Funding Proposal

FP116: Carbon Sequestration through Climate Investment in Forests and Rangelands in Kyrgyz Republic (CS-FOR)

Kyrgyzstan | Food and Agriculture Organization of the United Nations (FAO) | Decision B.24/09

4 December 2019

GREEN CLIMATE FUND

Funding Proposal

Version 1.1

The Green Climate Fund (GCF) is seeking high-quality funding proposals.

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

Project/Programme Title:	**Carbon Sequestration through Climate Investment in Forests and Rangelands in Kyrgyz Republic (CS-FOR)**
Country/Region:	**Kyrgyz Republic**
Accredited Entity:	**Food and Agriculture Organization of the UN**
Date of Submission:	June 21, 2018

Acronyms and definitions

AE	Accredited Entity
AI	Artificial Insemination
AMA	Accreditation Master Agreement
ARIS	Community Development and Investment Agency [ARIS is acronym of Russian name]
A/R	Afforestation/Reforestation
AWP/B	Annual Work Plan and Budget
CBD	UN Convention on Biological Diversity
CC	Climate Change
CCCC	Coordination Commission on Climate Change
CFC	Climate Financing Center
CLMG	Community Landscape Management Groups
CS-FOR	Carbon Sequestration through Climate Investment in Forests and Rangelands Project
CSO	Civil Society Organizations
DPLF	Department of Pastures, Livestock and Fisheries
DW	Dry Weight
EBRD	European Bank for Reconstruction and Development
EE	Executing Entity
ESA	Environmental and Social Analysis
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESRI	Environmental Systems Research Institute
ESS	Environmental and Social Safeguards
EU	European Union
FAO	Food and Agriculture Organization of the UN
FC	Forest Code
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas Emissions
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit*
GPS	Global Positioning System
IFAD	International Fund for Agricultural Development
IFEMP	Integrated Forest Ecosystem Management Project – WB funded
INDC	Intended Nationally Determined Contribution
INRMCRP	Integrated Natural Resource Management and Climate Resilience Plans
JICA	Japan International Cooperation Agency
M&E	Monitoring and Evaluation
MAFIM	Ministry of Agriculture, Food Industry and Melioration

m a.s.l.	Meters above sea level
MES	Ministry of Emergency Situations
MoU	Memorandum of Understanding
NAP	National Action Plan
NBKR	National Bank of the Kyrgyz Republic
NDA	National Designated Authority
NDVI	Normalized Difference Variation Index
NGO	Non-governmental Organization
NRM	Natural Resource Management
NSC	National Statistics Committee
NSSD	National Strategy for Sustainable Development
NTFP	Non Timber Forest Product
OECD	Organization for Economic Cooperation and Development
OPA	Operational Partners Agreement
OPIM	Operational Partners Implementation Modality
PMU	Project Management Unit
PUU	Pasture Users Unions
QGIS	Quantum GIS Software for Desktop provided for free under open source license
RDF	Rural Development Fund
RKDF	Russian-Kyrgyz Development Fund
SAEPF	State Agency for Environment Protection and Forestry
SALSGIR	State Agency for Local Self Government and Interethnic Relations
SDG	Sustainable Development Goals
SFF	State Forest Fund
SFM	Sustainable Forest Management
SLF	State Land Fund (area managed by MAFIM where majority of pastures are located)
SPCR	Strategic Programme for Climate Resilience
TA	Technical assistance
TNC	Third National Communication
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNFCCC	UN Framework Convention on Climate Change
US$	United States dollar
WB	World Bank
WFP	World Food Programme
WP	Working Paper
WUA	Water User Associations

Contents

Note to accredited entities on the use of the funding proposal template

- Sections **A, B, D, E** and **H** of the funding proposal require detailed inputs from the accredited entity. For all other sections, including the Appraisal Summary in section F, accredited entities have discretion in how they wish to present the information. Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other project documents such as project appraisal document.
- The total number of pages for the funding proposal (excluding annexes) is expected not to exceed 50.

Please submit the completed form to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:
"[FP]-[Agency Short Name]-[Date]-[Serial Number]"

A.1. Brief Project / Programme Information			
A.1.1. Project / programme title		**Carbon Sequestration through Climate Investment in Forests and Rangelands (CS-FOR) in the Kyrgyz Republic**	
A.1.2. Project or programme		**Project**	
A.1.3. Country (ies) / region		**Kyrgyz Republic**	
A.1.4. National designated authority (ies)		**State Agency for Environmental Protection and Forestry**	
A.1.5. Accredited entity		**Food and Agriculture Organization of the UN**	
A.1.5.a. Access modality		☐ Direct ☒ International	
A.1.6. Executing entity / beneficiary		Executing Entities: SAEPF, ARIS, FAO, RKDF Direct beneficiaries: 432,450 individuals (7% of the country's population) of which 246,497 are women in the Project Area; Indirect beneficiaries: 540,563 (8% of the country's population) individuals of which 380,121 are women in the Project Area	
A.1.7. Project size category (Total investment, million US$)		☐ Micro (≤10) ☐ Medium (50<x≤250)	☒ Small (10<x≤50) ☐ Large (>250)
A.1.8. Mitigation / adaptation focus		☐ Mitigation ☐ Adaptation ☒ Cross-cutting	
A.1.9. Date of submission		21 June 2018 (v.1); 27 November 2018 (1st re-submission); 22 August 2019 (2nd re-submission); 30 August 2019 (3rd re-submission); 13 September 2019 (4th re-submission); 19 September 2019 (5th re-submission); 23 September 2019 (6th re-submission); 3 October 2019 (7th re-submission); 7 October 2019 (8th re-submission)	
A.1.10. Project contact details	Contact person, position	Daniel Gustafson, Deputy Director General	
	Organization	FAO	
	Email address	Daniel.Gustafson@fao.org; FAO-GCF-Team@fao.org	
	Telephone number	+39 0657056320	
	Mailing address	Viale delle Terme di Caracalla 00153 Rome, Italy	

A.1.11. Results areas *(mark all that apply)*

Reduced emissions from:

- ☐ Energy access and power generation
  (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- ☐ Low emission transport
  (E.g. high-speed rail, rapid bus system, etc.)
- ☐ Buildings, cities and industries and appliances
  (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)
- ☒ **Forestry and land use**
  (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.)

Increased resilience of:

- ☒ **Most vulnerable people and communities**
  (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.)
- ☐ Health and well-being, and food and water security
  (E.g. climate-resilient crops, efficient irrigation systems, etc.)
- ☐ Infrastructure and built environment
  (E.g. sea walls, resilient road networks, etc.)
- ☒ **Ecosystem and ecosystem services**

(E.g. ecosystem conservation and management, ecotourism, etc.)

A.2. Project / Programme Executive Summary (max 300 words)

1. The Kyrgyz Republic's Intended Nationally Determined Contributions (INDCs) under the Paris Agreement commits the country to reducing, by 2050, its greenhouse gas emissions by 35 – 37 percent through international assistance. By investing in rangeland and forestry management, strengthening national and local institutions, introducing market-driven incentives and local planning processes, the project will lead to the sequestration of 19.8 million tCO_2eq in 20 years. These reductions represent 7.6 percent of the country's total emissions, and 22.6 percent of the agricultural share of emissions.

2. The project will achieve these sequestration results, while capitalizing important co-benefits from adaptation and disaster risk reduction, through: supporting government's on-going efforts to harmonize relevant policies and legal frameworks, and strengthen its planning, monitoring and evaluation systems (Component 1); introducing a process of local integrated rangeland and forestry resource planning built around forest, rangeland and livestock management practices that sequester carbon, are responsive to observed changes in the climate and enable the diversification of household income earning activities (Component 2); facilitating market opportunities that provide the financial incentives, funded by the Russian Kyrgyz Development Fund (RKDF), for resource users to adopt and maintain management practices that sequester and preserve stored carbon. The targeted project areas were selected due to their high level of exposure and sensitivity to climate change stressors, mitigation potential, human poverty and dependency on natural resources.

3. The 49.99 million US$ investment will achieve carbon sequestration at a cost of US$ 2.5 per tCO_2eq, while also indirectly strengthening the resilience and improving the livelihoods of 90,000 households (8.9 percent of total county population) by facilitating investment towards diversification, increase of efficiency and competitiveness, thus reducing dependency of communities on direct uses of resources (i.e., wood and pasture) and improving their livelihoods through benefits gained by improving ecosystem functions and diversification of livelihood opportunities for women and men. The harmonized legislative and legal frameworks, enhanced institutional systems and local procedures, will enable the national scaling-up of carbon sequestration investments through forest and rangeland management, and increase the effectiveness of additional domestic expenditures in reaching the country's INDC targets.

A.3. Project/Programme Milestone

Expected approval from accredited entity's Board (if applicable)	dd/mm/yyyy
Expected financial close (if applicable)	End 2027
Estimated implementation start and end date	Start: First Quarter 2020 End: First Quarter 2027
Project/programme lifespan	20 years (8 years of implementation under project financing, and 12 years of capitalization)

B.1. Description of Financial Elements of the Project / Programme

4. The project's investments and activities will be executed through three components in addition to Project Management:

- Component 1. Evidence-based Strengthening of Natural Resources Management Governance;
- Component 2. Green Investments for Forests and Rangeland Rehabilitation;
- Component 3. Climate-sensitive Value Chains Development

5. The total project costs amount to US$ 49.99 million, with project management costing less than 5 percent of the total. Table B.1.1 presents the breakdown of costs by Component and Table B.1.2 the breakdown of Components by financiers.

Table B.1.1: Breakdown of costs by Component (GCF format) – rounded figures in US$

Component	Outcome	Amount (for entire project)	Currency	Amount (for entire project) (1US$=69.78 KGS)	Local currency	GCF funding amount	Currency of disbursement to recipient
1: Evidence-based strengthening of NRM governance	M5.0 Strengthened institutional and regulatory systems	4.175.587	million USD ($)	291,388,746	KGS	3.775.587	million USD ($)
	A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development	1.406.350	million USD ($)	98,140,588	KGS	1.406.350	million USD ($)
2: Green investments for forest and rangeland rehabilitation	M9.0 Improved management of land or forest areas contributing to emissions reductions	22.472.168	million USD ($)	1,568,195,524	KGS	20.295.168	million USD ($)
3: Climate-sensitive value chains development	A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	19.512.965	million USD ($)	1,361,690,798	KGS	3.012.965	million USD ($)
Project Management Component	Project Management Component	2.497.930	million USD ($)	169,081,505	KGS	1,423,450	million USD ($)
Total project financing		49.990.000	million USD ($)	3,488,497,161	KGS	29.998.520	million USD ($)

Financing

6. **The project will be funded by a GCF grant for the amount of US$ 29.99 million**, or 60 percent of the total CS-FOR costs. The GCF grant will finance: (i) 93 percent of the evidence-based strengthening of NRM governance Component (US$ 5.2 million); (ii) 91 percent of the green investments for forest and pasture rehabilitation Component (US$ 22.4 million); (iii) 15 percent of the Climate-sensitive value chains development Component (US$ 2.5 million); and (iv) 60 percent of the project management Component (US$1.5 million). An estimated 82.7 percent of the GCF budget (US$ 24.82 million) will be devoted to mitigation result area's interventions (i.e., reduced emissions from forest and land use), and the remaining 17.2 percent (US$ 5.17 million) to the adaptation result area (i.e., more specifically: about 12.9 percent or US$ 3.88 million to increased resilience of most vulnerable people, communities and regions; and about 4.3 percent or US$ 1.29 million to Ecosystem and ecosystem services).).

7. The GCF grant mechanism is an innovative catalytic element of the co-financing components which assists by enhancing the public-private partnership for promoting climate-related investments holistically in the project. The project will create an integrated policy and legal framework through technical, legal and institutional approaches to advance public-private partnership in integrated natural resources management (e.g. Output 1.1 and Output 2.1). Under the public-private partnership, the GCF grant and co-financings will provide investment environment and opportunities for

entrepreneurs and business actors in: i) afforestation/reforestation and forest enrichment; ii) rangeland rehabilitation and livestock production; and iii) agribusinesses upgrade/operation in selected value chains identified and mobilized through information campaign with agribusinesses and value chain mapping for market access/development (see e.g. Output 2.1 and Output 3.1). The business investment and opportunity will cover for example native walnut and pistachio production, livestock, honey, non-timber forest products. In addition to this, an inclusive-finance scheme may be used, as part of the blended finance component of the project, to support the initial investments for establishing community tree nurseries. The project will de-risk and secure financial inclusion to facilitate the participation in critical climate sensitive value chains. RKDF as well as communities are committed to co-financing the relevant private investment to make sure the innovative financing in a GCF grant mechanism.

8. By targeting policy harmonization, and strengthening the capacities of key national and local institutions in the use of new approaches and tools, the project will significantly influence the policy and operational environment in a way to shift towards climate change mitigation-driven natural resources management. Component 1 is instrumental to ensure the national scale up of the project approach (reference: Section C.3, and Chapter 4 and 5 of the FS). The improved framework will also contribute to a more effective mainstreaming of climate resilience in vulnerable economic sectors (forestry and livestock), and enable lessons learned from the field to be progressively adopted by all involved stakeholders, and scaled-up by the relevant authorities (SAEPF, Pasture Department, and all institutions involved in monitoring the country's natural resource base). As a reinforcing element, even during the project life cycle, the project will promote market driven incentives at national level (via Component 3 and private sector involvement) to income diversification thus reducing pressure on natural resources. Finally, the harmonized and evidence based approach of integrated management of forests and rangelands has the potential for replication also in other countries - especially in Central Asia, with similar economic structure (i.e., livestock dominated in rural areas, and suffering from progressive rangelands degradation). As shown in the EFA (Annex 3) and in the carbon accounting (Annex 3.a), the project has the potential to enhance carbon sequestration at a low cost per ton of CO2eq, which is an attractive element to adopt similar approach for other countries committed to similar mitigation objectives.

9. **RKDF co-financing amounts US$ 15.0 million**, or 30 percent of the total CS-FOR costs. The co-financing will cover 77 percent of the climate-sensitive value chains development Component (US$ 15.0 million). Such investment is critical to the project's theory of change, as they contribute to the required **(a)** economic diversification from the prevailing livestock practices; **(b)** valuation of economic opportunities from sustainably managed and climate resilient forests and rangelands (i.e., by developing non timber forest products value chains); and **(c)** transition towards a modern economy less dependent on natural resources. The investment in climate sensitive value chains as the innovative part compared to the past practices of forest investment in the country, and its integration in the project theory of change will be one of the critical success factors.

10. RKDF will provide its contributions as wholesale credits to local banks which will on lend to entrepreneurs beneficiaries ("End-borrowers"). Wholesale loans to the banks will be provided at about 3 percent p.a. in US$ and 6 percent in local currency (with interest rate to End-borrowers of 5 percent p.a. in US$ and at 10 percent in local currency, for a term of about 3-5 years). RKDF already has partner arrangements and experience in working with 13 local commercial banks. During project design, five local commercial banks were pre-identified as already intervening in the Project Area (see Section C). RKDF will also provide direct retail credits to End-borrowers (at 5 percent p.a. in US$ and at 10 percent in local currency, for a term of about 3-5 years).

11. The final selection of End-borrowers will be carried out by RKDF under the oversight of FAO, reviewed by the Project Steering Committee and finally confirmed by AE during the project implementation. Contractual agreements with selected End-borrowers will be signed by RKDF or local commercial banks accredited by RKDF (including beneficiaries' co-financing contribution). RKDF manages and oversees the loan fund, while FAO will oversee the implementation of activities and modality of loan as co-financing in the overall project framework. The loan input will be applied by following the grant inputs in the project activities sequentially as a co-financing of the grant component. The timeline of RKDF financing is aligned to the project implementation (with the majority of the investment expected from project's Y2 to Y6).

12. The component is co-financed by RKDF and will ensure the sustainability of the investment in carbon sequestration carried out in Component 2 in the improved enabling environment supported through Component 1, and will create economic opportunities with limited risk, in order to decrease pressure on and degradation of natural resources in the project intervention areas, this will result in important contributions to enhanced resilience of target communities.

13. **SAEPF, MAFIM and ARIS will provide an in-kind contribution of US$ 0.3 million each** (about 0.7 percent of the total project costs), covering 40 percent of the Project Management Component. For SAEPF, MAFIM and ARIS, the in-kind contribution will be through staff time and office spaces. For FAO, the contribution will be from Technical

Cooperation Project for staff, trainings & conferences, travel, etc. FAO will provide an in-kind contribution of US$ 0.4 million for Component 1 (about 0.8 percent of the total project costs).

14. **The project beneficiaries are expected to contribute about US$ 3.6 million**, or 7 percent of the total project costs, covering: 9 percent of the investments for Component (US$2.1 million), and 8 percent of the cost of Component 3 investment (US$1.5 million). Their contribution would comprise labour, materials and own investment resources. The beneficiary contributions will be: in kind (labour) for forestry activities; also in kind (labour and some material) for rangeland rehabilitation; and as part of the investment for the climate sensitive value chain under Component 3. The beneficiary contribution will be calculated based on the anticipated labour/ material inputs (e.g. hours and standard wages, cost) and the basis of calculation will be reflected in the contractual agreement to be signed (see Table C.3.1 for detail). The in-kind contribution will be monitored accordingly as per the contractual agreement.

15. **The Project Management Component costs about US$ 2.498 million**, equivalent to 5 percent of the project cost, with a contribution from GCF grant of 60 percent, slightly lower than the overall GCF contribution to the project. Tables B.1.2 below provide summaries by the project Components, by financier and financing parameters.

Table B.1.2: Financing Plan by Components (million US$) – rounded figures in US$

Component	%	GCF	RKDF	SAEPF	MAFIM	ARIS	BENEF	FAO	Total
Component 1	**11%**	**5,181,937**						**400,000**	**5,581,937**
Component 2	**45%**	**20,370,168**					**2,102,000**		**22,472,168**
Component 3	**39%**	**3,012,965**	**15,000,000**				**1,500,000**		**19,512,965**
PMC	**5%**	**1,423,450**		**340,000**	**317,000**	**342,480**			**2,422,930**
Total	**100%**	**29,988,520**	**15,000,000**	**340,000**	**317,000**	**342,480**	**3,602,000**	**400,000**	**49,990,000**

16. As shown in table B.1.2 above, component 2 represents the bulk of the investment for carbon sequestration. Among the investment in component 2, the majority is for afforestation / reforestation / forest enrichment, with a lower share on rangeland rehabilitation. While the largest share of carbon sequestration is from rangeland, the costs for forestry are higher, and require a higher concessionality than the rangeland investment (75%) as the latter generate higher financial benefits. The EFA (Chapter 7 of the Feasibility Study in Annex 2, and detailed in Annex 3) demonstrates that without the provided concessionality, the forest investment would not be feasible, with consequent risks for the project's framework. Similarly, there is limited scope for private sector investment (i.e., from the financial market) as the returns are too long and too low for the currently existing financial products (Component 3 works also on the financial literacy and inclusion). Nevertheless, Component 1's efforts on the enabling environment (policy and regulatory framework) will generate economic interests in maintaining the forests investment and Component 3 will support in diversifying from the prevailing unsustainable livestock practices.

17. A breakdown of cost by expenditure type (project staff and consultants, travel, goods, works, services, etc.) is included in Chapter 8 of Annex 2 (Feasibility Study).

B.2. Project Financing Information

	Financial Instrument	Amount	Currency	Tenor	Pricing
(a) Total project financing	**(a) = (b) + (c)**	49.99	million USD ($)		
(b) GCF financing to recipient	(i) Senior Loans	……	Options	( ) years	( ) %
	(ii) Subordinated Loans	……	Options	( ) years	( ) %
	(iii) Equity	……	Options		( ) % IRR
	(iv) Guarantees	……	Options		
	(v) Reimbursable grants*	……	Options		
	(vi) Grants *	29.99	million USD ($)		
	** Please provide economic and financial justification in section F.1 for the concessionality that GCF is expected to provide, particularly in the case of grants. Please specify difference in tenor and price between GCF financing and that of accredited entities.*				

	Please note that the level of concessionality should correspond to the level of the project/programme's expected performance against the investment criteria indicated in section E.

Total requested (i+ii+iii+iv+v+vi)	29.99	million USD ($)	

(c) Co-financing to recipient

Financial Instrument	Amount	Currency	Name of Institution	Tenor	Pricing	Seniority
In-kind	0.34	million USD ($)	SAEPF			
Senior Loan	15.00	million USD ($)	RKDF	(3-5) years	(5-10[1]) %	Options seniorsenior
In-kind	0.32	million USD ($)	MAFIM			Options
In-kind	0.34	million USD ($)	ARIS			Options
In-kind	3.60	million USD ($)	Beneficiaries			
In-kind	0.40	million USD ($)	FAO			Options

Financing institution: SAEPF, RKDF, MAFIM, ARIS, and FAO. Co-financing letters are provided in Section I.

Beneficiaries' contribution to the investment will be in-kind depending on the activities.[2]

** Please provide a confirmation letter or a letter of commitment in section I issued by the co-financing institution.*

(d) Financial terms between GCF and AE (if applicable)

18. The GCF grant financing is entrusted to FAO as Accredited Entity. FAO will in turn transfer funds to SAEPF and ARIS as Executing Entities. The latter, throughout the Funding Proposal, will be referred to as Operational Partners, and will be executing selected project's activities under the FAO Operational Partners Implementation Modality (OPIM) and following the respective Operational Partners Agreements (OPAs) contracted with FAO.

19. The senior loan co-financing will be entirely managed by RKDF, which will report to the Project Management Unit (PMU) Coordinator and to FAO for planning and results monitoring purposes. A detailed financial scheme for the project, including RKDF participation, is described in Chapter 5 of the Feasibility Study (Annex 2).

B.3. Financial Markets Overview (if applicable)

20. In order to support the sustainability of carbon sequestration investment in forests and rangeland, with US$ 15.0 million in co-financing as senior loans from the RKDF, the project will activate special credit lines for project-relevant value chains and entrepreneurs. Within its Component 3, CS-FOR will generate loans to existing enterprises representing eligible value chains. The loans will be provided to entrepreneurs at 5 percent p.a. in US$ and at 10 percent in local currency, for a term of about 3-5 years (wholesale loans to the banks providing credit to End-borrowers will be at about 3 percent p.a. in US$ and 6 percent in local currency, and End-borrowers will enjoy the same level of concessionality as for direct loans provided by RKDF). Such interest rates applied are about half of the prevailing market weighted average interest rates (Credit Information Bureau - see Chapter 3 of the Feasibility Study, rural finance Section). Wholesale loans to the banks will be provided at about 3 percent p.a. in US$ and 6 percent in local currency. This is in line with the project concept to support investment towards reducing unsustainable use of forests and rangelands. The RKDF loans will specifically target small and medium sized enterprises that need larger loans as compared to those typically offered in the market by commercial banks.

[1] 5% in USD, 10% in local currency
[2] By reinforcing beneficiaries' ownership, their contribution represents an element of sustainability of the project's investment.

C.1. Strategic Context

Climate Scenario

21. The Kyrgyz Republic is a low-income food deficit country (LIFDC) with a population of nearly 6 million, of which two-thirds live in rural areas. Agriculture is one of the key economic sectors in the Kyrgyz Republic, with 48% of labour force dedicated to this sector and almost 15% of GDP coming from it.

22. Kyrgyzstan is a landlocked country with many tall mountains, glaciers, and high-altitude lakes. Ninety-three percent of the country is mountainous, dominated by the Tien Shan range, with over 40 percent of the country laying at above 3,000 meters elevation, and three-quarters of that under permanent snow or glaciers. At lower altitudes, the dominant weather regime is dry, showing the typical characteristics of the continental climatic zone marked with sharp contrasts between summer and winter seasons. With increasing altitude, average temperatures decrease while humidity increases such that diurnal variations and differences between the summer and winter seasons are less marked.

23. The Third National Communication to the UNFCCC and additional literature[3] show small but statistically significant changes in key weather variables (minimum and maximum temperatures and precipitation). Average annual temperatures over the period 1960-2010 have been increasing at a rate of 0.025ºC/year, reaching a rate of increase of 0.07ºC/year between 1990 and 2010. The greatest rate of warming has occurred during in the winter months, with monthly low temperatures warming more rapidly than highs.[4] Annual precipitation has shown a slight downward trend in the last 20 years (-1.868 mm/year). The full climate scenario for the target areas and entire country is available in the Feasibility Study attached to this proposal (Chapter 1). The main climatic changes are summarized as follows:

- Under the intermediate emission pathway RCP4.5,[5] maximum temperatures are expected to increase more rapidly, reaching between 2ºC (in the east) and 2.8ºC (in the north) by mid-century (under RCP8.5 the expected maximum temperature rise is between 2.6ºC (east) and 3.8ºC (north)). Minimum temperatures are also expected to continue to increase between 0.5º and 1ºC. Regarding change to average seasonal temperatures, RCP4.5 predicts an increase of between 2ºC (east) and 3ºC (north) in winter and autumn, between 2ºC and 2.7ºC in summer, and between 1.7ºC and 2.6ºC in spring.

- Precipitation' projections suggest an increase in accumulated rainfall of between 12% (west) and 18% (northeast) under RCP4.5 by mid-century (for RCP8.5 the relative change could be between 20% (west) and 28% (north)). Annual and monthly rainfall records (2000-20017) analysed by FAO revealed a scenario of overall precipitation increase, except in the project target areas where a significant decrease is evident. In the project target areas monthly rainfall trends show a clear intra-seasonal shift, with increased rainfall during autumn and winter (+6% to +20%), and a marked reduction in summer (from -18% to -28%).[6] In addition, FAO analysis of snow cover between 2000 and 2017 identified a marked decrease in the number of days with snow cover in areas above 1,500 meters above the sea level (m a.s.l.) and a slight increase in areas below 1,500 m a.s.l. The projected change in annual runoff is 0.261; projected change of annual groundwater recharge is 0.354.

24. As reported in the feasibility study (Chapter 1), the interactions between changing weather patterns, the impact of these changes on vegetative communities and forests, and the degradation of natural resource systems due to human activities, has led to an increase in damage from extreme weather events and a growing threat to the future provisioning of key ecosystem services. The Kyrgyz Ministry of Emergency Situations reports that during the past 20 years the number of weather related disasters has increased by six times and that about 70 percent of these events have occurred in the country's Southern regions (the project target area). In 2016, the last year for which data is available, the number of weather related emergencies was above average, causing 1.6 billion KGS in damages (approximately US$23 million)[7]. One of the key reasons for the growing number of disasters is the unsustainable harvesting of timber from mountain slopes and degradation of hillside vegetation and along waterways from livestock overgrazing. The growing volume of rainfall in the spring and autumn, falling on hillsides and waterways removed of their protective forest and vegetative cover, has resulted in the increased frequency and intensity of flash floods and landslides (UNISDR 2015).

25. As the climate continues to change, the changes and seasonal redistribution of rainfall and rising temperatures will increasingly exert direct pressure on forest and grassland ecologies. In response to temperature increase and to the extent allowed by physical features, forest biomes will shift upwards in elevation, although into an ever-decreasing surface area. The species composition of grassland communities will also change in response to temperature increase and the decrease

[3] FAO and NDA teams collected and analyzed over 250 publications. Priority was given to: (i) national communications/reporting to UNFCCC, UNCCD, CBD and others; (ii) national action plans and strategies; (iii) national legal frameworks, (iv) UN assessments and reports; (v) publications from national institutions, academia (national and international) and CSO; (vi) national media; and (vii) bilateral donors' reports. A climate reference list is attached to the Feasibility Study and to the Funding Proposal.
[4] When comparing the mean monthly temperatures for the periods 1961-1990 and 1991–2010, the greatest increase in temperature (at all altitudes) was observed during the cold months - February, March, October and November, while in summer the temperature increase was the lowest. Perhaps, this is the reason for a significant reduction in the mean duration of the heating period. (Climate profile of the Kyrgyz Republic, 2013, UNDP Project: "Climate Risk Management in Kyrgyzstan").
[5] Representative Concentration Pathways.
[6] See Figure 17 in Chapter 1, Feasibility Study.
[7] Ministry of Emergency of the Kyrgyz Republic data

and re-distribution of seasonal rainfall. The steady increase of the livestock population, poses a major threat to ecologies that are already degraded and which are undergoing substantial change.

26. With more than 40 percent of the agricultural land seriously degraded and over 85 percent of the total land area exposed to erosion, as a result of poor pasture management, and with the increasing volume of rainfall in the spring and autumn falling on hillsides and waterways removed of their protective forest and vegetative cover, the degradation of natural resource systems due to human activities and unsustainable agricultural practices will continue to be the key reasons for the growing number of disasters.

27. As the country recognizes the importance of an adequate response to climate change, its Intended Nationally Determined Contribution (INDC), highlights relevant and ambitious adaptation and mitigation actions and refers to important policy and strategic documents such as the National Development Programme and the National Sustainable Strategy for the Kyrgyz Republic, which establishes a commitment to ensure a transition to a resource-efficient and low-carbon development based on rational nature use.

28. According to the ND-GAIN Index[8], Kyrgyzstan's Country Index Rank is 81[9]. Its vulnerability is 0.390, and its readiness is 0.391. Adaptation challenges still exist, but Kyrgyzstan is well positioned to adapt, especially considering national level commitment. Kyrgyzstan is the 65th least vulnerable country and the 87th least ready country. Nonetheless, forests and pastures, already under stress due to anthropogenic pressure, are among the most sensitive resources being impacted by climate change; the lack of intervention in this regard is among the main causes of increased exposure of the Country to climate induced natural disasters. Extreme events like flash floods and mudslides have increased in frequency and intensity in large areas of the country where forests have historically provided protection and pastures have been the main, if not the only, source of livelihood for communities. Climate change, coupled with a transforming set of Natural Resource Management practices that suffered radical changes in the past 20 years, is now not only threatening key ecosystems but also Kyrgyz cultural heritage and development opportunities.

29. For climate change adaptation, additional information on climate rationale for the Project Area and its selection is summarized in Addendum 1 of the Funding Proposal.

30. **Concerning CO_2eq emissions**, Kyrgyzstan's Intended Nationally Determined Contributions, and its National Communications to the UNFCCC, report on emissions relative to the period 1990-2010.[10] National GHG emissions dropped significantly from 1990-1995, reflecting the economic slowdown that followed independence in 1991, held more-or-less stable from 1996-2000, and grew modestly from 2001 to 2010 (from less than 10,000 Gg CO_2eq in 2001 to over 12,500 GgCO_2eq between in 2010). During the 1990-2010 period, the sector showing the least reduction in emissions was the agricultural sector. The sector's share of total emissions in fact increased during the period from 19.8 percent to 33.5 percent, as other sectors of the economy struggled. In 2010, agriculture was still the second largest contributor to the country's emissions, in spite of a lower than average increase of the sector's contribution to the national GDP. From 2000 to 2016, emissions from the agricultural sector grew from about 3.1 m tCO_2eq to 4.6 m tCO_2eq. The contribution of emissions from livestock related sources (enteric fermentation and manure management) represented around 90% of the total agricultural emissions (FAOSTAT).

31. The Third National Assessment (TNA, 2016) reports that despite a general reduction of the emission of the country compared to 1990 levels, after the significant drop from 1990-1995, the trend of general emissions shows a general increase (10,000 GgCO2eq in 1995 to above 12,500 GgCO2eq in 2010). The TNA reports also that the lowest reduction in emissions in the period 1990-2010 was registered in the agriculture sector. The share of Agricultural emissions on total emissions went up from 19.8% to 33.5%. Agriculture in 2010 remains the second largest contributor to the country emissions, in spite of a low than average increase of the sector on the national GDP (meaning a significantly lower efficiency in carbon). As mentioned in section D.1 of the funding proposal, the CS-FOR potential sequestration of CO2eq corresponds to some 22.6% of the agriculture share of emissions. This would be achieved by investing in only 4 of the 40 districts of the country.

32. Moreover, it is worth noticing that mitigation from land use management and forests is generally reported as the most effective way to stabilize soils. Given the high risks of soil and climate related negative events in target areas, mitigation is the best option to achieve not only carbon sequestration but also benefits that can be monitored in terms of increased resilience, disaster risk reduction and environmental benefits. Mitigation in Kyrgyzstan, as per project planned investments, is also a global opportunity contributing to GCF fund level impacts and paradigm shift objective and will contribute to CO2eq sequestration by over 19.8 m t at an estimated cost of about USD 2.5 per ton which is about 50% cheaper than the world average (ref: REDD+ related intervention costs).

33. For emissions from land use, land-use change, and forestry (LULUCF), carbon dioxide, methane and nitrous oxide were considered, as well as precursor gases (nitrogen oxides and carbon monoxide). Carbon dioxide was considered both in terms of CO_2eq emissions into the atmosphere from the soil, as well as the flow of CO_2eq back into the soil through

[8] A country's ND-GAIN index score is composed of a vulnerability and readiness score. Readiness measures a country's ability to leverage investments and convert them into adaptation actions. ND-GAIN measures overall readiness by considering three components: economic, governance and social readiness.
[9] https://gain-new.crc.nd.edu/country/kyrgyzstan
[10] It should be noted that the TNC does not use most recent data – only up to 2010.

sequestration. CO_2 is the largest constituent of total GHG emissions, contributing to 96.11 percent total of GHG emissions in 1990 and increasing to 99.15 percent in 2010. Net emissions from LULUF sources were relatively steady during the period 1990-2010, and may decline in importance in the future as emissions from other sectors in the economy grow and existing stocks of stored carbon (forests and soils) become further depleted through mismanagement (see Feasibility Study, Chapter 1).

34. As reported by the World Bank, the Kyrgyz economy is expected to grow by 4-5 percent per year, with GHG emissions increasing proportionally under the business as usual scenario. The increase in national GHG emissions is expected to be much faster than in developed countries due to rapid growth of key variables, such as: (a) total population (2010-2016, +12%); (b) urban population growth (2010-2016, +100%); and (c) electric power consumption (2010-2016 +41%). The literature reviewed and FAO's analysis of land cover change and changes in productivity, point to an increasing tendency towards degradation of the main carbon sinks of the country (rangelands and forests) due to climate change impacts (principally the declining trend in summer rainfall) and inefficiency of natural resource management practices. Forest cover in Kyrgyzstan decreased at a rate of 6 percent between 2010 and 2016, while the extent of rangeland degradation reached 42 percent as livestock numbers increased by 41 percent over the same time period.

Country Economic Background[11]

35. The economy of Kyrgyzstan highly depends on services (56%), industry (29%), and agriculture (15%) with a GNI per capita of US$1,100 in 2016[12]. One third or 30.4 percent of GDP comes from the remittances of almost 1 million people working abroad, mostly in Russia and Kazakhstan.

36. The Debt Sustainability Analysis carried out by the IMF in 2017 assesses the Kyrgyz Republic at moderate risk of debt distress. However, the debt outlook remains vulnerable, in particular to a sizeable exchange rate depreciation, a deceleration in real GDP growth and a deterioration of the fiscal balance, which could tilt the assessment to high risk of debt distress. Therefore, the IMF recommends authorities to remain cautious when contracting and guaranteeing new debt and to continue fiscal consolidation[13].

37. Poverty level is high, with 25.4 percent of the country's population living below minimum subsistence level in 2016. Another 50 percent of the population were vulnerable to poverty, living below US$5/day in 2015. About 74 percent of poor people live in rural settlements, but poverty is the highest in remote mountainous areas, where almost all households are poor with average per-person annual incomes there being approximately US$82 in 2015, which is equal to minimum level for subsistence established by the Government and 1.3 times lower than in valleys (NSC data). 85.4 percent of the population living in extreme poverty in 2016 and about three quarters of the poor reside in rural areas. Poverty rates vary across the regions with Naryn recording the highest in 2016 (37.8 percent). However, the absolute number of the poor is high in Jalalabad and Osh, which accounts for 22 percent and 20 percent of the total population, respectively.

38. Scarce arable land combined with underdeveloped irrigation, limited off-farm employment opportunities, distance and poor accessibility and inadequate market infrastructure are among the key factors that constrain economic development in rural areas. According to the World Food Programme (WFP), two out of three food insecure people live in remote valleys, 'where high altitudes, harsh winters and hot, dry summers limit livelihoods potential'[14]. Food insecurity is exacerbated by climate-related shocks, including floods and mudslides, which affect resilience of families and communities. Livestock is the most important source of income and the primary source of nutrition for the rural poor. Animals also serve as an important asset for the poor families, which can prevent them from becoming destitute at the time of shocks.

39. Among the key drivers of forest degradation are overexploitation and over grazing, related to livelihood and weak management of natural resources exacerbated by the negative impacts of climate change. Forest's level of degradation is estimated by applying the UNCCD LPD methodology (approach and methodology are described in Chapter I of the feasibility study). A detailed reference of climate change impact on forests is also in Chapter 1 of the Feasibility Study (Page 31).

40. Livestock rearing is a long-standing tradition of Kyrgyz people. Before being fully settled by the Soviets in the mid-20th century, Kyrgyz mountain tribes enjoyed a pastoral lifestyle based on transhumant grazing. Traditional knowledge of sustainable transhumant grazing was lost during the Soviet times, when households were prohibited to own more than three sheep for personal purposes. After gaining independence and with more people engaged in livestock breeding, traditional livestock practices have been slowly recovering. More farmers today migrate along the rangelands not only to ensure adequate feeding for their livestock, but to preserve and allow the vegetation to regenerate. Sustainable landscape-based grazing has been a core of Kyrgyz traditional pastoral practices, which have been incorporated in recent pasture management reforms.

[11] Detailed information and data on Kyrgyz economy, demography and rural context are in the Chapter 2 of the Feasibility Study.
[12] World Bank Country Profile, 2018.
[13] IMF Country Report No. 18/53, Feb 2018
[14] WFP Kyrgyzstan (http://www1.wfp.org/countries/kyrgyzstan), accessed in February 2018.

41. In the last ten years, animal inventories have increased by 41 percent with cattle and sheep – jointly representing 80 percent of the total stocks – spiking by 37 and 68 percent respectively. The main drivers of growth are low animal productivity, non-diversified economies and low financial literacy of rural residents who perceive livestock as both a source of cash income and a means of savings accumulation.

42. Animal husbandry has been traditionally the main source of livelihood for rural population with farming households generating 95 percent of all red meat in the country. Livestock is especially important in remote mountainous areas, where cropping is limited due to a shortage of arable land, almost non-existent irrigation, and adverse climatic conditions, such as frosts and droughts. In the last ten years, animal inventories have increased by 41 percent with cattle and sheep – jointly representing 80 percent of the total stocks – spiking by 37 and 68 percent respectively (Chapter 1, section VI.c of the FS).

43. The main drivers of growth are low animal productivity, non-diversified economies and low financial literacy (as well as traditional attitudes) of rural residents who perceive livestock as both a source of cash income and a means of savings accumulation. The livestock/pasture ecosystem is trapped in a vicious cycle of productivity collapse: overgrazing and degradation cause lower levels of available forage, which reduces animal productivity, causing households to own more animals to compensate for productivity declines, which in turn increases grazing pressure and leads to more degradation.

44. Almost all livestock is grazed at pastures year-round. Daily grazing occurs in pastures near villages during the fall-winter-early spring months with very few herders moving to summer pastures in summer. Livestock productivity is low and large seasonal variations in animal body weights indicate that animal feeding is geared towards animal survival rather than commercial production.

45. Degraded pastures and inefficient production systems have resulted in animal breeding non-profitable. Animal owners are trapped in intermediaries' network; relations of mistrust and difficulties to reach up the formal markets weaken the chain. Simple calculations demonstrate that animal husbandry brings no (or negative) profit to herders who use pastures inefficiently (this is the case of the vast majority of herders, except for the most advanced PUUs that apply good pasture management techniques). High price volatility is inherent to the Kyrgyz meat market due to unorganized domestic market and aggressive speculation on prices by animal traders (intermediaries), the latter obviously aim at price growth. Small-scale production has unavoidably led to high production costs. Little to no profit on herder's side vs. generous margins of intermediaries create relations of mistrust compromising the performance of the entire chain.

