses are adapted and introduced</p> <p>Salt-resistant varieties are introduced at both districts the territory of</p>	
--	---	--	--------------------------------------	---	--

Annex 6: Terms of Reference for Key Project Staff

Terms of Reference

Administration and Operations Officer (FAO)

Timing/Duration Full time for project duration

Background: Under the overall supervision of the FAO SEC Representative and in close cooperation with other FAO SEC staff, the incumbent will provide administrative and operational support to the implementation, monitoring and evaluation of the project for timely delivery of its outcomes and outputs. In particular he/she will perform the following tasks:

Main tasks:

- Ensure smooth and timely implementation of project activities in support of the results-based work plan, through operational and administrative procedures according to FAO rules and standards;
- Coordinate the project operational arrangements through contractual agreements with key project partners;
- Arrange the operations needed for signing and executing Letters of Agreement (LoA) and Government Cooperation Programme (GCP) agreements with relevant project partners;
- Maintain inter-departmental linkages with FAO units for donor liaison, Finance, Human Resources, and other units as required;
- Undertake day-to-day management of the project budget, including the monitoring of cash availability, budget preparation and budget revisions to be reviewed by the Project Coordinator;
- Ensure the accurate recording of all data relevant for operational, financial and results-based monitoring;
- Ensure that relevant reports on expenditures, forecasts, progress against work plans, project closure, are prepared and submitted in accordance with FAO and GEF defined procedures and reporting formats, schedules and communications channels, as required;
- Execute accurate and timely actions on all operational requirements for personnel-related matters, equipment and material procurement, and field disbursements;
- Participate and represent the project in collaborative meetings with project partners and the Project Steering Committee, as required;
- Be responsible for results achieved within her/his area of work and ensure issues affecting project delivery and success are brought to the attention of higher level authorities through the BH in a timely manner,
- In consultation with the FAO Evaluation Office, the and the FAO-GEF Coordination Unit, support the organization of the mid-term review and final evaluations, and provide inputs regarding project budgetary matters;

Minimal requirements:

1. University Degree in Economics, Business Administration, or related fields.
2. Five years of experience in project experience in planning, project implementation and management/administration of development programmes including the preparation, monitoring and evaluation of development projects and operations procedures
3. Knowledge of FAO's project management systems.

Location: Ankara, Turkey

Language: English/ Russian

National Project Coordinator

Timing/Duration	Full time for project duration
Background	The NPC will be a senior officer seconded to the Project by the national lead agency.
Main tasks	<ul style="list-style-type: none"> • Assume overall responsibility for the successful execution and implementation of the project, accountability to the Government and FAO for the proper and effective use of project resources; • Serve as a focal point for the coordination of projects with other Government agencies, FAO and outside implementing agencies; • Ensure that all Government inputs committed to the project are made available; • Supervise the work of the Regional Project Manager and ensure that the Regional Project Manager is empowered to effectively manage the project and other project staff to perform their duties effectively; • Select and arrange, in close collaboration with FAO, for the appointment of the Field Officers, as appropriate; • Supervise the preparation of project work plans, updating, clearance and approval, in consultation with FAO and other stakeholders and ensure the timely request of inputs according to the project work plans; • Represent the Government institution (national counterpart) at the tripartite review project meetings, and other stakeholder meetings; • Build and strengthen synergies and collaboration with other countries and contribute to the regional collaboration component to ensure knowledge exchange and benefits at national level.

CACILM Secretariat Staff

Title	Regional Project Coordinator
Timing/Duration	Full time for project duration
Background	The RPC is a GEF funded position reporting to the FAOR and the FAO LTO.
Main tasks	<ul style="list-style-type: none"> • Manage Project Management Unit • Prepare annual and quarterly workplans and prepare ToR for all inputs; • Ensure all CACILM Secretariat staff and all consultants fully understand their role and their tasks, and support them in their work; • Oversee day-to-day implementation of the project in line with the workplans; • Assure quality of project activities and project outputs; • Organise regular planning and communication events, starting with inception mission and inception workshop; • Oversee preparation and implementation of M&E framework; • Oversee preparation and implementation of Project communication and knowledge management frameworks; • Prepare progress reports and all monitoring reports. • Lead interactions with stakeholders • Liaise with government agencies and regularly advocate on behalf of the Project; • Coordinate project interventions with other ongoing activities, especially those of co-financers and other GEF projects;

