FAO/GLOBAL ENVIRONMENT FACILITY

PROJECT DOCUMENT

PROJECT TITLE: Sustainable management of forests in Mountain and Valley areas in Uzbekistan (FSP) **PROJECT CODE: GCP/UZB/004/GFF**	
COUNTRY: Uzbekistan	
FINANCING PARTNER: GEF	
FAO Project ID: 635216	**GEF/LDCF/SCCF Project ID: 9190**
EXECUTING PARTNERS: State Committee on Forestry (SCF) of the Republic of Uzbekistan	
Expected EOD (Starting Date): February 2018	
Expected NTE (End Date): January 2023	
CONTRIBUTION TO FAO's STRATEGIC FRAMEWORK:	***a. Strategic Objective/Organizational Result:*** *SO1: Contribute to the eradication of hunger, food insecurity and malnutrition* *SO2: Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner* *SO3: Reduce rural poverty* *SO5: Increase the resilience of livelihoods to threats and crises* ***b. Regional Result/Priority Areas:*** ***1*** *Food security and nutrition* ***2*** *Natural resources management, including climate change mitigation and adaptation* *3 Policy and institutional support for entry of Member States into regional and global trade standard-setting and organizations of regional economic cooperation* ***c. Country Programming Framework Outcome:*** *Priority Area E: Sustainable natural resources management* *Outcome 1. Development of forestry for sustainable management of natural resources and increased income-generating opportunities for rural population supported*
GEF/LDCF/SCCF Focal Area: Multifocal area (LD, CCM)	
GEF/LDCF/SCCF strategic objectives:	

CC-M 2, Program 4 - Promote conservation and enhancement of carbon stocks in forest, and other land-use, and support climate smart agriculture

LD 2, Program 3 - Landscape Management and Restoration

SFM 3: Restored Forest Ecosystems: Reverse the loss of ecosystem services within degraded forest landscapes

Environmental and social risk classification (insert √): Low risk √ Moderate risk High risk

Financing Plan: GEF/LDCF/SCCF allocation:	
GEF financing:	**3, 187,023**
Co-financing:	
SCF	7,301,107
Forestry Organizations	10,069,513
FAO	1,053,000
GIZ	227,531
ICRAF	15,000
Sub-total cofinancing:	**18,666,151**
Total Budget:	**21,853,174**

Executive Summary

Uzbekistan's rich forests represent a vast untapped potential in terms of carbon sequestration and delivery of ecosystem services important for human well being and the environment. Moreover, there are vast areas of land in Uzbekistan that currently have little or no forest cover yet are suitable for forestry. If brought under sustainable forest management this land could make a major contribution to carbon sequestration as well as local livelihoods and protection of nature. Much of the existing forest is currently being degraded, thereby losing both its production and protection values. The alternative proposed through this Project is to remove the barriers to sustainable forest management. This will contribute to the reversal of the current situation of degradation, and help switch forestry in Uzbekistan onto a path of increased forest cover, increased social and economic benefits from forests, increased carbon sequestration and an improved quality of existing forest. The barriers to sustainable forest management will be removed by implementation of four components and delivery of related outcomes and ouputs:

Component 1: Information management systems for sustainable forest management. SFM cannot be developed and its principles followed without up-to-date information on the status and trends of forest ecosystems. Therefore, under this Component, the Project will support the development of a system to provide reliable, up to date information on forests and forest cover and of trends at the project site/FO level, including trends in carbon stocks and delivery of other ecosystem services, such as provision of habitats for biodiversity, retention of sediments and regulation of water. The Project will develop a basis for a modern Forest Inventory (FI) system based on statistically sound methods, which on the one hand makes it possible and affordable to generate the necessary information with reasonable frequency, and on the other hand largely eliminates potential bias (systematic errors) of the information provided. This will include accurate forest inventorying at the FO level. The FI system will provide the basis for development of the managememt plans to implement multifunctional forest management. It will be also possible to use inventory results as part of national reporting (UNFCCC, UNCCD, CBD, IPCC and FAO/FRA) without any conversion.