46. Farmers, and not only smallholders, have limited to no access to climate information and technical knowledge on how to improve their production practices and how to factor in climate change into their natural resource management strategies. Today in Kyrgyzstan advisory service provision to farmers (both, herders and growers) is largely driven by donor support and limited assistance had been delivered to local administrations to support rural economy in the described climate change scenario. While heads of municipalities have powerful mandate, failure to understand national priorities and lack of climate change and natural resource management related policy's mainstreaming at the local level result in lack of action and "exploitation" attitude vis-à-vis natural resources and settlement development in general. Discussion with the local government authorities during various missions fielded for the purpose of design, revealed that the heads of municipalities *(Aiyl Okmotu)* are generally not aware and/or do not fully understand the national strategies with regards to climate change, natural resource management and agrifood industry.

47. Considering that only better off farmers can afford technical assistance from private extension services in a business scenario and that the large majority of herders and farmers cannot access any sort of assistance, this makes the system patchy and non-sustainable in time.

48. Described challenges along with discontinuity in implementation are jeopardizing the positive impact of investment's operations designed to address issues related to climate change and degradation of natural resources. Failure to address this issue will – without a doubt – lead to the increased degradation of natural resources further compromising the net carbon sequestration profile of the Country.

49. In recent years, climate change and accompanied destruction of ecosystems have deteriorated natural resources/capitals and stakeholder's capacity to manage NR as traditional natural resource management approach with a focus on how to use resource resources appropriately and efficiently - cannot cope with this situation. In this context, climate change sensitive integrated planning, monitoring, and evaluation of NRM incorporates mitigation / adaptation to climate change as a main element in its framework which is a multi-layered approach including the following three elements: 1. Prevention of degradation of natural capital, enabling sustainable supply of ecosystem services, 2. Encourage various stakeholders to participate and cooperate horizontally, 3. Promote bottom-up activities from local communities and connect them with the global network.

Alignment to relevant National policies and strategies

50. As reported in the feasibility study (chapter 1), to cope with the described scenario without compromising its economic and social development objectives, the country has developed a series of policy frameworks that find their ultimate goal in their Intended Nationally Determined Contribution (INDC) where mitigation and adaptation targets are reported and described and from where a cross cutting approach is derivable to ensure maximization of climate investments. Climate change mitigation and adaptation are priority areas for Kyrgyzstan, especially if joined in one investment as actions in both are linked to achieving wider sustainable development goals reducing risks to people's livelihoods, the environment and the national economy. The State Agency on Environmental Protection and Forestry (SAEPF) was nominated as the Designated National Authority (DNA) to the Green Climate Fund.

51. Kyrgyzstan's INDC acknowledge the importance of addressing climate change and the challenges related to its impacts. The country identifies adaptation and mitigation as main targets of its climate change strategies and identified the total cost required to adapt and mitigate in about US$ 3 billion.

52. Although Kyrgyzstan's INDC is among the few reporting cost estimates related to adaptation and mitigation, the document provides limited information in regards of strategies and approaches established or envisaged to ensure climate change management and shift from BAU to green economy. Nonetheless, forestry and land use / land use changes are presented among the most relevant sectors to target to secure both adaptation and mitigation targets.

53. To assess the potential mitigation actions to achieve the long-term GHG emissions target, three scenarios were developed (Figure C.4): **Scenario 1:** low population growth / high economic growth; **Scenario 2:** average population growth/average economic growth; and **Scenario 3:** high population growth / low economic growth. It was determined that the Kyrgyz Republic's contribution to mitigation will be to reduce GHG emissions in the range of 11.49 - 13.75 percent below business as usual (BAU) in 2030. Under international support, the Kyrgyz Republic could implement mitigation measures to achieve total reduction in the range of 29.00 - 30.89 percent below BAU in 2030. Projecting to 2050, the Kyrgyz Republic will reduce GHG emissions in the range of 12.67 - 15.69 percent below BAU. Additionally, under international support the Kyrgyz Republic could implement the mitigation measures to achieve total reduction in the range of 35.06 - 36.75 percent below BAU in 2050[15].

54. In terms of mitigation targets monitoring, the INDC confirms that the domestic MRV system will be developed and established as a basis for monitoring and reporting of the mitigation actions. Reporting will also be carried out in the frames of the national communications on climate change and biennial update reports. The MRV is not yet developed and there are no clear indication on its timeframe. The document presents as well an estimate of mitigation's costs related to the three identified scenarios assessing total financial needs in more than US$ 1.8 billion.

55. Climate change mitigation and adaptation are also addressed in a series of key policy frameworks and strategies. reflected, among the others, in the National Strategy for Sustainable Development 2040,[16] and the Action Plan 2017-2022 (expected to be adopted in 2018) accompanied by the "Forty Steps Programme" (especially Steps 39 and 40).[17] These recognize the importance of mitigation and adaptation to climate change by supporting mountainous ecosystems, regenerating natural resources, and preserving forest ecosystems and their biodiversity. These goals are to be achieved by establishing an adequate legal framework and providing state support for environmental protection and afforestation/reforestation of fragile mountainous areas.

56. The Climate Change Adaptation Programme and Action Plan for 2015-2017[18] for the Forest and Biodiversity sector and the draft Concept of Forestry Development 2040 aim to reduce poverty of the forest communities by 10 percent, increase the contribution of the forestry sector to national GDP by 0.5 percent, and increase forest cover from 5.7 to 6 percent.

57. Within the framework of the Pilot Programme for Climate Resilience (PPCR), the Government has started developing the Strategic Programme for Climate Resilience (SPCR) and established a Climate Finance Coordination Mechanism (CFCM), including a Climate Finance Centre (CFC) in 2017. It is expected that the CFCM and CFC will become fully operational. This project is aligned with Component 10 of the PPCR, and will support the efforts of the Government of the Kyrgyz Republic to ensure that the target sectors are managed in a climate resilient manner and bring co-benefits.

58. UNDP is providing support to the Kyrgyz Government, including the MES, MAFIM of the Kyrgyz Republic, and the SAEPF in development of the National Policy for the Adaptation to Climate Change (NPACC).[19] FAO is a partner in the process focusing on forestry and agriculture sectors. The main findings and policy directions of this document are reflected in the CS-FOR proposal. However, while there are several coordination mechanisms available in the country, there is a lack of technical capacity and limited inter-ministerial coordination between the SAEPF, MAFIM, MES, and SALGSIR and coordination among local self-government bodies. The CS-FOR will be a major contribution to the strengthening of these

[15] The Government of the Kyrgyz Republic. Intended Nationally Determined Contribution to the UNFCCC (submitted in 2015).
[16] The NSSD is based on the draft Agriculture Development Programme 2017-2020.
[17] Step 39th - Environmental Sustainability - aims at establishing an adequate legal framework and providing state support for environmental protection, and Step 40th - Mountainous Forests -- emphasizes the fragility of mountainous forest ecosystems and the need for protection and afforestation.
[18] Currently under update to cover 2018-2022.
[19] CBD defines: "the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change".

arrangements and facilitation. From this point, the project will be directly implemented under the government guidance and political/cross-sector coordination of the Climate Change Coordination Commission (CCCC) to create a multi-sector coordination processes for integrated forest/rangeland ecosystem management to address climate risk.

59. In this context, the Government of the Kyrgyz Republic, under the leadership of the Climate Change Coordination Commission and the State Agency for Environmental Protection (SAEPF) acting as National Designated Authority (NDA) to the GCF, has set clear scope for climate action in the country and provides important guidance with regards to the required support from the international community towards achieving the (INDC) targets for climate change adaptation and mitigation.

60. In line with this guidance, understanding the agriculture sector presents important opportunities for the implementation of adaptation and mitigation actions according to the country's INDC. The State Agency for Environment Protection and Forests (SAEPF), has requested the World Food Programme of the United Nations (WFP) and the Food and Agriculture Organization of the United Nations (FAO) to serve the country as Accredited Entity and to submit two complementary funding proposals for priority investments. The WFP and FAO Project proposals have the following particularities and represent an important effort to ensure successful implementation of country commitments:

- *Climate services and diversification of climate sensitive livelihoods to empower food insecure and vulnerable communities in the Kyrgyz Republic* (**WFP**, 10m USD grant, 4 years): responds to the GCF **Climate Change Adaptation** result area.
- *Carbon Sequestration through Climate Investment in Forests and Rangelands in the Kyrgyz Republic (CS-FOR)* (**FAO**, 30m USD grant, 8 years): responds to the GCF cross cutting **Climate Change Mitigation and Adaptation** results area.

61. The development of these proposals is the result of a long lasting history of collaboration between the Government of the Kyrgyz Republic, through the SAEPF and the two United Nations Agencies. The proposed investments are also in line with the national support programmes that WFP and FAO have agreed with the country. A note on the complementarity of FAO and WFP proposals has been submitted to the GCF secretariat by the NDA of the Kyrgyz Republic in November 2018; additional details on these complementarities can be found in the referred note in Annex 1 to this Funding Proposal.

62. Given the described scenario: (a) carbon emissions are projected to increase similarly to the period 2000-2016 where the World Bank reports an increase of 41%; (b) carbon sink from forests and rangelands will decrease; (c) policy framework is still too centralized with unclear participation of local communities and resource users to be conducive for effective changes in the brief to medium term. The described situation is not conducive to reaching proposed nationally determined commitments and reducing both exposure and vulnerability of communities and national economy.

63. As reported by the European Union, the OECD and the World Bank: investing in forests and rangelands play a significant role in regulating climate balance, reducing the impact of extreme events, and contributing to carbon sequestration. FAO analysis and presented studies concur with such findings with the additional input that reducing emissions from Agriculture optimizing and improving the livestock sector (responsible of about 91% of agriculture emissions) is paramount and precondition to ensure effective contribution to carbon sequestration from forests and rangelands.

64. Particularly for the CS-FOR project, given the presented context and relevant policy frameworks, data and analysis reported in the previous sections, and amply presented in the feasibility study, allowed the identification of the proposed target areas according to the following criteria: a) mitigation potential in terms of forest and pasture rehabilitation; (b) type and exposure of ecosystems and communities to natural hazards triggered by (or worsened by) climate variability and change; (c) vulnerability of ecosystems and communities to climate change; (d); high dependency of communities from natural resource exploitation; and e) socio-economic vulnerability of communities. Given the five criteria reported above, participants of the national engagement process,[20] the NDA and the FAO identified the four contiguous districts of Ak-Talaa in Naryn region, Toguz-Toro

65. Within the four districts selected, the project has identified priority areas (hotspots) where, according to the referenced criteria, investments on forest and pasture restoration will have the higher potential impact: a) relevance of ecosystem services such as those provided by pastures and forests (i.e., protection, livelihood, water) benefitting communities; b) potential sustainable use of products and resources for local communities; c) availability of public land of at least 1,000 hectares; and d) agreement of communities for reducing pressure on identified areas.

66. Leskhozes are Forest enterprises in charge of the local management of State Forest Fund territory. They are administered by the SAEPF, and depend on it for the resource allocation. The territory under their control includes forested land, buffer zones and land for future afforestation. The land classified under the latter is often used as grazing areas, and its use is transferred on seasonal basis through agreements between individual users and Leskhozes with fees based on the extension of the area. Such mechanism differs from the one promoted by the Pasture Law since 2009 (whereby the use of State Land Fund for grazing is under the control of local communities – Pasture Users Unions, with fees depending

[20] Throughout the project design, the engagement process involved the NDA as well as other government institutions plus civil society organizations and NGOs, local communities and private sector representative.

on the herd size), and is one of the elements of inconsistency on which the project will work to ensure harmonization of the regulatory frameworks on forests and rangeland use (reference: Component 1).

67. In the Project Areas there are five State Forest Enterprises, one Forestry Unit, and two National Natural Parks which make up the core target area. A detailed profile of the Leskhozes in the Project Areas (and in the pre-identified possible expansion area), including forest / rangeland coverage, is provided in the CS-FOR WP "Forestry" in Annex 9, and their climate change related challenges is in the Project ATLAS (Annex 6.b). The major strength of the Leskhoze staff is their generally thorough understanding and knowledge of the local forest resources (trees, nuts, fruits and shrubs for planting). However they have often weak capacities (especially when it comes to new technologies and georeferencing tools, which are a critical element of the project's led shift towards evidence based planning and management), and suffer from limited staff availability, insufficient to ensure the required planning and management of forest. Also, the Leskhozes do not have full financial autonomy (resource allocations are decided at the national level). The implementation of CS-FOR will depend on the collaboration and coordination with the other local institutions leveraged by the project's facilitation (i.e., for the planning and implementation and monitoring of the integrated NRM community resilience plans). Among the opportunities for the project's approach is that several Leskhozes started the introduction of new methods in management of forests, such as public private partnerships, outsourcing forestry activities to private sector. The vicinity to the local communities and institutions is also an assed, creating opportunities for bottom-up "pull" elements towards joint management of state forest fund resources.

68. The project will address the needs and strategies identified by the Kyrgyz Republic in the INDC and in the NAP roadmap of 2017 with an approach that maximizes mitigation while capitalizing important co-benefits from adaptation and disaster risk reduction. Consequently, the project is in line with the National Strategic Framework for Sustainable Development, Environmental and Climate Change Policy (Kyrgyz Republic 2013-2017 National Sustainable Development Strategy) as well as with the Priority Directions for Adaptation to Climate Change in the Kyrgyz Republic till 2017, including the Program and Action Plan for Adaptation to Climate Change for the Agricultural Sector (2016-2020).

69. Considering the importance of the private sector role in developing alternative economic opportunities that support the carbon sequestration potential, especially in the targeted hotspots areas, the project is closely aligned to the Regional Development Programme (20 cities – 20 centers of growth), to the National Programme of Digital Transformation (Taza Koom / Clean Society), and to the Financial Literacy Programme for 2016-2020 (National Bank of the Kyrgyz Republic).

70. The project is in line with the United Nations Sustainable Development Goals (SDG) – in particular, but not limited to, SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land)[21] framed by its core principle of *Leaving no one behind* (see also specific contributions to SDGs in Sections E.1.2 and E.3.1, and detailed contributions to SDG monitoring in Section H). In addition, the project is also aligned to the United Nations Partnership for Development Assistance Framework (UNDAF 2018– 2022) for the Kyrgyz Republic, to the FAO Country Programming Framework 2018-2022, and to the FAO Regional Initiatives (RIs), in particular: RI3 "Managing natural resources sustainably, under a changing climate"; RI1 "Empowering small holders and family farms for improved rural livelihood and poverty reduction"; and RI2 "Improving agri-food trade and market integration".

Coordination with ongoing relevant projects and strategies

71. **Climate change** initiatives are being supported primarily by UNDP, the European Bank for Reconstruction and Development (EBRD), the Japan International Cooperation Agency (JICA), the Food and Agricultural Organization (FAO), IFAD and the World Bank. Support to enhance the national hydro-meteorological service (Kyrgyzhydromet) is being provided by the World Bank. A more exhaustive description of past and ongoing experiences and the analysis of the respective lessons learned is provided in Chapter 3 of the Feasibility Study. Within the open and inclusive coordination supported, CS-FOR will also ensure complementarity with the Readiness related efforts of the country, and will leverage the capacity development opportunities, particularly at the local level in the target areas of this project.

72. **The CS-FOR project complements the currently ongoing efforts and fills specific gaps in climate change mitigation projects in the country.** In order to ensure effective results in improving the enabling environment (reference to component 1), the project will adopt an inclusive approach to coordinate with all relevant projects and interventions implemented by the government and development partners. The main domains and relevant projects include:

a. On carbon sequestration through forestry and rangeland rehabilitation: Forestry Sector reforms in the Kyrgyz Republic were supported for more than a decade by the **Swiss Development Corporation** (SDC) from 1995 till 2009. The Kyrgyz-Swiss Forestry Support Programme (KIRFOR) covered a wide range of activities, including elaboration of tenure arrangements and legal framework for a collaborative forest management (CFM), providing technical support to the SAEPF in developing the Concept of Forestry Development of 1998 and corresponding National Action Plan. It also provided support in development of forestry inventory methodologies and tools. Additionally, the **GIZ** has started supporting piloting forest sector reforms in Kyrgyzstan 2015 in the

[21] The project will also contribute to SDG 1 (No Poverty) and SDG 17 (Partnership for the Goals)

framework of the Sustainable and Climate Sensitive Land Use for Economic Development in central Asia project. In Kyrgyzstan, the GIZ facilitated establishing the Coordination and Consultative Council at the national level, comprised of representatives of state ministries, international organizations, and civil society representatives to discuss various policy issues in the forestry sector. The project has initiated piloting of new management approach in six leskhozes. The Biodiversity Conservation and Poverty Reduction Through Community-Based Management of Walnut Forests and Pastures in Southern Kyrgyzstan (2015-2018) is another GIZ project focusing on six pilot Leskhozes with promotion of sustainable management.

Coordination and synergies are established with the SAEPF-implemented **Integrated Forest Ecosystem Management Project** (2017-2021), with World Bank and Global Environment Facility (GEF) financing for US$ 16.1 million). The project aims to strengthen government institutions and communities' capacities to improve sustainable forest ecosystem management through investments in planning, ecosystem restoration, and infrastructure. At national level, CS-FOR and IFEM have the opportunity to join forces on the enabling environment for (a) evidence-based monitoring; and (b) integrated forest and rangeland management for more effective carbon sequestration; at the local level, the projects will coordinate to have the largest geographic coverage in their efforts to reinforce forest institutions' capacities. Synergies and collaborations are also critical with the global **NDC partnership support facility**[22] (managed by the World Bank and implemented by the SAEPF in the country), for all aspects related to monitoring carbon sequestration. Specifically on rangeland rehabilitation, CS-FOR builds upon, and will continue coordinating with, the relevant ongoing IFAD-funded **Livestock and Market Development Project**, and the two WB-funded **Pasture and Livestock Management Improvement Project** and **Integrated Dairy Productivity Improvement Project**. Specific complementarities are around the common aim to improve productivity of rangelands and livestock.

CS-FOR adds value by adopting an integrated approach to rangeland rehabilitation (focusing also on State Forest Funds areas) that limits the pressure on rangelands thus increasing the sustainability of investments and ensuring carbon sequestration capacities. Specific coordination mechanisms will be established through social mobilization at local level, where CS-FOR ensures complementarity in investment and harmonization of approaches.[23]

b. On resilience to climate change-related hazards: The World Food Programme (WFP) is planning to expand its operations focusing on the most vulnerable populations exposed to climate change through a GCF Funding Proposal entitled **Empowering Food Insecure and Vulnerable Communities through Climate Services and Diversification of Climate Sensitive Livelihoods**. This project – expected to be discussed at GCF B.20, will contribute to enhancing national capacities to implement climate change adaptation activities in the food security and nutrition and agricultural sectors of the country. While the two projects (WFP and FAO) are largely targeting different areas, Ak-Talaa district is one area of overlap. Collaborations at local level will focus on planning specific investment and support to rural communities, and synergies will be important in identifying specific adaptation technologies and practices in agriculture. Additional potential collaborations will also come from the UNDP proposal for GCF financing (currently under development, focusing on water management and related infrastructures), where the CS-FOR will open dialogue and support harmonized practices on similar fields of intervention.

c. On biodiversity and ecosystem services: CS-FOR builds on the approach, and will upscale results of the **Sustainable Management of Mountainous Forest and Land Resources Under Climate Change Conditions** (FAO-GEF) project, with a more specific focus on carbon sequestration. The CS-FOR's cross-sectorial approach was pioneered also by the GIZ and SAEPF **Regional Project on Ecosystem-based Adaptation to Climate Change in High Mountainous Regions of Central Asia** (2015-2019) that introduced an ecosystem-based approach to climate adaptation. In addition, CS-FOR will also interact with the activities of the ongoing **GEF-UNDP Project**[24] in Toguz-Toro district.

d. On value chains and agribusiness support: CS-FOR will collaborate with the IFAD-funded **Access to Markets Project** (ATMP, US$ 55.5 Million), which is also co-financed by RKDF. The coordination will focus especially on the support to private sector entrepreneurs working in CS-FOR target areas and their suppliers. The common aim will be to unlock investment aimed to improve access and integration of smallholder livestock farmers with remunerative markets for their products, with improved and more equitable returns. CS-FOR will add value by focusing on stimulating behavioural changes in reducing pressure on forests and rangelands as necessary approach to ensure carbon sequestration from forests and rangelands. CS-FOR will coordinate also with the ongoing and future support from EBRD's **Kyrgyz Sustainable Energy Finance Facility** which adopts the Green Economy Transition approach[25] aimed at increasing the volume of financing with focus on environmental benefits.

Building on existing towards the implementation

[22] WB NDC Partnership Support Facility (http://www.worldbank.org/en/topic/climatechange/brief/the-ndc-platform-a-comprehensive-resource-on-national-climate-targets-and-action).
[23] The mentioned projects are co-implemented by ARIS which is the executing entity selected for CS-FOR social mobilization.
[24] Titled Conservation of Globally Important Biodiversity and Associated Land and Forest Resources of Western Tian Shan Forest Mountain Ecosystems to Support Sustainable Livelihoods (US$ 28.6 million for 2017-2021).
[25] www.ebrd.com/cs/Satellite?c=Content&cid=1395250237163&d=Mobile&pagename=EBRD%2FContent%2FContentLayout.

73. Within the framework of the GEF/FAO project "Sustainable management of mountainous forest and land resources under climate change conditions", reforestation activities were carried out in 8 pilot Leskhozes with broad participation of local population using joint forest management approach. Also, restoration of rangelands through seeding of pasture grasses, reduces the area of degraded lands, improving and maintaining soil fertility, allowing communities to diversify their livelihood sources.

74. One of the most important lessons learned through the implementation of this GEF sponsored project, is the interest of local communities in identifying innovative opportunities for forest resources management, allowing to create new forest plantations on large areas, which in turn will have a beneficial impact on the environment, reducing greenhouse gases, helping to solve social and economic problems in rural areas of the country.

75. Lastly, Kyrgyzstan is one of five project countries which receive support to develop a national criteria and indicator set for sustainable forest management through the capacity-building project “Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia”. This first draft national Criteria and Indicators for SFM set was developed to monitor the sustainable management of the state forest fund, specially protected natural areas and hunting grounds. The set contained 41 indicators under 6 criteria.

76. The objective of the work carried out within the framework of the UNECE / FAO project "Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia" is to develop and adopt, as a separate legal act, a list of targets characterizing the performance of the main functions of state forest management and the results of the forest sector for annual monitoring and evaluation of effectiveness.

77. During the design, and as an anticipation of the project’s activities, FAO has also complemented the analysis of the forest coverage with satellite imageries and produced a detailed Atlas (Annex 6.b). Before the FAO Forest Assessment, the country had an incomplete picture of its forest resources. In 2008, national surveying crews inventoried about 60 percent of the state-administered forests, leaving a significant information gap. Moreover, inventories focused mainly on timber production rather than on the multiple ways forests benefit local communities − environmentally, socially and economically. The Forest Assessment, aimed to help the Government design and carry out a comprehensive national forest inventory on all forest types and land properties. The Forest Assessment was carried out in two phases, in partnership with the State Agency for Environmental Protection and Forestry and with additional funding from the Government of the Kyrgyz Republic and the Swiss-Kyrgyz Forestry Support Programme. This activity brought together major stakeholders working on forest management, civil society, NGOs, forest services, scientists, line ministries and international partners, to agree on a sector-integrated approach to assess the country’s forestry resources and their multiple functions. Such an approach is crucial for meeting national information needs, and for gaining a better understanding of the relationship between plant biodiversity and carbon storage. The stakeholders also reached consensus on setting up a long-term natural resource monitoring system.

C.2. Project / Programme Objective against Baseline

Project baseline

78. The project baseline for this proposal was established using nationally and locally collected data, including: (**i**) literature review [26]; (**ii**) questionnaire-based household survey [27] (project sites n=600; control sites n=300); (**iii**) community focus groups (project sites n=8; control sites n=4); and (**iv**) extensive remote sensing analysis [28]. The baseline includes both target and control areas selected through the national engagement process used in preparation of this proposal. The baseline establishes a benchmark that will support the monitoring and evaluation framework in tracking both the progressive impacts achieved through project implementation, and the ability to document changes in conditions between project target areas and control sites (‘business as usual’) outside of the Project Areas.

79. The intervention areas of the project are described in detail in Chapter 1 of the Feasibility Study (Annex 2). Analysis of the study area on the extent and status of range and forest resources and the identification of changes in key climate parameters and related hazards are presented in the Project Atlas (Annex 6). [29] In carrying out the analysis, the design team utilized a large number of national and sub-national data sets to complete a series of vulnerability assessments to identify the project’s core target areas. Target areas were selected according to the following criteria: [30]

a. Exposure of ecosystems and communities to natural (rapid onset) hazards triggered by climate change;
b. Vulnerability of ecosystems and communities to (slow onset) climate change;

[26] Literature review is annexed to this funding proposal.
[27] The household survey report and findings of the focus group interviews are available up on request.
[28] Geospatial analysis is presented in the Kyrgyz Republic Baseline Atlas appended to this report, and will be available on Earth Map (the tool is available at this temporary link: https://storage.googleapis.com/eetest/EarthMap/index.html).
[29] Data and analysis that allowed the identification of the proposed target areas were organized in the form of an ATLAS that presents the rationale behind the areas selected and that form the main part of the baseline in terms of distribution, density, status and vulnerability of target ecosystems (forests and pastures) and communities. The ATLAS presents key information on climate variables including trends, demography, agriculture, infrastructure distribution, pasture users unions grazing areas, forest fund lands and others. The set of data defines the needs, and details the context by which project impact will be assessed.
[30] This analysis also identified priority and potential expansion areas to guide possible scaling-up of the project approach.

c. Mitigation potential in terms of forest and pasture rehabilitation;
d. High dependency of communities from natural resource exploitation;
e. Socio-economic vulnerability of communities.

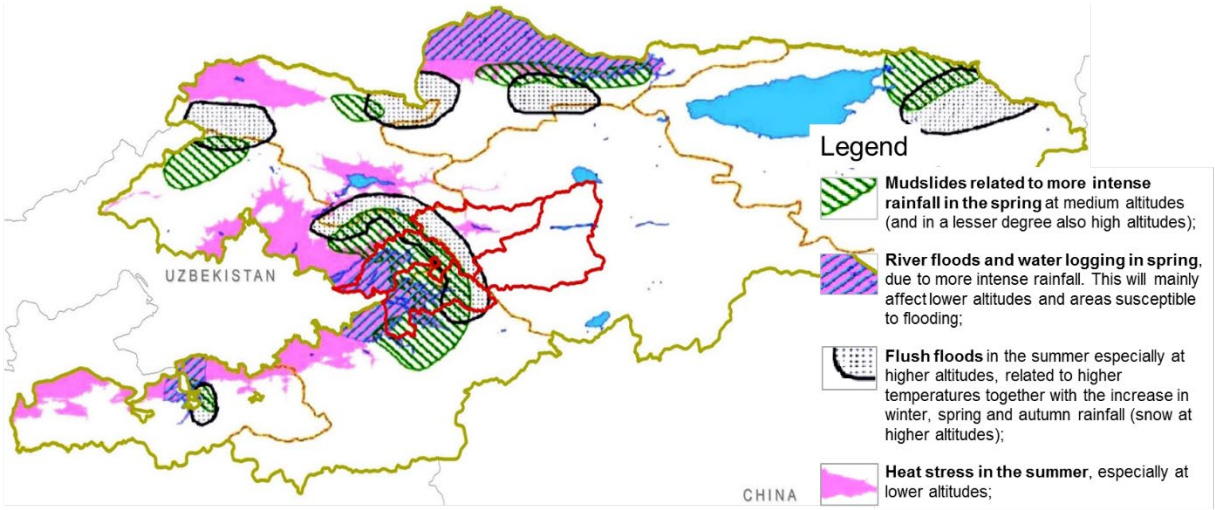
80. The core intervention area of the CS-FOR project is located in selected rural municipalities (aiyl aymak) in the four contiguous districts of Ak-Talaa, Toguz-Toro, Suzak and Uzgen ("Project Area"). The table below indicates population and numbers of rural municipalities and villages by district. Each rural municipality include one or more villages.

Table C.2.1: Population and Numbers of Rural Municipalities and Villages in Target Area (2016)

District	Region	No of rural municipalities	No of villages	No of rural households	Total Rural Population[31]
Ak-Talaa	Naryn	13	18	8,274	38,008
Toguz-Toro	Jalal-Abad	5	13	5,456	24,942
Suzak	Jalal-Abad	13	125	51,713	272,096
Uzgen	Osh	19	102	40,143[1/]	205,517
TOTAL		**50**	**258**	**105,586**	**540,563**

Source: NSC data (2017)
Note: 1/ extrapolated by the average of the other three, where data on household numbers is available.

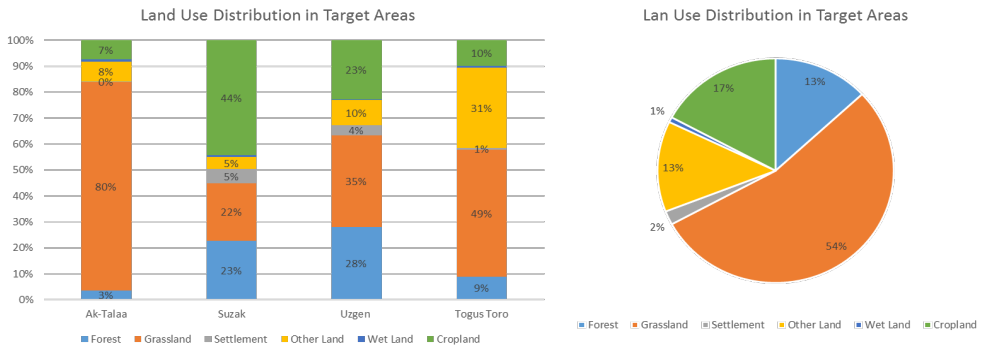
81. The four target districts (Figure C.2.1) are the most vulnerable to climate related stresses and hazards.



Source: IFAD/GOK 2013

Figure C.2.1: Map of Selected Target Districts

82. As shown in figure C.2.2 (below), the highest percentage of land in the four districts is under grassland (54 percent) followed by cropland (17 percent) and forests (13 percent). The availability and location of resources has *de facto* shaped the livelihood strategies of communities that are heavily dependent on forest and pasture ecosystems (FAO, 2018, IFAD 2013, WB 2013).



[31] Estimates for 2016 (NSC).

Figure C.2.2: Land Use Distribution in Target Areas (FAO 2016)[32]

83. There are five Leskhozes (Ak-Talaa, Uzgen, Toguz Toro, Kara Alma, and Ortok), one forestry unit (Urumbash), and two National Parks (Saimaluu Tash and Kara Shoro) in the four target districts. The total land area of *State Forest Agencies* and national parks in the target districts is about 262,000 ha, with more 40 percent of the total land area used as grassland pastures for grazing livestock of neighbouring communities. Forest covered areas make up less than a third of all Leskhoze territories (Figure C.2.3).

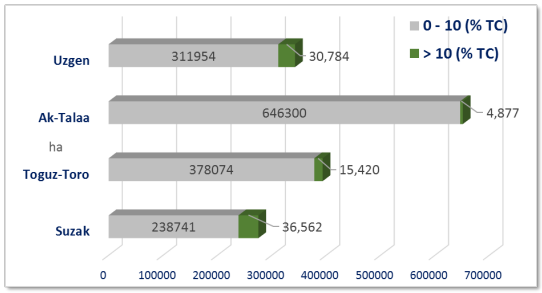


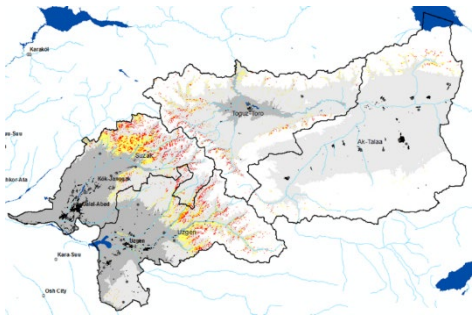
Figure C.2.3: Forest: Tree Cover > 10 percent)[33]

Forests and rangelands conditions in the target areas

84. **Forests:** as reported in Chapter 1 of the Feasibility Study and the geospatial analysis presented in the Project Atlas (LPD 2001-2017- Figure C.2.4), the forested areas in the project target districts showing signs of widespread degradation, extending over 40 percent of forested areas.

Table C.2.2 and Figure C.2.4: Land Productivity Dynamics (LPD) of forests based on MODIS NDVI Time Series 2001/2017.

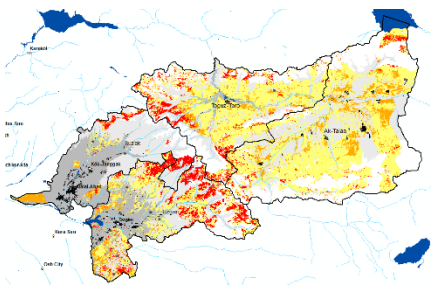
Degradation class	Ak-Talaa	Suzak	Toguz-Toro	Uzgen	Grand Total (%)
Extremely degraded	14.8%	27.3%	26.7%	22.2%	24.7%
Moderately degraded	4.3%	15.3%	17.2%	16.6%	15.5%
Not degraded	80.8%	57.5%	56.2%	61.2%	59.8%
unclassified	0.0%	0.0%	0.0%	0.0%	0.0%
Grand Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**



85. **Pastures:** Overall, 40 Pasture User Unions (PUUs) were identified, covering 73.4 percent of the total target area. Land cover in Toguz Toro, Ak-Talaa and Uzgen districts are between 80 and 90 percent pasture, while Suzak district is nearly 25 percent[34] pasture. Pastures in different PUUs have been combined with altitude and slope classes that influence ecologies and appropriate management practices to demarcate 165 unique sub-areas for further climatic and vegetation analysis. The geospatial analysis (NDVI and LPD 2001-2017 – Figure C.2.5) run by FAO (2018) identified various levels of stress in pasture resources with declining trends in above-ground biomass productivity noted in over 32 percent of pastures. Reported data are still under evaluation and additional details will be provided once 'ground-truthing' of each PUU will be concluded.

Table C.2.3 and Figure C.2.5: Land Productivity Dynamics (LPD) of pastures based on MODIS NDVI Time Series 2001/2017[35]

Degradation class	Ak-Talaa	Suzak	Toguz-Toro	Uzgen	Grand Total (%)
Extremely degraded	5.2%	27.0%	16.6%	24.4%	15.5%
Moderately degraded	16.9%	20.2%	15.7%	16.1%	17.0%
Not degraded	76.3%	52.9%	67.6%	58.8%	66.8%
unclassified	1.6%	0.0%	0.1%	0.7%	0.8%
	100.0%	**100.0%**	**100.0%**	**100.0%**	**100.0%**



Carbon stocks baseline

86. To monitor and track carbon sequestration in enhanced forest cover and increases in belowground soil carbon content of rangeland areas brought under improved management, the CS-FOR has established a carbon monitoring system that involves national resources and complementary project specific analyses (see Section H.2 and Chapter 6, Section B.4.1, of the Feasibility Study, summarized later in this Section). The proposed system will align with ongoing efforts carried out by the State agency for Environmental Protection and Forests (SAEPF) in developing a carbon measurement, verification and reporting system with support from the World Bank through the NDC Partnership, of which FAO is also a member. The SAEPF will be implementing both the CS-FOR project and the World Bank supported efforts,

[32] Data on land use originated from FAO Collect Earth survey executed in Kyrgyzstan in 2014 and 2015.
[33] Source: Forest Cover Change https://earthenginepartners.appspot.com/science-2013-global-forest/download_v1.4.html
[34] The process to complete the coverage of PUUs in the 4 target Rayons (districts) is on-going.
[35] The areas assessed as non-degraded are lands where NDVI trends are positive but where the amount of potential biomass availability is very low due to previous degradation processes that cannot be captured by the LPD and NDVI analysis.

thus CS-FOR resources will serve to strengthen the institutional capacities of a key Government entity overseeing implementation of national mitigation activities.

87. Once the final selection of management areas under the CS-FOR project are made, reference sites will be established in the rangeland management, reforestation/afforestation and plantation project areas. Control sites will also be established within the project districts, but in locations not benefiting from project interventions. These target and control reference sites will be georeferenced, and a measurement protocol established and used throughout the duration of the project to track changes in carbon stores, and the further degradation and carbon loss in the control sites under 'business as usual' management practices. The BAU practices in rangeland management (resulting in overgrazing and reduction of forest natural regeneration potential) generate a progressive deterioration of the CO2eq sequestration potential.

Expected benefits in carbon sequestration and climate change resilience

88. The total national emissions in 2010 [source: TNC] were **13,046 Gg CO2eq** / year, with a reported share of agricultural emissions in 2010 [TNC] of 33.54% (or **4,375 Gg CO2eq / year). The CS-FOR** sequestration potential is estimated at 19.8 m tCO_2eq (over 20 years), or **0.99 m tCO_2eq / year, which correspond to about 22.6% of the** 2010 total agricultural sector portion of emissions. Moreover, with a 20 years life cycle (i.e. by 2038), the project will contribute to a total sequestration of 19.8 m tCO_2eq, or 0.99 m tCO_2eq/year. With a low pop increase scenario (i.e. 6.872 m people in 2050, source: INDC, TNC), this corresponds to about 0.14 tCO_2eq / year / capita (corresponding to 11.7% of the 1.23 tCO_2eq per capita, or 9.1% of the 1.58 tCO_2eq per capita targets).

89. CS-FOR project will use a series of indicators deriving from both GCF core performance indicators and from FAO's established processes.[36] Selected monitoring indicators have been discussed and agreed with the NDA (i.e., SAEPF) and with implementation partners during the national engagement process of the design stage; they are included in the monitoring and evaluation plan. Targets for mitigation, abated resource degradation and household (HH) resilience are as follows:

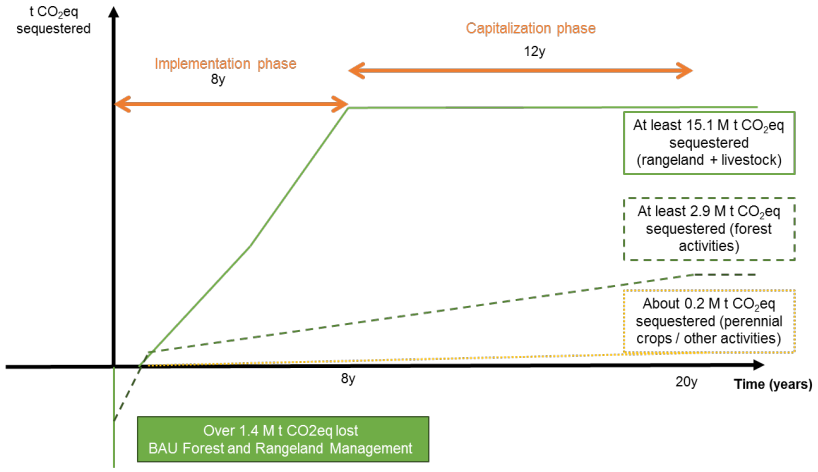
1. Targets for carbon sequestration: The FAO EX-ACT[37] and GLEAM[38] methodologies and tools were used to calculate an initial estimation of reduced and avoided GHG emissions. These calculations derived a target of +1,483,543 tCO_2eq emission avoided (projected over 20 years) in the Project Area (at the observed levels of forest and pasture degradation), and a contribution of net sequestration of approximately -19,751,354 tCO_2eq over the same period (see Figure C.2.6). The highest carbon sinks will result from the grassland management (-14,923,368 of tCO_2eq) followed by forest management and degradation activities (-3,479,418 of tCO_2eq), perennial system (-873,500 tCO_2eq, 1,117,520 tCO_2eq taking into account carbon sequestration from the conversion of degraded land to perennial system), afforestation activities (-729,608 tCO_2eq), and livestock management (-149,545 tCO_2eq). Agricultural inputs are a minor source of GHG (160,958 tCO_2eq).

2. Targets of investments in reverting forest and rangeland degradation: The baseline remote sensing assessment identified approximately 920,850 ha of degraded rangeland and 93,931 ha of degraded forests in the target districts. Through project interventions the area of degraded rangeland will be reduced to 276,255 ha, a 70 percent reduction, and degraded forests to 31,572 ha, a 60 percent improvement. The NDVI trends show a clear decreasing trend in mountain areas (where the highest risks of landslides is generated), and a limited availability of forests. These areas will be privileged for afforestation / reforestation. The section of the Atlas specifically dedicated to forests (pages 60-73) shows how the degradation of the forest areas is widespread in the four intervention districts. Page 71 in particular shows in one map how most of the State Forest Fund lands have a negative NDVI trend, with some exceptions in the district of Suzak which contains the largest walnut forest.