	<ul style="list-style-type: none"> • Facilitate and strengthen collaboration between national project's stakeholders and regional/international partners to ensure smooth implementation and delivery of project's activities; • Support the establishment of the project as an umbrella for SLM/INRM in CA and encourage regional/international partners to support this initiative; • Regularly promote the project and its outputs and findings on a national, and where appropriate, regional stage.
Key competencies/qualifications	<ul style="list-style-type: none"> • Advanced degree in natural resources management or related fields • At least ten years of experience in the natural resources management sector in Central Asia; • Demonstrated ability to adopt new ideas; • Demonstrated commitment to participatory and bottom-up approaches; • Demonstrated ability to communicate, including advocating to government agencies; • Demonstrated ability to manage, including project management, office management ; • English and Russian language skills
Title	Field Officers (3)
Timing/Duration	Three x Full time for project duration
Background	These GEF funded positions will report to the RPC.
Main tasks	<p>The Field Officers provide and channel guidance to local governments and to local communities at demonstration sites.</p> <ul style="list-style-type: none"> • Provide capacity development to district/oblast natural resources/agricultural units • Provide training and awareness raising on INRM • Oversee the preparation of participatory land-use plans, and their implementation at Project demonstration sites • Lead field-based M&E, together with local communities, of project environmental and socio-economic impacts • Liaise regularly with provincial government and with PMU and national government; • Provide regular feedback and advance warning on conflicts, and assist with conflict resolution.
Key competencies/qualifications	<ul style="list-style-type: none"> • Demonstrated experience in participatory natural resources management at the local level • Excellent communication skills, with district/oblast government, national and international experts and local communities • Demonstrated ability to open up to new approaches and new practices
Title	M&E and Communications Expert
Timing/Duration	Full time for project duration

Background	This GEF funded position reports to the RPC.
Main tasks	<p>This assignment will support FAO SEC and the CACILM Secretariat on M&E, and communicating and disseminating messages from the project. The assignment will cover written, verbal, electronic and other forms of media.</p> <p>The aim is to ensure that INRM in drought and salinity affected areas is raised on the agenda of decision-makers and politicians and that the issues are fully understood and appreciated.</p> <p>This assignment contributes to all Outcomes of the project. The consultant will work with the RPM. Specific tasks include:</p> <ul style="list-style-type: none"> • Support the RPC in monitoring and evaluation of key project results and impacts; • Design a system for monitoring the effectiveness of the project's communications; • Determine the principal messages to be disseminated by the Project; • Determine the key audiences for each message; • Determine the optimal media for conveying the messages to the targeted audience; • Draft a communication strategy; • Train CACILM Secretariat and national staff on communication techniques; • Work with the CACILM Secretariat staff to design, develop and support use of communication tools as the project evolves, conveying the project findings and outputs: websites, posters, leaflets, TV interviews, radio interviews, Facebook, twitter, etc.
Key competencies/qualifications	<ul style="list-style-type: none"> • Higher degree in impact monitoring and communications • Ten years of experience in communications or media relations with a national government agency or international private sector organization • Demonstrated ability to (i) train (ii) develop communication tools – written, verbal, electronic, etc. • Perfect English and Russian language skills • Previous work in Central Asia is highly preferential.
Title	Gender and Livelihood Expert
Timing/Duration	TBD
Background	This GEF funded position reports to the RPC.
Main tasks	<p>The aim of this assignment is to ensure that gender and livelihood considerations are integrated into all project approaches, strategies, activities, inputs and outputs. The assignment will also be responsible for advising FAO SEC and CACILM Secretariat on gender issues. Specifically:</p>

- Assess and analyze the project from a gender and socio-economic perspective;
- Identify key gender issues in the project and key gender entry points;
- Identify awareness and training needs regarding gender and livelihoods in the CACILM Secretariat and at national level;
- Prepare a practical strategy for integrating gender and socio-economic consideration into the project, including a training programme and a gender and livelihood monitoring framework;
- Train CACILM Secretariat and national staff on gender and livelihood issues;
- Work with the CACILM Secretariat staff to (i) integrate gender into all project workplans (ii) integrate gender into all project ToR (iii) review all outputs from a gender perspective;
- On a regular basis, monitor the effectiveness of the project with regards to addressing gender ad livelihood issues;
- Prepare regular lessons learnt and best practices material.

**Key
competencies/qualifications**

- Higher degree related to social issues or gender;
- At least ten years of experience working on gender and livelihoods in rural Indonesia;
- Demonstrated experience successfully working with international partners on natural resource management issues;
- Demonstrated ability to interact effectively with a range of stakeholders – national government, local government and local land users;
- English and Russian language communications skills are preferential.