Component 2: Multifunctional forest management leading to carbon sequestration, improvement in forest and tree resources, and other benefits. Under this Component, the Project will work with the State Committee on Forestry (SCF), Forest Project Enterprises (FPEs) and four Forest Organizations (FOs) to develop and implement strengthened forest management at four diverse locations across the country. Strengthened forest management planning and implementation will lead to enhanced provision of ecosystem services, increased carbon sequestration as well as many other economic and ecological benefits. SFM will be operationalized at 4 demonstration sites representative of the different types of forest ecosystems in Uzbekistan generating sustainable benefits such as carbon sequestration and improved livelihoods of at least 500 local households: Site 1: Sirdaryo Forestry Organization (valley forest area) – the intention is to establish shelterbelt plantations together with private land owners and farmers. The technical knowledge and participatory planning processes are not available in the forest enterprises to do this; Sites 2, 3 and 4 (Mountain forest area): Dekhkanabad, Kitab and Pop Forestry Oranizations– the objective is tree planting, especially for mountain forest restoration applying watershed management principles as well as pistachio forestry development through an agro-forestry approach. Available knowledge on site and climate requirements for production of tree products and timber is limited. Planning processes to include the local population in rangeland management and protection of natural

forests will be strengthened and social benefits and gender sensitivity and responsiveness will be ensured throughout the process at all four project locations.

Component 3: Upscaling of sustainable forest management - with carbon sequestration – by strengthening of the enabling environment. Under this Component, the Project will promote changes in the enabling environment that either directly lead to or greatly facilitate broader investment in sustainable forest management, including government investments and non-government investments. Some of the required changes are already known others are dependent on the findings and lessons learnt from Components 1 and 2, including a functioning forest monitoring and assessment system. The Project will support strengthening of the policy and enabling framework and make it conducive to state and private investment in SFM. SFM will be integrated into sector policies and legislation related to forest management, agriculture, combating land degradation and shelterbelt management. Institutional structures and legislation will be strengthened, especially with respect to ownership and management responsibility. Measuring, reporting and validation (MRV) systems will be strengthened with the help of remote sensing and geospatial data, and improved access to information leading to improved assessment of carbon stocks.

Component 4: Monitoring, evaluation and knowledge sharing. The Project implementation and M&E systems will be supported. In addition, development of guidelines and extension material to be used by technicians and forestry extension workers in Uzbekistan will also be supported under this component. Some of the knowledge generated will be of use across the Central Asia region and in other regions. The project's progress will be tracked and periodic evaluations conducted for learning and adaptive management. Project results, innovative approaches and achievements will be disseminated for replication and scaling up.

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Acronyms

AWP/B	Annual Work Plan and Budget
BH	Budget holder
CA	Conservation Agriculture
CADI	Central Asian Initiative
CACILM	Central Asian Countries Initiative in Land Management
CBD	Convention on Biological Diversity
CCM	Climate Change Mitigation
CEO	Chief Executive Officer
CPF	Country Programming Framework (FAO)
CSA	Climate-Smart Agriculture
CSO	Civil Society Organisations
CSR	Corporate Social Responsibility
DS-SLM	Decision Support for mainstreaming and scaling up SLM
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EEA	European Environment Agency
EECCA	Eastern Europe, Caucasus and Central Asia
FAO	Food and Agricultural Organization of the United Nations
FE	Final Evaluation
FF	Forest Fund
FFS	Farmer Field School
FI	Forest Inventory
FLO	Funding Liaison Officer
FMI	Forest Management Institute
FMP	Forest Management Planning
FMS	Forest Inventory and Monitoring System
FO	Forests Organization
FPE	Forest Project Enterprise
FPMIS	Field Programme Management Information System
FRA	Forest Resources Assessments
FSC	Forest Stewardship Council
GAP	Gender Strategy and Action Plan
GCU	FAO GEF Coordination Unit in Investment Centre Division
GDP	Gross Domestic Product
GEF	Global Environment Facility
GNSS	Global Navigation Satellite System
GoU	Government of Uzbelistan
GSP	Global Soil Partnership
GHG	Greenhouse Gases
GIS	Geographical Information System
GoU	Government of Uzbekistan
HQ	Headquarter