3. Targets towards increased household resilience: From the climate resilience survey of 900 households (n=600 target districts; n=300 control districts) conducted during the project design, a baseline value of 57/100 on the Resilience Composite Index (RCI) has been established.[39] The project will target a minimum 10 percent improvement for households in the project target area. A longitudinal monitoring approach will be used with reference households within the project and controls areas to track changes in their well-being and resilience during project implementation.

[36] FAO, 2016. Guidance for Standardized GHG Assessment of Agriculture, Forestry and Other Land Uses (AFOLU) Project. http://www.fao.org/fileadmin/templates/ex_act/doc/EX-ACT_MRV_Guidelines-lb-20_1_2016.pdf
[37] http://www.fao.org/tc/exact/ex-act-home/en/
[38] http://www.fao.org/gleam/en/
[39] The Resilience composite index is derived from the Resilience Impact measurement Analysis methodology (RIMA II), and is described in Chapter 6 of the Feasibility Study. RIMA is an innovative quantitative approach developed by FAO that focuses on explaining how certain households are able to better cope with shocks and stressors (i.e., natural hazards and climate change).

Figure C.2.6: graphic representation of carbon sink potential of CS-FOR[40]

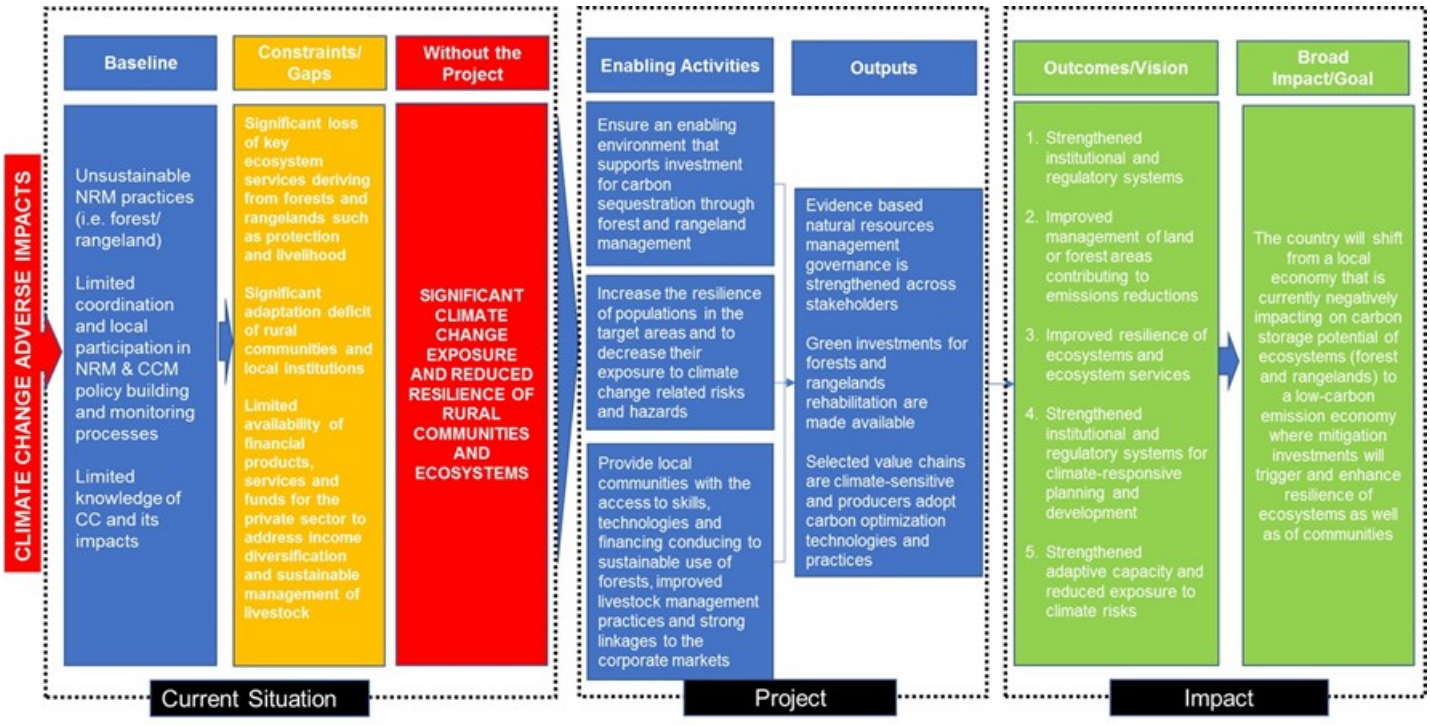


90. The chart shows that the current level of forest degradation under BAU scenario generates an estimated net loss of 1.5 m tCO2eq in 20 years; through the combined effect of the various interventions, the project will be able to avoid the mentioned losses and to generate an additional over 18 m tCO_2eq sequestration (15.1 rom rangeland and livestock, 2.9 from forest activities and 0.2 from other agricultural activities), for a net effect of 19.8 m tCO_2eq sequestered. Such expected sequestration (4.2m tCO_2eq) is composed of: **(i)** 0.7 m tCO_2eq from afforestation and reforestation, and forest enrichment; and **(ii)** 3.5 m tCO_2eq from improved forest management of the existing forests. The EX-Act Land Use Change (LUC) calculations are based on current degradation trends, showing 25% of the forest as largely degraded, 15% as moderately degraded and 60% as non-degraded. The potential net sequestration calculation is based on the current trends (showing substantial degradation).

91. One of the main and most innovative elements of the project is the development of green value chains under component 3. The Component co-financed by RKDF will ensure the sustainability of the investment in carbon sequestration carried out in Component 2 and will create economic opportunities with limited risk, in order to decrease pressure on and degradation of natural resources in the project intervention areas, this will result in important contributions to enhanced resilience of target communities.

92. Theory of change of the Project is summarized in Figure C.2.7.

Figure C.2.7. Summary diagram of theory of change for the CS-FOR project



C.3. Project / Programme Description

Project objective and impact indicators

93. In line with the national policies and regulatory framework in the fields of climate change and natural resources management (NRM), the goal of the project is to **contribute to the development of a low carbon-emission and climate-resilient economy**, while capitalizing important co-benefits from adaptation and disaster risk reduction.

94. The **project objective** is to **increase carbon sequestration through supporting climate investments in forests and rangelands** and **through reducing drivers of degradation and emissions** via institutional support, participatory ecosystem-based sustainable management of natural resources and green growth investments.

95. Commons,[41] including natural resources, have been originally regarded as an open space but there has always been a problem of free riders. As a countermeasure to such a situation, **traditional natural resource management** aimed at an appropriate and efficient use of natural resources (ex. estimate its usable period, formulate a sustainable use level, develop a usage method with less environmental impact), and also provided a framework to bear the cost of maintenance and management by beneficiaries.

96. In this context, it is crucial to consider that at country level there is no unified vision and policy on management of lands and ecosystems, this leaves the management of intrinsically linked ecosystem resources such as rangeland and forests completely separated and comparted. On the rangeland side, the approval of the Pasture Law in January 2009 has started an effective process of reform, putting pastoralists at the center. While such reform has achieved substantial results in social and economic empowerment of rural pastoralist communities, it failed to establish an effective integrated management framework especially with regard to forest land and forest resources, often adjacent to rangelands. On the forest side, the outdated National Forest Policy (1998) has left forest management responsibilities within Forest Enterprises, and aims to maximize forest potential and extension more than potential co-benefits with other resources. While the new Concept of the Forestry Development 2040 (under finalization and accompanied by the Action Plan for 2018-2022) promotes sustainable forest management including by decentralizing management to local forestry enterprises and local government and enhancing co-management of resources with communities, **the existing policies and legislation lack of a roadmap that operationalizes a joint management**, hampering stakeholders' capacity to coordinate in way that preserves the environmental integrity of rangeland and forests ecosystems.

97. Regarding the integrated approach to natural resources management under a climate perspective, the **main lessons draw from the country's experience on sustainable rangeland management**. The related activities in the CS-FOR project (component 1) have incorporated lessons learned from a number of initiatives (donors, government and non-government). These include: (i) the importance to promote dialogue between state agencies and civil society; (ii) the criticality of evidence based management of resources; (iii) in absence of a policy for sustainable rangeland, the growing number of livestock would lead to further fast deterioration of fragile resources; (iv) community and private sector engagement in afforestation and pasture improvement need to be based on clear and secure tenure arrangements.[42]

98. In light of the successful experiences and lessons learned, as policy breaking element, CS-FOR's investment on the enabling environment of natural resources aims to break the current discrepancy and lack of coordination by **setting in participatory and inclusive way rules and regulatory frameworks to facilitate the integration of climate mitigation and climate resilience issues in the rangeland-forest policy and legal framework**. Moreover, the Project will facilitate the integration of climate resilience issues in the rangeland-forest policy and legal framework, and implement the adaptation measures identified by the Government in 2013 and reflected in the Priority Directions for Adaptation to Climate Change until 2017.

99. This climate change sensitive integrated approach to Natural Resource Management differentiates from attempted approached in the area of NRM, because incorporates mitigation / adaptation for climate change as a main element in its framework which is a multi-layered including the following three elements: 1. Prevent degradation of natural capital, enabling sustainable supply of ecosystem services, 2. Encourage various stakeholders to participate and cooperate horizontally, 3. Promote bottom-up activities from local communities and connect them with the global network. In this regard. The approach proposed by CS-FOR, crossed by a strong climate rationale, will include: **(a)** a role of the communities in monitoring and planning natural resources use (including with satellite data) whereby the communities will own the plans and the maps of natural resources for climate change mitigation; **(b)** a surveillance role of the local (Leskhozes, municipalities) and central institutions (SAEPF, pasture department of the MoA); and **(c)** a coordination mechanism at national level, for both policy dialogue and for monitoring and evidence-based decision making to mitigate GHG emissions.

100. In this sense, the **Community Landscape Management Groups and the INRMCRP will develop and involve all relevant institutions** (see Annex 9, Working Paper on 'NRM policy and governance', pp 9-10) calibrating their interests

[40] See also the Carbon Accounting Chapter in the Feasibility Study – linked in the last page of this document.
41 land or resources belonging to or affecting the whole of a community
[42] The Feasibility Study reports also (in Chapter 3) the successful experience from Balykchy Leskhoze local stakeholders' partnership that proves how the above lessons are critical for a successful joint NRM.

to **focus also on climate and ecosystem related issues**, aiming towards protection and preservation of NR as a basis for climate change adaptation and mitigation patterns and disaster risk reduction.

101. The facilitation of this approach at local level will be through the support and experience of ARIS (national Operational Partner of the project), and the actual decisions on investment will be based after the initial NR mapping (evidence based). FAO will provide quality assurance and support throughout the interventions including in mapping. Further information on the climate sensitive ecosystem-based interventions are partly identified and described in Chapter 4 (detailed project description) of the Feasibility Study, with an economic/financial justification in Chapter 7 (Economic and Financial Analysis).

Components

The project's investments and activities will be executed through three technical components (each a "Component"):

1. **Evidence-based Strengthening of Natural Resources Management (NRM) Governance;**
2. **Green Investments for Forest and Rangeland Rehabilitation**; and
3. **Climate-sensitive Value Chains Development**.

Component 1: Evidence-based Strengthening of Natural Resources Management Governance

102. **Rationale**: The leading element of this Component is to provide Kyrgyzstan with **an enabling environment that supports investment for carbon sequestration through forest and rangeland management while providing economic and social incentives to the users of natural resources**, to avoid the depletion of carbon sink potential. The key measure in Kyrgyzstan to preserve forest-rangeland ecosystem's natural resources is to improve governance in their management in order to prevent livestock overgrazing, overharvesting of fuelwood and timber, and to create an enabling environment that stimulates innovative practices and investments that conserve and regenerate these resources. The current policy and regulatory environment is highly fragmented and ineffective. About 1.2 million ha of pastures, located in and around forests on the State Forest Fund (SFF) lands are managed differently than the 9 million ha of municipal pastures. Forests which grow on the municipal lands are governed by different legislation than forest on the SFF lands. The management, use and protection arrangements for the resources within the SFF are regulated by the Forest Code and related set of legislation, while municipal lands and their resources are governed by a different set of legislation. The major gaps in the regulations for use of natural resources relate to lack of legal framework on management of communal (municipal forest), contradictory tenure arrangements for use of pastures located within the forest-rangeland ecosystems and managed by different agencies, and lack of legal foundation for private-public partnerships in management of natural resources. Other gaps relate to legislation and guidance to the users on preservation of biodiversity of the forest-rangeland ecosystem. As a result, **the existing regulatory framework fails to support effective and sustainable arrangements for natural resources management,** hampering: (a) effective investment for carbon sequestration; and (b) adaptive investment to reduce the impact of climate related stresses on natural resources (see Chapter 1, Feasibility Study). Several institutions in charge of forest-rangeland ecosystem resources operate in isolation, and there are no formal arrangements to synergize tenure regimes.

103. As described in Chapter 1 of the FS), the current (baseline) situation is that the policy and governance mechanism in NRM is segmented and limits further inclusion of climate risk in the management schemes in forestry and rangeland ecosystem in an integrated manner. In addition there is no enabling environment of public-private partnership in climate resilient NRM. The added value proposed by CS-FOR rests in the use of evidence for the identification of resources, and in the cohesive and inclusive approach in validation of the evidence, and identification of investment priorities with a view at carbon sequestration potential. The GCF additionality in the proposal is therefore focused on establishing an integrated climate sensitive NRM mechanism in public-private partnership.

104. The participation of private sector is essential to realize the theory of change and paradigm shift of the project. In this sense the policy and legal framework will enable private sector engagement by enhancing the inclusive policy dialogue in public-private partnership for integrated ecosystem management in the context of a changing climate, based on the established stakeholder engagement process, which was initiated during the project formulation stage by involving private sector and identifying their needs and requirements (see Annex 2, Chapter 4, Appendix 3). The process will be sensitized by knowledge management and facilitated by the experts, aiming at institutionalizing policy instrument and governance framework to create the enabling environment for public-private partnerships; and sensitizing private sectors in green investments (Component 2) and climate-sensitive value chain development (Component 3).

105. The results achieved under component 1 will build on the work carried out by FAO together with the state Agency for Environmental Protection and Forestry to put together the Forest Assessment, as a tool containing an inventory of the forests in the Kyrgyz Republic, developed with a very participatory approach with the support of major stakeholders working on forest management, civil society, NGOs, forest services, scientists, line ministries and international partners. Additionally, the design of the project and especially the enabling environment component (Component 1) is fully aligned with the major review carried out by the World Bank (PROFOR) whose lessons are mainstreamed throughout the project,

especially when it comes to the local level planning and the need to involve all concerned institutions in the decision making process over the use of natural resources.

106. **Component objective**: This Component will **contribute to the harmonization of procedures and regulations to ensure a sustainable and climate change sensitive integrated planning, monitoring and evaluation of natural resources management**. The key tool to ensure success will be the promotion of evidence-based and inclusive processes, involving all institutions responsible for natural resources' (forests and rangelands) protection and management at national and local levels.

107. Component 1 is structured with the following output (each an "Output"):

Output 1.1: Evidence based natural resources management governance is strengthened across stakeholders

108. **Objectives:** By operating with participatory, inclusive and evidence-based approaches, this output constitutes the basis to **create a** conducive **enabling** environment and **support the harmonization** of the regulatory framework related to integrated management and use of forests-rangeland resources (see Activity 1.1.1, 1.1.2, 1.1.3, 1.1.4, and 1.1.5). The output will also provide capacity development on climate change risks and natural resource assessments. It will **support existing natural resources monitoring functions** at national level (including measurement, reporting and verification within SAEPF) with evidence-based tools and methodologies for Planning, Monitoring and Evaluation, and will **facilitate linkages between evidence and data from the ground, information systems and the forest-rangeland ecosystem planning processes** (see Activity 1.2.1). The output is dedicated to strengthening the existing national system for monitoring natural resources, with the specific additionality to focus on climate-sensitive and evidence-based monitoring and decision making (e.g., via Earth Map, Collect Earth, and other tools developed by FAO specifically for climate monitoring and decision making). Furthermore this output will create and improve skills and capacity in **planning climate-resilient and adaptive natural resources management** and **use in beneficiary communities** (see Activity 1.3.1). Activity 1.3.1 under this output is where communities' planning and monitoring capacities are strengthened. The investment for monitoring in Activity 1.2.1 are instrumental to the communities' integrated climate-resilience plans for Activity 1.3.1.

109. **The first group of activities** implemented within this output will support the development of a set of knowledge products, aimed to enhance the quality, effectiveness and harmonization of the policy and regulatory framework on natural resources management. Specifically, the work under this output will promote: **(a) Support to review and harmonize the current regulatory framework on forest and rangeland management** for identification of legal gaps and ambiguities in sectoral policies and regulations; conduct special assessments on impacts of existing legislation on biodiversity, environmental resources, and livelihoods for women and men, including on gender equality. The major gaps in regulations relate to lack of legal framework on tenure and management of communal (municipal forest), contradictory tenure arrangements for use of pastures located within the forest-rangeland ecosystems and managed by different agencies, and lack of legal foundation for private-public partnerships in management of natural resources. Other gaps relate to legislation and guidance to the users on preservation of biodiversity of the forest-rangeland ecosystem. These analyses together with the consultations with the local government bodies, district administrations, forest institutions, PUUs and other community groups representing the interests of both women and men and users in four target districts will identify critical policy elements for integrated and participatory natural resources management and use. **(b) Capacity development and mobilization of an Expert group for technical assistance**. The project will support the establishment of an Expert Group – which will become integral part of the Project Management Unit (PMU), comprised of various technical expertise with engagement of local research and outreach organizations will develop and deliver capacity-development interventions to enhance capacity on policy making and management of natural resources among key stakeholders. The Expert Group will include Gender and Social Development Specialist, and TOR of each member includes gender mainstreaming. The output will seek to provide evidence to inform the policy and legislation framework and plans for priority climate financing activities and investments. The project will also finance studies to advise on forest-rangeland ecosystem zoning, stratification and planning, spatial and territorial development. This Output 1.1. is comprised of the following activities (each an "Activity"):

1.1.1. **Prepare communication material and organize information awareness campaigns to mobilize national stakeholders.** This Activity will support the preparation of material for the mobilization of stakeholders at the local level to advance participatory management of natural resources.

1.1.2. **Organize fora/ international conferences meetings to sensitize the stakeholders.** This Activity will comprise making and translating short films, social advertisement and other means in the mass media. Special attention will be on developing such materials for schools to be incorporated in classes to raise awareness in target communities. Various community information events will be held to attract attention of resource users to climate change impacts and mitigation measures.

1.1.3. **Training sessions/ workshops on forest and rangeland tenure arrangements, policy making, and management of natural resources.** This Activity will support existing natural resources monitoring functions at national level (including measurement, reporting and verification within SAEPF) with evidence-based tools and methodologies for Planning, Monitoring and Evaluation, and will facilitate linkages

between evidence and data from the ground, information systems and the forest-rangeland ecosystem planning processes.

1.1.4. **Propose recommendations for enforcement of sustainable management and use of forest-rangeland ecosystems through participatory process.** This Activity will support the harmonization of legislation on tenure arrangements for forest-rangeland ecosystem and include aspects such as: (a) recommendations for enforcement of sustainable management and use of forest- rangeland ecosystems; and (b) technical, legal and institutional approaches to advance public-private partnership in promotion of integrated natural resources management. More specifically, the project will work on improvement of the existing forest-rangeland ecosystem related legislation required for integrated management. The major issues to be analyzed, documented and utilized for the policy agenda relate to: i) development and introduction of a harmonized approach to sustainable management of livestock grazing in a participatory manner on pastures of the State Forest Fund (SFF) and State Land Fund (SLF); ii) elaboration of different tenure arrangements for use of various natural resources on the lands of SLF and SFF with engagement of beneficiaries in local communities and beneficiary institutions at local level (communities, municipalities, users' groups, and individual women and men farmers) (in line with the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests – VGGT, and its technical guides, including on gender equality (*Governing land for women and men*), governing tenure rights to commons[43], improving governance of forest tenure, and improving governance of pastoral lands); iii) elaboration of legislation and regulations on gender equitable and sustainable management and use of municipal forests. The project will also elaborate standards of sustainable use of pastures and forests, methods and tools for monitoring and compliance requirements and arrangements while ensuring social equity.

1.1.5. **Identify approaches for national stakeholder involvement process and organize National Stakeholders Platform Policy Dialogue for the management and use of municipal forest and facilitate thematic workshops, and submit the recommendation document to the Parliament.** This Activity will establish a system of documenting findings and evidences to channel to the CS-FOR National Platform for discussions. The national platform aims to facilitate discussion and cooperation between agencies engaged in the NRM and advance legislation, and will serve as Steering Committee of CS-FOR. The National Platform will include representatives from Government and CSOs knowledgeable about gender issues, and its Terms of References will include gender aspects. The project will also support inclusive technical discussions to deepen selected topics (via specific consultations, including on impacts of existing legislation on biodiversity, environmental resources, and livelihoods for women and men, including on gender equality) to inform dialogue and harmonization of regulatory framework. Dialogue on biodiversity and environmental resources in target areas will be supported, with the aim to endow the country with better chances to ensure ecosystem preservation.

110. **The second set of activities** implemented under this Output 1.1 will aim to enhance capacities on climate change risks and natural resource assessments, support further enhancement of capacities of the existing monitoring *units* at the central level with evidence-based integrated NRM Planning, Monitoring and Evaluation tools and methodologies, and facilitate linkages between the evidences, data from the ground, information systems and the forest-rangeland ecosystem planning processes

1.2.1 **Demonstrate and accompany national and local institutions in adopting the evidence-based Natural resources Planning, Monitoring and Evaluation System.** This Activity will be twofold, including:
a. Establishment of a dedicated evidence-based and georeferenced project M&E system, including a dedicated NRM and climate-oriented monitoring procedure for central institutions to ensure scalability across the country. The activity will support development of standards, methodologies and implementation modalities for the state monitoring of rangelands and forests resources, which, in addition to tracking investments in climate change-related activities, will also contribute to enhancing the knowledge-base of the impact of ameliorated/managed pasture and forest lands to climate change (including human and ecosystem resilience). Over time, data generated can show trends in the correlation between management practices and climate change mitigation and adaptation. The activity will be developed in the framework of the targets of the Memorandum of Understanding (MOU) agreed by Kyrgyz institutions with the Kyrgyzstan National Spatial Infrastructure: central, local institutions, academia, and Civil Society Organizations (CSO).

b. Supporting use of georeferencing and evidence-based approach.[44] This will be done at all levels in an interactive manner and through the implementation of the project's activities. **(a) At national level**: by establishing an NRM communications framework to secure data and information transfer across the country and within institutions. Within the framework of the Kyrgyzstan National Spatial Infrastructure Memorandum of Understanding and existing policies and laws, the project will ensure that mechanisms, tools and approaches will be used to support the dissemination of NRM and climate policies/laws/information across

[43] http://www.fao.org/tenure/resources/results/card/en/c/39d3d18f-3ebc-4aa5-bc2a-7c5996788a81
[44] See Georeferencing Strategy, annexed as Working Paper to the Feasibility Study and to the Funding Proposal.

the country, and to update central institutions with data/information/needs originating from local administrations and rural communities. Trainings will develop the capacity of central and local institutions, schools, academia and CSOs in bridging policies and management plans with data and information (using the FAO approach and tools for Georeferencing and Geospatial Analysis). **(b) At local level**: by providing technical support to beneficiary institutions at local level (PUUs and Leskhozes (local forest institutions)) to update and enhance their datasets, working maps and tools to support the evidence-based NRM/climate-oriented strategies. This will be linked to the implementation of Integrated Natural Resource Management and Climate Resilience Plans (INRMCRPs) (under Component 2), where the project will provide PUUs with *ad hoc* tools (i.e., digital maps, GPS, field met-stations) to map and monitor their pastures and forests adequately.

111. **The third group of activities** implemented under this Output 1.1 will aim to create and improve skills and capacity in promotion of climate-resilient and adaptive NR management and use in participating communities.

1.3.1 **Mobilize communities, establish CLMGs and accompany in formulating INRMCRPs.** This Activity will be threefold, including:

a. Establishment of Community Landscape Management Groups (CLMGs). Through social mobilization, this Activity will support the establishment of CLMGs as informal institutions at the local level to advance participatory management of natural resources. Specific members of the CLMGs will be selected as part of the Community Mobilization, and will include beneficiaries in local communities and institutions at local level, for example, the representatives of district administration, local self-government bodies (aiyl okmotu and aiyl kenesh), management of Leskhozes and national parks, representatives of the Pasture Users Unions (PUUs), Water Users' Association (WUAs), other civil society and community organizations and private sector representatives. The selection criteria and mechanism are outlined in Table C.3.1 below. The CLMGs would also include active forest and pasture resources users and local entrepreneurs, as well as representatives of women's and youth committees. ARIS will facilitate the establishment of such groups in the four target areas. Community representatives will be selected at the general village meetings; CLMGs will form a cluster at the district level chaired by the District Akim. When necessary, the CLMG cluster would invite representatives of the State Registration Offices and district tax bodies to participate in meetings. The informal status of CLMGs will ensure flexibility of the group and wider participation of stakeholders. The legal status of the CLMG will be reviewed at the mid-term stage.

b. Methodologies for integrated natural resources management and climate resilient plans (INRMCRP) elaboration. This Activity will develop methodologies, guidelines and materials on the elaboration of **INRMCRPs** considering all issues of environment, biodiversity protection and ecosystem functions as related to climate change mitigation and adaptation, but also to improve livelihoods. The methods will be based on assessment and mapping of CLMG resources. The plans will incorporate various resource use regimes, including agreed schedule and migratory routes of the livestock grazing on the SFF and SLF land. Joint decisions will be made on number of livestock to be grazed on different pastures to preserve fragile resources and allow regeneration, and on various improvements to the pasture and forests. CLMGs will propose different tenure arrangements for use of forest and rangeland resources, such as municipal forests, including shelterbelts and windbreaks, as well as private and community-based tree plantations, and sustainable fuelwood resources and alternative rural fuel sources. The CLMGs will report to their communities on the preparation and implementation of INRMCRPs. This Activity will develop training methodologies and materials on INRMCRPs and other issues of pasture-forest ecosystem management and use, and organize training for beneficiary institutions at local level (local government, Leskhozes and CLMGs) on new arrangements for management and monitoring.

c. Design of INRMCRPs in all communities in the target districts. In order to develop INRMCRPs, the project will build the capacity of stakeholders on georeferencing and community mapping of natural resources and livelihood strategies. This activity will serve also as on-the-job training and it will be an additional opportunity for communities to gradually contribute to governance of natural resources. This activity will also guarantee ground-truthing of geospatial analysis and GIS managed at the central level. An information dissemination and capacity-building programme will be developed to target decision makers on various sources of funding for sustainable natural resources management that includes carbon finance, especially in the international context of carbon sequestration in grasslands. Lastly, this activity will also inform the policy and legislation framework, providing recommendations to relevant sectorial strategies and plans for priority climate-financing activities and investments.

Component 2: Green Investments for Forest and Rangeland Rehabilitation

112. **Rationale**. Forest ecosystems hold the largest shares of terrestrial carbon, and trees and perennial-grass pastures are dynamically sequestering CO_2 from the atmosphere into long-term biomass in trees and shrubs. The climate rationale of green investments in forests and pasture rehabilitation is anchored in the imperative of maintaining the health of these ecosystems to perform their carbon cycle functions. This capability has been weakened in the Kyrgyzstan forests and pastures due to their poorly governed use and unsustainable management. The project aims at mainstreaming the principles and benefits of their sustainable management into broader user groups than their traditional custodians. Equally important is that management planning becomes integrative and goes beyond the sub-sectorial boundaries, which seem to lead to policy contradictions and only partial solutions that do not lead to sustainable development.

113. **Private sector's involvement in forestry investment**. The key returns of forestry investment are essentially represented by carbon sequestration, which in the current absence of carbon pricing initiatives, makes financial returns largely unattractive for the private sector. The financial benefits of pure forestry investment are too low even in a 20 years horizon to mobilize private capitals. However, considering the strong interlinkages between forestry and rangelands especially in their use by local rural communities as amongst the primary sources of livelihood, the **project approach envisages private sector's participation in forestry investment**. Even if the investments are local native (not commercial) tree species, communities and individuals will contribute with own resources (as also reflected in the project budget). The level of concessionality for such investments has been set according to the potential returns of the forestry investment (reference: Chapter 7 of the Feasibility Study, where the individual forests financial and economic returns are described). Varieties such as Juniper, Spruce, Poplar, and Mixed tree species give particularly low returns (the related financial performance indicators such as IRR and NPV are all negative), making public resources (including GCF grant) necessary for about 90 percent of the investment. On the other side, walnut and pistachio reforestation, even with the selected non-commercial local varieties, generate some higher financial results (IRR at 20-year horizon result positive only for walnut forests, barely positive for pistachio), and the concessionality is set at 65 percent. Such level, when accompanied by a leasehold agreement on the use and harvest of non-timber forest products, generate private sector's interest to provide an actual contribution even when the major benefit of the investment is a public good as mitigation. As per the EFA (Annex 3), for Pistachio and Walnuts the concessionality is 65% of the investment. Even considering the grant, the returns are barely positive. For Pistachio Forests (non-commercial varieties, afforestation activities), the IRR for a grant-supported investment over 20 years is 16% and the NPV is positive at barely 1,000 USD. Walnut (same, non-commercial indigenous varieties) is slightly more viable, with 20-yrs IRR at 19% and NPV 5,000 USD.) All forest investment envisage the participation of private sector, with direct investment in land, labour, and other costs. The concessionality has been set at a level that raises the interest of possible private investors – that could access to credit lines generated by RKDF. See also Feasibility Study (Annex 2), Chapter 4, Appendix 3, which summarizes the significance of private sector involvement in the project.

114. **Private sector's participation in rangelands development**. Rangelands play a critical role in the project's expected carbon sequestration potential, and are one of the key elements of innovation compared to previous interventions and to the existing regulatory framework. In the project's framework, improvement of rangelands conditions contributes by over 70 percent of the carbon sequestration potential of the project (14.9 m tCO_2eq over a total expected sequestration of 19.7 m tCO_2eq in a 20 years horizon). Thus, the importance of rangeland investment is critical and cost effective: when considering the sole investment in rangeland (i.e., excluding the associated cost of capacity development and for improving the enabling environment) the cost of sequestration is about 0.26 USD / tCO_2eq, very low compared to average sequestration investment. Rangeland are at the centre of the livelihoods of rural communities in the target areas, but the currently prevailing livestock management is incompatible with considering rangeland as a carbon sink. In order to provide incentives to the behavioral change of private sector, the project has, on one side, set an attractive level of concessionality to the rangeland investment (yet with a private sector contribution of at least 10 percent). On the other side, the project has established an innovative associated investment (Component 3) that stimulates private sector's investment in value chains that will contribute to reducing the pressure on rangeland.

115. **Component objective**. Through investment on afforestation/reforestation and forest enrichment, and productive investment in pasture restoration, this Component will contribute to increasing the resilience of populations in the target areas and to decrease their exposure to climate change related risks and hazards.

Component 2 includes one single Output:

Output 2.1: Green investments for forests and rangelands rehabilitation are made available

116. Improved management of forests and rangeland on SLF and SFF with the aim to increase carbon sequestration, besides direct investment in forestry and pasture, can be achieved only through training and mentoring of the principal actors involved in livestock and forest management. As such, this component will have a preparatory section dedicated to accompany the local-level stakeholders (members of CLMGs) and their institutions through a capacity development process with technical and institutional features, to implement and monitor the INRMCRPs. The second phase will be dedicated to the actual implementation of forest and rangeland investments at community level (see paragraphs for activities related to supporting the investment under Component 2). Key results of the capacity development investment will include: reaching a consensus among the involved institutions of the need to change current pasture management

practices; a general understanding of the risks to community resilience if current practices are not amended; awareness of the ecological justification and livelihoods rationale for rotational grazing and how to implement and monitor pasture rotation. This will lead to the application of rotational grazing to pastures in the target areas. This Component will carry out five Activities, with a first set (Activities 2.1.1 to 2.1.3) dedicated to strengthening stakeholders capacities to manage integrated natural resource management climate resilient plans, and a second (Activities 2.1.4 and 2.1.5) dedicated to support these investments in accordance with the description in the Logframe. Definitions of forest, afforestation/reforestation/ deforestation, and degradation are summarized in Addendum 2 of this Funding Proposal.

Capacity development activities:

2.1.1 **Conduct training to 50 communities and institutions on technical/ legal matters on forest enrichment and afforestation/ reforestation, and provide technical/legal assistances on forestry PPP establishment.** All trainings will address gender issues as appropriate in the thematic topic. More specifically, within this activity, the activity will perform the following:

a. Carry out community mobilization and training for 50 *aiyl aymaks* (municipalities) and their communities, including gender training and institutional support, as well as the establishment of task forces and fire management teams at Leskhoze level. Training of trainers (TOT) will be provided on technical and institutional matters and facilitate dialogue among beneficiaries in local communities and beneficiary institutions at local level including Leskhozes, NGOs, CSOs, forest and pasture experts, PUUs, WUAs and other natural resource users. Forest and pastures stakeholders' meetings will be supported to promote information-sharing and organization of CLMGs and focus on change management in the forest sector. Local (between districts) and regional study tours for Leskhoze staff and leaders should stimulate improved forest investments. Training sessions will be also provided to women on leadership, decision-making and participation in local institutions with a view to supporting women's further engagement in PUUs, WUAs and other community resource user groups.

b. Provide technical assistance on forestry, to ensure covering all technical requirements for Leskhoze staff as well as municipal administration and forest users for sustainable management of forests and Integrated Pest Management. As part of the evidence-based approach, all natural resources will be mapped and georeferenced to facilitate the M&E of progress in planting, safeguards, carbon sequestration, etc.

c. Provide technical and legal assistance on Public-Private Partnerships for forest management, to ensure that individual households benefit from the introduction of the new regulation which allows leasing of SFF forest land (in five-year renewable leases) for tree planting on low-productive land.

d. Provide technical assistance on land tenure matters, to ensure that all actors at local level are aware of and apply the principles of responsible governance on tenure arrangements for forest-rangeland ecosystem management (with support from FAO expertise),[45] and follow the approaches proposed through the regulatory framework harmonization under component 1.

2.1.2 **Provide technical assistance to the Pasture Department on climate-sensitive pasture management, assessment and monitoring, and conduct INRMCRP assessment and monitoring.** This Activity will provide support for technical assistance, training and study tours to the pasture department, including via national and international expertise. This will include one short term international and two long-term national consultants (GIS and pasture specialists) based in the pasture department with specific task to reinforce the monitoring capacities and coordinate the department's efforts in pasture management awareness and capacity development, along with the technical support of the gender and social development specialist. The tangible result of this support will be the participation to the monitoring of the INRMCRP implementation.

2.1.3 **Conduct training of trainers on pasture rotation and evidence-based rangeland M&E to local cadres as well as training of trainers on INRMCRP management and implementation, and training sessions to the CLMGs and local stakeholders to implement INRMCRPs on rangeland management.** Within this Activity, the project will:

a. develop local cadres capacities on pasture rotation and evidence-based rangeland M&E. Through a system of TOT, trainings and refresher trainings, administrators and CLMGs will be educated on the ecological wisdom and benefits of rotational grazing and erosion control, and the need for policies and regulations that support improved resource management and land-use planning. The output is a cadre of extension staff created within existing organizations to provide guidance and technical assistance to ayil okmotus and PUUs in implementing change in grazing management practices and land use.

b. Strengthen CLMGs' capacities to implement INRMCRPs on rangeland management. This activity will include TOT organized by ARIS and provided through the mobilization of national and international

[45] Reference to the in-country analysis and policy dialogue and the related FAO policy notes land tenure (2016 - 2017).

expertise. Capacities of beneficiaries at local level listed in Table C.3.1 (ayil okmotus, Leskhozes, PUUs, etc.) to implement INRMCRPs on pasture management will be strengthened through a set of initial trainings and refresher training on technical and institutional issues (mainstreaming both gender aspects and land tenure within the framework of the VGGTs). The project will support the participation of stakeholders in local and international study tours (of which at least 30% will be women). The work will target all 49 PUUs/Pasture Committees and the 6 Leskhozes in the Project Area. Under this activity, capacity development will focus on the following aspects:

- Livestock owners and their immediate supervisory organizations (Pasture Committees, local self-governing organizations, and district level leadership) will be coached on implementing on-ground measures to achieve outcomes that enhance resilience to climate change. Livestock owners and shepherds who care for livestock grazing on pastures will be trained in improved grazing management practices, and their performance monitored under project supervision.
- CLMGs will recognize livestock producers' incentive to own as many animals as possible to compensate for low productivity her head and the vicious cycle of resource degradation driven by this incentive. The project will try to change the incentive structure by introducing an appreciation of the benefits from managing for higher production per head, and how that can be achieved. It will also promote change in pasture management by anticipating higher livestock productivity, higher income, reduction in total animal numbers as production per animal rises, and opportunities for enterprise diversification.
- Training on genetic selection of livestock in current herds to cull unproductive or less-productive animals, and on the careful use of Artificial Insemination (AI) to achieve cross-bred livestock that yield more meat and milk, and therefore reduce the need for large herds.
- Training on how to integrate and harmonize pasture management of SLF and SFF lands. Training also on the benefits of planting trees on municipal land and in Leskhoze grazing land to create shelterbelts and copses for shade, and windbreaks to protect against cold winds.

117. In line with FAO's comparative advantage and with the objective to support forest investments that will directly respond to the core impact of the project, land tenure activities are being co-financed by a grant. These activities will also aim to contribute to the sustainability of the CO_2 sequestration potential; however, direct climate change related activities will be mostly financed under the GCF grant.

118. **Investment activities under Component 2**. The economic behaviour in rural areas responds to economic and market incentives. The project, mainly under Component 2, will stimulate the required incentives by: (a) Facilitating the development of sustainable forests as repository of CO_2eq and (in DRR prone areas) as disaster risk reduction measure; (b) providing concessional investment and technical assistance that demonstrate success in rangeland management and to ensure breaking the vicious circle of poor NR management (under Activity 3.1.3); and thus (c) Facilitating the development of diverse value chains, sensitive to the changing climate pattern and all aiming at ensuring the sustainability of rangelands and forest.

119. Such activities represent the bulk of investment for carbon sequestration through restoration and improvement of forests and pastures in the target area through INRMCRPs developed by CLMGs. The total estimated sequestration of about 19.8 m tCO_2eq (break down by investment type is provided in Sections E.1.2 and E.6.5). The investment will be discussed and decided by the Project Steering Committee and final confirmation of decisions by Accredited Entity within the INRMCRP framework.