Annex 7: Project environmental and social (E&S) screening checklist

Would the project, if implemented?	N/A	No	Yes	Un-known
I. FAO VISION/STRATEGIC OBJECTIVES				
Be in line with FAO's vision?			X	
Be supportive of FAO's strategic objectives?			X	
II. FAO KEY PRINCIPLES FOR SUSTAINABILITY IN FOOD AND AGRICULTURE				
Improve efficiency in the use of resources?			X	
Conserve, protect and enhance natural resources?			X	
Protect and improve rural livelihoods and social well-being?			X	
Enhance resilience of people, communities and ecosystems?			X	
Include responsible and effective governance mechanisms?			X	
ESS 1 NATURAL RESOURCES MANAGEMENT				
❖ Management of water resources and small dams				
Include an irrigation scheme that is more than 20 hectares or withdraws more than 1000 m3/day of water?		X		
Include an irrigation scheme that is more than 100 hectares or withdraws more than 5000 m3/day of water?		X		
Include an existing irrigation scheme?			X	
Include an area known or expected to have water quality problems?			X	
Include usage of non-conventional sources of water (i.e. wastewater)?				X
Include a dam that is more than 5 m. in height?		X		
Include a dam that is more than 15 m. in height?		X		
Include measures that build resilience to climate change?			X	
❖ Tenure				
Negatively affect the legitimate tenure rights of individuals, communities or others ¹⁰ ?		X		
ESS 2 BIODIVERSITY, ECOSYSTEMS AND NATURAL HABITATS				
Make reasonable and feasible effort to avoid practices that could have a negative impact on biodiversity, including agricultural biodiversity and genetic resources?			X	

¹⁰ In accordance with Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)
<http://www.fao.org/docrep/016/i2801e/i2801e.pdf>

Have biosafety provisions in place?				X
Respect access and benefit-sharing measures in force?			X	
Safeguard the relationships between biological and cultural diversity?			X	
❖ Protected areas, buffer zones and natural habitats				
Located such that it poses no risk or impact to protected areas, critical habitats and ecosystem functions?			X	
ESS 3 PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE				
❖ Planted forests				
Have a credible forest certification scheme, national forest programmes or equivalent or use the Voluntary Guidelines on Planted Forests (or an equivalent for indigenous forests)?			X	
ESS 4 ANIMAL - LIVESTOCK AND AQUATIC- GENETIC RESOURCES FOR FOOD AND AGRICULTURE				
❖ Aquatic genetic resources				
Adhere (Aligned) to the FAO Code of Conduct for Responsible Fisheries (CCRF) and its related negotiated instruments?	X			
Aligned, where applicable, with FAO's strategic policies established in the FAO Technical Guidelines for Responsible Fisheries (including aquaculture)?	X			
❖ Livestock genetic resources				
Aligned with the Livestock Sector Strategy including the animal disease, public health and land degradation provisions?			X	
ESS 5 PEST AND PESTICIDES MANAGEMENT				
Involve the procurement or provision of pesticides?		X		
Result in increased use of pesticides through expansion or intensification of production systems?		X		
Require the disposal of pesticides or pesticide contaminated materials?		X		
ESS 6 INVOLUNTARY RESETTLEMENT AND DISPLACEMENT				
Avoid the physical and economic displacement of people?			X	
ESS 7 DECENT WORK				
Adhere to FAO's guidance on decent rural employment, promoting more and better employment opportunities and working conditions in rural areas and avoiding practices that could increase workers' vulnerability?			X	
Respect the fundamental principles and rights at work and support the effective implementation of other international labour standards, in particular those that are relevant to the agri-food sector?			X	
ESS 8 GENDER EQUALITY				
Have the needs, priorities and constraints of both women and men been taken into consideration?			X	
Does the intervention promote women's and men's equitable access to and control over productive resources and services?			X	
Does the intervention foster their equal participation in institutions and decision-making processes?			X	
ESS 9 INDIGENOUS PEOPLES AND CULTURAL HERITAGE				
Are there any indigenous communities in the project area?		X		

February, 2017

Are project activities likely to have adverse effects on indigenous peoples' rights, lands, natural resources, territories, livelihoods, knowledge, social fabric, traditions, governance systems, and culture or heritage (tangible and intangible)?		X		
Are indigenous communities outside the project area likely to be affected by the project?		X		
Designed to be sensitive to cultural heritage issues?			X	