120. The component includes two main branches of investment, comprising the following activities.

2.1.4 **Provide climate investment in restoration and improvement of forests based on INRMCRP developed, and execute afforestation/ reforestation and forest enrichment work by Leskhozes with technical assistance.** The focus of this Activity is supporting investment and has financial support under Component 2. More specifically, within this Activity, in accordance with the Logframe, the project will support **investment in Afforestation / Reforestation and Forest Enrichment**. The project will provide the required concessional forestry investment (where the investments are budgeted as equipment and professional/contractual services, e.g.: seedlings, fences, labour) to stimulate the required economic behavioral change of involved institutions and communities in rural areas. Activity 2.1.4 will be supported by Activities 2.1.1, 2.1.2, and 2.1.3, comprising the bulk of technical assistance and support to the rural communities and their institutions to implement the INRMCRPs at local level. The carbon sequestration potential for this investment is 4.2 million tCO_2 equivalent (corresponding to 21 percent of the total project's carbon sequestration potential). Supported investments include: (a) at least 3,000 hectares of new forests successfully planted on degraded lands; (b) at least 3,000 additional ha of existing degraded forests enriched; (c) about 56,000 ha of existing forests (slightly above half of the existing forests in the four districts) under improved management. For a. and b., all selected tree species are indigenous and non-commercial varieties, which makes their financial returns very low to stimulate private sector investment. Non-commercial trees will be used in forest areas owned by the state only where forests are established

and maintained in order to ensure primarily ecosystem services (i.e., public goods and services) without specific direct economic purposes. Nevertheless, the project still envisages the participation of the private sector, especially for local walnut and pistachio tree species (reduced concessionality, as detailed in the EFA), considering their potential participation in the export markets.[46] A detailed approach in forestry interventions is divided into three main areas of work, comprising Afforestation / Reforestation and / Forest Enrichment (The specific work areas are selected under Activity 1.3.1 as part of the Integrated Natural Resources Management Climate Resilience Plans (INRMCRPs)). The eligibility criteria for the selection of the areas are listed in the dedicated box and in further technical details are presented in Annex 2, Chapter 4 (page 113). The beneficiaries of investment in Afforestation/ Reforestation and Forest Enrichment will be the State Agency for Environment Protection and Forestry and the local communities according to the INRMCRPs developed under Activity 1.3.1. Beneficiaries will contribute with own work as a contribution to the investment. Besides community mobilization, including a contribution from beneficiaries represents an additional way to ensure interest and ownership. Being in-kind (labour of communities and of SAEPF) it implies no transfer of ownership. Being the investment decided within the INRMCRPs where local communities and their institutions are represented, all beneficiaries have incentives to participate in the investment with own labour time, and possibly material. The contributions amounts will be according to the level of concessionality mentioned in paragraph 113 (regarding Private sector's involvement in forestry investment). The supported forestry investments will include:

- **Afforestation/reforestation (A/R)**, covering at least 3,000 ha spread over five years (yr. 2-6) of the project: (a) **on public land, where urgently needed** due to high levels of degradation of forest, on failed or delayed reforestation sites, and on open grasslands of SFF which have been totally deforested by grazing. The project will use fencing and reforest patches of highlands/grassland between and around the remnants of forest, on roadsides, and extending forest margins. In walnut and pistachio forests households sign up long-term leases (5 years renewable) to plant/sow new plantations with a combination of selected varieties that are (i) early-maturing (3rd year) to bear nuts; and (ii) are early-ripening to yield harvest in August. (b) **As private tree planting** activities through long-term leases from the municipalities (mostly in combination of fruit trees and endemic deciduous trees and trees for fuelwood) on SLF low-productive lands, riparian zones and landslide-prone areas around floodplains. **Responsibilities**. For effectiveness, the investment model takes into account the region, altitude, climate, tree species, forest legal status, custodianship and the competent partners. Three investment models refer: (a) Leskhoze-cantered investments in high-altitude spruce and juniper forests (long rotation timber forest, but devoid of direct economic incentives to private partners); (b) Collaborative Forest Management (Leskhozes, private individuals, households) through long-term leasing of walnut and pistachio forests on SFF lands from Leskhozes to households: here economic interest is high and competition is intense); and (c) Individuals investing in tree-planting on SLF lands, with a long-term lease tendered from ayil okmotu (mix of poplar, willow, fruit trees, etc., to combine short-term income with long-term timber, fuelwood and carbon benefits).

  Benefits for carbon sequestration: *A/R and enrichment planting intensifies sequestration of* CO_2 *in young forests (<20 years) and lowers emissions from forest die-back. A healthy forest cover/canopy has a lower albedo: forests reflect only around 5-15% of sun's radiation and mitigate its impact of radiation in warming up the lower spheres of the atmosphere.*

  Co-benefits for CC adaptation: *net forest cover (new planting area minus deforested area) increases and holds soil and water from uncontrolled erosion. Selected local tree varieties are bred to form the basis for future climate-resilient forests. Additional rural income, greening of less-productive lands, and livelihood options to supplement restrictions in livestock. Rural infrastructure and accessibility with remote roads.*

- **Forest enrichment, covering at least 3,000 ha planted** throughout five years (yr. 2-6) of the project. Activities will support the restoration of moderately degraded growing forests through enrichment planting of walnut (in Uzgen and Suzak), and **spruce** and juniper in Ak-Talaa and Toguz-Toro and in the buffer zones of Saimaluu-Tash and Kara-Shoro National Parks.
- **Improved forest management** of another 56,400 ha of growing forests. This will be achieved through training of Leskhoze staff and implementation of INRMCRPs. Accountability to plan and implement thinning and sanitary cutting to stimulate the growth rate and health of standing forests, and the harvesting residues for fuelwood for rural households will be strengthened. The INRMCRPs will stimulate a positive spill-off effect of the improved practices in nurseries (see also Component 3 supported activities), planting and tending of growing forests to elsewhere in the adjacent Leskhozes.

[46] Experiences such as Vega Plus, Gedik, Lesnoy Produkt, Golden Walnut, Farmers Organic Garden, and others have shown how it is possible to benefit from economically vibrant sector of NTFP and dried fruits and integration with well-functioning export markets.

- **Support to establishment of climate-resilient tree nurseries will include** training to local Leskhoze nurseries on planning (design and operational); standards of production for closed-root spruce and juniper seedlings. Walnut and pistachio seeds will be collected from ''Plus-trees'' and grown. Support will include improved greenhouses, rootstock collection and training on growing resistant and endemic varieties of wild apricot, apple, pear, cherry, plum. Under Component 3 (climate sensitive value chains), the project may support investments in **nursery** establishment, aiming at establishing sustainable businesses that can produce high quality seedlings both for commercial and restoration purposes. The investment package will mainly include young seedlings, drip irrigation, fence and fertilizers. It is planned to support 100 business cases with the establishment of relatively small-scale nurseries (100 m^2). IRR at 28% signals about financial attractiveness of such business under the condition of access to markets. 100 beneficiaries are expected to benefit from these activities.

Box. The eligibility criteria *of sites selected for Project's interventions take stock of the past experiences in forestry:*

- ***Spruce forests*** *in the lower zones of the Ak-Talaa and Toguz-Toro districts (2200-2400 m above sea level) should preferably be done in northern exposures. Above 2500 m above sea level, plantations can be carried out both on the northern slopes, and on the eastern and western slopes. Juniper mainly grows in southern exposures, where no spruce grows.*
- ***Pistachios****: lower zones in 700-1000 meters above sea level should be selected. These zones are pistachio's natural distribution area. For walnut, the most suitable growing zone is from 1200-2000 m above sea level, mainly in the northern slopes. On higher altitudes, the walnut can grow on the western and eastern exposures, and sometimes on southern exposures.*
- ***Afforestation/reforestation*** *planting can target be either open areas, clearings, forest fringes, roadsides, as well as in light forest with a crown cover of less than 10 percent, with slope steepness not over 50 percent.*
- ***For enrichment planting****, the areas where the crown cover is less than 30 percent and/or areas with low-value species are eligible.*

Environmental safeguards*. The main tree species have been matched per target Leskhoze future conditions that will follow the climate scenarios presented in this Proposal for their respective regions, and in accordance with the scientific knowledge from the Kyrgyz Forest Institute under the Academy of Science and validated with SAEPF. The project supports only the planting of endemic or non-invasive domesticated tree species from the Central Asia region, or introduced from the Russian Federation. The list of most preferable sub-species and varieties is presented in* ***Appendix 1 to Chapter 4 of the Feasibility Study****.*

2.1.5 **Develop and execute INRMCRP pasture investment plans for catalyzing green investment in rangeland rehabilitation and livestock production.** More specifically, the project will support investments in Pasture rehabilitation and livestock production. The carbon sequestration potential for this investment is 15.1 million tCO_2eq[47] (or 76 percent of the project's potential sequestration). Resilience of a grazed ecosystem, and of the communities that depend on livestock grazing, depend primarily on the ecological health of pastures. The activity will guide and support communities (CLMGs) to overcome pasture degradation through adoption of pasture rotation and a change in land use practices through training, mentoring and monitoring. The activity will increase carbon sequestration and enable local communities to become more resilient to the adverse impacts of climate change. Higher HH incomes are expected from more productive animals (e.g. greater milk yield) and opportunities to invest in alternative or complementary enterprises. In order to facilitate these investments, ARIS will support the procurement of goods and services required for the investment and facilitate training and technical assistance (TA). A critical activity is to improve access to remote pastures through bridge and road repair, and thereby spread livestock grazing impacts more evenly. When large areas of pastures are inaccessible, the grazing pressure is high on those pastures that are easily reached, exacerbating localized degradation. Complimentary activities include the establishment of shade shelters and windbreaks aiming at having multipurpose tree species to form the major part of these breaks, in order to increase the use of them, construction of seed-increase fields, harvesting and broadcasting seeds to increase fodder production, construction of watering points or small bridges to unlock inaccessible pasture, and procurement of large equipment for infrastructure improvement. All investment will be combined with technical support for integrated and improved pasture management. Key recommendations comprise the following elements (see Appendix 2 to Chapter 4 of the Feasibility Study for reference). Beneficiaries of the investment in pasture rehabilitation and livestock production will be Pasture Users Unions (PUUs) and members of the CLMGs. Beneficiaries will contribute with own work and possibly some simple construction material as a form of ownership of the investment. Being the investment decided within the INRMCRPs where local communities and their institutions are represented, all beneficiaries have incentives to participate in the

[47] Combining the sequestration from rangeland rehabilitation and livestock management.

investment. The activity will focus on:

- **Rotational grazing**. The main method for achieving higher pasture production, and therefore greater carbon sequestration over 644,595 ha of grazing land, is rotational grazing (pasture rotation). The essential feature of pasture rotation is a focus on long periods of rest from livestock grazing to allow the growth of pasture vegetation to approach its potential. By allowing pastures to approach maximum growth, above-ground plant biomass rises from an estimated 1 tonne DW/ha on degraded land to 3 tonnes DW/ha under pasture rotation. The root:shoot ratio for perennial grasses is at least 2:1[48], so total plant biomass rises from 3 tonnes DW/ha to 9 tonnes DW/ha. Successful adoption of pasture rotation will mean transforming traditional grazing practices and will require coordination among members of the PUU and supervision from the PC or its delegate. A set of technical assistance will be provided in this activity. The activity will also identify incentives that may be necessary to make management changes more attractive. Incentives to be considered in the activity will include for example, adoption of pasture rotation as a condition for receiving a particular project benefit, such as water-point development.[49]
- **Windbreaks and shelterbelts**. Another activity that while improving livestock and rangeland management addresses also potential adaptation to climate change and contributes directly to carbon sequestration is the planting of trees in small areas on municipal pastures and Leskhoze land. The activity will promote shelterbelts and copses to provide shade and reduce wind velocity. Windbreaks of trees with lower strata of shrubs are especially beneficial for protection against winter wind. Trees will be protected by fencing, which can be removed and re-located after trees have grown to safe heights. Trees will be procured with SAEPF. Tree seedlings will require maintenance, including watering in summer months, for the first 3 years.
- **Promotion of improved grassland seeds**. Pasture rotation will improve plant composition because palatable leafy grasses have a competitive advantage during the long rest periods over less palatable plants. Broadcasting seed of desirable indigenous perennial plants can accelerate pasture improvement. The activity will promote the establishment of 1-ha seed-multiplication fields near PUU villages, separate from the 1-ha demonstration sites promoted by the IFAD-funded LMDP. A 1-ha seed-increase field in each PUU requires fencing materials of 400m per PUU, or 19,600m for 49 PUUs.
- **Livestock investment.** Reflecting the centrality of livestock to ensure forests and rangeland management for carbon sequestration, the project will promote investment in improved livestock production and productivity. Complementing the activities and investment carried out by ongoing livestock and dairy development projects in the area (IFAD and WB funded), the INRMCRPs will support investment in livestock productivity in this activity. Investment will include among others, promoting more productive and more palatable pasture vegetation composition, improved livestock herd management and improved breeds (large ruminant releases less methane per kg of body weight than smaller animals). In the activity, specific principles of improved herd management will include culling and/or sale of intermittently productive or barren cows and weak or injured or low-productive small ruminants. By simply applying aggressive culling to existing herds, and selling 80% of male calves at 2 years old and male small ruminants at 1.5 years, livestock production is expected to rise by at least 10%.

Component 3: Climate-sensitive Value Chains Development

121. The role of Component 3 is to **strengthen the sustainability of the investment in carbon sequestration carried out in Component 2 by creating economic opportunities** with limited risk, in order to decrease pressure on and degradation of natural resources in the project intervention areas, thus contributing also to the enhanced resilience. The investment under Component 3 is referring to the provision of concessional investment through activation of special credit lines and provision of loans by RKDF (Activity 3.1.3) and technical assistance that demonstrate success in rangeland management. Through provision of capacity development and the increased access to credit (via RKDF co-financing), Component 3 will support the development of the selected value chains' participants towards higher efficiency and competitiveness of the marketed product. Project activities in Component 3 will facilitate access to the external credit line provided by RKDF (senior loan as co-financing). This would eventually contribute to decreasing pressure on and degradation of natural resources in the project intervention areas. The component will promote Forest Stewardship Council (FSC) Ecosystem Services Certification that will enable local producers market their products and services with the specific FSC label, e.g. water from responsibly managed forests" or support running green tourism businesses. The main selection criteria [50] for the value chains will include low carbon footprint, market potential, financial viability, environmental

[48] See Sainju et al. (2017) Root biomass, root/shoot ratio, and soil water content under perennial grasses with different nitrogen rates. Field Crops Research 210:183-191. This research was carried out in the northern Great Plains of America in an environment of cold winters and warm summers similar to Kyrgyzstan. One of the three perennial grasses studied was *Bromus inermis* which is endemic to Kyrgyzstan.

[49] An important consequence of pasture rotation is that greater ground cover by plants and leaf litter traps rainwater where it falls and increases water infiltration into the soil, promoting root growth. A deeper and more extensive root system will confer greater resilience to drought. The mechanism of benefits from pasture rotation is control over grazing pressure and more soil water available for plant growth. Moreover, a complement to higher infiltration rates is a reduction in overland water movement and the associated erosion. Erosion is manifest in mudslides and land slumps accompanied by muddy streams, flooding and bridge destruction. Erosion must be addressed at a landscape scale, and rotational grazing management achieves that objective.

[50] Reference: Appendix to Chapter 5 of the Feasibility Study.

sustainability and raw material sourcing area within the core Project Area (the four districts of Ak-Talaa, Toguz-Toro, Suzak and Uzgen). Specifically on the livestock sector, the Component will also support operations that aim to reduce pressure on pastures through accelerated offtake of animals. Ultimately, the component will not only foster sustainable use of natural resources but will also provide economic opportunities for entrepreneurial growth among women engaged in non-timber forest product (NTFP) activities. Households in target areas are highly dependent from the direct use of forests and rangelands and the ecosystem services provided by both (see the baseline assessment carried out by FAO with Kyrgyz institutions and communities in Annex 6.b Baseline Atlas (Part 3 and 4)). Target areas are exposed to climate change, and the main agri-food value chains where rural households are involved (e.g. livestock, non-timber forest products such as nuts and other dried fruits and beekeeping) are vulnerable due to lack of diversification, limited adaptation capacity of stakeholders and prevalence of unsustainable practices (see Annex 2, Feasibility Study, Chapter 1 (pages 42-46)).

122. Component 3 includes one output:

3.1: Selected value chains are climate sensitive and producers adopt carbon optimization technologies and practices

123. **Objective**. This Component will provide capacity development across a number of carefully selected value chains, and will support establishing direct linkages between producers and corporate buyers operating on end markets and having strong green orientated corporate social responsibility. This Component will support the investment in carbon sequestration under Component 2 **by providing local communities with the access to skills and technologies conducing to sustainable use of forests, improved livestock management practices and strong linkages to the corporate markets**. Component 3 is structured in a first preparatory phase (see Activities 3.1.1 and 3.1.2) and an investment phase (see Activity 3.1.3). Targeted value chains include non-timber forest products (NTFP) such as tree nuts (walnuts, almonds, pistachio), dried fruits (dried apricot, dried plum), and fruit orchards (cherries, apples), beekeeping, but also other value chains that can complement the rural smallholders income (as an incentive for diversification), including poultry, turkey, etc. Certification of NTFP according FSC standard[51] and other voluntary international standards such as HACCP, Fair Trade, Organic and GlobalGAP to enable direct linkages with end markets will be the driving force towards a paradigm shift in forest use and local economies growth. The FSC certification will guarantee gender equality in employment practices, training opportunities, awarding of contracts, processes of engagement and management activities. By implementing innovative climate-resilient agricultural practices, value addition must be achieved using resource-efficient technologies such as solar dryers, drip irrigation, solar pumps, no-till technique, etc. The Project will also support livestock operations that aim to reduce pressure on pastures and improve their health (e.g., rational feeding practices) (cf. Annex 2 Feasibility Study, Chapter 7 (Section: Climate-sensitive Value Chain Models). The main selection criteria for the value chains will include low carbon footprint, market potential, financial viability and raw material sourcing area within the core Project Area. In addition, the value chains and the actors will be selected according to the potential to contribute to income diversification from unsustainable livestock or forestry practices, which represents in turn a contribution to their resilience to climate change, and a way to ensure sustainability of the forestry and rangeland investments promoted under Component 2 (cf. Annex 2 Feasibility Study, Chapter 4 (paragraph 55: General criteria and approach for identification of eligible private sector actors and value chains)). Additional criteria for identification of the potential End-borrowers is their capacity to procure raw materials from the Project Area. Due review and selection of the End-borrowers will be performed under Component 3. Final selection of beneficiaries and their value chains will be carried out by the AE. The analysis for investment under Component 3 shows substantially positive financial benefits and rate of return (cf. Annex 2 Feasibility Study, Chapter 7, Section: Project Benefits). These results are derived from the increased access to the required financing (loans) – which will be made available by the project co-financing, coupled with training, demonstrations and advisory services, provided by the project.

124. **Preparatory activities**.

3.1.1 **Select value chains in operation and provide technical support to the value chain actors/organizations for climate-sensitive business development.** This Activity will include:
a. Conduct and publish an end-markets assessment. This will include:

- **End markets assessment**, covering key international markets[52] for the Kyrgyz NTFPs and periodical monitoring of market trends, including supply planning calendars and gaps, existing bottlenecks and risks.
- **Market prospecting campaign** on national and international markets, to identify potential buyers operating in premium segments and fostering environmental and social responsibilities as their corporate commitment;
- **Resource inventory**, using geospatial tools followed by a thorough Market Development Plan (will include introduction of Geographic Indication, especially for the walnut).

[51] FSC-NEPCon Interim National Standard of Kyrgyz Republic. The project builds largely on the existing positive experience of FSC-certified forest users in Jalal-Abad.
[52] See Working Paper on NTFP.

b. Raise awareness on market opportunities and requirements, including the design and rollout of the *Kyrgyz Tree Nuts & Dried Fruits information and trade portal*. The portal will provide buyers with a comprehensive information on the Kyrgyz offer in tree nuts, dried fruit and other NTFPs (including beekeeping, see details in the EFA, in Annex 2, Chapter 7, and details in Annex 3), sustainably and responsibly sourced, enhancing practices for marketing and increasing business opportunities for FSC certified leaseholders.

c. Support to agribusinesses operating in the selected value chains, targeting Kyrgyz companies sourcing (or interested to source) raw material within the core Project Area to upgrade their supply chain by introducing good farming practices, voluntary certification, optimized logistics and robust marketing. Potential for women's participation in and benefitting from the value chains will be considered in selecting the operators (FAO guideline on gender sensitive value chains will be a reference).

3.1.2 **Identify and mobilize operating agribusinesses in the selected value chains via information campaign and value chain mapping for climate-sensitive business practices.** This Activity will include:

a. Map and analyse selected value chains actors, comprising: **(i)** performance assessment *of* businesses interested to take part in the project, receive assistance to conduct digital mapping of their respective value chains; and **(ii)** analysis of the raw material suppliers' performance, for value chain upgrade business (action) plan.

b. Develop and upgrade climate-sensitive value chains, following experimented practices such as:

- **Accompanying the preparation business proposal.** Agribusinesses, where necessary, jointly with the supplying communities, prepare and submit for appraisal business proposals for value chain upgrade/development. Project provide support to properly design and evaluate business plans;
- **Developing technical capacity** through training and reference material provision to collectors of NTFP, farmers, mediators and agribusinesses;
- **Providing financial literacy.** Regardless of involvement in value chains supported by the project, villagers' awareness on green economy will be raised and training on financial literacy provided. At least 50% of the trainees will be women.
- **Support certification.** Based on targeted market/specific client, project participants will receive support to adopt international standards requirement and undergo the third party audit.
- **Enhancing transparency within the value chains**, using geotagging and block-chain principles, established of certified logistical centres, and other modalities conducive to transparent transactions;
- **Promote marketing**. These activities include project-supported product marketing, testing of chemical parameters of selected NTFP, co-financing of exporters' participation at international trade shows, design and dissemination of promotional material. It will include also the facilitation of the establishment of an apex organization to promote export (*Export Promotion Secretariat*).
- Promote women participation. The project will provide assistance in establishment of the chain of custody and empowerment of woman through trainings and opportunities for business development.

125. **<u>Investment activities under Component 3</u>**.

3.1.3 Activate special credit lines and provide loans for eligible value chain actors in communities/ entrepreneurs/ enterprises in the project-relevant value chains.

The key investment activity under Component 3 will include the activation of special credit lines for project-relevant value chains and entrepreneurs beneficiaries under Activity 3.1.1 ("End-borrowers"). Supported by the technical assistance provided under Activity 3.1.1 and 3.1.2, small, medium and larger enterprises in the Project Area (as well as other areas with economic connections to the Project Areas) will have access to the credit lines. The loans will range from US$ 10,000 to US$ 300,000, with the average amounts about US$100,000 extended to about 150 End-borrowers (as part of project's beneficiaries). The loans will be provided by RKDF, as the Executing Entity and Co-financier, through pre-identified five commercial banks (see Involved Institutions below), sub-contracted by RKDF, at 5 percent p.a. in US$ and at 10 percent in local currency, for a term of about 3-5 years, to existing enterprises representing eligible value chains. Indicative loan purposes include: packaging equipment, equipment for laboratories, vacuum and solar driers, agricultural machinery, greenhouses, nurseries for tree plantations and commercial orchards, eco-tourism, agricultural produce processing, etc. In addition to these favourable lending conditions, the capacity development support implemented under this component will provide further incentives to the financial

institutions to on-lend to the target beneficiaries through the reduction of credit risk and increased creditworthiness of loan recipients.

In order to reduce forest and pasture degradation and to change the behaviour of keeping an alarming number of unproductive animals as a source of cash income for safety net, communities need a parallel path towards increased efficiency and productivity of the livestock production system along with a progressive continuous creation of alternative (to livestock) income opportunities able to offer at least the same incentives for economic return (e.g., orchards and high value non-timber forest products). This shift will not only reduce the pressure on resources (increased carbon sink and enhanced ecosystem benefits) but also reduce emissions (as more productive animals raised using good practices emit less). These models will be regarded in the activity as a potential set of project investments and this set can be flexibly adapted within the project implementation.

This Activity will select value chains including walnut; however, value chains or raw material is not the only entry point for this Component, which besides development of orchards, nurseries, greenhouses, beekeeping, beef, includes logistics, cold storages, and solar driers (See Annex 2, Chapter 7 and Annex 3, as well as Annex 9, Working Paper “Value Chains Development”).

Involved institutions. The credit line funding will be provided by RKDF through local commercial banks that already reach out to the project target areas. Initially, 5 commercial banks will participate in the disbursement of the credit line (listed alphabetically): (i) Ayil Bank; (ii) Bank Kyrgyzstan; (iii) BTA Bank; (iv) Kompanion Bank; and (v) RSK Bank.

The activity will be carried out in close collaboration with RKDF and the partner banks to identify prospective beneficiaries within the eligible value chains and ensure the complementarity of the technical assistance provided under Component 3 and related credit resources. While criteria will be set within the project inception phase, following the rationale of Component 3 and in line with the project’s theory of change, as first and utmost criterion for the identification of eligible value chains and private sector actors is the potential contribution to the solidification the efforts of the project for mitigation through forestry and rangeland investment. At first, the value chains and actors will be selected according to the potential to contribute to income diversification from unsustainable livestock or forestry practices. This will constitute the building block for both the mitigation and the increased resilience objectives. Additional general principles will be developed during the project inception phase, and will include criteria such as: (a) readiness to expand the business and include / procure from smallholders in the project target areas; (b) readiness to follow international and EU standards; (c) Experience to work with sustainable technologies of harvesting / drying / processing; and (d) overall past financial / economic performance.

This senior loan input by RKDF will follow the grant inputs considered under Component 3, sequentially as a co-financing of the grant component by RKDF. The project will provide de-risking for the participation of private entrepreneurs beneficiaries (“End-borrowers”) in the financial market, and will work in parallel to enhance the overall financial literacy in rural areas (in collaboration with the National Bank) and financial inclusion. Moreover, the approach of Component 3 is to first identify selected value chains, and map their actors, before working with selected entrepreneurs and leading entities beneficiaries with **(a)** potential for expansion of their activities in the Project Area; and **(b)** potential for expansion of outsourcing their raw material in the target areas. See Annex 2, Chapter 4, Appendix 3, which summarizes the significance of private sector involvement in the project.

Indicative outputs and respective targets will include about 150 entrepreneurs beneficiaries (End-borrowers) in selected value chains who will access the loans financed by RKDF.

126. The proposed approach of the Component will support the required diversification and enhanced efficiency, productivity and competitiveness of existing economic activities in the highly degraded target areas, based on leveraging available local financial resources and the provision of highly targeted technical assistance to carefully selected value chains. The total estimated value of the investment is US$ 16.5 million, including US$ 15 million of the RKDF-financed credit line and US$ 1.5 million of beneficiaries’ contributions.

127. The use of subsidized resources provided by RKDF may present a risk to the sustainability of the project intervention in the unlikely situation that such resources are no longer available; at the same time, due to its size (US$ 545 m in assets as of Dec. 2017) and the development mandate, RKDF will continue to be able to provide resources at favourable conditions to the economy of the country. The technical assistance provided under Component 3 should additionally contribute to the mitigation of this risk by supporting the competitiveness of the selected value chains.

Project Management Component (PMC)

128. The activity under this Component will establish a Project Management Unit (PMU). The PMU will be physically located under SAEPF headquarters. The PMU will be responsible for day-to-day project management, providing human

resources management, financial and procurement services and management, coordinate and monitor M&E of the project's activities, generate work plans and budgets, project reporting and documentation. The PMU will be headed by a Senior International Technical Adviser for forestry, rangeland and governance will be recruited by the project. The Technical Adviser will be recruited and have overall responsibility for preparing the annual work plans and budgets, technical documents for procurements, terms of references of technical experts, clearing them with FAO, the OP and the donor and obtaining Steering Committee clearances. The Adviser will also have overall responsibilities of capacity development of OPs' and of PMU's staff and consultants on technical and managerial aspects (including facilitation for procurement and financial, human resources and quality assurance for overall project implementation). The Technical adviser will be supported by the PMU staff, including a Project Coordinator, in charge of the day to day management of the project and coordination between all operating partners and project stakeholders, a Financial Specialist, a Procurement Specialist, an M&E team leader, a secretary and a driver. The PMU will include the Expert Group, comprised of various technical expertise comprising the Gender and Social Development Specialist and the Safeguards Specialist. The M&E and Planning team leader, under the overall supervision of the Project Coordinator, will be in charge of the overall planning, M&E and learning process of the project, and will coordinate a team of technical expert (part of the Expert Group) composed of an M&E specialist, a GIS specialist and a communication expert. The PMU will also liaise with FAO-KG, ARIS, MAFIM and RKDF to ensure coordination of planning and in the achievement of the project's results, and with FAO for technical assistance and support in implementation.

Project area and beneficiary selection

129. Project support will be delivered in four districts: Ak-Talaa in Naryn region, Toguz-Toro and Suzak in Jalal-Abad region, and Uzgen in Osh region ("Project Area"). The selection of these districts, as well as the selection of sites and beneficiaries, is further summarized in Table C.3.1. The Project will not foresee any transfer of ownership for the beneficiary contribution.

Table C.3.1. Selection of districts, sites and beneficiaries

Level / type/ related project component	Criteria / process	Stage / timing
Region and District selection	The primary target group of the Project are all the users of pasture and forest resources (both formal and informal) in the target area of the four project Districts (Ak-Talaa, Toguz-Toro, Uzgen and Suzak) in the selected in three Regions (Naryn, Jalal-Abad, and Osh Regions). The selection of the regions and districts of Project Area was based on the assessment of a large number of data sets at national and sub-national scale and using the Earth Map tool as well as a series of vulnerability analysis and according to the following criteria: a. Exposure level of ecosystems and communities to natural hazards triggered by climate change (see Figure C.2.1 of the funding proposal, and Figure 19: Map of levels of vulnerability to climate change in Kyrgyzstan, Annex 2 Page 30 for hot spot identification; also see Figure 29-30, Annex 2, Pages 41-42); b. Vulnerability of ecosystems and communities to climate change (Criteria: 1. Fragile mountain ecosystems characterized by pastures and limited spruce forests; 2. Relevant presence of pasture and of walnuts forests (biodiversity hot spot) currently exposed changes of main climatic variables; 3. Fragile mountain ecosystems characterized by pastures and limited spur forests; and 4. Presence of pistachios and juniper forests currently decreasing due to climate change). See Table 2, Annex 2 Page 34; c. Mitigation potential in terms of forest and pasture rehabilitation (Criteria: Availability of land suitable for forest and pasture restoration investments). See also	Completed during project design. The following districts have been prioritized, and constitute the 'Project Area'. In Naryn region: Ak-Talaa district. In Jalal-Abad region: Toguz-Toro and Suzak districts. In Osh region: Uzgen district.

	Para 83-85 of the proposal, and Table 2, Annex 2 Page 34; d. Dependency of communities from natural resource exploitation (see Table 2, Annex 2 Page 34 for detailed criteria); e. Socio-economic vulnerability of communities ((see Table 2, Annex 2 Page 34 for detailed criteria); and f. Livelihood-household resilience survey results (resilience structure matrix, see e.g. Annex 2 pages 45-46)	
Beneficiary institutions at national level for the following Activities: 1.1.1; 1.1.2; 1.1.3; 1.1.4; 1.1.5; 1.2.1; 2.1.1; 2.1.2; 2.1.3.	The State Agency for Environmental Protection and Forestry (SAEPF), the Ministry of Agriculture, Food Industry and Melioration (MAFIM), the Ministry of Emergency Situations (MES), the Agency for Local Self Government and Interethnic Relations (ALSGIR), the Climate Finance Center (CFC), the Ministry of Economy (ME), and the Ministry of Culture, Information and Tourism (MoCIT). Eligibility criteria for national level stakeholders include institutions involved in planning, management and monitoring of natural resource base (forests, rangeland) in the context of climate change, institutions mandated to stimulate on socio-economic development, and institutions signatories of the National Spatial Infrastructure Memorandum of Understanding.	Identification of primary beneficiaries was completed during project design. Additionally research and educational institutions and NGOs will be inclusively considered based on the discussion at the Project Steering Committee and final approval by the respective Executing Entity under the overall and final confirmation of the AE during the project implementation. Contractual agreements required for co-financing contribution by selected beneficiaries will be signed by: a) SAEPF and ARIS for the activities on forest land and rangeland; and b) SAEPF, ARIS and FAO for the other co-financing contribution. Beneficiaries that have the role of both Executing Entities and Co-financiers of the Project will be directly contracted with AE (i.e. SAEPF, ARIS).
Beneficiary Institutions at local level for the following Activities: 1.3.1; 2.1.1; 2.1.2; 2.1.3; 2.1.4; 2.1.5.	The beneficiaries are: Leskhozes (Forest Enterprises), National Parks, self-government bodies (ayil okmutu and aiyl kenesh), women's councils, Pasture Users' Unions, Community Landscape Management Groups (CLMGs) and other natural resource users groups. CLMGs will include all member-based community organizations (e.g., Pasture Users Unions, Women's groups, Forest Committees, Water Users' Associations), forestry enterprises and Parks, self-government bodies (ayil okmotu) with direct mandate to plan, manage or monitor the natural resources base in the Project Area.	Identification of primary beneficiaries was completed during project design. The final selection of beneficiaries will be carried out by the Executing Entity (ARIS under the oversight of the AE), reviewed by the Project Steering Committee and finally confirmed by AE during the project implementation. Contractual agreements required for co-financing contribution by selected beneficiaries will be signed by: a) SAEPF and ARIS for the activities on forest land and rangeland; and b) SAEPF, ARIS and FAO for the other co-financing contribution.
Climate sensitive value chain producers in the Project Area supplying raw material or participating in the selected value chains benefitting of Activities: 3.1.1 and 3.1.2	The beneficiaries for the technical assistance should include (depending on actual demand and on the nature of the loans): • Fruit and nut orchards: The number of beneficiaries based on 1-ha was estimated at 3100 households assuming small scale (1-ha) orchards. • Small-scale nurseries (100 m2): 100 beneficiaries • Solar dryer investments : 100 beneficiaries • vacuum dryer investments: at least 10 entrepreneurs with 265 small-scale suppliers. • 10 cold storage facilities plan to source from 2 260 small-scale suppliers annually. • Conservation agriculture: about 400 adopters, each assumed to manage at least 10-ha agricultural land. • Greenhouses ((1000 m2 and 300 m2): about 70 entrepreneurs.	Identification of primary beneficiaries was completed during project design. The final selection of beneficiaries will be carried out by RKDF (Executing Entity and Co-financier of the Project) under the oversight of AE (FAO), reviewed by the Project Steering Committee and finally confirmed by AE during the project implementation. Contractual agreements required for co-financing contribution by selected beneficiaries will be signed by: a) SAEPF and ARIS for the activities on forest land and rangeland; and b) SAEPF, ARIS and FAO for the other co-financing contribution.

	• Beekeeping, broiler and turkey raising: about 220 households / entrepreneurs.	
Agribusinesses participating in the project supported value chains benefitting of Activity 3.1.3 ("End-borrowers")	The main selection criteria for the entrepreneurs beneficiaries ("End-borrowers") benefitting from RKDF-financed loans will include low carbon footprint, market potential, financial viability, environmental sustainability and raw material sourcing area within the core Project Area, as further developed in paragraph 127 above . While the project will prioritize entrepreneurs from the selected 4 districts of the Project Area, the project cannot exclude that it may include also entrepreneurs from other areas (the total number of entrepreneurs beneficiaries will be 150). The selection criteria for "external" entrepreneurs will be as defined above plus the level of business linkages with the Project Area. For the avoidance of doubt, selected external entrepreneurs are also End-borrowers.	The final selection of entrepreneurs beneficiaries ("End-borrowers") will be carried out by the Executing Entity (RKDF) under the oversight of FAO, reviewed by the Project Steering Committee and finally confirmed by AE during the project implementation. Contractual agreements with selected End-borrowers will be signed by RKDF or local commercial banks accredited by RKDF (including beneficiaries' co-financing contribution).

C.4. Background Information on Project / Programme Sponsor (Executing Entity)

130. Ensuring Country Ownership, the project will be co-executed by FAO (which will also have a coordinating role as Accredited Entity, providing quality assurance to the overall implementation of the project activities), SAEPF and ARIS. A detailed description of the roles and responsibilities of the EEs in included below:

131. The State Agency for Environment Protection and Forestry (SAEPF) under the Government of the Kyrgyz Republic is responsible for the formulation and implementation of policy around environmental protection, preservation of biodiversity, sustainable use of natural resources, development of forestry and hunting enterprises, and ensuring the ecological security of the State. The major tasks of the SAEPF are to develop and implement policy; oversee state control of the implementation of legislation, protection, and use of natural resources; undertake inventory and assessment of natural resources; and disseminate information about the environment. As such, the SAEPF acts as the National Designated Authority (NDA) at the GCF, and works in close cooperation with other sectorial ministries in order to integrate climate change considerations in the country's development strategy.

132. The Kyrgyz Republic's Community Development and Investment Agency (ARIS) was established in October, 2013 as a non-commercial organization. The supreme body is Supervisory Board with 21 members. ARIS mission is to support sustainable poverty alleviation by providing assistance to local communities and local self-governmental bodies in resolving local social and economic problems by strengthening their capacity in determining and prioritizing local issues, developing investment and action plans, mobilizing resources, as well as developing, implementing and managing investments aimed at resolution of local priority issues.

133. ARIS operates in accordance with the following principles, including: (a) autonomy; (b) impartiality; (c) involvement; (d) management; (e) transparency; (f) cost effectiveness; (g) decentralization; (h) sustainability of sub-projects/micro-projects; (i) environmental conscience.

134. FAO has extensive experience in supporting countries in the fields of Climate Change Adaptation and Mitigation, Resilience Building and Disaster Risk Management. Having under implementation more than 138 climate and resilience projects worth over US$ 600 million, the Organization has the experience and technical capacity to manage the requested grant and to properly support Kyrgyzstan where it is already actively supporting the State in adapting to climate change with over US$ 20 million already mobilized to green its main value chains.

135. FAO has collaborated with Kyrgyzstan since 1993, when the country joined the Organization. First opened in 2009, the Country Office was upgraded in 2012 and a FAO Representative appointed in 2014. Technical expertise provided by FAO covers the agriculture sector, including crop, livestock and fisheries projects and support to sustainable land and forest management in the face of climate change. The FAO assistance in Kyrgyzstan is planned around the 2018-2022 FAO Country Programming Framework (CPF), with climate change adaptation and mitigation as key strategic elements.

136. Through the FAO Investment Centre, the Organization is providing technical support to sizable investments by the World Bank and IFAD in the following areas, NRM (land, water, forest, and pasture), value chain (VC) development, livestock, community development and climate change adaptation. FAO is also active at the regional level where the Organization provides analysis and advice in policy reform for agriculture, land tenure and natural resources. The

Organization's technical assistance covers institution building, development of knowledge and competencies, and exchange of experience among countries facing the challenges of transition.

137. Currently FAO is supporting Kyrgyzstan with the GCF Readiness Program and with funds allocated by the GEF to address community based natural resource management in five oblasts of the Kyrgyz Republic. While the first is still in its starting up phases the second one has already passed its mid-term evaluation. Recommendation from the Mid-Term Review (MTR) have been discussed during national consultations and have highly considered in the development of the present concept. Additionally, FAO had been assisting SAEPF and the Ministry of Agriculture, Food Industry and Melioration since the country's independence and has sponsored key assessments and reports such as the Integrated Assessment of Natural Resources 2008-2010 and the National Forest Inventory of 2011.

C.5. Market Overview (if applicable)

138. **Non-timber forest products**. Natural, low sugar and safe products are the main trends in the international market supporting increasing consumption of edible nuts and dried fruit. The production starts to be stimulated by the growing demand for "healthy snacks", following natural processing methods (sun dried vs. industrial dehydration). Importantly, the role of traditionally dominating supplying countries is reducing as importers seek to diversify their sourcing options. In Kyrgyzstan, government and businesses have in general low awareness on the potential of NTFP. Globally, consumers – especially in Europe and North America – are increasingly aware of, and concerned by, the origins of the products they buy and the processes that go into producing them. They want to make responsible decisions about what they buy, weighing up social and environment credentials. Cosmetics, confectionary and healthy snacks are other potential markets for the Kyrgyz NTFPs (see FS for more details).

139. Thus, Kyrgyz exports of walnut in 2017 has reached 1 253 MT, 44 percent up compared to 2016, generating US$ 5.8 million. Thanks to several development initiatives launched by the donor community and the certification schemes such as FSC, Fair Trade, Organic and HACCP brought into the value chain as its critical element securing quality, sustainability and accountability, the average FOB price has doubled: from 2.6 US$/kg in 2016 to 4.6 in 2017. As walnuts exported to Turkey – main products exported in NTFP category – are then re-exported, mainly to EU, not carrying any information on their true country of origin, during last five years, Kyrgyz economy has "lost" US$ 14 million failing to valorize its unique offer: the Arslanbob walnut.

140. Narrowing down to the core Project Area, walnuts can be harvested on some 24 thousand hectares of forest. Fruit orchards occupy 838 ha of land with Suzak representing 51 percent, Ak-Taala 24 percent, and Uzgen – 21 percent. This area is specialized in apricot (fresh and dried) and plum (dried).

141. **Red meat market.** Exceptional palatability traits of Kyrgyz beef and lamb are valued by consumers in the Eurasian Economic Union countries, Islamic Republic of Iran, China and Gulf States. Export performance is, however, significantly lower than committed quantities as organizing batches of animals sourced from a multitude of unorganized small producers is challenging. Thus, out of 340 tonnes of mutton contacted by the Iranian buyers in 2017, Kirgizstan was able to supply only 11 percent. Direct linkages between farmers and agribusinesses coupled with efficiency gains through improved herd management, including intensification, are crucial to address the bottleneck on the supply side.

142. The main reason of such missed opportunity for export lies in the highly fragmented production structure: over 90 percent of livestock are owned by smallholders raising on average two heads of cattle and about 8 small ruminants. Such ownership limits investment and keeps livestock productivity low. In fact, large seasonal variations in animal body weights indicate that animal feeding is geared towards animal survival rather than commercial production. Nine animals out of ten are sold live in traditional animal markets. Informal marketing model is advantageous for intermediaries but leaves little (to zero) income to animal owners and limits modern meat industry development. Little to no profit on herder's side vs. generous margins of intermediaries discourages the participation of smallholders in the value chain and force them to increase their stock instead of investing in productivity.

C.6. Regulation, Taxation and Insurance (if applicable)

143. The total investment and incremental recurrent Project costs, including physical and price contingencies, are estimated at about US$ 49.59 million. For activities relating to procurement of services through FAO, according to Project Agreement signed with the Government of the Kyrgyz Republic, taxers are not applicable. Section 7 of the Convention on the Privileges and Immunities of the United Nations provide, *inter alia* that the United Nations and its subsidiary organs are exempt from all direct taxes, except for utilities services, and is exempt from customs duties and charges of a similar nature in respect of items imported or exported for its official use. For services and goods procured directly by the Government of Kyrgyz Republic implementing partners, then national procedures apply, which entail the payment of Domestic Tax (VAT) amounting to 12% where applicable. With respect to taxes that maybe levied on any form of expenditures to be made out of the GCF Proceeds for the financing of the Project, the Accredited Entity shall apply the same treatment that it would apply to its own resources used for the same purposes, and make best efforts to obtain

exemptions from tax payments. In the event that the Project is not granted the relevant tax exemptions provided under the Project Agreement, any applicable taxes shall be borne by the Project and the GCF will not make additional contributions for payment of taxes.

144. The Project will not foresee any required licenses/permits/land right or rights in relation to land. For forestry, the project will invest only in state forests fund land or in municipal land. For rangeland rehabilitation, the project will support investments in private lands that are legally owned by beneficiaries and reported in the national cadastre, or in state land fund (including rangeland), regulated by the national laws. Investments under climate sensitive value chains will be private and on privately owned land. No specific permits are required for the activities of the project.

145. Any greenhouse gas emission reductions achieved will be treated in accordance with Clause 23.05 of the Accreditation Master Agreement (AMA) with FAO. CO_2eq emission reduction will be treated as public good, monitored by the project and by the national authorities and reported to UNFCCC as part of regular reporting under INDCs.

C.7. Institutional / Implementation Arrangements

146. **Overall governance.** The governance and institutional arrangements proposed in this section are fruit of discussions and agreement with the selected project operational partners and co-financiers, including the SAEPF, ARIS, MAFIM and the Russian Kyrgyz Development Fund (RKDF). The CS-FOR project will be implemented under the overall political direction and guidance of the Climate Change Coordination Commission (CCCC), the national institution responsible for climate change, chaired by the First Vice-Prime Minister of the Kyrgyz Republic, with the Director of the SAEPF as the Deputy Chair. The CCCC ensures multi-sector coordination of all activities in the Kyrgyz Republic related to climate change, and is comprised of the heads of all key ministries and divisions, and representatives of the civil, academic and business sectors. By establishing the CCCC at the level where it has convening power, the Kyrgyz Government intends to make climate change an intrinsic part of economic development. The Commission is already operational and has a mandate to coordinate climate change activities across sectors and projects in Kyrgyzstan (see CS-FOR organization structure in Figure C.7.1). The GCF Accredited Entity of the project is the Food and Agriculture Organization (FAO). During the country consultation process, SAEPF, ARIS and FAO Country Office were identified primarily as multiple Executing Entities that ensure the execution of the GCF project under the strong country ownership. The project beneficiaries will be Leskhozes, national parks, local self-government bodies, community organizations, private sector in the Project Area, as listed in detail in Table C.3.1. The co-financers of the project are SAEPF, RKDF, the Ministry of Agriculture, Food Industries and Melioration (MAFIM), ARIS, Beneficiaries and FAO.

Project Steering Committee - country ownership of decision-making process

147. The CS-FOR will establish a National Stakeholders Platform (NSP) under the CCCC (coordinating with all ongoing efforts to ensure stakeholders coordination under the Readiness programme), acting as **Project Steering Committee (PSC)** that will be providing policy and operational guidance to the project's implementation. The PSC will meet on a biannual basis unless there are issues to be discussed in between meetings. The PSC will be integrated and include by decision-making officials, appointed as focal points by partner institutions to guarantee the country driven decision-making processes to achieve the GCF project target: SAEPF, Climate Finance Centre (CFC), ARIS, RKDF, MAFIM), the Pasture Department (under MAFIM), State Agency for Local Self Government and Interethnic Relations (SALSGIER), the Ministry of Emergency Situations (MES), Kyrgyz Hydromet (under MES), the State Registration Agency, and the FAO Representation in Kyrgyzstan. There will be also selected representatives of the civil society and private sector (women and men) participating as observers in the PSC/National Stakeholders Platform. Representatives of beneficiaries such as participating communities/CLMGs will be observers of the PSC and will be invited to the meetings of their special interest and concern.

148. The PSC functions will: (i) ensure the quality of results, and the sustainability and impacts of the project in line with the policy direction; (ii) approve the Annual Work Plan and Budget (AWPB) to be sent to FAO; (iii) approve six monthly project progress reports to be sent to FAO; (iv) approve adjustments to the distribution of budget between items on the basis of information provided by the Project Management; (v) approve proposals of adjustments to indicators and the targets of results and outputs, based on information provided by the Project Management Unit; (vi) approve possible modifications to the project implementation agreements; and (vii) invite competent professionals to participate in PSC meetings, in accordance with the issues under consideration. The PSC will also support project's activities by promoting results and approaches within the Government and ensuring mainstreaming among political decision makers.

Project execution

149. Ensuring the country ownership, the project will be primarily co-executed by SAEPF, ARIS and FAO-KG (which will also have a coordinating role as Accredited Entity, providing quality assurance to the overall implementation of the project activities). Additionally, the Russian Kyrgyz Development Fund (RKDF) will manage and oversee the loan fund (Section B.1) under Component 3 as an Executing Entity. SAEPF will be an Executing Entity of the project and host a PMU to be located under SAEPF headquarters. SAEPF will be in charge of operationalization of PMU and achieving results under selected outputs and activities (or parts of them), where SAEPF holds the highest comparative advantages. ARIS, an

Executing Entity of the project, will be in charge of ensuring coordination of planning and in the execution of project activities where ARIS holds highest comparative advantages. SAEPF and ARIS will be executing the project activities under FAO's legal agreement instruments such as Letters of Agreement (LOA) and/or the Operational Partner Implementation Modality (OPIM) according to the rules and regulations of FAO.

150. The project will be jointly executed by a Project Management Unit under SAEPF, in coordination with FAO-KG (as Executing Entity for quality assurance), ARIS (as Executing Entity including local coordination function) and RKDF[53] according to the respective areas of expertise. FAO will involve national Executing Entities (SAEPF and ARIS) under the Operational Partner Implementation Modality (OPIM) according to FAO's rules and regulations for the Project. OPIM provides a framework for informed decision-making on the engagement of FAO in partnership arrangements. Such setup will support strong country ownership and execution of the project but also serve the capacity development objectives of the project.[54] In order to ensure SAEPF and ARIS' capacity to implement the project as identified potential executing entities, FAO has commissioned an independent Operational Partners' assessment covering their programme, financial and operations management policies, procedures, systems and internal controls. The assessment reported an overall low risk, with moderate risks in procurement procedures. Based on the risk levels of the assessment results, FAO will mitigate potential risks by carefully selecting the scope of executions and identifying e.g. low risk procurement procedures based on the type and amount of goods and service contracts. Additionally, FAO will also support in strengthening the execution capacity of partner executing entities through the Operational Partners Agreement, to be signed between FAO and the respective Executing Entity.

151. In its role of Accredited Entity, FAO will maintain overall accountability on the project implemented by the OPs, and will perform independent audits and spot checks, besides retaining a role of executing entity for quality assurance throughout the project. FAO will organize spot checks and audits of the OPs during the implementation of the Project under OPIM. Independent spot-checks and audits for OPIM will be performed subject to the standards, scope, frequency and timing as decided by FAO in accordance with FAO's relevant rules. Audits will cover financial transactions and internal controls related to the activities implemented by the OPs, which shall include verification to ensure that the OPs' expenditures comply with the eligibility requirements applicable to the OPs.

152. **The Project Management Unit (PMU)**. Within the above framework, the CS-FOR will establish a Project Management Unit (PMU). The PMU will be physically located under SAEPF headquarters. The PMU will be responsible for day-to-day project management, providing human resources management, financial and procurement services, coordinate the project activities, generate work plans and prepare reports. The PMU will be established within SAEPF and will coordinate with ARIS, MAFIM, RKDF and FAO will be responsible for overall management, supervision, guidance and technical support.

153. The PMU will be headed by a Senior International Technical Adviser for forestry, rangeland and governance to be recruited by the project. The Technical Adviser will have overall responsibility for preparing the annual work plans and budgets, technical documents for procurements, terms of references of technical experts, clearing them with FAO, the OP and the donor and obtaining Steering Committee clearances. The Adviser will also have overall responsibilities of capacity development of OPs' and of PMU's staff and consultants on technical and managerial aspects (including facilitation for procurement and financial, human resources and quality assurance for overall project implementation). The Technical adviser will be supported by the PMU staff, including a Project Coordinator, in charge of the day to day management of the project and coordination between all operating partners and project stakeholders, supported by a Financial Specialist, a Procurement Specialist, an M&E team leader, a secretary and a driver. The team will facilitate administrative functions and provide support to the technical teams visiting the project on a regular basis to support operations in the districts and in Bishkek. The M&E and Planning team leader, under the overall supervision of the Project Coordinator (see functions described in Chapter 5 of the Feasibility Study), will be in charge of the overall planning, M&E and learning process of the project, and will coordinate a team of technical experts (part of the Expert Group – see functions described in Chapter 5 of the Feasibility Study) composed of a M&E specialist, a GIS specialist and a Communications expert. The Gender and Social Expert and Safeguards Specialist are also part of the Expert Group. The PMU will also liaise with ARIS, RKDF and MAFIM to ensure coordination of planning and in the achievement of the project's results, and with FAO for technical assistance and support in execution. See PMU structure in Figure C.7.1 below.

154. **SAEPF**: is a State agency under the Government of the Republic. SAEPF is a separate legal entity under the Act of Government of the Kyrgyz Republic No. 123 dated 20.02.2012. Currently, SAEPF is implementing a number of projects, including the WB/GEF funded Integrated Forest Ecosystem Management Project (IFEMP), total amount of which is US$ 12 million, scheduled to be completed in September of 2021. For implementation of this project, SAEPF has established a Project Management Unit (PMU), which includes a Coordinator, Financial Management Specialist, Procurement Specialist, M&E Specialist, and Forestry Expert. Such PMU has been trained and it is fully equipped to undertake complex procurement, disbursement, and financial management tasks.

[53] RKDF will not receive funds from the GCF or others, but it will execute the activities funded with their share of co-financing.
[54] The OPIM is described in the FAO Manual Section 701.

155. In addition to the overall responsibility of the project coordination, the PMU located in SAEPF will be in charge of achieving results under selected outputs and activities (or parts of them), where SAEPF holds the highest comparative advantages. It will be supported by technical assistance provided by FAO in the form of FAO expert or international/national consultants or partners and service providers of its trust. More specifically, the PMU's responsibility will include the achievement of results under Component 1, and parts of Component 2. In its role as EE of CS-FOR, SAEPF will provide staff time and office/conference spaces to support project implementation. This will constitute co-financing to project implementation.[55]

156. The separation between SAEPF's NDA role and its execution role in CS-FOR implementation will be guaranteed by a fully-fledged CS-FOR PMU, operating under the aegis of the CCCC and of the Project Stakeholders Committee, where SAEPF is a member together with all relevant government and non-government institutions.

157. The result from independent Operational Partners' assessment can highlight some capacity baseline of SAEPF for executing the project (see Annex 4.b). The assessment, for example, suggests that the project ensures adequate staffing structure for the volume and complexity of operations. SAEPF will be executing the project activities under a legal agreement between FAO and Execution Entity (e.g. Letter of Agreement, Operational Partners Agreement (OPA) under OPIM) or any formal agreement that needs to be applied under the current FAO rules and regulations based on the risk classifications suggested by the Operational Partners assessment.

158. **ARIS**: was established in October, 2013 as a non-commercial organization and has a separate legal entity. The supreme body is Supervisory Board with 21 members. ARIS mission is to support sustainable poverty alleviation by providing assistance to local communities and local self-governmental bodies in resolving local social and economic problems by strengthening their capacity in determining and prioritizing local issues, developing investment and action plans, mobilizing resources, as well as developing, implementing and managing investments aimed at resolution of local priority issues. ARIS operates in accordance with the following principles, including: (a) autonomy; (b) impartiality; (c) involvement; (d) management; (e) transparency; (f) cost effectiveness; (g) decentralization; (h) sustainability of sub-projects/micro-projects; (i) environmental conscience.

159. ARIS will be executing the project activities with a legal agreement with FAO under an OPA as Operational Partner under OPIM or any other applicable legal instrument according to the risk classification suggested by the Operational Partners assessment.

160. ARIS will be in charge of achieving the agreed results related to the project activities where it holds highest comparative advantages. This will comprise Component 1; parts of Component 2; and parts of Component 3. Under FAO rules and procedures and in conformity with this project document, any legal/formal agreement with FAO and the Annual Work Plan and Budget (AWPB), the Project Coordinator will identify expenses and disbursements that should be requested to FAO for the timely execution of the project as well as timely reporting to the PMU in the format and with the information requested. In its role as EE of CS-FOR, ARIS will provide its structure of central and decentralized officers and offices to support the implementation of the activities, which will constitute a co-financing to the project implementation.[56]

161. MAFIM will be involved to implement specific outputs via a Letter of Agreement.

162. Other government and non-government entities will be involved through Letters of Agreement (LOA) while commercial service providers through other forms of procurement.

163. **RKDF:** As a main co-financier of the project, RKDF will coordinate with the PMU and ARIS to ensure the timely delivery of the loans envisaged under Component 3 and will be in charge of the overall monitoring of the financial aspects of the related loans. It will ensure that the monitoring reports are available at the time and using the format requested by the PMU. In its role as co-financier of CS-FOR, RKDF will provide its structure of central and decentralized officers and offices to support the implementation of activities, thereby constituting co-financing to the project implementation.[57]

164. RKDF was established in late 2014 as an international organization per the Agreements between the governments of the Kyrgyz Republic and the Russian Federation "On the development of economic cooperation in the conditions of Eurasian economic integration" and "On the Russian-Kyrgyz Development Fund". The capital of the Fund is US$ 500 million. RKDF provides both direct funding to Kyrgyz medium-sized and large enterprises (with loans starting from US$ 1 million) and indirectly through commercial banks to smaller enterprises (loans below US$ 1 million). RKDF lends to all economic sectors and as of April 2018, has funded 926 enterprises for a total amount of over US$ 275 million. Agriculture is one of the key focus areas for RKDF: it takes the first place in terms of the number of loans (338 out of 926, or 36.5 percent) and second in terms of the volume of funding (over US$ 64 million, or 23 percent). In 2016, RKDF has partnered with International Fund for Agricultural Development (IFAD) to provide loans to agricultural producers and processors identified and assisted through IFAD's "Access to Markets Programme" in Kyrgyzstan, to be launched later in 2018.

[55] A SAEPF co-financing letter of intent is annexed to the Funding Proposal.
[56] A letter of intent for co-financing signed by ARIS is annexed to the Funding Proposal.
[57] The RKDF co-financing letter of intent is annexed to the Funding Proposal.

165. The RKDF will provide a credit line through local commercial banks that already reach out to the project target areas. Initially, 5 commercial banks will participate in the disbursement of the credit line (listed alphabetically): (i) Ayil Bank; (ii) Bank Kyrgyzstan; (iii) BTA Bank; (iv) Kompanion Bank; and (v) RSK Bank. These pre-identified five commercial banks have already been accredited by RKDF. They will be sub-contracted by RKDF in the Project and the selection process and decision making of the loans will be carried out by the Executing Entity under the oversight of the Accredited Entity. The project will work in close collaboration with RKDF and the partner banks to identify prospective beneficiaries within the eligible value chains and ensure the complementarity of the technical assistance provided under Component 3 and the related credit resources. This senior loan input will follow the grant inputs considered under Component 3 sequentially as a co-financing of the grant component.

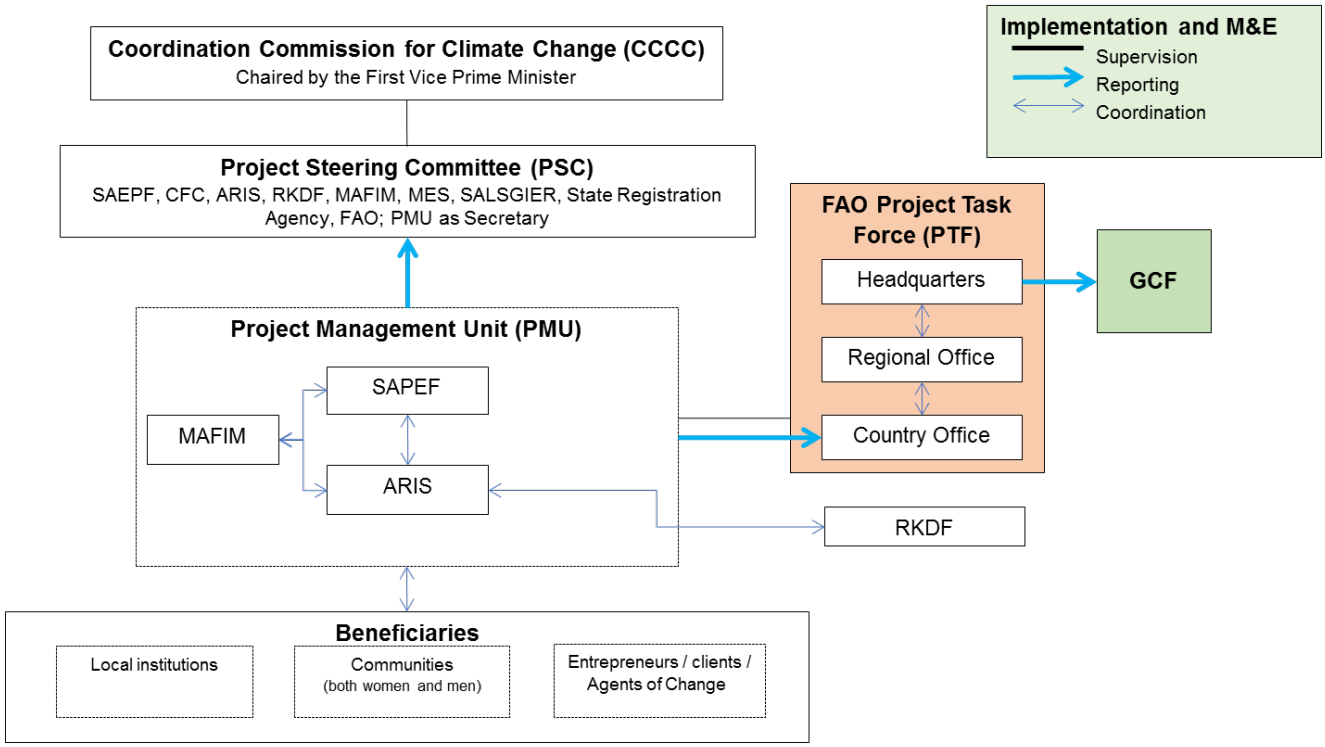
166. FAO has been creating an enabling environment for RKDF through a FAO technical cooperation project TCP/KYR/3701/C1, “Institutional and technical support to the Russian Kyrgyz Development Fund of Kyrgyzstan”. The project assists the RKDF and its implementing partners (e.g. Regional Consultation Centers and intermediary banks) in the following: (i) increase awareness in rural areas about the RKDF and its financial products with the purpose of enhancing access to such products for agricultural producers; (ii) enhance technical capacity of the RKDF and its implementing partners to effectively evaluate potential business proposals and applications submitted by agricultural producers. It is envisaged to ensure smooth involvement of RKDF to this project as an Executing Partner but also as a co-financier.

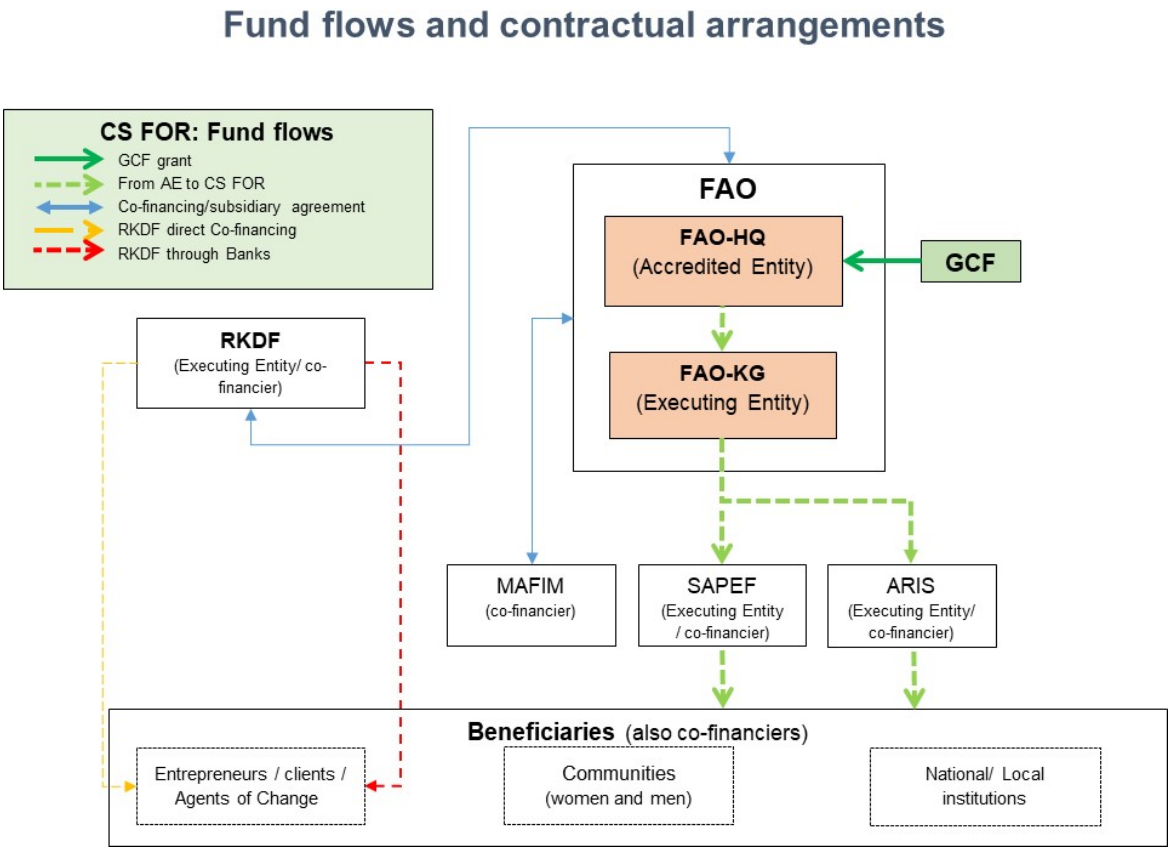
167. **The Food and Agriculture Organization (FAO):** will serve both as **GCF Accredited Entity**, being responsible for supervising the project; and as **CS-FOR Executing Entity**, providing quality assurance and technical assistance during project implementation. **The independency of the two roles** will be guaranteed by establishing two separate functions as follows:

A. **FAO as Accredited Entity**. The FAO’s supervising role will be attributed to the FAO Regional Office for Europe and Central Asia (REU, located in Budapest) with support by the FAO Climate, Biodiversity, Land and Water Department (CB, located in Rome) and other technical divisions as required. In order to fulfil this function, a specific **project supervision team** will be established, including FAO staff from REU, CB and other technical divisions. A Lead Technical Officer will be appointed in the regional office, coordinating the supervision functions. The separation from the role of executing entity will be ensured by the establishment of: (a) regular system of approval of Annual Work Plan and Budget – exercised by the Lead Technical Officer (belonging to REU) and the members of the Project Task Force, composed of FAO technical staff; (b) regular independent supervisions of the project activities throughout the project intervention, ultimately to ensure that the project management takes corrective measures if and when required, and (c) through the evaluation functions carried out by the FAO Office of Independent Evaluation (in Rome) at mid-term and final stage. More specifically, the **FAO Lead Technical Officer (LTO**) will have overall technical responsibility of the project implementation. The role of the LTO is central to FAO’s comparative advantage for projects and to separate the functions of FAO in its role as Accredited Entity and as Executing Entity. The LTO will oversee and carry out technical backstopping to the project implementation. The LTO will support the Budget Holder (BH) in the implementation and monitoring of the Annual Work Plan and Budget (AWPB), including work plan and budget revisions. The LTO is responsible and accountable for providing or obtaining technical clearance of technical inputs and services procured by the Organization. In addition, the LTO through supervision missions (she/he may call other experts to participate and advise) will provide technical backstopping to the Project Team to ensure the delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical support from the PTF to respond to requests from the PSC.

B. **FAO as Executing Entity**. Within its CS-FOR Budget Holder functions, **the FAO Representation in Kyrgyzstan** (FAO-KG) will be in charge of the execution of selected activities and of the contractual agreements with the executing entities (see below, SAEPF, RKDF and ARIS). A **project delivery team** will be set up in FAO-KG, comprising staff covering all functions relevant to the execution of the envisaged activities. More specifically, following the principle to ensure the highest level of ownership and sustainability of the project investment at country level (i.e., within local institutions), FAO-KG’s role in CS-FOR will be **limited to the provision of quality assurance** throughout all project components, to enhance the success of the project and its potential replicability, and to **ensure coordination with SAEPF and ARIS as Operational Partners and RKDF as co-financier/ executing entity** in charge of specific activities. Technical assistance will be provided by mobilizing FAO experts, or FAO supervised consultants and service providers. FAO’s mandate as a global stakeholder in the field of agriculture, forests and rangeland management, and climate change, and its related expertise represents a comparative advantage in providing technical assistance and quality assurance.

Figure C.7.1 - CS-FOR - Project organization structure and project cash flow





168. The FAO Kyrgyzstan Country Office has all the required expertise and capacities to undertake the roles and responsibilities described above (as AE and EE). The current structure comprises six Regular Programme staff posts that are filled, as well as FIRST Policy Officer and Junior Social Protection Officer. The Representation regularly employs a number of consultants and other Non-Staff Human Resources (NSHR). As of October 2018, there are 67 National Project

Personnel (NPP) and Personal Service Agreement (PSA) holders working within TCP and TF projects, out of which 10 are administrative covering all projects. The current field programme in Kyrgyzstan consists entirely of nonemergency developmental activities, mainly funded by Trust funds and TCPs (10-Country projects and 8-Global, regional, sub-regional projects).

169. Implementation of project activities at the field level will be undertaken by responsible entities with project entities. The above-mentioned entities have different roles and responsibilities for project components. Table C.7.1 summarizes the roles and responsibility of entities at activity level.

170. **Contractual arrangement with beneficiaries**: Under Component 1 and 2, contractual agreements required for co-financing contribution by selected beneficiaries will be signed by: a) SAEPF and ARIS for the activities on forest land and rangeland; and b) SAEPF, ARIS and FAO for the other co-financing contribution (see Table C.3.1 for detail). Under Component 3, identification of primary beneficiaries for Activity 3.1.1 and Activity 3.1.2 was completed during project design. The final selection of beneficiaries for Activity 3.1.1 and Activity 3.1.2 will be carried out by RKDF (Executing Entity and Co-financier of the Project) under the oversight of FAO, reviewed by the Project Steering Committee and finally confirmed by AE during the project implementation. Contractual agreements required for co-financing contribution by selected beneficiaries will be signed by: a) SAEPF and ARIS for the activities on forest land and rangeland; and b) SAEPF, ARIS and FAO for the other co-financing contribution (for Activity 3.1.1 and Activity 3.1.2). For Activity 3.1.3. The final selection of “End-borrowers will be carried out by RKDF under the oversight of FAO, reviewed by the Project Steering Committee and finally confirmed by AE during the project implementation. Contractual agreements with selected End-borrowers will be signed by RKDF or local commercial banks accredited by RKDF (including beneficiaries’ co-financing contribution).

Table C.7.1: Summary of activity-level responsibility of executing entities

Name of Executing Entity	Activity-level responsibility
FAO Representation in Kyrgyzstan (FAO-KG	Activities 1.1.2; 1.1.3; 1.1.4; 1.1.5; 1.2.1; 1.3.1; 2.1.1; 2.1.2; 2.1.3; 2.1.4; 2.1.5; 3.1.1; 3.1.2; PMC
SAEPF	Activities 1.1.1; 1.1.2; 1.1.3; 1.1.4; 1.1.5; 1.2.1; 1.3.1; 2.1.1; 2.1.4; PMC
ARIS	Activities 1.3.1; 2.1.3; 2.1.5; 3.1.1; 3.1.2; PMC
RKDF	Activity 3.1.3

C.8. Timetable of Project/Programme Implementation

Note: see Annex 7: Timetable of Implementation.

D.1. Value Added for GCF Involvement

171. Kyrgyzstan is a lower middle-income country. The country's exposure to climate change risks is among the highest in Central Asia, ranking third on the World Bank simplified vulnerability index (World Bank, 2013). According to both internal documents and published literature, the rural poor are the least resilient and most exposed to natural disasters triggered by climate change (see Chapter 1 of the Feasibility Study). The exposure to climate change risks is closely tied to the high dependency rural people have on natural resources and ecosystems that support their livelihoods, principally including Kyrgyzstan's pastureland and forests. These same ecosystems constitute important stores of sequestered carbon in the form of soil organic matter in pasturelands and above ground forest biomass, with the ability to absorb and store significant amounts of additional carbon. By assisting the country to make significant progress towards meetings its INDC targets under the Paris Agreement, this investment will initiate a series of reinforcing, coordinated actions that will lead to the sequestration of 19.8 million tCO_2eq, or 22.6 percent of the agricultural share of emissions. The highest carbon sinks will result from the grassland management (-14,923,368 of tCO_2eq) followed by forest management and degradation activities (-3,479,418 of tCO_2), perennial system (-873,500 tCO_2eq, 1,117,520 tCO_2-e taking into account carbon sequestration from the conversion of degraded land to perennial system), afforestation activities (- 729,608 tCO_2eq), and livestock management (-149,545 tCO_2eq). Agricultural inputs are a minor source of GHG (160,958 tCO_2eq).

172. The current level of forest degradation under BAU scenario generates an estimated net loss of 1.5 m tCO2eq in 20 years; through the combined effect of the various interventions, the project will be able to avoid the mentioned losses and to generate an additional over 18 m tCO2eq sequestration (15.1 rom rangeland and livestock, 2.9 from forest activities and 0.2 from other agricultural activities), for a net effect of 19.8 m tCO_2eq sequestered. Such expected sequestration (4.2m tCO2eq) is composed of: (i) 0.7 m tCO2eq from afforestation and reforestation, and forest enrichment; and (ii) 3.5 m tCO_2eq from improved forest management of the existing forests. The EX-Act LUC calculations are based on current degradation trends, showing 25% of the forest as largely degraded, 15% as moderately degraded and 60% as non-degraded. The potential net sequestration calculation is based on the current trends (showing substantial degradation).

173. The carbon sequestered will be achieved at a low cost of US$ 2.5 per tCO_2eq (or 1.5 US$ per tCO2eq considering GCF financing only). Of equal or greater importance, the design of this investment is intended to put Kyrgyzstan's agricultural sector on a net low-CO_2 pathway by harmonizing national policies and strategies and establishing national capacities to introduce and support innovative practices that lead to the sequestration and safeguarding of carbon stocks as described in Section C. Given the country's economic standing, these achievements would likely be much delayed, if forthcoming at all, in the absence of catalytic financing from the GCF. One of the main and most innovative elements of the project is the development of green value chains under component 3. The Component co-financed by RKDF will ensure the sustainability of the investment in carbon sequestration carried out in Component 2 and will create economic opportunities with limited risk, in order to decrease pressure on land degradation of natural resources in the project intervention areas, this will result in important contributions to enhanced resilience of target communities.

174. The shortage of domestic resources for internal investments in the agricultural sector overall is evidenced by the country's debt rate. Despite a sharp decline of external public debt in 2016 (expected to reach 54.5 percent of GDP in 2017), the Kyrgyz Republic is still considered at moderate risk of debt distress. The current national debt rate will also affect targeted investments into climate change mitigation and adaptation actions. As reported by OECD (2016) the level of climate finance made available for Kyrgyzstan, as well as the committed finance "per capita," is considerably lower than the average in Central Asia (US$ 10.3 per person vs US$ 33.2 per person). To date, the largest amount of climate-related development financing has been directed towards the energy sector (mostly hydropower), with very limited support given to forest and rangelands improvement. The actions detailed in this proposal fill an important gap, directing additional resources to areas of high potential gains in carbon sequestration and storage. GCF involvement is critical to initiate a national transition in forest and rangeland management from a business as usual scenario leading to further resource degradation and carbon loss, to a more carbon-rich agricultural rural economy. Investments in mitigation efforts to enrich the carbon stocks of the country's most vulnerable agricultural systems will simultaneously deliver important co-benefits of enhancing the resilience of those ecosystems to climate change stresses as well as the communities that directly depend on these resources for their livelihood (65 percent of the population).

D.2. Exit Strategy

175. The continued delivery of benefits from activities initiated under the CS-FOR project will be sustained beyond the investment period by four critical elements, as follows:

- **National ownership:** In preparing this funding proposal, the design team initiated an extensive national engagement process over a 15-month period. As a result, the proposal is fully aligned with the Kyrgyzstan's INDCs and national policies / frameworks, and the interests of those key actors necessary to the success of the planned activities and who helped to plan the investment. The process of inclusive engagement in project planning was pursued to ensure that a high level of felt ownership over the project and the supported activities was instilled from the outset. It is hoped that as a fully owned initiative the project activities will become deeply integrated into the work plans and mandates of the executing entities over the eight-year investment period, and that this will carry over into the post-investment period and subsequent cycles of activity planning. After the implementation of the project is finalized, the investment will be fully funded by the institutions and private sector actors involved (communities, private entrepreneurs, local banks, others).

  a. On the private sector's side, the loans generated by RKDF and de-risked by the project will act as a revolving fund for the local banks. The economic activities will be self-standing and the most successful investment and credit lines will be repeated by the banks even without RKDF senior loans.
  b. The project places substantial emphasis on strengthening capacities of institutions and individuals (at all level) while at the same time working on the enabling environment (policies and regulatory framework). The use of free tools for NR and climate monitoring (Collect Earth, Earth Map, and the support to the network of agencies using sat imageries) will ensure institutional and implementation sustainability. The project will upgrade existing systems, for example, the geo-referenced monitoring and evaluation system (Output 1.2) instead of installing new systems. The operation and maintenance of such large system has already integrated as a part of government structure. Accredited Entity will follow the standard handover procedure of project assets accordingly.

- **Economic rationale:** In order to reduce forest and pasture degradation and to change the behaviour of keeping an alarming number of unproductive animals as a source of cash income for safety net, communities need a parallel path towards increased efficiency and productivity of the livestock production system along with a progressive continuous creation of alternative (to livestock) income opportunities able to offer at least the same incentives for economic return (e.g., orchards and high value non-timber forest products). This shift will not only reduce the pressure on resources (increased carbon sink and enhanced ecosystem benefits) but also reduce emissions (as more productive animals raised using good practices emit less). The overall impact of agricultural investments is generally dependant on high levels of adoption and sustained use of new practices and technologies by targeted farmers / pastoralists. For resource poor farmers the potential for significant financial gain and increased control over critical assets are among the most powerful motivating forces leading to behaviour change. In response, the project has carefully selected supportive activities that respond to the self-interests of farmers / pastoralists and other key target groups within selected value chains to stimulate high adoption rates and sustained action. The results of the financial and economic analysis show solid positive returns on the investment, affirming the selection of value chains. In the case of investments in the high mountain forest areas a social value of carbon sequestration was calculated, rather than direct monetary returns, to show their value in contributing to the national INDC targets. By working with the banking sector, with support from the Russian Kyrgyz Development Fund, and providing technical assistance to enhance the credit worthiness of select value chain enterprises, the project will further leverage the self-interest of these businesses that will long out live the investment period of the project.

- **Future expansion**: An important outcome of the engagement process used in preparing the CS-FOR proposal, was the expressed interest on the part of key governmental agencies implementing the project, and other stakeholders, for the continued and expanded use of the approaches presented here as part of an evolved national strategy involving carbon sequestration through integrated forest and pasture management. As the processes initiated through this investment are taken up and expand to a larger scale of implementation, they effectively make the transition from a (time-bound) project to a more permanent programme, creating momentum for planning, budgeting and accountability supporting the sustained maintenance and continued growth of the activities (see Section E.2.1 for further details). Moreover, the project's strategy for carbon

sequestration presents high potential for replication within other countries in Central Asia, where large portions of agricultural land are rangeland and the holding structure is similar.

- **Enabling Environment**: By targeting policy harmonization, and strengthening the capacities of key national and local institutions in the use of new approaches and tools, including local management groups, the project will significantly influence the policy and operational environment necessary to support effective implementation. These changes will immediately benefit the implementation of project activities and will equally support future efforts of expansion. In terms of maintenance, the proposed activities and use of new technologies will not increase operational costs of the institutions or beneficiaries involved. On the contrary, the planned changes will strengthen the effectiveness and efficiency of planning and management, increasing natural resource monitoring capacity and therefore decreasing the risks of ineffective expenditures and potential that negative effects of climate change occur without detection.

E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

176. The Kyrgyz Republic submitted its INDC (Intended Nationally Determined Contribution) in September 2015 Kyrgyzstan's INDC acknowledge the importance of addressing climate change and the challenges related to its impacts. The Country identified 6 main sectors with the highest vulnerability to climate change impacts and estimated the economic impact in over USD 1 billion[58]. The Country identifies adaptation and mitigation as main targets of its climate change strategies and identified the total cost required to adapt and mitigate in about USD 3 billion

177. The project will mainly contribute to the Paradigm Shift Objective of the GCF related to (i) Shift to low-emission sustainable development pathways, with co-benefits in the GCF objective related to (ii) Increased climate-resilient sustainable development.

- **Shift to low-emission sustainable development pathways**. According to the INDC document submitted by the Government of the Kyrgyz Republic, it was determined that the Kyrgyz Republic's contribution to mitigation will be to reduce GHG emissions in the range of 11.49 - 13.75% below business as usual (BAU) in 2030. Under international support, the Kyrgyz Republic could implement mitigation measures to achieve total reduction in the range of 29.00 - 30.89% below BAU in 2030. Projecting to 2050, the Kyrgyz Republic will reduce GHG emissions in the range of 12.67 - 15.69% below BAU. Additionally, under international support the Kyrgyz Republic could implement the mitigation measures to achieve total reduction in the range of 35.06 - 36.75% below BAU in 2050[59]. As detailed in this Funding Proposal, the project will support the reduction of emission and enhance carbon storage of about 19.8 million tCO_2eq. through: (i) the creation of legal and management enabling environments supported by an innovative evidence-based climate and natural resource planning and monitoring system; (ii) community-based investments in natural forest regeneration, sustainable forest management, afforestation and reforestation; (iii) rehabilitation of rangelands and prevention of further degradation; (iv) diversification of options for community livelihoods; and (v) reduction of emission intensity per unit of animal protein. The country will thus shift from a local economy that is currently negatively impacting on carbon storage potential of ecosystems (forest and rangelands) to a low-carbon emission economy where mitigation investments will trigger and enhance resilience of ecosystems as well as of communities that, in addition to provisioning ecosystem services, will also benefit from supporting and regulating services (e.g. improved climate regulation, flood regulation, soil retention, habitat provision). The project will measure its success by assessing the degree *to which it will have contributed to low-emission sustainable development*.