Annex 8: Terms of reference for the project steering committee

(The final version of the document shall be reviewed and adopted at the inception meeting of CACILM2 project)

Role of the PSC

The PSC will be the policy setting body for the project; as and when required, the PSC will be the ultimate decision making body with regard to policy and other issues affecting the achievement of the project's objectives. The PSC will be responsible for providing general oversight of the execution of the Project and will ensure that all activities agreed upon under the GEF project document are adequately prepared and carried out. In particular, it will:

- Provide overall guidance to the Project Management Unit in the execution of the project.
- Ensure all project outputs are in accordance with the Project document.
- Review, amend if appropriate, and approve the draft Annual Work Plan and Budget of the project for submission to FAO.
- Provide inputs to the mid-term review and final evaluations, review findings and provide comments for the Management Response
- Ensure dissemination of project information and best practices

Meetings of the PSC

1. The Project Steering Committee meetings will normally be held annually (on rotational bases), but the Chairperson will have the discretion to call additional meetings, if this is considered necessary. Meetings of the PSC would not necessarily require a physical meeting and could be undertaken electronically. No more than 13 months may elapse between PSC meetings.
2. Invitations to a regular PSC meeting shall be issued not less than 90 days in advance of the date fixed for the meeting. Invitations to special meetings shall be issued not less than forty days in advance of the meeting date.

Agenda

1. A provisional agenda will be drawn up by the -Regional Project Manager and sent to members and observers following the approval of the Chairperson. The provisional agenda will be sent not less than 30 days before the date of the meeting.
2. A revised agenda including comments received from members will be circulated 5 working days before the meeting date.
3. The Agenda of each regular meeting shall include:
 - a) The election of the Vice-Chairperson
 - b) Adoption of the agenda
 - c) A report of the National Project Manager on Project activities during the inter-sessional period
 - d) A report and recommendations from the Regional Project Manager on the proposed Annual Work Plan and the proposed budget for the ensuing period
 - e) Reports that need PSC intervention
 - f) Consideration of the time and place (if appropriate) of the next meeting;
 - g) Any other matters as approved by the Chairperson
4. The agenda of a special meeting shall consist only of items relating to the purpose for which the meeting was called.

The Secretariat

The CACILM Secretariat will act as Secretariat to the PSC and be responsible for providing PSC members with all required documents in advance of PSC meetings, including the draft Annual Work plan and Budget and independent scientific reviews of significant technical proposals or analyses. The PMU will prepare written report of all PSC meetings and be responsible for logistical arrangements relative to the holding of such meetings.

Functions of the Chairperson

1. The Chairperson shall exercise the functions conferred on him elsewhere in these Rules, and in particular shall:
 - a) Declare the opening and closing of each PSC meeting
 - b) Direct the discussions at such meetings and ensure observance of these Rules, accord the right to speak, put questions and announce decisions
 - c) Rule on points of order
 - d) Subject to these Rules, have complete control over the proceedings of meetings
 - e) Appoint such ad hoc committees of the meeting as the PSC may direct
- f) Ensure circulation by the Secretariat to PSC members of all relevant documents
- g) Sign approved Annual Work Plans and Budgets and any subsequent proposed amendments submitted to FAO
- h) In liaison with the PSC Secretariat, the Chairperson shall be responsible for determining the date, site (if appropriate) and agenda of the PSC meeting(s) during his/her period of tenure, as well as the chairing of such meetings

Participation

The PSC (RCC) will be chaired by the representative of the country holding the meeting (another option, representative of the FAO). Other PSC members with the right to vote include two representatives of the countries, as country's decision-makers, main donors of projects under CACILM2 and FAO-SEC. FAO LTO and the project management will also be represented on the PSC, in ex-officio capacity. The Regional Project Coordinator will be the Secretary to the PSC. Other active institutions, including representatives of implementing partners, may be invited or requested to participate as observers.

Decision-making

1. All decisions of the PSC shall be taken by consensus.

Reports and recommendations

1. At each meeting, the PSC shall approve report text that embodies its views, recommendations, and decisions, including, when requested, a statement of minority views.
2. A draft Report shall be circulated to the Members as soon as possible after the meeting for comments. Comments shall be accepted over a period of 20 days. Following its approval by the Chairperson, the Final Report will be distributed and posted on the Workspace as soon as possible after this.

Official language

The official language of the PSC shall be English/Russian

Annex 9: E&S risk classification certification form



fpmis_14800669528
99.pdf