The current level of forest degradation under BAU scenario generates an estimated net loss of 1.5 m tCO_2eq in 20 years; through the combined effect of the various interventions, the project will be able to avoid the mentioned losses and to generate an additional over 18 m tCO_2eq sequestration (15.1 rom rangeland and livestock, 2.9 from forest activities and 0.2 from other agricultural activities), for a net effect of 19.8 m tCO_2eq sequestered. Such expected sequestration (4.2m tCO_2eq) is composed of: (i) 0.7 m tCO_2eq from afforestation and reforestation, and forest enrichment; and (ii) 3.5 m tCO_2eq from improved forest management of the existing forests. The EX-Act LUC calculations are based on current degradation trends, showing 25% of the forest as largely degraded, 15% as moderately degraded and 60% as non-degraded. The potential net sequestration calculation is based on the current trends (showing substantial degradation). Detailed information on the calculation methodology for emission reduction is included in Chapter 9 of the Feasibility Study (Annex 2).

- **Increased climate-resilient sustainable development**. Throughout the preparation of the project, the household survey has assessed the level of resilience of the target population (compared to a possible project expansion areas a control group). The approach used is the FAO-developed Resilience Impact measurement Analysis methodology (RIMA II), which allows to derive a *Resilience capacity index* tailored on the local vulnerability, focusing on explaining how certain households are able to better cope with shocks and stressors (i.e., natural hazards and climate change).[60] The analysis shows, and shows how **the control group is more resilient** with respect to the intervention group. Looking at the resilience structure matrix for the **intervention group, adaptive capacity is the**

[58] Assessment of economic losses is the lower bound, as a result of the specific national assessment methods. The revision of the methods is envisioned (INDC, 2016).
[59] The Government of the Kyrgyz Republic. Intended Nationally Determined Contribution to the UNFCCC. Submitted to UNFCCC in 2015.
[60] A Working Paper on Resilience Analysis is enclosed in Annex 9 of the Funding Proposal.

most influential pillar, **followed by access to Basic Services, Social Safety Nets and Assets**. For the control group **adaptive capacity is the main pillar, followed by Assets, access to basic services and social safety nets**.[61] For both the intervention and control groups, the importance of adaptive capacity is mainly driven by the **high level of education** (household head with university degree, which accounts for almost 25 percent on the final Resilience Composite Index (RCI) score) and the **diversification of income portfolios** (which account for almost 16 percent in the intervention group and 11 percent in the control group). These findings confirm the need for economic diversification as part of the adaptive capacity and help identifying priorities for investment in the country, including for partner organizations and parallel projects. It is noted that the CS-FOR project is complementary with the WFP-GCF adaptation project for the country. Through its evidence-based approach, the project will support the diversification of sources of rural income ensuring mitigation-oriented productivity with co-benefits for adaptation to climate change-related stresses and hazards through implementation of systematic INRMCRPs and related investments. The project will secure, mainstream and upscale the enabling environment for diversification, increase of efficiency and competitiveness by reducing dependency of communities on direct uses of resources (i.e., wood and pasture) and improving their livelihoods through benefits gained by improving ecosystem functions and diversification of livelihood opportunities for women and men. Ultimately, the experience of this project will serve as a driver for dissemination of good practice throughout the country, shifting national agricultural production from a predominantly unsustainable subsistence livestock production to a diversified and climate-sensitive value chain business-oriented economy. Through the mid-term and final assessment of resilience using the RIMA II approach,[62] the project will assess the degree to which it will have contributed to climate-resilient sustainable development. To this end, the project will assess the *degree to which it will have contributed to climate-resilient sustainable development.*

178. In addition, CS-FOR will contribute directly to SDGs 12, 13 and 15, and indirectly contribute to SDGs 1, 2, 5, 6, 8 and 11.

E.1.2. Key impact potential indicator

Provide specific numerical values for the indicators below.

GCF core indicators	*Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)*	*Annual*	*tCO_2eq -987,568 / year*
		Lifetime	*tCO2eq - 19,751,354 (20 years)*
	• *Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience);* • *Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)*	*Total*	*Direct beneficiaries: 432,450 individuals (7% of the country's population) of which 246,497 are women;* *Indirect beneficiaries: 540,563 (8% of the country's population) individuals of which 380,121 are women*
		Percentage (%)	8 percent of the population (equivalent proportion of women)

[61] The WP on Resilience in Annex 9 includes an appendix with all statistical references and details on tests used to check the significance of the results.
[62] The Resilience Impact measurement Analysis methodology (RIMA II) is described in Chapter 6 of the Feasibility Study. RIMA II is an innovative quantitative approach developed by FAO that focuses on explaining how certain households are able to better cope with shocks and stressors (i.e., natural hazards and climate change).

Other relevant indicators	While section H.1 reports the main GCF and project indicators a series of additional relevant sub-targets and indicators are available in the M&E methodology in Chapter 6 of the Feasibility Study (Annex 2). These will also serve to guide the M&E unit with its activities and reporting duties.

E.2. Paradigm Shift Potential

Degree to which the proposed activity can catalyse impact beyond a one-off project/programme investment

E.2.1. Potential for scaling up and replication (Provide a numerical multiple and supporting rationale)

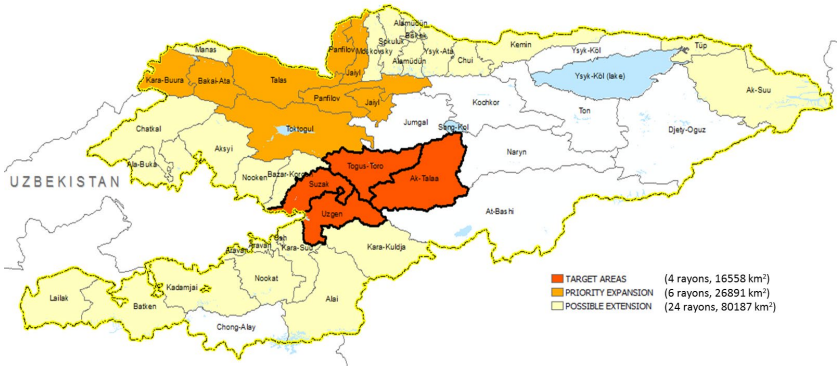
179. The major constraint to the increase of carbon sequestration and storage in forests and rangelands has been the expansion of pasture areas and use of traditional extensive grazing practices at the expense of protecting forest cover. These processes will likely continue in the absence of clear incentives for communities to preserve and expand forested areas and to limit and more intensively manage grazing lands. Moreover, the number of animals has been increasing. **The project intends to break these trends by introducing and supporting an integrated, locally determined, ecosystem management approach for rangeland and forest resources linked to profitable markets**. These measures will establish the preconditions for the maintenance and increase of forest cover and at the same time improve the ecological status of rangelands leading to greater carbon sequestration and storage, both in trees and pasture soils. By establishing linkages with market channels, the changes in management practices will benefit from and lead to more a diversified and profitable agriculture for beneficiaries in targeted areas. The potential for scaling-up of this paradigm shift introduced through the project is supported by the following combination of planned actions.

180. The harmonization of national policies and strategies affecting forest and grassland management (undertaken in Component 1) are, by definition, national in scope. Not only will the target areas selected by the CS-FOR project benefit, but the resulting clarification, refinement and coordination among these core planning frameworks, governance structures and enforcement protocols will establish the same enabling conditions nation-wide. As a result, future investments in the expanded use of the local planning processes, institutional support and service provision introduced through the project, will encounter a much more conducive policy and institutional environment, greatly improving the efficiency by which expanded actions can be undertaken. The investment on the enabling environment will result in the improved management of an estimated 56,359 ha of degraded forests resulting in the sequestration of about 3.48 m tCO_2eq. The improved enabling environment is also the condition to ensure the sustainability of the forestry and rangeland investment, whereby about 14.9 m tCO_2eq can be sequestered through improvement of rangelands in about 646,275 ha, 0.7 m tCO_2eq from afforestation / forest enrichment in 6,000 ha of degraded forests, about 0.5 m tCO_2eq from new orchards in about 3,100 ha and 0.1 m tCO_2eq from improved livestock management.

181. The design process has taken great care in bringing together key governmental agencies and coordination bodies, resulting in a self-identified set of clear roles and responsibilities for project implementation. The degree of authentic ownership that this approach has established is essential not only in ensuring a high level of performance during project implementation, but also serves as the basis and internal motivation for the continued and expanded use of the new, approach to local resource management leading to greater carbon sequestration. The incorporation of project activities into the regular annual work plans, and experiences gained through the project implementation period will be invaluable in helping to ‘normalize’ these activities as part of the implementing agencies’ vision and approach to resource management nation-wide while establishing a solid operational capacity in their use.

182. The assessments carried in the identification of the CS-FOR project target areas was conducted at a national scale. A by-product of this analysis was the identification and prioritization of expansion areas, using the same criteria employed in the selection of project target areas (see figure E.2.1). This additional step was undertaken to assist the implementing agencies in their progressive, expanded use of the resource management/carbon sequestration approaches introduced through the project. The remote sensing / GIS management tools being developed to assist with the project implementation and monitoring are fully designed for being used at increasing scales of application.

Figure E.2.1 Priority expansion area of the project



183. The engagement of private sector interests in key value chains in the design of the CS-FOR project is strategic and purposeful. Investments in strengthening key VCs, specifically nuts and dried fruits, establishes a virtuous cycle, rewarding participating beneficiary groups with ready, profitable markets for the produce generated through implementing their INRMCRPs, which in turn serves to reinforce the continued use of these plans that enable them to participate in new markets. The success of commercial enterprises in the targeted VCs also provides the motivation and strengthens their ability to expand into new geographic areas as the approaches introduced through the CS-FOR project also move into new locations.

E.2.2. Potential for knowledge and learning

184. Learning and knowledge management represents a paramount element of CS-FOR. The project will aim at transferring not only information and knowledge generated during execution of activities but also tools and skills that will support stakeholders in factoring in climate change into the decision making process (institutions and private sector) and into livelihood strategies (communities).

185. The project will ensure transfer of knowledge to stakeholders across the three project Components via trainings and knowledge sharing events identified on a yearly basis in the Annual Work Plan and Budget (AWPB) and described in each of the Components. To this end stakeholders' involvement from planning to monitoring will be among the main objectives of the project. Each of the identified Components will support the learning and knowledge management process with specific training targeting both communities and institutions. A key objective of the learning and knowledge management process is to mainstream NRM policy frameworks and climate change-related information to all stakeholders involved in project activities as well as to the wider public.

186. Additionally, the project foresees the organization of at least 5 engagement workshops per year (1 national and 1 per district) to enhance stakeholders' participation and exchange of information between communities and institutions as well as to create opportunities for local and international media to understand the project and report on its achievements. Finally, it will also allow a more stringent and precise follow up of the Environmental and Social Safeguards.

187. To ensure sound and effective management of learning and knowledge processes the project will hire a communication and Knowledge Management Specialist that will be assigned to the M&E unit of CS-FOR. The specialist will ensure – among the others - socialization of project's data and information, communication with the media, and coordination of the national engagement process. In addition, facilitating awareness campaigns (in Component 1) with wide outreach and in schools will increase the engagement including of younger generations.

E.2.3. Contribution to the creation of an enabling environment

188. The CS-FOR Project will pilot a collaborative resource assessment and develop Integrated Natural Resources Climate Resilient Management plans using remote sensing, climate maps and various zoning and stratification approaches. These plans will be developed with *Leskhozes*, local governments and Pasture Committees as the drivers of the process. The Project will develop and test implementation arrangements for INRCRMPs with the engagement

of the private sector and local communities. Improved governance of the pasture-forest ecosystem would create an enabling environment for private investments into afforestation. These approaches will feed into an improved policy and legal framework for managing rangeland-forest ecosystems. The project will also work with involved communities so to enhance livelihood strategies demonstrating with investments, training and communication campaigns that a climate adaptive management of natural resources is the best economic option to secure development and wellbeing.

189. The reforms conducted in pasture management of the SLF did not translate into any changes for the management of forests and their ecosystems. Regulation of management and use of forest and rangeland components of one ecosystem in two different sets of legislation has led to contradictions, created confusion on the ground, and most importantly translated into inefficient management, fragmentation and resource degradation. Several elements of good management of the SLF pastures could be adapted for the tenure of the forest lands to facilitate an integrated ecosystem-based approach.

190. The project will promote an approach to integrated forest and pasture management based on the following principles: (a) **Transparency:** Communities will be aware of rangeland-forest ecosystem resources and will participate in the development of INRMCRPs, which will be available to communities and the general public (displayed at local government bodies, online); **Participation:** Community Consultative Groups (CCGs) will be established at the local level (level of watershed or other appropriate to area of forestry enterprise) to participate in development of INRMCRPs; (c) **Accountability:** Accountability mechanisms will be developed for CLMGs to report to local communities on the planning and implementation of plans; (d) **Fairness/Equity:** The CS-FOR will develop recommendations for tenure arrangements for improved access and sustainable use based on climate resilience assessment and planning; (e) **Coordination**: Mechanisms will be established at the local and national level to ensure synergy amongst all related institutions under the Climate Change Coordination Committee (CCCC) and Climate Finance Center (CFC); and (f) **Capacity Development**: The CS-FOR will work with task forces to develop tools and methodologies and train stakeholders on community engagement, and on technical issues of planning and management of pasture-forest resources; local governments will be trained to mobilize communities for the development of INRMCRPs and will commit budget allocation for community participation.

E.2.4. Contribution to regulatory framework and policies

191. The CS-FOR will support the Government of Kyrgyzstan in pursuing ecosystem-based adaptation as declared in the “Climate Change Adaptation Programme and Action Plan for 2015-2017 for the Forest and Biodiversity sector”.[63] It will adopt a participatory, evidence-based approach to Kyrgyzstan’s most vulnerable mountainous areas, enabling national institutional capacity to be informed by evidence and lessons learned from the four large pilot areas. Strengthening the national institutional and legal framework for climate resilience will provide the umbrella for long-term transformational change. An improved framework will contribute to a more effective mainstreaming of climate resilience in vulnerable economic sectors, such as forestry and livestock, and enable lessons learned from the field to be progressively scaled-up. The project will integrate climate risk management into national and sub-national planning, thus seeking to change the long-term resilience of vulnerable populations, exposed assets and natural systems to climate stresses. It will introduce new approaches and technologies, including innovations in pilot areas. The four major priorities are to: (i) set up facilities and tools, and create capacities for assessing and forecasting availability and resilience of forest-rangeland resources using innovative technologies in line with climate change trends and risks; (ii) improve the planning process at the national and community level through stratification and zoning of forest-rangeland resources based on assessment and climate change trends; (iii) facilitate the creation of sustainable legal and institutional conditions, mechanisms and tenure arrangements for communities, local agents and private sector to access, use and improve forest-pasture resources, and to arrest degradation and stimulate investments in afforestation, resources improvement and maintenance; and (iv) establish mechanisms and arrangements for feeding climate change data and information into decision-making in all sectors of the economy.

192. The CS-FOR Project will dedicate the entire first Component of the project to ensure strengthening the enabling environment by accompanying national institutions, project stakeholders and civil society in harmonizing the policy and regulatory framework on natural resources management, planning, monitoring and evaluation. More specifically, through evidence-based, gender sensitive, participatory and inclusive processes for pasture-forest ecosystem management, Component 1 will contribute to harmonize strategies and legislation and to incorporate biodiversity and climate change mitigation issues. At national level, the project will operate through facilitation of informed policy

[63] Full document available here.

dialogue, combined with: (a) *ad hoc* technical studies; (b) the evidence generated by the investment in the four target districts and of similar operations in the country; and (c) the evidence from geospatial data and an improved methodology to monitor and assess pasture and forest degradation. At local level, the project will work with CLMGs, which would include member-based community organizations (e.g. PUUs, Forest Committees, WUAs), forestry enterprises and self-government bodies (ayil okmotu / municipalities) to develop integrated, gender sensitive, and adaptive INRMCRPs and monitor their execution. Through harmonization of forest-rangeland ecosystem policies, output 1.1 will aim to facilitate the creation of an enabling environment for carbon emission reduction from land use and opportunities for co-benefits for climate change adaptation. It will seek to support the government's vision of institutional reforms to strengthen the legal and institutional frameworks governing forests and rangelands resources. During the preparation phase, an evaluation of these frameworks identified key strengths and weaknesses and suggested some recommendations and options to strengthen these frameworks. Output 1.2 will support and enhance capacities of the existing monitoring units at the central level with Evidence-based Integrated NRM Planning, Monitoring and Evaluation tools and methodologies. The activity will be developed within the framework agreed by Kyrgyz institutions with the Kyrgyzstan National Spatial Infrastructure Memorandum of Understanding Target: central, local institutions, academia and CSOs. At local level, while supporting planning and negotiation of the INRMCRPs, output 1.3 will guide communities and local institutions in georeferencing and mapping their territory, its natural resources and livelihoods of residents. The activity will also act as on-the-job training and it will be an additional opportunity for communities to gradually contribute to governance of natural resources management. The activity will guarantee ground-truthing of geospatial analysis and GIS managed at the central level to guarantee monitoring of NR.

E.3. Sustainable Development Potential

Wider benefits and priorities

E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

193. The project will mainly contribute to the Paradigm Shift Objective of the GCF related to (i) Shift to low-emission sustainable development pathways, with co-benefits in the GCF objective related to (ii) Increased climate-resilient sustainable development. In addition, the project will generate a critical mass of additional co-benefits, as follows.

Environmental co-benefits

194. In addition to carbon sequestration, investment in afforestation/reforestation and forest enrichment will contribute to improved soil fertility and stability, reduce land degradation, improve water retention in soils, provide additional habitat to beneficial animals such as pollinators, and enrich biodiversity. Some of these benefits, including the valuation of the expected carbon sequestration, the increased availability of drinking water and of non-timber forest products were valued in the economic analysis (Section F.1).

195. By allowing pastures to approach maximum growth through pasture management, above-ground plant biomass rises from an estimated 1 tonne DW/ha on degraded land to 3 tonnes DW/ha under pasture rotation. The root:shoot ratio for perennial grasses is at least 2:1, so total plant biomass rises from 3 tonnes DW/ha to 9 tonnes DW/ha, or an increase of 3.87 million tonnes of plant biomass over 644,595 ha. Pasture rotation will improve plant diversity by releasing the growth potential of species that are otherwise suppressed under continuous heavy grazing pressure.

Social and institutional co-benefits

196. Community mobilization and training for 50 municipalities and their communities will include social mobilization including gender training and institutional support, as well as the establishment of task forces and fire management teams at Leskhoze level. Moreover, by facilitating policy dialogue under Component 1, the project will play a prominent role in promoting institutional coordination between stakeholders operating on climate change and on forest/rangelands management.

Co-benefits for women and youth

197. Women and youth (both young women and young men) will benefit from their specific inclusion in project activities, as outlined in the Gender and Social Inclusion Action Plan. Particular attention will be paid to promote women and youth engagement in business opportunities in the project supported value chains by proactively including them in business related capacity building activities, and women's participation in/benefiting from the value chain development will be taken into consideration when selecting value chains. Moreover, the project will encourage the access for women to improved natural resources (forests and rangelands) to ensure equitable distribution of benefits.

Economic co-benefits

198. Overall, income of rural dwellers is expected to increase through the investment operated by the project. Specific financial benefits will come from better herd management, contributing to an expected rise of livestock production by at least 10 percent (under the assumption of a decreasing livestock herd number by 20 percent and an increasing share of cows, the average financial benefits are positive for the individual households, but the highest benefits are when economic benefits are accounted for, with a total net incremental economic benefit of over per households including all ecosystem services amount to about 3,000 USD). From fruit trees/nuts plantations, supplying fruits and/or nuts to the selected value chains featuring green technologies generate solid financial results, IRRs between 22 and 39 percent and NPVs between 5,800 and 21,400 USD per ha); also, forest users will benefit from collecting Non-Timber Forest Products through certification according to the international voluntary standards for sustainable forest use and management. As additional benefit, the EFA in Annex 3 shows how the project's investment can generate up to 3,300 new full time equivalent jobs.

E.4. Needs of the Recipient

Vulnerability and financing needs of the beneficiary country and population

E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

199. The geography and topography of Kyrgyzstan make it one of the most hazard-prone countries in Central Asia, and climate-induced disasters are already occurring. Hazards such as drought, land and mudslides, avalanches, violent winds, downpours, icing, frosts, breakthrough of glacial lakes, floods, river erosion and earthquakes are all common occurrences in Kyrgyzstan. The vast majority of the population lives in the valleys and foothills of the mountains, where vulnerability to these events is particularly high. On average, natural disasters are responsible for US$30-35 million average annual costs in damages and economic losses that represent 1-1.5 percent of the country's GDP[64]. Limited state and local government resources available for disaster reduction and response exacerbate the population's high vulnerability to natural disasters. The resilience level in the Project Areas (as confirmed by the baseline survey carried out during the project design) depend largely on **adaptive capacity, access to basic services, social safety nets and availability of economic assets.** Adaptive capacity is mainly driven by the **level of education** and the **diversification of income portfolios**. These findings confirm the need for economic diversification as part of the adaptive capacity and help identifying priorities for investment in the country, including for partner organizations and parallel projects.

E.4.2. Financial, economic, social and institutional needs

200. According to the Kyrgyz State Design Institute of Land Management, large areas of agricultural land are in poor condition, and are affected by land degradation (an estimated 50-80 percent). This includes erosion, salinization and alkalization, water logging of arable soils, trampling and contamination of pasture vegetation (mainly unpalatable plants) and organic soil carbon content that has declined from 3 percent to 1.5 percent, which, cumulatively, lead to a reduction of soil fertility and soil depletion. Some estimates by the Land Registry place the total area of land subject to erosion at 6.4 million ha, 700,000 has of which is arable land. 11.2 million ha of land (of which 1.3 million irrigated), are prone to wind and water erosion; 1.2 million ha (of which 146,600 irrigated), are saline; 480,200 (of which 98,800 irrigated) are alkalinized[65]. Inappropriate tillage practices have eroded soil and led to poor soil fertility on an estimated 770,000 ha of arable land. These factors have damaged soil ecosystem services (chemical, biological, hydrological) and led to reduced ecosystem functions which are critical for resilient agriculture, especially in light of climate change.

201. Forest investments suffer from a systematic shortage of funding in the country. Private sector is not investing sufficiently in rural areas due to the remoteness of their markets and to the lack of financial literacy. Investment in rangeland benefit of higher attention (including of multilateral financial institutions) but investment in the sector have never been focused on carbon sequestration, rather on livelihoods which is not sufficient to ensure contributions to the country's INDC targets.

[64] Global Facility for Disaster Reduction and Recovery Disaster Risk Management for Priority Countries, Kyrgyz Republic case.
[65] Fitzherbert. Country Pasture/Forage Resource Profiles – Kyrgyzstan. http://www.fao.org/ag/agp/agpc/doc/counprof/kyrgi.htm

202. Poverty level remains high with over a quarter of the total population living below poverty line in 2016 (National Statistics Committee). About three quarters of the poor live in rural area and mainly rely on agriculture for their livelihood. Poverty is the highest in remote mountainous areas where scarce arable land combined with underdeveloped irrigation, limited off-farm employment opportunities, distance and poor accessibility and inadequate market infrastructure limit income opportunities. Malnutrition remains a problem as evidenced by the fact that 13 percent of children under five suffer from stunting[66]. Micronutrient deficiencies, including vitamin and minerals, are also evident as 43% of children under five and 39% of women of reproductive age are affected by anaemia. According to the WFP, two out of three food insecure people live in remote valleys. Food insecurity is exacerbated by climate-related shocks, including floods and mudslides, which affect resilience of families and communities. Livestock is the most important source of income and the primary source of nutrition for the rural poor. Animals also serve as an important asset for the poor families, which can prevent them from becoming destitute at the time of shocks.

E.5. Country Ownership

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

203. As specified in Section C.1, the project operates in line with the commitments of the INDCs and their targets in terms of mitigation and adaptation. **Mitigation**. Regarding long-term GHG emissions targets, it was determined that the Kyrgyz Republic's contribution to mitigation will be to reduce GHG emissions in the range of 11.49 - 13.75 percent below business as usual (BAU) in 2030. Projecting to 2050, the Kyrgyz Republic will reduce GHG emissions in the range of 12.67 - 15.69 percent below BAU. Under international support, the Kyrgyz Republic could implement mitigation measures to achieve total reduction in the range of 29.00 - 30.89 percent below BAU in 2030, and total reduction in the range of 35.06 - 36.75 percent below BAU in 2050. **Co-benefits for climate risks mitigation**. While the INDC does not identify or clearly analyse adaptation targets, monitoring of implementation of the contribution to enhance individuals' capacities to adapt will be combined with a process of regular updating of the national priorities and sectorial adaptation programs and action plans. Preparation of updated programs and plans will be based on assessments of the earlier adaptation plans' outcomes. Reported plans are being processed and will constitute the initial policy framework to reach both mitigation and adaptation targets.

204. A **National Adaptation Plan** is not approved yet in the country. UNDP is leading the process under GCF readiness process. The whole policy dimension is addressed under the project's overall support to the enabling environment. The project links partly to the development of the NAP.

205. The Climate Change Coordination Commission (CCCC), headed by the First Vice Prime Minister of the Kyrgyz Republic, coordinates all the activities in the Kyrgyz Republic related to climate change. The CCCC is composed of all heads of key ministries and divisions, representatives of the civil, academic and business sectors. SAEPF, the lead governmental body for climate change, acts as its secretariat and is the UNFCCC and GCF Focal Point. SAEPF is also a key stakeholder in the CS-FOR project; it is a member of the CS-FOR Steering Committee and the Project Management Unit. The key objective of the CCCC is to lead and coordinate activities of various agencies and ministries in implementation of the country's commitments under the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

206. The project conforms to and is aligned with all national climate change strategies and action plans developed for various sectors including emergency situations, biodiversity and forestry, and agriculture and water management.

207. The "Priority Directions for Adaptation to Climate Change in the Kyrgyz Republic until 2017" is being revised and meetings held with representatives of concerned ministries and agencies confirmed that the project will be coherent and in alignment with the updated versions of national climate change-related frameworks covering the period 2018-2022.

208. The National Strategy for Sustainable Development 2013-2017 (NSSD) emphasizes the importance of climate change considerations as part of a sustainable development approach for the sustainable use of natural resources and sustainable economic growth. Currently, the Kyrgyz Government is in the process of finalizing the country's National Strategy for Sustainable Development 2040, which is expected to be adopted in 2018. It is accompanied by the "Forty

[66] Data from WHO/World Bank Group Joint Child Malnutrition Estimates 2017, cited in Global Nutrition Report, 2017 Nutrition Country Profile: Kyrgyzstan, 2017.

Steps Programme," aiming, among other things, to preserve forests and biodiverse ecosystems through social forestry and joint forest management, and by regenerating natural resources. Actions on climate change are reflected in the "National Sustainable Development Strategy of the Kyrgyz Republic for 2013-2017" and the "Program of the Kyrgyz Republic on Transition to Sustainable Development for 2013-2017."

209. The National Action Plan (NAP) and its Activity Frameworks for Implementing the UNCCD in the Kyrgyz Republic for 2015-2020 has many actions on land degradation that are highly relevant to climate change adaptation measures for the agricultural and livestock sectors, and particularly for pasturelands. Particularly relevant is the inclusion of adaptation measures to climate change in local plans for social and economic development of the regions of the country. Strategic Target 4.2 under the "Action Plan for implementation of biodiversity conservation priorities of the Kyrgyz Republic for 2014-2020" in the Third National Biodiversity Strategy and Action Plan of the Kyrgyz Republic (submitted to the CBD in 2003) is: "Increase the resilience of ecosystems, and thus increase the contribution of biodiversity to carbon stocks, contributing to climate change mitigation and adaptation and to combating desertification"

210. CS-FOR not only is in line with national climate change adaptation and mitigation priorities and goals but will make concrete contributions to achieving these. The project will support carbon emission reduction and enhance carbon storage through: (i) the creation of legal and management enabling environment supported by an innovative evidence-based climate and natural resource planning and monitoring system; (ii) community based investments in natural forest regeneration, sustainable forest management, afforestation and reforestation; (iii) rehabilitation of rangelands and prevention of further degradation; (iv) diversification of options for community livelihoods; and (v) and reduction of emission intensity per unit of animal protein.

- Component 1 will contribute to the harmonization of procedures and regulations to ensure sustainable and climate change sensitive integrated planning, monitoring and evaluation of NRM. Output 1.1 will support strengthening and harmonization of the policy and legislation related to integrated management and use of forests-rangeland resources based on an ecosystem approach by supporting stocktaking and analysis of current legislation for identification of legal gaps and ambiguities in sectorial policies and regulations; conduct special studies on impacts of existing legislation on biodiversity, environmental resources, and livelihoods; and facilitate discussion and cooperation between agencies engaged in NRM, and advance legislation. Furthermore, by working on improving the existing forest-rangeland ecosystem-related legislation required for integrated management, output 1.1 will seek to provide evidence to inform the policy and legislative framework and plans for priority climate financing activities and investments.
- Output 1.2 will enhance capacities on climate change risks and natural resource assessments, support further enhancement of capacities of the existing monitoring units at the central level with evidence-based Integrated NRM Planning, Monitoring and Evaluation tools and methodologies, and facilitate linkages between the evidences, data from the ground, information systems and the forest-rangeland ecosystem planning processes. Working within the framework agreed by Kyrgyz institutions with the Kyrgyzstan National Spatial Infrastructure Memorandum of Understanding Target: central, local institutions, academia and CSOs, output 1.2 will facilitate establishment and enhancement of a dedicated NRM and climate-oriented monitoring procedure for central institutions to ensure monitoring and evaluation of NR across the country by supporting the development of standards, methodologies and implementation modalities for the state monitoring of pasture resources.
- Output 1.3 will create and improve skills and capacity in promotion of climate-resilient and adaptive NR management and use in participating communities. The project will develop methodologies, guidelines and materials on elaboration of INRMCRPs considering all issues of environment and biodiversity protection and ecosystem functions.
- Through investment on afforestation/reforestation and forest enrichment, and productive investment in the productive capacities for pasture restoration for adaptive livelihood, Component 2 will contribute to increase the resilience of the population in the target areas and to decrease their exposure to climate change related risks and hazards.
- The use of Georeferencing and Geospatial Analysis (FAO approach and tools) is a key part of the evidence-based approach of the project, to map and monitor (e.g. planting, carbon sequestration) project implementation with regards to project impacts on natural resources. Information from these can be used to

validate national targets and help in national reporting to relevant international processes.

E.5.2. Capacity of accredited entities and executing entities to deliver

Food and Agriculture Organization of the United Nations (FAO)

211. FAO has considerable experience and expertise and a proven comparative advantage in Sustainable Forest Management (SFM), Sustainable Land Management (SLM) and climate change. In the field of SFM, FAO (i) promotes SFM by placing technical expertise in forestry at the disposal of member countries through field projects; (ii) chairs the Collaborative Partnership on Forests (CPF) which brings together 14 major forestry-related international organizations, institutions and convention secretariats to support the implementation of SFM; (iii) through its Committee on Forestry and Regional Forestry Commissions, provides primary venue for countries, civil society and private sector to convene to address common global and regional issues related to forests and forestry; and (iv) implements the National Forestry Program (NFP), National Forest Monitoring and Assessment Program, Global Forest Resources Assessment (FRA), Forest Sector Outlook Study, Forests and Climate Change, and GEF projects.

212. FAO's work on natural resources management in the Kyrgyz Republic and the wider region includes projects for capacity development on the assessment and systematic development of modernization plans for irrigation schemes, including training on irrigation management transfer to improve performance and tools and methods to improve water productivity, and identification of priorities for investment on water saving technologies in watersheds and training in the development of national drought preparedness plans and projects. FAO has also piloted its tools and methods for assessing and mapping land use systems, land degradation and SLM (LADA-WOCAT) through training on national mapping and assessment with Central Asia Countries Initiative on Land Management (CACILM) and on local level assessment and analysis with the Palm Alai SLM project of UNU shared by Tajikistan and Kyrgyz Republic.

State Agency for Environmental Protection and Forestry (SAEPF)

213. At national level, SAEPF comprises the Department of Protection and Use of National Resources, the Department of Development of Forest Ecosystems, the Center for State Regulation in Area of Environmental Protection and Security and State Enterprise for Hunting and Forest Management. At decentralized level, SAEPF is structured along seven Territorial Divisions for Environmental Protection and the Development of Forestry Ecosystems. It also includes Republican and Local Funds for Environmental Protection and Forestry Sector Development, the Issyk -Kul Biosphere Territory, Forest Management Institutions (Leskhoze), Forest Ranges, National Parks and Nature Reserves. At local level, SAEPF implements its activities through Leskhozes, whose planning and budgeting functions are mandated directly by the central body. Limitations of the current institutional structure, combined with a lack of resources and capacity at SAEPF has led to inefficiencies in the management of forest resources for the maximum benefit of local communities.

214. The SAEPF has extensive experience working with bilateral and multilateral donors in the field of environment and forestry. FAO and GEF have been implementing the project Sustainable Management of Mountain Forests and Land Resources of the Kyrgyz Republic under Climate Change Conditions, whose experience was considered during CS-FOR design. SAEPF has been actively engaged in several projects related to sustainable resources management funded by the GIZ.

215. On policy and regulatory frameworks, SAEPF is piloting a process of forest management reform in selected Leskhozes with a broadened stakeholders' involvement (Decree of the Government of the Kyrgyz Republic dated 16 June 2015 #367). In addition, the Government of Kyrgyzstan had programs and action plans for adaptation to climate change on "Forest and Biodiversity" 2015-2017. These were aimed to strengthen the resilience of the Kyrgyz's forest and biodiversity to the adverse effects of climate change on natural ecosystems and communities. Leskhoze management reforms are underway supported by the WB-funded IFEMP.

ARIS

216. There are also seven oblast representatives providing support and administrative basis to the work of regional consultants on-site – Community Development Support Officers (CDSO) are responsible on average for 5-6 village districts. CDSOs are regional representatives of ARIS and provide consultations and training to communities, local self-governmental bodies and local public institutions on matters related to social mobilization and mobilization of local resources, development of local development strategies and pasture management plans, development of social and infrastructure micro-projects, environmental assessment of micro-projects, business planning and basic marketing, development of local budget and public hearings, consultations on procurement procedures at the level of communities,

accounting etc. ARIS is managed by an Executive Director assisted by the Coordinators of each implemented project. The organization has a solid and extensive Management Information System (MIS). All data on conducted activities is entered into the MIS which can be also used to generate various reports (activities on social mobilization, capacity development, procurement, disbursements, electronic document management, beneficiaries' satisfaction on project implementation etc.).

217. ARIS will be Operational Partner of the project and will have specific responsibility to contribute achieving the results of selected outputs and activities according to its comparative advantages. The role and functions are described in Section C.7 and in Chapter 5 of the Feasibility Study.

E.5.3. Engagement with NDAs, civil society organizations and other relevant stakeholders

218. CS-FOR was developed and prepared following a request by the Government of Kyrgyzstan, and a No-Objection Letter was signed by the NDA (SAEPF). SAEPF, who was, and will be involved, in the stakeholder engagement process, is also a member of the CS-FOR Steering Committee and the PMU. The CS-FOR proposal was developed in consultation with stakeholders to ensure that the project design is appropriate and meets national and local needs, to verify the feasibility of the activities included in the project Components, and to obtain feedback from all stakeholders on all aspects of the project, including the Environmental and Social Management Framework (ESMF) and its components (including GRM and Gender). Project disclosure during stakeholder involvement is crucial especially at the local level where CLMGs will be heavily involved in the process of INRMCRP development which will decide the exact activity areas and precise beneficiary identification.

219. Stakeholder engagement was undertaken during the Funding Proposal development stage and will continue during project implementation. Consultations during the Funding Proposal development stage were held through: workshops with potential stakeholders, meetings with potential stakeholders, and structured consultations. During project formulation missions, "non-structured" bilateral meetings were also held on both technical and project management/implementation issues.

220. The following stakeholders were consulted: State Agency for Environmental Protection and Forestry (SAEPF); Ministry of Emergency Situations (MES); Ministry of Economy; Agricultural Projects' Implementation Unit and the Department of Pastures, Livestock and Fisheries under the Ministry of Agriculture, Food Industry and Melioration (MAFIM); ARIS (Community Development and Investment Agency); Association of Pasture User Unions "Kyrgyz Jaiyty"; Russian-Kyrgyz Development Fund (RKDF); local NGOs Rural Development Fund (RDF) and CAMP Alatoo; Kyrgyz Scientific-Research Institute of Livestock and Pasture; Kyrgyz Scientific-Research Veterinary Institute; Climate Financing Secretariat; "KyrgyzHydromet"; State Design Institute for Land Management "Kyrgyzgiprozem"; other donor agencies and civil society.

221. The following consultations were held: National Facilitation Workshop on Green Climate Fund Project Formulation (Bishkek, 28-29 March, 2017, and bi-lateral meetings on 20 March, 2017); Meeting of the Working Group on discussion Green Climate Fund project proposal concept. Bishkek, 15 June 2017; Initiating Funding Proposal Development (September-October 2017); Furthering Funding Proposal Development (December 2017); and Structured Consultations (District-level Consultation Meeting (Jalalabad, 6 April 2018); Consultations with CSOs (Bishkek, 12 April 2018) and National Workshop (Bishkek, 13 April 2018)).

222. During consultations, stakeholders identified activity priority areas and gaps, project target areas, and main stakeholders. Other issues that were discussed included the climate rationale, the relevant climate change mitigation and adaptation targets, the proposed project approach including the investment criteria, the sustainability and the expected paradigm shift. Stakeholders agreed on needs to be addressed, targets, methodology, timeframe and budget. Targeted district-level consultations involved over 40 stakeholders including representatives of local self-governments (ayil okmotu), forest enterprises (Leskhoze), pasture committees, women's councils and traditional councils of the elders. Consultations with CSOs active in related areas (forestry, pasture, community development and value chain) saw a strong support to the project by confirming the current challenges which the project attempts to address as well as presenting success stories in similar interventions.

223. Outputs from the Stakeholder Consultations were used to refine and improve the project design, especially in the areas related to participation and capacity development of beneficiaries and their institutions, and feed into the environmental and social management framework for the Project. The information and feedback obtained at the

consultation helped strengthen the overall content of Funding Proposal and associated documents. Further details on the Stakeholder Engagement process can be found in the Stakeholder Engagement Report in Annex 2b.

224. The design process considered the interests of the stakeholders and established a plan for their involvement, laying out specific activities in which stakeholders will participate. A National Stakeholders Platform (NSP) under the CCCC, acting as Project Steering Committee (PSC) was established, and which will provide guidance to the project's implementation. It was also agreed that SAEPF and ARIS will be the Operational Partners and key implementing agencies, jointly with the RKDF for the implementation of Component 3 (credit lines) and FAO for TA. Additionally, there will be direct contact with stakeholders through CLMGs to develop INRMCRPs and which will provide feedback for reporting on the technical aspects of the projects, needs for and results of training/capacity building, and annual operations plans.

225. The Department of the State Environmental Review under the SAEPF, of the Government of Kyrgyzstan, will disclose all relevant ESMF CS-FOR documentation on their website. However, it's worth highlighting that the proposal has been accepted by the relevant communities and national institutions.

E.6. Efficiency and Effectiveness

Economic and, if appropriate, financial soundness of the project/programme

E.6.1. Cost-effectiveness and efficiency

226. The Project budget will amount a total of US$ 49.59 million, with a GCF grant of US$ 29.99 million or 60.4 percent of the project cost. The level of concessionality of the operation is justified by two main factors: (a) by the substantial expected impact in contribution to sequester about 19.8 m tCO_2eq through forests and rangelands investment; coupled with (b) the limited or negative financial return of investment in forests, and the high transaction costs associated to mobilizing different stakeholders for joint investments in rangeland rehabilitation, which would not make the investment attractive for the private sector (see financial returns prospects under section F.1).

227. The estimated benefits in sequestration of tonnes of CO_2 equivalent is 19.8 million, with an average cost of US$ 2.5 per tCO_2eq. The economic benefit of the intervention, including the social value of carbon (as per WB estimates, 2017) is US$ 353.7 million, with an average benefit of US$ 498.9 per ha as a result of the improved forests and rangelands management and with the support to climate-sensitive value chains. The average economic benefit per direct beneficiary in the Project Area is estimated at about US$ 41.1 per year (economic net present value of the operation per beneficiary per year), as a result of the project interventions. The project can be considered sound from a financially as well as from an economic perspective (see Chapter 7 of the Feasibility Study and Section F. 1) and has a significant potential for scaling up for manifested interest from other donors.

E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)

228. With a contribution of US$ 29.99 million from GCF, the project will have a grant:co-financing ratio of 1:0.7. The co-financing will total US$20 million, of which: 77 percent from RKDF, 18 percent from beneficiaries and about 2 percent each from SAEPF, MAFIM and ARIS. FAO has committed USD 400,000 to: support policy dialogue around evidence-based NRM governance (and land tenure) (output 1.1).

229. The high level of concessionality of the operation is justified by the public good nature of the mitigation interventions in the forestry and pasture rehabilitation sectors. Nevertheless, while forestry investment under Component 2 are a public good, rangeland investments under the same component are not technically a public good itself, as they improve management of common pool resources and provide a global public good in the form of reduced GHG emissions. Additionally, the interventions with expected high financial returns, such as the ones in the Climate-sensitive value chain development Component, with a private good economic nature, will have a substantially lower level of concessionality. All private investments generated under Component 3 will be undertaken entirely with private funds and GCF funding will not finance any of it, aside from the capacity development to improve management of common pool resources mobilized under the same Component.

230. The specific grant: co-financing ratio of Component 3 is at 1:5.6, including RKDF and beneficiaries' contributions. For high-mountain and slow-growth forestry interventions, the concessionality reaches 90 percent of the cost. The high level of concessionality of the operation is justified by the public good nature of the mitigation interventions in the forestry and pasture rehabilitation sectors While forestry investment under Component 2 are a public good, rangeland investments under the same Component are not technically a public good themselves, as they improve management

of common pool resources, but provide a global public good in the form of reduced GHG emissions. For pasture rehabilitation interventions the concessionality is lower (with a 25 percent expected contribution from the beneficiaries). Such level responds to the twofold aim to: (a) contribute to carbon sequestration (19.8 million tCO_2eq sequestration); and (b) support to beneficiaries' co-benefits in reducing climate-related risks. A contribution from the beneficiaries stimulates their ownership in the needed shift towards efficient rangeland rotation and smart herd management, and reflects the important monetary benefits of the investment for the individuals.

231. As it happened with the transformation of pasture management in SLF due to the Pasture Law reform in 2009, it is expected that the Government of the Kyrgyz Republic and its development partners will continue the investment in line with the transformative approach that the project will deploy at a significant scale.

E.6.3. Financial viability

232. The financial analyses show that all of the proposed measures show positive Net Present Values (NPVs) and Internal Rate of Returns (IRR) significantly above the financial discount rate prevailing in the Kyrgyz economy. The details and the findings of the financial analysis are fully described in Chapter 7 of the Feasibility Study as well as in Section F.1 of the Funding Proposal.

233. Private sector operations under Component 3 will be accompanied by technical assistance provided by the project as element to enhance the credit worthiness of the entrepreneurs as Agents of Change. The substantial financial support from RKDF and the expertise of its accredited partner banks will ensure appropriate financial viability of the operations.

E.6.4. Application of best practices

234. The project will support the uptake of technologies and practices that are largely tested in similar contexts but with provide an innovative approach to ensure that the interconnected interests generate virtuous spaces for synergies instead of vicious circles leading to depletion of natural resources. In Forestry investment, technically sound recommendations have been incorporate with improvements in the implementation arrangements, to ensure higher survival rates of the trees as well as to ensure using adapted species in the appropriate locations. In Pasture management, the main element given by pasture rotation has demonstrated successes throughout the region (e.g., Tajikistan); the project will build on such successful cases, emphasizing the need for this practice to ensure the appropriate level of carbon sequestration potential. The technologies proposed within the Climate-sensitive value chain development have been analysed according to their technical feasibility, financial profitability and market potential, both for the domestic and export demand.

235. The delivery mechanism of the project has also proven to be successful. On one side through local institutions mobilization, improved by the integrated cross-sectorial planning instead of a monothematic planning (e.g., not limiting the planning to mere pasture development, but embracing also other natural resources and their users); on the other side, value chain support through credit lines has demonstrated great successes in the region and in the country, and is being adopted also by IFAD in the Access to Market Project (ATMP). For further details, Chapter 7 of the Feasibility Study and the Working Paper on Climate-sensitive value chain provide descriptions of the specificities and potential of practices and technologies and their expected results.

E.6.5. Key efficiency and effectiveness indicators

	Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)	
GCF core indicators	(a) Total project financing	US$ 49.99 million
	(b) Requested GCF amount	US$ 29.99 million
	(c) Expected lifetime emission reductions overtime	19.8 million tCO_2eq
	(d) Estimated cost per tCO_2eq (d = a / c)	US$ **2.5 / tCO_2eq**
	(e) Estimated GCF cost per tCO_2eq removed (e = b / c)	US$ **1.5 / tCO_2eq**

236. The project's CO_2 equivalent potential sequestration was estimated utilizing the FAO developed Ex-Ante Carbon Balance Tool (**EX-ACT**)[67]. The tool assesses the net balance of tCO_2eq Greenhouse Gases that were emitted or carbon sequestered as a result of project implementation compared to a "without project" scenario. The analysis utilized parameters adapted to the Kyrgyz context, utilizing as much as possible Tier 2 values specific to the project's interventions. For the assessment of the dynamics of the livestock production, considering the significant contribution of this subsector to emissions and its socio-economic importance in the area, a specific analysis was carried out using the Global Livestock Environmental Assessment Model (**GLEAM-*i***) [68] and its interactive user-friendly tool. GLEAM-*i* summarizes a biophysical model of livestock supply chains that calculates animal herd dynamics, feed rations, production and greenhouse gas emissions with Tier 2 methodology (IPCC, 2006), with a life cycle approach.

237. The results of the analysis show how effective carbon sequestration can be achieved through an integrated approach that takes into account forest management, improved pasture management, and livestock management.

238. The project targets afforestation, forest management, grassland management, perennial crops and agro-forestry development activities on a total area of 709,174 ha:

Carbon sequestration per activity (tCO_2eq sequestered):	**On 20 years life span**	**Per year**
6,000 ha[69] under afforestation / reforestation / forest enrichment	729,608	36,480
56,359 ha of forest under Improved management	3,479,418	173,971
646,275 ha of improved rangeland	14,923,368	746,168
3,100 ha new orchards	469,415	23,471
Smart herd management, improved feeding and manure management for about 849,226 head of cattle and other ruminants	149,545	7,477
TOTAL	**19,751,354**	**987,568**

239. As per livestock production, when comparing to a BAU situation with no technology or practice improvements (i.e., very low livestock productivity), projecting the results of the improved practices over 20 years, the project will result in saving 149,545 tCO_2eq, with a total extra 8,346 tons of protein produced. With a relative herd control (i.e., corresponding to 20 percent of the number of animals), the project would result in saving 1,077,451 tCO_2eq, for an extra 974 tons of protein produced.

Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (mitigation only)

240. As described in Section B.1, the project's approach is to grant higher concessionality for activities with higher potential for carbon sequestration. Similarly, the project provides a limited concessionality where the investments have an indirect role on sustainability of carbon sequestration investment, but guarantee substantial private benefits. As such, most of the project co-financing from RKDF (US$ 15.0m) is directed to private enterprises (agents of change).

241. In order to ensure ownership of the investment in carbon sequestration, the project envisages a contribution of the beneficiaries in-kind to both, investment in forests (around 20 percent of the cost of investment) and in rangelands rehabilitation (about 25 percent of the cost of the investment), for a total amount of US$ 3.6 million or 7 percent of the total project cost.

[67] http://www.fao.org/tc/exact/ex-act-home/en/
[68] www.fao.org/gleam/resources
[69] The investments in afforestation / reforestation cover an area of 3,000 ha planted at full density; forest enrichment investments are carried out in an area where forests already exist, and correspond to the reforestation of about 440 ha of new forest.

Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme)	

**** The information can be drawn from the project/programme appraisal document.***

F.1. Economic and Financial Analysis

Financial and economic analysis

242. CS-FOR Financial and Economic analysis focuses on selected economic activities supported by the project. Following the project investment structure, the analysis presents two sets of illustrative models of representative investments:

(i) **Green Investments for forest and rangeland rehabilitation models (Component 2)**, including afforestation, reforestation, forest enrichment, rangeland rehabilitation. The **investment in forests**, including afforestation / reforestation and forest restoration through the INRMCRPs describe a 20 years projection of incremental costs and benefits of expectedly low financial performance. Such results are associated to the low pace of growth in the local conditions of the adapted tree species selected as most suitable for the investment (see Chapter 4 of the Feasibility Study and the attached spreadsheets). The **investment in improved rangeland** present slightly better results, with positive financial returns, and with higher resistance in with-project scenario to climate stresses. Both categories of investment present substantial results under the economic analysis, which takes into account the valuation of carbon sequestration and the ecosystem benefits. In order to ensure financial viability of these investments, the project will provide significant level of concessionality.

(ii) **Climate -sensitive value chains models (Component 3)**, including investment supported by RKDF's loans in fruit / nut orchards; nurseries; conservation agriculture for cereals; greenhouses; beekeeping; broiler; turkey; cold storages; solar dryers; vacuum dryers. The models are structured assuming a 5-year loans with a 10% interest rate in a local currency. All value chain models show substantially positive financial benefits and rate of return. These results are derived from the increased access to the required financing (loans) – which will be made available by the CS-FOR co-financing, coupled with training, demonstrations and advisory services, provided by the project.

243. **The impact of climate pattern**. Based on the climate scenario (reference to Section C.1 and Chapter 1 of the Feasibility Study), agriculture is mostly affected by a generalized temperature increase and water stress recurrence. The impacts of these stressors are applied on both, the without and with project scenarios for all models (except for greenhouse, intensive poultry and agrifood processing models).[70] For rangelands, the mixed impact of climate changes on hayfield productivity (see Third National Communication) is worsened by the significant load on pasture. They yield projection for with and without project scenarios takes into account climate related stresses. The impact on yields varies, and reaches an average of 20 percent of difference in benefits during the years with highest climate related stresses, such as high temperatures and low rainfall (four years frequency based on the last ten years. In a With project scenario, yields are supposed to increase mostly due to the adoption of best agricultural practices (e.g., drip irrigation), facilitated by the project's direct interventions and by the increased access to finance.

F.1.1 Impact of climate pattern on the main economic activities at maturity		Expected average yields (on 20 yrs projection)		Expected average yields in high climate stresses years (every 4 yrs)	
Crop / Product	**Unit**	**Without project**	**With project**	**Without project**	**With project**
Wheat	*t/ha*	2.1	2.7	1.7	2.6
Corn	*t/ha*	6.0	7.8	4.8	7.5
Alfalfa	*t/ha*	2.5	3.3	2.0	3.1
Barley	*t/ha*	1.8	2.4	1.5	2.3
Honey	*kg/bee-family*	24.0	28.0	20.0	22.4
Meat sold	*kg/LU/year*	15.8	22.2	13.5	21.1
Milk production	*l/LU/day*	5.3	6.0	4.5	5.7

[70] Activities performed in closed environments, with limited or no impact of climate change.

Nursery (*seedling/100m²*)	*Seedl./100m²*	1,000	2,400	800	2,300

Financial analysis: results

244. The analysis takes into account two time horizon for the projected net incremental benefits. With a **10-year horizon**, the project shows an overall poor financial performance, affected by the slow realization of benefits from the forests related interventions. A **20-years projection period** is set in order to account for the phasing and gestation period of the proposed interventions, an average adoption rate set at 80 percent, and a financial discount rate of 8 percent used to assess the viability and robustness of investments.[71] In the latter, the FIRR is estimated at 11.1 percent, and the net present value (NPV) of the project's net benefit stream is US$12.0 million. Detailed calculations of aggregated financial IRR and NPV are presented in the "Summary" spreadsheet of the Integrated Financial Model. Considering the different level of concessionality of the two main sets of investment under Components 2 and 3, the results are presented in a disaggregated way to show attribution.

(i) **Component 2 investments**. On one side, forestry and pasture investments (with 80 percent of investment funded by the project) present mixed financial performance, mostly negative NPVs for spruce forestry operations (associated with long-term benefits), but positive NPVs with walnut related activities and rangeland rehabilitation. In details, the 10-year financial IRR and NPV for aggregated cash flows of forests and rangelands investment are -20.9 percent US$ -13.3 mln US$ respectively, while financial IRR and NPV achieve 8.8 percent and US$ 1.3 m in 20-years, highlighting weak attractiveness of forest and pasture interventions for the private sector (this, in turn, provides a justification for the concessionality associated with these investment).

(ii) **Component 3 investments**. On the other side, for climate-sensitive value chain models (where the project provides capacity development related costs, for an equivalent of 15 percent of the investment), the results show the worthiness of the investments, with a significant increase in gross and net returns. More specifically, the financial IRR for aggregated sustainable value chain investments for 20 years is estimated at 28.1 percent exceeding the expected rate of return of RKDF loans (10 percent). The financial results for 10 years are attractive for RKDF as well: NPV is estimated at US$ 0.7 million, while IRR is 9.0 percent

Sensitivity analysis on financial performance[72]

245. **Impacts of climate change.** All models take into account the effect of climate change on the economic activities' performance. Incremental costs and benefits streams are adjusted according to the expected effect of climate change. In particular, **increase of costs due to climate change** reflects the need for replanting seedlings due to the influence of higher frequency of temperature and rainfall related stresses (or droughts), or increasing inputs quantities and costs, or the effect of landslides and mudslides on forests and rangeland infrastructures. Correspondingly, **decrease of yields and productivity** reflects the impact of more intense water and temperature stresses on yields of fruit and nut trees, pasture productivity and crop production. With the above elements taken into account, the aggregated project's investment is financially viable within 35 percent (or even more) of costs increase and benefits decrease in 20 years. The operation is not financially viable in the unlikely case that costs increase by more than 60 percent, or benefits decrease by 40 percent in the 20-year horizon (Table F.1.2).

F.1.2 Financial parameters' sensitivity due to impacts of climate change	10 Years		20 years	
	IRR (%)	NPV (US$ m)	IRR (%)	NPV (US$ m)
Base scenario	-1,9%	-12,5	20,3%	55,4
Increase of costs due climate change impacts by 60%	NA	-51,7	8,1%	0,3
Decrease of benefits due climate change impacts by 40%	NA	-33,6	7,0%	-3,5

Economic analysis: results

246. The CS-FOR economic analysis is based on the aggregation of incremental benefits from all models taking into account the associated environmental benefits. The benefits are set under the assumption that about 80 percent of the 105,000 households beneficiaries benefit of the technologies and practices supported by the project. Moreover, it is expected that the Project investments in supportive value chains will generate more than 3,300 full-time equivalent jobs when the activities reach their full capacity.

[71] Weighted average deposits rate of individuals in local currency (Source: National Bank of the Kyrgyz Republic, Apr 2018).
[72] See the "Sensitivity" spreadsheet of the Integrated Financial and Economic Model linked at the end of the Funding Proposal.

247. **Assumptions**. The economic discount rate of 4.75 percent based on the current refinancing rate of the National Bank of the Kyrgyz Republic is used in this analysis. The shadow exchange rate (SER) has been calculated at 1 US$ = 73.4 KGS. Overall conversion factors for inputs and outputs vary between 0.70 and 1.18. An average conversion factor of 0.89 has been applied when converting financial prices into economic prices. The derivation and a summary of economic prices are presented in the conversion factor ("CF") spreadsheet of the Integrated Financial Model. At aggregated economic level, the analysis takes a 10- and a 20-year horizon, where the latter takes into account the phasing and gestation period of the carbon sequestration investment.

Valuation of environmental benefits

248. **Carbon sequestration potential.** Under the community investment in forestry and rangeland rehabilitation, the project will contribute to ensuring capturing about 19.8 m tCO_2eq via: reforestation-afforestation of 6,000 ha of severely damaged forests, rehabilitation of over 645,000 hectares of degraded pastures, improved management of over 56,000 ha of forests, and other activities. More details are available in the Carbon Accounting Chapter of the Feasibility Study. The analysis considered the shadow price of US$ 40/tCO_2eq as the social value of carbon (World Bank, 2017).[73]

249. **Economic benefit from ecosystem services.** The incremental economic benefits of the project result from the improvement and restoration of ecosystem services in the rehabilitated forest and pasture areas with the Project support. These ecosystem services represent public goods, which are not captured by markets or by the Gross Domestic Product (GDP) and do not monetarily contribute to farmers.[74] A regional report prepared by The Economics of Land Degradation (ELD)[75] Initiative to value land degradation looked beyond the market value for crops; the ELD also looked at ecosystem services benefits including from carbon storage and sequestration to nutrient provision and cycling. Out of the indicated ecosystem services in the study, the relevant ones for this analysis are non-timber products (estimated value of about 6.5 US$/ha) and drinking water (about 0.3 US$/ha) since other services such as pasture and forest carbon sequestration were already integrated in financial and economic analysis. For other ecosystem services like erosion control, pollination, water flow regulation and habitat provision, no economic values were found in the country. Therefore, they were not considered in the economic analysis.

250. **Economic Results**. Considering the above-mentioned benefit and cost streams, in the base scenario the net incremental benefit stream associated with project interventions and accounting for the carbon sequestration potential and related ecosystem services generates an economic rate of return of 71.3 percent and a net present value of US$ 353.7 million over 20 years. Especially for the valuation of the carbon sequestration benefits, the component 2 economic benefits contributes to about 80 percent of the economic results of the project. Component 3 related activities have a very robust financial performance, but contribute to the remaining 20 percent to the economic benefits.

251. **Sensitivity Analysis.** Various hypothesis were tested to assess the project's sensitivity to critical variables (summarized in table F.1.3). They include:

(i) Climate change affecting costs and benefits. Sensitivity analysis assessed, among others, the effect of variations in benefits and costs due to the potential impacts of climate change on revenues and costs. The underlying assumption is that costs increase due to higher climate related stresses, for example additional replanting costs in reforestation and afforestation activities due to the droughts. Similarly but in terms of benefits, late frosts and droughts adversely impact the yield of fruit and nut trees, while pasture productivity and crop yields may suffer from frequent droughts. These factors, combined with low adoption of climate smart practices and technologies may have an adverse impact on the Project's interventions. Considering the potential carbon sequestration through the project's interventions, even with a significant increase of costs (+30 percent) or reduction of benefits (-30 percent), the investments show positive net incremental economic benefits.

(ii) Changes in potential sequestration or in its valuation. The analysis took also into account the possibility of a drop of the social value of carbon to half of the current estimated value, showing anyway positive economic benefits in both, the 10- and 20-years scenarios.

(iii) Changes in potential sequestration or in its valuation. The analysis took also into account the possibility of a drop of the social value of carbon to half of the current estimated value, showing anyway positive economic

[73] World Bank, 2017. Guidance note on shadow price of carbon in economic analysis
[74] See Appendix to this Chapter: Value of forest and pasture-related ecosystem services in Kyrgyzstan
[75] Sabyrbekov, R., & Abdiev, A. (2016). Economics of Land Degradation (ELD) Initiative: Kyrgyzstan Case Study. Evaluating ecosystem services of highland pastures. Report for the ELD Initiative from the Consultative International Group on Agricultural Research (CGIAR): Amman, Jordan

benefits in both, the 10- and 20-years scenarios. The analysis has also considered the possibility of a substantial reduction of the sequestration capacity of the rangelands, either by reducing the sequestration capacity per hectare, or the success rate on the targeted rangelands. The results are positive in both scenarios, specifically: (a) when carbon sequestration per hectare drop by almost four times (i.e., from 1.15 tCO_2eq per year to 0.3 tCO_2eq per year); (b) when the number of hectares where the practices are adopted drops by half (i.e., with a success on 300,000 ha on the above 640,000 assumed target). Similar results are obtained with a reduced general adoption rate.

(iv) Delays in implementation would cause a reduction of the net present value but would not be significant before a three years delay.

F. 1.4 Economic analysis different scenarios		**10-year period**		**20-year period**	
Sensitivity analysis to variations in costs and benefits		**Economic IRR (%)**	**Economic NPV (million US$)**	**Economic IRR (%)**	**Economic NPV (million US$)**
Base scenario		68,0%	113,5	71,3%	353,7
Increase of costs due climate change impacts by 30%		35,4%	73,2	43,2%	291,5
Decrease of benefits due climate change impacts by 30%		32,8%	41,2	41,2%	170,7
Sensitivity to social value of CO_2		**Economic IRR (%)**	**Economic NPV (million US$)**	**Economic IRR (%)**	**Economic NPV (million US$)**
Base case (US$/$tCO_2eq$)	40	68,0%	113,5	71,3%	353,7
	20	42,1%	61,5	49,1%	238,4
	80	112,4%	217,6	113,3%	584,3
Sensitivity to rangelands' carbon sequestration potential		**Economic IRR (%)**	**Economic NPV (million US$)**	**Economic IRR (%)**	**Economic NPV (million US$)**
Base case (tCO_2eq/ha)	1,15	68,0%	113,5	71,3%	353,7
	0.30	27,1%	34,7	37,8%	180,4
Sensitivity to area of rehabilitated rangelands with potential to sequester carbon		**Economic IRR (%)**	**Economic NPV (million US$)**	**Economic IRR (%)**	**Economic NPV (million US$)**
Base case (thousand ha)	644	68,0%	113,5	71,3%	353,7
	500	56,8%	90,3	61,4%	302,6
	300	40,3%	58,2	47,7%	231,9
Sensitivity to adoption rate of benefits		**Economic IRR (%)**	**Economic NPV (million US$)**	**Economic IRR (%)**	**Economic NPV (million US$)**
Base case (%)	80%	68,0%	113,5	71,3%	353,7
	50%	35,4%	45,7	43,2%	182,2
Sensitivity to delay in project activities		**Economic IRR (%)**	**Economic NPV (million US$)**	**Economic IRR (%)**	**Economic NPV (million US$)**
Base case		68,0%	113,5	71,3%	353,7
1 year delay		39,2%	74,2	47,4%	311,0
2 year delay		21,8%	37,8	36,0%	270,3

F.2. Technical Evaluation

252. The proposed investment and technologies have been selected and proposed as the most suitable to the project target area, considering multiple factors including: the environmental and climate conditions of the area (project ATLAS), the socio-economic conditions, livelihoods and balance of empowerment between disadvantaged groups and within households including gender aspects (Livelihood Study), technical performance aimed at maximizing carbon sequestration and potential market for the products of the related economic activities.

253. **Pasture rotation is the main strategy proposed and driving the investment in pasture rehabilitation**. The current grazing management practice allows livestock to have access to an entire pasture for the whole season. By the end of the season the pasture is evenly overgrazed, and this situation is repeated and reinforced from year to year. Rotational grazing (Pasture Rotation) is designed to maximize pasture growth and available forage on a grazed pasture without necessarily reducing the number of grazing livestock. Degraded pastures in Kyrgyzstan have a measured

standing forage yield between 0.5 and 1 ton DW/ha. Conservatively, the potential yield of biomass on Kyrgyz pastures is at least 3 tons DW/ha. If Kyrgyz pastures can be managed with a pasture rotation so that growth approaches this level while they still provide forage for grazing livestock, the contribution to carbon sequestration is substantial. However, if belowground growth is also taken into account, the carbon sequestration is magnified. The root:shoot ration for perennial grasses can be set conservatively at 2:1. For carbon accounting purposes, the above-ground biomass with a root:shoot ratio of 2:1 can be multiplied by 3 to express the total plant biomass. The calculated increase in total Kyrgyz pasture biomass (shoots and roots) rises from 1.5 to 3 tons DW/ha in a degraded condition to 9 tons DW/ha when plant growth is allowed to approach its potential.

254. **Forestry investment.** On the basis of monitoring results of forest conditions, an estimate has been produced on the availability of lands in target areas. For **afforestation/reforestation** planted forests on barren, clear-cut or pastureland were selected; and for **forest restoration**, degraded forests with some tree cover. The selection of tree species and the estimates on the potential areas for forestry investment have been made depending on factors including the availability of land and the suitability for the survival of tree species. In the Project Area, five zones were identified: **(1) zone of desert pistachio forests and small semi-shrubs,** occupying low and partly high foothills in the range from 700 to 900 m above sea level. Vegetation is represented by thickets of bush cherry, rare pistachio thickets (*Pistacia vera*) are encountered; **(2) zone of steppe pistachio forest** of cereal meadows and steppes is confined to high foothills, located at an altitude of 900 to 1,100 m (occasionally 1,300 m) above sea level. Vegetation is diverse: in the lower part, there are thickets of pistachio, red-fruited cherry, hawthorn. In the upper and middle parts of the zone *Prunus* aflatunia, barberry (*Berberis* spp.), cherry plum (*Prunus cerasifera*), and others species grow; **(3) Walnut-apple forest zone** lies at an altitude from 1,100-1,300 to 2,000-2,200 m above sea level. Woody vegetation of the forest zone is represented by walnut-apple forests. Walnut forests here are of seed-bearing origin, of different age and are confined to the slopes of northern exposures. Apple forests consist of apple trees of *Malus sieversii* and *Malus kirghisorum*. The top edge of walnut-apple forests is formed by maple trees, which rise to an altitude of 2,500-2,600 m; **(4) subalpine shrub-meadow zone**, occupying heights of 2,000-2,500 m, in places up to 3,000 m above sea level. The main components of this zone are rare maple trees from *Acer turkestanica*, juniper, fir (*Abies* spp.), bushes and subalpine meadows; **(5) alpine low-grass meadow** zone, located at an altitude of 2,500 m (or sometimes above). It occupies mainly mountain-tops and rocks devoid of vegetation. The smaller part of the belt is occupied by alpine meadows. Woody vegetation is almost absent; shrubs are found in individual specimens from 800 to 3,000 m above sea level.

255. **Climate-sensitive value chains.** Potential investment under the value chain development component have been pre-identified on the basis of the Livelihood Study, on results of ongoing projects (such as the IFAD-funded Access to Market), as well as dedicated end-market assessments on selected value chains. These studies have also influenced the selection of the models included in the detailed financial and economic analysis. Specific analysis have been carried out on: estimated margins along the beef value chain; the current potential for orchards and greenhouses development in the Project Area; assessment of lost market opportunities for nuts and dried fruits on nearby markets (which result in a total of about US$ 193.9 million – see Appendix to Chapter 7 of the feasibility Study); economic effect of direct sales of animals to slaughterhouse; and other analyses. The analyses have confirmed the need to proceed with pre-assessment of the market potential within value chains that can boost agricultural productivity and competitiveness gains in the Project Area, with the potential to adopt energy saving and green technologies (vacuum and solar driers, agricultural machinery, greenhouses, eco-tourism, agricultural produce processing etc.).

F.3. Environmental, Social Assessment, including Gender Considerations

256. During project formulation, an environmental and social management framework was developed as the initial phase of the due diligence (see the Environmental and Social Management Framework annexed to this Proposal). An initial risk assessment was carried out against FAO´s Environmental and Social Safeguards and the project is considered to be moderate risk (for an in-depth description, see Annex 5,Section 5.1 of the attached Environmental and Social Management Framework, linked in appendix). Potential environmental risks identified are not major, will not extend beyond the area of influence of the project and are neither irreversible nor cumulative.

257. The project will proactively work with stakeholders to lessen environmental impacts in all target areas: an ecosystem-based approach ensures forest restoration/reforestation/afforestation and pastureland rehabilitation activities are jointly designed to improve management of natural resources and ecosystem service functions while improving livestock productivity; strengthening natural resource management governance will also be addressed. The project will not intervene in legally protected areas nor in their buffer zones. The project will not deny access to certain

areas a priori. Restoration activities will be selected and executed in agreement with those communities that are legally entitled to benefits from targeted lands. Specifically regarding pasture rotation and consequent restriction of access to certain areas of pastures, this is determined by the INRMCRPs decided by the CLMGs where all users are represented. The regulation on access to SFF is determined by the law and will be agreed within the INRMCRPs mentioned above. Restriction of access to certain areas is according to the law (i.e., in SFF or in Parks) and no compensation is envisaged. Main tree species have been matched per target Leskhoze conditions according to scientific knowledge from the Kyrgyz Forest Institute under the Academy of Science and validated with SAEPF. The project supports only the planting of endemic or non-invasive domesticated tree species from the Kyrgyzstan and the Central Asia region. Priority consideration will be given to conserving the biodiversity and genetic pool of endemic species that are becoming scarce or are under threat (International Union for Conservation of Nature). Selected species have been identified among the species that are endemic/autochthonous and naturalized that are not reported in the IUCN invasive species list. Detailed selection of species will be done according to ecological and climatic trends and projections of target areas (reference: Project ATLAS, Annex 6 and 6.b of the Funding Proposal). Concerning the economic sustainability, the project will invest in forest restoration in forest areas publicly owned by the State where the main purpose of forests is not a direct economic use but the ecosystem services provided to local communities and overall to the Country. Regarding the incentives, trees will be planted only in dedicated public land (State Forest Fund and/or Municipal land), and will be maintained by relevant public bodies (SAEPF, Municipalities).

258. Potential social impacts identified in the assessment are related to unequal participation because of gender discrimination or discrimination against other vulnerable groups, including youth. A Gender Assessment and Gender Action Plan was prepared; the Livelihood Study prepared during formulation, and stakeholder consultations, informed that certain groups in the rural community are socially disadvantaged, particularly poor families, female-headed households, and young women and men, due to their weak social and economic standing. The project therefore incorporates special actions to ensure their equal participation in the project. For young women and men, in addition to ensuring their equal access to project information and benefits, particular attention will be paid to promote their engagement in business opportunities in the project supported value chains by proactively including them in business related capacity building activities.

259. The ESMF identified the most relevant mitigation actions, including compliance with standards, and training, as appropriate. During project implementation, activities will be identified and FAO´s screening procedures will be implemented accordingly. Through the PMU Safeguards Specialist and Environmental Expert, Environmental and Social Management Plans will be developed as necessary and mitigation actions will be monitored throughout the life of the project. The annual reporting of FAO to GCF will be provided through the Annual Performance Report. The project will not fund or be involved in sub-projects / investments rated at high risk. Independent party will deal with all sub-project screening and categorization and require preparation of Environmental and Social Analysis (ESA, for moderate risk) for sub-project proposals using FAO ESS standards and have FAO approve and then forward to RKDF and partner banks for the loans to be provided to borrowers for Component 3 of the Project. Independent party such as ESS Management Plan Specialist will be responsible for all sub-project screening and categorization and will ensure the preparation of ESA when required under Component 1 and Component 2 of the Project.

260. A stakeholder engagement process was carried out to identify and engage with all stakeholders of the project, from national to local authorities, relevant technical institutions, to NGOs and CSOs, etc. The process (divided into two major segments: during project formulation and later, during project implementation) resulted in proactive involvement in the initial phase of the proposal. A project level grievance mechanism is being established to ensure all stakeholders the possibility to file grievances if needed. Each CLMG will include the representative of women's council as well as youth organization in each Ayil Aimak. At least 30% of the members should be women.

261. The Gender Assessment found that despite the adequate legal framework and Government's proclamations of gender equality, researchers and development practitioners point out that Kyrgyzstan faces high gender inequalities. Deep-rooted patriarchal attitudes and conventional beliefs of women's roles and responsibilities in the family and society serve to perpetuate gender inequality. While women's councils exist at the rural municipality level to address gender issues and support women, many are not strong.[76] Economic empowerment of women is lagging behind as barriers to their equal employment opportunities and entrepreneurship development continues to remain. Because only one pasture ticket is allowed per family, women have limited access to decision making in pastures. Also gender-based

[76] From 454 pasture management committees that existed in 2016, only 11 were chaired by women (2.4 percent).

inequalities are present in women's access to land, finance, decision making and management of resources. Gender considerations will therefore be mainstreamed into all trainings associated with project implementation and opportunities for women's participation and empowerment in project activities will be promoted.

F.4. Financial Management and Procurement

262. The FAO Representation in Kyrgyzstan will be the **Budget Holder** (BH) of the project, and will be responsible for timely operational, administrative and financial management of GCF resources implemented by FAO directly. The budget holder will be also responsible for i) managing OPIM for results, including monitoring of risks and overall compliance with the OPA provisions; ii) review and clear financial and progress reports received from the OP and certify request for funds iii) approve and clear budget revisions and annual work plan and budgets; iv) ensure implementation of the Risk Mitigation and Assurance Plan v) follow up and ensure that the OP implements all actions and recommendations agreed upon during Assurance Activities.

Financial management

263. Financial management in relation to the GCF resources directly managed by FAO will be carried out in accordance with FAO's rules and procedures.

264. The Operational Partners (OPs) SAEPF and ARIS are accountable to FAO for achieving the agreed project results and for the effective use of resources made available by FAO. Financial management and reporting for the funds transferred to SAEPF and ARIS will be done by them in accordance with terms, conditions, formats and requirements of FAO and the signed Operational Partners Agreement (OPA). The administration by the OP of the funds received from FAO shall be carried out under its own financial regulations, rules and procedures, which shall provide adequate controls to ensure that the funds received are properly administered and expended. The Operational Partners shall maintain the account in accordance with generally accepted accounting standards.

265. **Financial records**. **FAO** shall maintain a separate account in United States dollars for the project's GCF resources showing all income and expenditures. FAO shall administer the project in accordance with its regulations, rules and directives. **The OPs** shall maintain books and records that are accurate, complete and up-to-date. The OPs' books and records will clearly identify all Fund Transfers received by the OPs as well as disbursements made by the OPs under their respective OPAs, including the amount of any unspent funds and interest accrued.

266. **Financial reports**. **FAO's BH** will prepare project expenditure accounts according to the requirements of GCF and in line with FAO Oracle Project budget codes. **The OPs** will prepare the financial reports in accordance with terms, conditions, formats and requirements of FAO and the signed OPAs. The BH will review and approve request for funds and financial reports of the OPs. The subsequent instalments can be released only based on the BH confirmation that all expenditures are eligible and all OPAs requirements are fulfilled to the satisfaction of FAO. The BH will withhold any payment due to the OPs in case of non-compliance with the reporting obligations detailed in the OPAs.

Procurement

267. Careful procurement planning is necessary for securing goods, services and works in a timely manner, on a "Best Value for Money" basis, and in accordance with the Rules and Regulations of FAO. 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 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 Annex 2, Chapter 6 – 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 ("Best Value for Money").

268. The FAO Representative will prepare an annual procurement plan for major items which will be the basis of requests for procurement actions during implementation. 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.

269. Before commencing procurement, both FAO (in its role as executing entity) and the OPs will update the project´s Procurement Plan for approval by the Project Steering Committee. This plan will be reviewed during the inception workshop and will be approved by the BH. The OPs will update their plan every six months and submit the plan to the BH for approval.

G.1. Risk Assessment Summary

270. The project is set around an ambitious target of transforming the management of NR towards higher participation and higher transparency, ultimately resulting in higher efficiency and effectiveness of the investment. Such change will be strengthened through substantial support provided by the project to the investment, and through the availability to the larger public of the results of investment in forestry and pasture. Ultimately, any individual will be able to monitor the actual situation on the ground of all investment carried out. Such dynamics are expected to encounter some initial resistance to change as the current situation generates ambiguities, but that may be turned to the advantage of the various interest holders in turn. Nevertheless, the strength of the project in supporting the paradigm shift relies in its approach embracing not only the need for investment in NR, but also in the need to provide economic opportunities that go beyond the NR use related subsectors (i.e., climate-sensitive value chain support), and also in its support for the use of evidence and availability of information. A number of detailed risks are associated with the investment; they are described in the following Section.

G.2. Risk Factors and Mitigation Measures

Selected Risk Factor 1

Description	Risk category	Level of impact	Probability of risk occurring
Insufficient inter-ministerial coordination between SAEPF, MAFIM, MES, and SALGSIR and coordination among local self-government bodies, Leskhozes and PUUs in implementation of reforms.	Technical and operationalTechnical and operational	Low (<5% of project value)Low (<5% of project value)	High

Mitigation Measure(s)

Risk will be mitigated by the establishment by the project of a dedicated National Platform – acting as Project Steering Committee (see Chapter 5 of the Feasibility Study), formally established and chaired by the Vice Prime Minister to ensure inter-ministerial coordination and cooperation. Embracing an inclusive approach by including representatives from all relevant government and non-government institutions, and operating under the aegis of the CCCC, the Platform will have a strong catalytic function to ensure the endorsement of policy and regulatory frameworks required to support the ecosystem based transformation of NRM. Moreover, it will have the required level of representation to promote at the Parliamentary and Governmental level the approval of the proposed harmonized policy and regulatory frameworks. Additional information is summarized in Addendum 3.

Selected Risk Factor 2

Description	Risk category	Level of impact	Probability of risk occurring
Since 1995, **livestock numbers have been increasing**, particularly in recent years. From 2010-2016 the number of cattle, horses, sheep and goats increased by 17 percent, 19 percent and 23 percent respectively, increasing pressure on pasture reserves. Control of herd numbers assumes critical importance for the success of improved pasture management and the subsequent carbon sequestration potential.	Technical and operational	Medium (5.1-20% of project value)	Medium

Mitigation Measure(s)

Through negotiated INRMCRPs, the project will deliver the required capacity development to ensure that PUUs and their Pasture Committees have the knowledge and authority to shift from a low productive livestock grazing to a high productivity livestock production system, which requires a significantly lower number of animals to reach parity of output. An incentive scheme may be necessary to overcome inertia and to change traditional pasture management behaviour into pasture rotation practices that support higher livestock production. Through Component 3 in support of climate-sensitive value chains, the project has set a system to ensure diversification from unproductive livestock

grazing towards more competitive and productive agricultural activities. Additional information is summarized in Addendum 3.

Selected Risk Factor 3

Description	Risk category	Level of impact	Probability of risk occurring
Low capacity of local forestry enterprises to work in the planned number of hectares. According to assessments done by FAO and the WB in the framework of projects where local forestry enterprises have been involved, human capacities of staff employed in such state enterprises require a substantive update to apply the best available techniques for reforestation, afforestation and pasture rehabilitation.	Technical and operational	Low (<5% of project value)	Medium

Mitigation Measure(s)

The project will deploy substantial capacity development to Leskhozes in the Project Areas to ensure that their staff gain up to date technical capacity to carry out sustainable (and with high survival rates) afforestation/reforestation and forest enrichment activities in SFF, but also to guarantee a basis of evidence on successful results of an integrated approach. Moreover, the project will provide highly concessional support to forestry investments, with higher guarantee that the investments are followed up on the years subsequent to the first.

Selected Risk Factor 4

Description	Risk category	Level of impact	Probability of risk occurring
Changes in the Government's political vision such as the decentralization of resource management with high change in the highest decision-making positions may affect the project implementation in the way it involves local communities.	Technical and operational	Medium (5.1-20% of project value)	Medium

Mitigation Measure(s)

In order to mitigate the risk, the project will establish a continuous engagement process as key strategic element of implementation. This follows up on the process already initiated during the project design stage (see ESMF and stakeholders engagement reports), involving the technical staff of relevant ministries and local stakeholders in project preparation and implementation to ensure buy-in, and supporting communications campaigns to disseminate results of the studies in order to raise public awareness on climate change risks and to ensure wide political support.

Selected Risk Factor 5

Description	Risk category	Level of impact	Probability of risk occurring
Saturation of the agricultural lending market when expected disbursement rates by RKDF and partner banks may not be possible.	Financial	High (>20% of project value)	Medium

Mitigation Measure(s)

As a mitigation strategy, the project and RKDF will partner with existing domestic banks interested in the development of the "green" agricultural sector, and with banks (e.g. Ayil Bank, Bai Tushum Bank, Kompanion Bank, and Mol Bulak Finance MFI) that have been active in developing innovative approaches to the provision of financial services. This will create assurance in their capacity to develop new innovative financial products and solutions within the CS-FOR scope. As an element increasing the credit worthiness of potential clients, the project will ensure complementarity of TA and credit resources provided to the eligible VCs and enterprises. Moreover, the project in partnership with the National Bank of the Kyrgyz Republic will explore new opportunities in agricultural lending for product development in cooperation with interested financial service providers and share these learnings among interested parties, for scaling up.

Selected Risk Factor 6

Description	Risk category	Level of impact	Probability of risk occurring
Forest investment may suffer from a downward spiral of illegal logging due to growth in rural energy consumption and in urban construction needs	Technical and operational	High (>20% of project value)	Low
Mitigation Measure(s)			
Through an evidence-based approach, the project will be able to ensure significantly higher transparency and faster reporting on areas being logged, providing especially SAEPF and the Leskhozes with the information to ensure appropriate monitoring and surveillance on their investment and on their territories. On the side of market incentives, through the support to climate-sensitive value chains and the associated increase in technical capacity, Component 3 of the project provides incentives to forest protection via provision of alternative livelihoods. To this end, the partnership of the project with banks involved in dissemination of energy-efficient technologies represents an opportunity to ensure reduced consumption of fuelwood in the national territory, with higher emphasis in the areas with high potential for forest management. Monitoring process of deforestation/ illegal loggings is summarized in Addendum 4 of the Funding Proposal.			
Selected Risk Factor 7			
Description	Risk category	Level of impact	Probability of risk occurring
The mobilization at local level and the dialogue around the INRMCR may be affected also by vested interests and distorted incentives, as well as petty corruption leading to resistance to changes.	Social and environmental	Medium (5.1-20% of project value)	Low
Mitigation Measure(s)			
Building upon the experience of ARIS and other partners in social mobilization, the project will adopt an inclusive process in the target communities and a strong participatory approach in implementation of all activities to ensure transparency and accountability. Moreover, broad and active communication and awareness campaigns will be conducted, indicating project engagement rules as well as implementation borders and benchmarks.			
Selected Risk Factor 8			
Description	Risk category	Level of impact	Probability of risk occurring
Natural hazards especially mudslides, landslides and flash floods **can lead to damages in the Project Area**, affecting the project's implementation and investments.	Social and environmental	Low (<5% of project value)	Low
Mitigation Measure(s)			
Part of the strategy of the project is to select areas for rangeland and above all forests rehabilitation where the investments can be more beneficial in terms of reducing the exposure to such natural disasters.			
Other Potential Risks in the Horizon			
The National Bank of the Kyrgyz Republic (NBKR, the central bank) officially operates a free floating exchange rate with inflation targeting. In the recent years, the country experienced a steady depreciation of the exchange rate with the international currencies. No projection on the exchange rate is available for the duration of the project. In the short run, the stabilization of the Russian rouble in 2016 and 2017 led to an appreciation of the KGS, which averaged around KGS 69 per US$1 in 2017, and in the short term it is expected a modest appreciation. However, under the assumption of political and economic stability and with an effective free floating exchange policy with inflation targeting, the purchase power parity of the project budget allocation is expected to remain stable.			

H.1. Logic Framework.

Please specify the logic framework in accordance with the GCF's Performance Measurement Framework under the Results Management Framework.

H.1.1. Paradigm Shift Objectives and Impacts at the Fund level[77]	
Paradigm shift objectives	
Shift to low-emission sustainable development pathways	The project will support carbon emission reduction and enhance carbon storage (carbon sinks), while capitalizing important co-benefits from adaptation and disaster risk reduction, through: (i) the creation of legal and management enabling environment supported by an innovative evidence-based climate and natural resource planning and monitoring system (ii) community based investments in natural forest regeneration, sustainable forest management, afforestation and reforestation; (iii) rehabilitation of rangelands and prevention of further degradation; (iv) diversification of options for community livelihoods; and (v) and reduction of emission intensity per unit of animal protein. The country will thus shift from a local economy that is currently negatively impacting on carbon storage potential of ecosystems (forest and rangelands) to a low-carbon emission economy where mitigation investments will trigger and enhance resilience of ecosystems as well as of communities that that will be less dependent on direct uses of resources (i.e., wood and pasture) and more reliant on ecosystem services such as protection (reduced climate vulnerability), biodiversity and diversified livelihood opportunities. **Indicator**: ☐ **PSM** Degree to which the Fund contributes to low-emission sustainable development
Increased climate-resilient sustainable development	Through its evidence-based approach, the project will support the diversification of sources of rural income ensuring climate adaptive and mitigation-oriented productivity through implementation of systematic INRMCRPs and related investments. The project will secure, mainstream and scale up the enabling environment for diversification, increase of efficiency and competitiveness reducing the dependency of communities on direct uses of resources (i.e., wood and pasture) and increasing their reliance on ecosystem services such as protection (reduced climate vulnerability), biodiversity and diversified livelihood opportunities. Ultimately, the experience of this project will serve as driver for dissemination of good practices throughout the country, shifting national agricultural production from a predominantly unsustainable subsistence livestock production to a diversified and climate-sensitive value chain business oriented economy. **Indicator**: ☐ **PSM** Degree to which the Fund contributes to climate-resilient sustainable development

Expected Result	Indicator	Means of Verification[78]	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
Fund-level impacts						
Core Indicator targets	Tonnes of carbon dioxide equivalent (tCO_2eq) reduced as a result of GCF-funded projects/programmes	Reduced or avoided emissions will be monitored with FAO EX-ACT[79] and GLEAM[80] methodology and tools.	Annual: 74,177 tCO_2eq Lifetime (20y) +1,483,543 tCO_2eq	-2,962,703 tCO_2eq	Annual tCO_2eq 987,568 Lifetime (20y) -19,751,354 tCO_2eq	Economic growth and GHG emission remains stable Forests' losses and forest/rangeland fires in target areas remains in the limits identified in the baseline Economic social and
	Cost per tCO_2eq decreased for all Fund-funded mitigation projects/ programmes	Financial Reports of the Project; EXACT; GLEAM outputs	N/A (incremental tCO_2eq occurs with project only)	US$ 10.7 per tCO_2eq (based on estimated disbursement over estimated tCO_2eq sequestered)	US$ 2.5 per tCO_2eq (GCF Fund contribution US$ 1.5 per tCO_2eq)	

[77] Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement): http://www.greenclimate.fund/documents/20182/239759/5.3_-_Performance_Measurement_Frameworks__PMF_.pdf/60941cef-7c87-475f-809e-4ebf1acbb3f4

[78] For Means of Verifications details kindly refer to Chapter 6 of the Feasibility Study.

[79] http://www.fao.org/tc/exact/ex-act-home/en/

[80] http://www.fao.org/gleam/en/

	Volume of finance leveraged by Fund funding	Reports from cofinancing actors and executing agencies	0	**Public**:[81] US$ 0.7 million **Private**:[82] US$ 11.8 million	**Public**: US$ 1.4 million **Private**: US$ 18.6 million	political situation in the Country and in target areas remains stable Absence of major natural disaster in the Country and in target areas
	Total number of direct and indirect beneficiaries; Number of beneficiaries relative to total population	**Independent Survey reports**	0	**Direct beneficiaries**: 86,490 individuals of which 49,299 are women **Indirect beneficiaries**: 108,112 individuals of which 76, 024 are women	**Direct beneficiaries**: 432,450 individuals (7% of the country's population) of which 246,497 are women **Indirect beneficiaries**: 540,563 (8% of the country's population) individuals of which 380,121 are women	
M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks	M.4.1 Tonnes of carbon dioxide equivalent (tCO_2eq) reduced or avoided (including increased removals) as a result of GCF-funded projects / programmes	Reduced or avoided emissions will be monitored with FAO EX-ACT[83] and GLEAM[84] methodology and tools.	Annual: 74,177 tCO_2eq Lifetime (20y) +1,483,543 tCO_2eq	-2,962,703 tCO_2eq	Annual tCO_2eq -987,568 Lifetime (20y) -19,751,354 tCO_2eq	
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	RIMA II Index Value[85] (Resilience Composite Index – RCI) against the assessed project's baseline.	Males: 324,338 Individuals Females: 184,873; 51.7/100.0 RCI for the target populations	n/a (measured at end project)	RCI improved by 10 percent (i.e. 56.9) for at least 75 percent of the project direct beneficiaries (Males: 324,338 Individuals Females: 184,873)	
A4.0 Improved resilience of ecosystems and ecosystem services	A4.1 Coverage/scale of ecosystems protected and strengthened in response to climate variability and change	Georeferenced M&E Archive and reports from partners / involved stakeholders (LPD[86] and NDVI[87] improvements against baseline).	Degraded Rangeland: 920,850 ha Degraded Forest: 93,931 ha	Degraded Rangeland: 791,931 ha (-20%) Degraded Forest: 75,144 ha (-20%)	Degraded Rangeland: 276 255.07 ha (-70%) Degraded Forest: 31 572.43 ha (- 60%)	Absence of major natural disaster in the Country and in target areas

[81] Including FAO, ARIS, SAEPF, MAFIM.
[82] Including RKDF and Beneficiaries
[83] http://www.fao.org/tc/exact/ex-act-home/en/
[84] http://www.fao.org/gleam/en/
[85] RIMA methodology is further described in CS-FOR WP on Resilience Analysis (Annex 9), and can be consulted at: http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/416587/.
[86] https://www.unccd.int/sites/default/files/inline-files/Presentation%20of%20UNCCD-%20Monitoring%20and%20Evaluation.pdf
[87] FAO Earth Map 2018.

H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level						
Expected Result	**Indicator**	**Means of Verification** (MoV)	**Baseline**	**Target**		**Assumptions**
				Mid-term (if applicable)	Final	
GCF Outcomes						
	Number of technologies and innovative solutions transferred or licensed to support low-emission development as a result of Fund support.	Georeferenced M&E archive and reports from partners and involved stakeholders Project's Targeted Policies Scorecard verification Official documentation from concerned ministries, agencies and local institutions	None	2	6	Economic, social and political situation in the Country and in target areas remains stable
M5.0 Strengthened institutional and regulatory systemsM5.0 Strengthened institutional and regulatory systems	M.5.2. Number and level[88] of effective coordination mechanisms.	Georeferenced M&E archive and reports from partners and involved stakeholders Project's Targeted Policies Scorecard verification Official documentation from concerned ministries, agencies and local institutions	0 - No existing mechanism allows to coordinate the integrated planning, access and use of forests and rangelands	1 National platform and national institutions (level 1) coordinate with at least 48 Community Landscape Management Groups established. (level 3 and 4)	1 National platform and national institutions (level 1) coordinate with at least 48 Community Landscape Management Groups established. (level 3 and 4)	Economic, social and political situation in the Country and in target areas remains stable Additional information are reported in the scorecard description available in Annex 2 page 166.
M9.0 Improved management of land or forest areas contributing to emissions reductions	M9.1 Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions	Georeferenced M&E Archive and reports from partners / involved stakeholders (LPD and NDVI improvements against baseline)	**Degraded Rangeland**: 920,850 ha **Extremely Degraded:** 123,517 ha **Moderately Degraded**: 160,984 ha **No degradation** 636,348 ha **Degraded Forest:** 56 359 ha **Extremely Degraded:** 23,238 ha	**Degraded Rangeland improved** : 55,245 ha **Extremely Degraded**: 7,411 ha **Moderately Degraded** 9,659 ha **No degradation** 38,181 ha **Degraded Forest (mgt.):** 11,272 ha **Extremely Degraded:**	**Degraded Rangeland improved** : 276,225 ha **Extremely Degraded**: 37,055 ha **Moderately Degraded** 48,295 ha **No degradation** 1 90,904 ha **Degraded Forest (mgt.):** 56 359 ha **Extremely Degraded:**	Forests' losses and forest/rangeland fires in target areas remains in the limits identified in the baseline Economic social and political situation in the Country and in target areas remains stable

[88] Level for each coordination mechanism is expressed on a scale of 0-4. Each 'level' refers to a different degree of effectiveness (0 = no coordination mechanism; 1 = National coordination, 2 National, Regional and District coordination; 3 Regional, district, Municipality coordination, 4 Regional, District, Municipality and Community coordination).

			Moderately Degraded 14,536 ha **No degradation** 56,157 ha **Forest Investment** 0 ha **A/R**: 0 ha **FE**: 0ha **Improvements of Degraded Agriculture Land** 0 ha	1,859 ha **Moderately Degraded**: 1,163 ha **No degradation**: 4,493 ha **Forest Investment** 1,200 ha **A/R:** 600 ha **FE:** 600 ha **Improvements of Degraded Agriculture Land** 430 ha	9,295 ha **Moderately Degraded:** 5,814 ha **No degradation:** 22,463 ha **Forest Investment:** 6,000 ha (+100%) **A/R:** 3,000 ha **FE:** 3,000 ha **Improvements of Degraded Agriculture Land** 2,150 ha	Absence of major natural disaster in the Country and in target areas
A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development [89]	A5. 5.2 Number and level of effective coordination mechanisms	Georeferenced M&E archive and reports from partners and involved stakeholders Project's Targeted Policies Scorecard verification Official documentation from concerned ministries, agencies and local institutions	0- No existing mechanism allows to coordinate allows to coordinate the integrated planning, access and use of forests and rangelands to incentivize for climate resilience.	1 National platform and national institutions (level 1) coordinate with at least 48 Community Landscape Management Groups established. (level 3 and 4)	1 National platform and national institutions (level 1) coordinate with at least 48 Community Landscape Management Groups established. (level 3 and 4)	Economic, social and political situation in the Country and in target areas remains stable Additional information are reported in the scorecard description available in Annex 2 page 166.
A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	A7.1: Use by vulnerable households, communities, businesses and public-sector services of Fund supported tools, instruments, strategies and activities to respond to climate change and variability	Georeferenced M&E archive and reports from partners and involved stakeholders Independent Household Survey (baseline, mid-term and closure)	0	At least 2 tools successfully used by at least 20% of households, communities, businesses and public-sector (INRMCRP and Evidence based decision tool)	At least 6 tools successfully used by at least 20% of households, communities, businesses and public-sector (INRMCRP, Evidence based decision tool, livestock destocking methodology, sustainable forest management plan, sustainable rangeland management plan, sustainable water resource management plan)	Economic social and political situation in the Country and in target areas remains stable Absence of major emergencies / natural disaster in the Country and in target areas. The scorecard addressing the qualitative part of A7.1 will be informed by the HH survey questions.

[89] The Project will also monitor SDG Indicator, 15.3.1 Proportion of land that is degraded over total land area. The baseline and final target are identified as 32% (Land Productivity Dynamics – LPD degradation value in target Areas) and 17% (LPD degradation value in target Areas), respectively.

Project Outputs	**COMPONENT 1**					
1.1 Evidence based natural resources management governance is strengthened across stakeholders	1-CS-FOR: # of recommendations/ harmonization / revisions (for enforcement of sustainable management and use of forest-rangeland ecosystems, including technical, legal and institutional approaches to advance public-private partnership) are approved by deputed institutions	Official documentation from ministries, agencies and local institutions	None	At least 1 for Forest Code and 1 for Pasture Law	Same as mid-term	Economic, social and political situation in the Country and in target areas remains stable Economic social and political situation in the Country and in target areas remains stable Absence of major natural disaster in the Country and in target areas
	2-CS-FOR: # of decisions (institutional/regional/local) related to CC and NRM supported modified and approved.	Georeferenced M&E archive and reports from partners and involved stakeholders Independent Household Survey (baseline, mid-term and closure) Independent Institutions Survey (baseline, mid-term and closure)	None	**Local** 4 (district level) **National** 0	**Local** 15 (12 at district level and 3 at regional level) **National** 12	
	3-CS-FOR: # of INRMCRP operational in target areas	Georeferenced M&E Archive and reports from partners / involved stakeholders. Official Documentation from ministries, agencies and local institutions Independent Institutions survey (baseline, mid-term and closure)	0	39	39	
Project Output	**COMPONENT 2**					
2.1 Green investments for forests and rangelands rehabilitation are made available	4-CS-FOR: # of hectares afforested / reforested with survival rate > 65%	Georeferenced M&E archive and reports from partners/ involved stakeholders Official documentation from ministries, agencies and	0	600	3000	Forests' losses and forest/rangeland fires in target areas remains in the limits identified in the baseline Economic social and political
	5-CS-FOR: # of hectares reporting improved Land Productivity Dynamics values		**Extremely Degraded:** 123,517 ha **Moderately Degraded** 160,984 ha **No degradation** 636,348 ha	**Extremely Degraded:** 98,814 ha **Moderately Degraded** 128,787 ha **No degradation** 509,078 ha	**Extremely Degraded:** 37,055 ha **Moderately Degraded** 48,295 ha **No degradation** 190,904 ha	

	6-CS-FOR: Average milk yields (l/animal/day) increased by at least 40%,	local institutions Independent Institutions Survey (baseline, mid-term and closure) Independent Household Survey (baseline, mid-term and closure)	5	5,5	7	situation in the Country and in target areas remains stable Absence of major emergencies / natural disaster in the Country and in target areas Barren and low-productive female livestock are culled and sold. Surplus male bulls are sold at 2 years old; surplus male small ruminants are sold at 1.5 years.
	7-CS-FOR: Average animal live weight (kg/animal) increased by at least 15%		**Cattle** Female 350 Mature male 320[90] **Sheep** Female 40 Male 65 **Goat** Female 35 Male 38	**Cattle** Female 367 Mature male 336 **Sheep** Female 42 Male 68 **Goat** Female 37 Male 40	**Cattle** Female 430 Mature male 400 **Sheep** Female 46 Male 75 **Goat** Female 40 male 44	
Project Output	**COMPONENT 3**					
3.1 Selected value chains are climate sensitive and producers adopt carbon optimization technologies and practices	8- CS-FOR: # of additional ha of forests used and managed under voluntary sustainable management standards	Certification body (register of certificates) and Kyrgyz Statistic Committee survey Independent Household Livelihood (baseline, mid-term and closure) and Kyrgyz Statistic Committee Survey	312	712	2312	Economic social and political situation in the Country and in target areas remains stable Absence of major emergencies / natural disaster in the Country and in target areas Aggregate herds' growth does not exceed in line with observed trends. Funds from RKDF are disbursed to beneficiaries in due time.
	9-CS-FOR: # of additional ha planted on permanent orchards and plantations using drip irrigation	Georeferenced M&E archive and reports from partners and involved stakeholders Independent Household Livelihood survey (baseline, mid-term and closure) and Kyrgyz Statistic Committee Survey	650	1050	3200	
	10-CS-FOR: % of targeted animal owners achieving improved emissions intensity by at least 15% per unit of animal protein		None	10%	50%	

90 Bishkek slaughterhouse data. Male calves reach sexual maturity age earlier than females.

Project Activities	Description	Inputs
COMPONENT 1 – US$ 5,581,937		
Output 1.1		
Activity 1.1.1 Prepare communication material and organize information awareness campaigns to mobilize national stakeholders	The activities will support the preparation of communication and information material for the mobilization of stakeholders at the local level to advance participatory management of natural resources.	USD 165,050 Local consultants, training-workshop, -conference-Professional/contractual services.
Activity 1.1.2 Organize fora/ international conferences meetings to sensitize the stakeholders		USD 568,200 Local Consultant, Equipment, Training workshop and conference, Travel, Staff.
Activity 1.1.3 Training sessions/ workshops on forest and rangeland tenure arrangements, policy making, management of natural resources	The activity will support existing natural resources monitoring functions at national level (including measurement, reporting and verification within SAEPF) with evidence-based tools and methodologies for Planning, Monitoring and Evaluation, and will facilitate linkages between evidence and data from the ground, information systems and the forest-rangeland ecosystem planning processes.	USD 1,076,467 Local consultants, International consultants, Training workshop and conference, Travel, Staff
Activity 1.1.4 Propose recommendations for enforcement of sustainable management and use of forest-rangeland ecosystems through participatory process (Dialogues / workshops / meetings)	The activity will support the harmonization of legislation on tenure arrangements for forest-rangeland ecosystem and include aspects such as: (a) recommendations for enforcement of sustainable management and use of forest- rangeland ecosystems; and (b) technical, legal and institutional approaches to advance public-private partnership in promotion of integrated natural resources management.	USD 379,370 Professional/contractual services, Local consultants, International consultants, Training workshop and conference, Travel, Staff, Others
Activity 1.1.5 Identify approaches for national stakeholder involvement process and organize National Stakeholders Platform Policy Dialogue for the management and use of municipal forest and facilitate thematic workshops, and submit the recommendation document to the Parliament	Based on the identified legal gaps and ambiguities in sectoral policies and regulations, and on special studies on impacts of existing legislation on biodiversity, environmental resources, and livelihoods, the activity will support the establishment of an Expert Group comprised of various technical expertise with engagement of local research and outreach organizations will develop and deliver capacity-development interventions to enhance capacity on policy making and management of natural resources among key stakeholders. The activities of the expert group will provide evidence (e.g., on forest-rangeland ecosystem zoning, stratification and planning, spatial and territorial development) to inform the policy dialogue supported under Component 1 focusing on the enabling environment for more effective climate investments in line with the Country Work Programme under development in Kyrgyzstan.	USD 533,400 Professional/contractual services, Local consultants, International consultants, Training workshop and conference, Travel, Staff, Others
Activity 1.2.1 Demonstrate and accompany national and local institutions in adopting the evidence-based Natural resources Planning, Monitoring and Evaluation System	The activity will secure the establishment of a dedicated evidence-based and georeferenced project M&E system, including a dedicated NRM and climate-oriented monitoring procedure for central institutions to ensure scalability across the country. Through this Activity, the project will support the development of standards, methodologies and implementation modalities for the state monitoring of rangelands and forests resources.	USD 1,406,350 Professional/contractual services, Local consultants, International consultants, Training workshop and conference, Travel, Staff, Others
Activity 1.3.1 Mobilize communities, establish CLMGs and accompany in formulating INRMCRPs	The Activity will develop methodologies, guidelines and materials to support stakeholders with the elaboration of the INRMCRPs The activity will also build the capacity of stakeholders on georeferencing and community mapping of natural resources and livelihood strategies. This activity will serve also as on-the-job training and it will be an additional opportunity for communities to gradually contribute to governance of NR. This activity will also	USD 1,453,100 Professional/contractual services, Local consultants, International consultants, Training workshop and

	guarantee ground-truthing of geospatial analysis and GIS managed at the central level. An information dissemination and capacity-building programme will be developed to target decision makers on various sources of funding for sustainable NRM that includes carbon finance, especially in the international context of carbon sequestration in grasslands.	conference, Travel, Staff, Others
COMPONENT 2 – US$ 22,472,168		
Output 2.1		
Activity 2.1.1 Conduct training to 50 communities and institutions on technical/ legal matters on forest enrichment and afforestation/ reforestation, and provide technical/legal assistances on forestry PPP establishment	The activity will mobilize and train 50 aiyl aymaks (municipalities) on technical/ legal matters on forest enrichment and afforestation/ reforestation and their communities will include social mobilization including gender training and institutional support, as well as the establishment of task forces and fire management teams at Leskhoze level. Training of trainers (TOT) will be provided on technical and institutional matters and facilitate dialogue among Leskhozes, NGOs, CSOs, forest and pasture experts, PUUs, WUAs and other natural resource users. Training sessions will be also provided to women on leadership, decision-making and participation in local institutions with a view to supporting women's further engagement in PUUs, WUAs and other community resource user groups. Technical assistance will include: (i) technical assistance on forestry; (ii) Technical requirements for Leskhoze staff as well as municipal administration and forest users for sustainable management of forests; (iii) Integrated Pest Management; (iv) natural resources georeferencing and mapping; (v) technical and legal assistance on Public-Private Partnerships for forest management; and (vi) technical assistance on land tenure and principles of responsible governance on tenure arrangements for forest-rangeland ecosystem management.	USD 2,072,055 Equipment, Training workshop and conference, Travel, Professional/contractual services.
Activity 2.1.2 Provide technical assistance to the Pasture Department on climate-sensitive pasture management, assessment and monitoring, and conduct INRMCRP assessment and monitoring	The activity will support the pasture department with dedicated technical assistance and will include: (i) training and study tours for staff within the Pasture Department, provided by national and international expertise; (ii) training on monitoring of INRMCRP implementation; (iii) capacity development on pasture rotation and evidence-based rangeland M&E. Additionally, through a system of training of trainers the activity will promote trainings and refresher trainings for administrators and CLMGs on the ecological wisdom and benefits of rotational grazing and erosion control, and the need for policies and regulations that support improved resource management and land-use planning.	USD 843,048 Local consultants, International consultants, Training workshop and conference, Travel, Professional/contractual services.
Activity 2.1.3 Conduct training of trainers on pasture rotation and evidence-based rangeland M&E to local cadres as well as training of trainers on INRMCRP management and implementation, and training sessions to the CLMGs and local stakeholders to implement INRMCRPs on rangeland management	The activity will strengthen CLMGs' capacities to implement INRMCRPs on rangeland management. This output will include training of trainers organized by ARIS and provided through the mobilization of national and international expertise. Capacities of local stakeholders (ayil okmotus, Leskhozes, PUUs, etc.) to implement INRMCRPs on pasture management will be strengthened through a set of initial trainings and refresher training on technical and institutional issues (mainstreaming both gender aspects and land tenure within the framework of the VGGTs) for both institutions and livestock owners. The capacity development will focus on the following: - Improved grazing management practices, and their performance monitoring. - Enhanced livestock productivity, higher income, reduction in total animal numbers and enterprise diversification. - Genetic selection of livestock in current herds to cull unproductive or less-productive animals, and on the careful use of Artificial Insemination (AI) to achieve cross-bred livestock to reduce the need for large herds.	USD 2,932,410 International consultants, Equipment, Training workshop and conference, Travel, Professional/contractual services, Others.

	- Integration and harmonization of pasture management of SLF and SFF lands and benefits of planting shelterbelts and copses.	
Activity 2.1.4 Provide climate investment in restoration and improvement of forests based on INRMCRP developed, and execute afforestation/ reforestation and forest enrichment work by Leskhozes with technical assistance	The activity will support investment in Afforestation / Reforestation and Forest Enrichment in target areas: Activity will include: (a) at least 3,000 hectares of new forests planted on degraded lands; (b) at least 3,000 additional ha of existing degraded forests enriched; (c) about 56,000 ha of existing forests under improved management; (d)Support the establishment of climate-resilient tree nurseries and training to local Leskhoze nurseries on planning (design and operational); standards of production.	USD 12,153,805 Equipment, Training workshop and conference, Professional/contractual services, Travel, Staff, Others
Activity 2.1.5 Develop and execute INRMCRP pasture investment plans for catalyzing green investment in rangeland rehabilitation and livestock production	The activity will support investment in pasture rehabilitation and livestock production. Su-activities will guide and support communities (CLMGs) to overcome pasture degradation through the adoption of pasture rotation, training, mentoring and monitoring support. Complimentary activities include the establishment of shade shelters and windbreaks aiming at having multipurpose tree species to form the major part of these breaks, in order to increase the use of them, construction of seed-increase fields, harvesting and broadcasting seeds to increase fodder production, construction of watering points or small bridges to unlock inaccessible pasture, and procurement of large equipment for infrastructure improvement. Investment will be combined with technical support for integrated and improved pasture management including: (i) Rotational grazing; (ii) windbreaks and shelterbelts, (iii) adaptation to climate change and contribution to carbon sequestration via planting of trees in small areas on municipal pastures and Leskhoze land; (iv) promotion of improved grassland seeds and seed dissemination of desirable indigenous perennial plants to accelerate pasture improvement; and (v) improved livestock production and productivity.	USD 4,470,850 Equipment, Travel, Staff
COMPONENT 3 – US$ 19,512,965		
Output 3.1		
Activity 3.1.1. Select value chains in operation and provide technical support to the value chain actors/organizations for climate-sensitive business development	The Activity will include: (i) End markets assessment, covering key international markets for the Kyrgyz NTFPs and periodical monitoring of market trends, including supply planning calendars and gaps, existing bottlenecks and risks; (ii) market prospecting campaign on national and international markets, to identify potential buyers operating in premium segments and fostering environmental and social responsibilities as their corporate commitment; (iii) resource inventory, using geospatial tools followed by a thorough Market Development Plan (will include introduction of Geographic Indication, especially for the walnut); (iv) awareness campaigns on market opportunities and requirements, including the design and rollout of the Kyrgyz Tree Nuts & Dried Fruits information and trade portal.	USD 2,677,240 Local consultants, International consultants Training workshop and conference, Professional/contractual services, Travel, Staff
Activity 3.1.2. Identify and mobilize operating agribusinesses in the selected value chains via information campaign and value chain mapping for climate-sensitive business practices	The Activity will support agribusinesses operating in the selected value chains to upgrade their supply chain by introducing good farming practices, voluntary certification, optimized logistics and robust marketing.	USD 335,725 Professional/contractual services, local consultants, Training workshop and conference, Others
Activity 3.1.3. Activate special credit lines and provide loans for eligible value chain actors in communities/ entrepreneurs/ enterprises in the project-relevant value chains	The activity will ensure the activation of special credit lines for project-relevant value chains and entrepreneurs.	USD 16,500,000 Others

H.2. Arrangements for Monitoring, Reporting and Evaluation

271. A detailed description of the Means of Verification of the indicators is provided in Chapter 6 of the Feasibility Study. Data will be collected by the M&E unit according to the means of verification described in the previous Sections. Data will originate from described sources and will be organized in the georeferenced M&E database. Data will be presented annually according to milestones fixed by each approved Annual Work Plan and Budget (AWPB). Specific wrap-up sessions will be organized and supported by FAO at midterm and completion so to ensure data availability to external evaluators.

272. CS-FOR will apply FAO's M&E standard procedures and will be compliant with the GCF performance measurement framework. FAO will manage and coordinate reporting to the GCF according to agreed standards and procedures. The project will follow an Evidence and Result-Based Management (ERBM) approach, which is intended to aid decision-making towards the explicit goal, outcomes and outputs identified as part of the Theory of Change.

273. Project achievements towards approved targets will be monitored via identified indicators and against the project baseline as reported in the logframe matrix. As described in the next Sections, the project will ensure georeferencing of activities including trainings and capacity development so to allow constant follow up via FAO's Remote Sensing application "Earth Map". The combination of georeferencing, ground truthing with communities and remote sensing analysis via FAO/Earth Map will allow the M&E unit, the NDA, FAO and the GCF to have a clear understanding of project's effectiveness and efficiency. Additionally, the described approach will allow the M&E unit to advise and support the PMU with evidence enhancing project's capacity not only to deliver but also to support stakeholders and beneficiaries in their decision-making processes. EX-ACT and GLEAM-I tools will also serve as monitoring tools. Calculations will be updated annually. Description of monitoring parameters and M&E framework is summarized in Addendum 4 of the Funding Proposal.

274. CS-FOR project cycle will be monitored using a combination of tools based on: **(i)** field data collection, **(ii)** georeferencing and **(iii)** geospatial analysis.

(i) Field data Collection: field data will be collected by the M&E unit via dedicated activities planned with communities according to the monitoring exercises planned by the project. To this end the M&E unit will collect data from communities following the HH survey methodological approach and specifications. Additionally the project has planned to conduct two additional household and institutions surveys at Mid-Term and Project Completion.

(ii) Georeferencing: This will ensure a unique relation between project's activities and geographical coordinates collected according to a specific procedure (Ref: Georeferencing Procedures). This will allow the project and the Country to ensure clear identification of activities and beneficiaries in the precise context identified during project identification and design. Georeferencing will allow the project to profit from the vast geospatial data set available for the Country and will support involved institutions in sharing and mainstreaming geospatial data as aimed by the 2016 NSDI MOU.

(iii) Geospatial analysis: the M&E unit will monitor activities and processes through a series of remote sensing and photointerpretation analysis that have been made accessible to the country via the FAO's Earth Map Application. The application will allow the project to factor in climate change variables as well as socio-economic and environmental data into the planning and decision-making process. The integration of 'geo-spatial' elements will allow stakeholders to overlay different classes of data such as climate trends, hydrography, erosion, flood risks, land cover, land use, distribution of population and livelihoods that are a non-negligible part of an evidence-based and informed decision-making process. Finally, the process will contribute to enhancing national and regional data collection activities that will support the understanding of climate change impacts at local level.

275. Having georeferenced investments as well as soft activities (i.e., training, capacity development) will allow the project to address indicators with objective elements of evaluation. The PMU and all other stakeholders - including the GCF - will be able to understand if activities have been executed, if these have been successful and finally if there is a specific impact that could be objectively linked to the project's theory of change. The use of such an approach will not require special technologies, equipment or advanced IT skills. Basic software is available under license (i.e., ArcGis/ESRI) or in open source (i.e. QGIS) and most of the currently available smart phones/tables, regardless of their operative systems, can execute most of the processes required to ensure georeferencing and data management. Additionally, FAO will provide targeted training to PMU, its M&E unit and project partners/stakeholders during the start-up phase of the project.

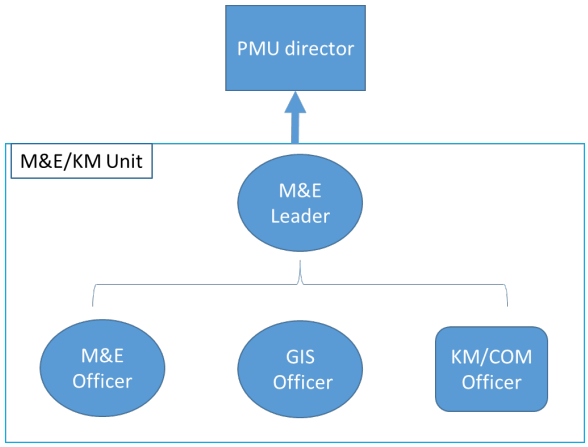


Figure H.2.1: M&E Unit composition

276. The PMU will be responsible for the M&E process. The M&E unit (Figure 1) is composed of one team leader and of three officers (M&E/GIS/knowledge management and communication). The team leader will respond directly to the PMU director and to the PSC.

277. During execution of the project, the M&E unit will ensure, among the others, support at the following levels:

(i) Monitoring of execution performances: The unit will be responsible for: (**a**) collecting data from identified service providers/partners; and (**b**) submitting progress reports on approved targets on a quarterly basis to the PMU. The M&E unit will ensure correct and efficient filing of collected GPS coordinates. Once coordinates will start populating the M&E database, activities will be shared through thematic maps generated by the project and will be monitored through consolidated remote sensing practices (geospatial analysis). This aspect of the process is paramount to ensure knowledge building within the PMU and among stakeholders and in evaluating direct and indirect impacts of project activities. Showing activities in their exact location - visualizing relations with the context - will allow a more objective impact's evaluation and will provide decision makers with an objective, transparent and evidence-based support to national strategies. Data, collected through reports prepared by service providers/partners and verified with beneficiaries, will be disaggregated by gender, among the others, and will be georeferenced. Data will be stored in a database accessible to the PSC as well as to FAO. Detailed procedures related to georeferencing are available in the specific Working Paper (linked in the last page of this Funding Proposal).

(ii) Community monitoring and ground truthing: The project will apply a new approach to monitoring the participation of target beneficiaries and stakeholders in the process. Given the importance and relevance attributed by the theory of change to **community's** participation in ecosystem-based NRM, the M&E unit will ensure annual consultations in target areas so to support planning and monitor execution of the INRMCRPs. Thanks to the described georeferencing process, communities will participate directly both in planning, according to the criteria designed for the INRMCRPs, and in ground truthing the results obtained via FAO spatial analysis tools and methodologies. This particular aspect of the M&E strategy will also allow for enhanced and evidence-based knowledge sharing with local communities and their administrations as well as for mainstreaming climate change knowledge among key stakeholders. As with all the other activities, data deriving from this exercise will be part of the Project Atlas and available for consultation via KMZ files upon request.

(iii) Strategic level: Annual results and related analysis, jointly reviewed by FAO and the PMU, will form the basis for each annual year planning **exercise** via the AWPB. These will be presented to the PSC in order to support its strategic role and to secure transparency and evidence-based strategy development.

278. **Independent Evaluation**. Independent interim and final evaluations will be carried out in accordance to the FAO procedures for the evaluation of initiatives funded by voluntary contributions.[91]

[91] See also Chapter 5 of the Feasibility Study and FAO procedures available at: http://www.fao.org/evaluation.

I. Supporting Documents for Funding Proposal

- ☒ NDA No-objection Letter (Annex 1)
- ☒ Feasibility Study (Annex 2 including: Gender Assessment / Action Plan, and Stakeholders Engagement Report)
- ☒ Integrated Financial Model that provides sensitivity analysis of critical elements (xls format) (Annex 3)
- ☒ Confirmation letter or letter of commitment for co-financing commitment (If applicable) (Annex 4)
- ☒ Project/Programme Confirmation/Term Sheet (including cost/budget breakdown, disbursement schedule, etc.)
- ☒ Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plan (If applicable) (see Annex 5: Environmental and Social Management Framework – ESMF)
- ☐ Appraisal Report or Due Diligence Report with recommendations (If applicable)
- ☐ Evaluation Report of the baseline project (If applicable)
- ☒ Map indicating the location of the project/programme (Annex 6)
- ☒ Timetable of project/programme implementation (Annex 7)

List of Annexed Documents:[92]

Folder Annex:	File(s)
1. NDA No-objection letter	SAEPF-NDA-No Objection letter-20June2018 SAEPF- NDA letter and memo on complementarities FAO-WFP
2. Feasibility Study	CS-FOR Kyrgyzstan - Feasibility Study (3 October 2019)
2.a. Gender Assessment and Action Plan	CS-FOR - Gender and Social Inclusion Action Plan CS-FOR - Gender Assessment
2.b. Stakeholders Engagement Report	CS-FOR - Stakeholders Engagement Report
3. Integrated Financial-Economic Models	CS-FOR - Economic and Financial Analysis (text) CS-FOR - Integrated Economic Model (spreadsheet) CS-FOR - Integrated Financial Model (spreadsheet)
3.a. Carbon Accounting (EX-ACT)	CS-FOR - Carbon Accounting (spreadsheet)
3.b. Cost Tables	CS-FOR - Budget Plan in GCF format CS-FOR - Procurement plan in GCF format
4. Letter of commitment for co-financing	ARIS-12Jun2018-Letter of confirmation for co-financing commitment; ARIS -15JUL2019-Letter of re-confirmation for co-financing commitment; FAO - 05November2018-Letter of Intent for co-financing; MAFIM-13June2018-Letter of confirmation for co-financing commitment; MAFIM-15July2019-Letter of re-confirmation for co-financing commitment; RKDF-Oct2019-Letter of confirmation for co-financing commitment; SAEPF-08Jun2018-Letter of confirmation for co-financing commitment; SAEPF-25SEP2019-Letter of re-confirmation for co-financing commitment
4.b. Operational Partners' Capacity Assessment	ARIS Kyrgyzstan - Micro-assessment report – final SAEPF PIU Kyrgyzstan - MDLF - Micro-assessment report - final
5. ESMF	CS-FOR - Environmental and Social Management Framework FAO Environmental and Social Management Guidelines_2015
6. Map of Project Areas	CS-FOR Map of Intervention areas
6.b. CS-FOR Project ATLAS and Earth-Map	CS-FOR Baseline Atlas CS-FOR Atlas Report CS-FOR - FAO Earth Map Presentation
7. Timetable of Implementation	CS-FOR - Timetable of implementation
8. References for climate scenarios	CS FOR - References for Climate Scenario
9. Working Papers	CS-FOR WP - Climate change and ecosystem-based NRM CS-FOR WP - Forestry CS-FOR WP - Georeferencing Strategy CS-FOR WP - Livestock Development CS-FOR WP - NRM Policy and Governance CS-FOR WP - Pastures Sector and Recommendations for CS-FOR Project CS-FOR WP - Value Chain Finance CS-FOR WP - Value Chains Development CS-FOR WP - Walnuts Value Chain CS-FOR WP - Resilience Analysis in the project target areas
10. Term Sheet	CS-FOR-Term Sheet

[92] All documents are available in the folder accessible at the following link: https://unfao-my.sharepoint.com/:f:/g/personal/rosalie_lehel_fao_org/EtNJ1IqJt6xDiU2YScPEECwBdTjPGaLMzj7P6EsPnBuWbg?e=ST5aYC