HR	High Resolution
ICI	International Climate Initiative
ICRAF	World Agroforestry Center
ICT	Information and Communication Technology
INRM	Integrated Natural Resources Management
IPM	Integrated Pest Management
IT	Information Technology
IW	Inception Workshop
LDN	Land Degradation Neutrality
LOA	Letter of Agreement
LTO	FAO Lead Technical Officer
LTU	FAO Lead Technical Unit
M	Million
MAP	Medicinal and Aromatic Plants
MAWR	Ministry of Agriculture and Water Resources (MAWR)
SCF	State Committee on Forestry
M&E	Monitoring and Evaluation
MSE	Micro and Small Entrepeneurship
MSF	Michael Succow Foundation for the Protection of Nature
MTR	Mid-Term Review
NAP	National Action Program (of the UNCCD)
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organization
NPF	National Programming Framework
NTFP	Non-Timber Forest Product
NWFP	Non-Wood Forest Products
OWL	Other Wooded Land
PC	Project Coordinator
PCU	Project Coordination Unit
PES	Payment for Ecosystem Services
PIR	Project Implementation Review
PPG	Project Preparation Grant
PPR	Project Progress Report
PSC	Project Steering Committee
PTF	Project Task Force (FAO)
PY	Project Year
RAPTA	Resilience, Adaptation and Transformation Assessment
RF	Project's results framework
SCEEP	State Committee for Ecology and Environmental Protection
SEC	Sub-Regional Office for Central Asia
SDG	Sustainable Development Goal
SGP	Small Grants Programme
SHARP	Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists
SLM	Sustainable Land Management

SO	Strategic Objective
STAP	Scientific and Technical Advisory Panel (of the GEF)
STAR	System for Transparent Allocation of Resources
TCI	The FAO Investment Centre Division
TOR	Terms of Reference
TT	Tracking Tool (GEF)
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States Dollar

SECTION 1 – PROJECT RATIONALE

1.1 PROJECT CONTEXT

1.1.1 The national context

The Republic of Uzbekistan is a Central Asian country that borders Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan and Turkmenistan. Its total area is 447,400 km^2. Approximately four-fifths of Uzbekistan is occupied by desert plains; although the eastern and southeastern areas of the country include mountains and the foothills of the Tien Shan and Pamir-Alai mountains. The climate is characterized by continental and subtropical conditions. In the lowlands the minimum annual precipitation is 80 – 90 mm. However, rainfall generally increases with elevation in the east and southeast, and in some places it exceeds 890 – 1,000 mm per year. Most areas experience large diurnal and seasonal variations in temperature.

According to the World Bank, the population in 2013 was 30.24 million and the GDP per capita was $1880 (using Atlas method, in current US$). GDP growth per annum averaged over 8% during 2011 – 2014, and was expected to continue at similar rates. Notwithstanding, Uzbekistan faces important socio-economic challenges with 13.7% of the population living below the national poverty line. The poverty line currently used in Uzbekistan is based on the cost of a food basket that guarantees a minimum calorie intake of 2,100 kilocalories per person a day. Over 60% of the poor live in rural areas and, while declining, rural poverty remains higher than urban poverty (17.3% rural, 10.6% urban in 2013). Official statistics on poverty which are disaggregated by sex (and cross-tabulated by urban-rural location) are not available.

Rural employment is limited by higher population growth in rural areas and increases in the working age population (up from 54% in 2001 to 62% in 2014), as well as by significant decreases in agricultural jobs. As a result, labour migration to urban areas and other countries in the region is significant, as is the share of people in seasonal jobs and informal employment. The average life expectancy is only 68 years. In 2016, it ranked 105th (out of 187 countries) on UNDP's Human Development Index. Administratively, Uzbekistan is divided into 12 Regions, one Autonomous Republic (of Karakalpakhstan) and the Tashkent Municipality.

Approximately 20% of the country, or 9 million hectares, is classified as Forest Fund (FF) land, and this is mostly managed by the state forestry agencies. Of this, approximately 3 million hectares may actually be covered with forests. From the non-Forest Fund land, both agricultural and reserve land may contain considerable areas of forest. This land is not managed by forest agencies, it is not managed for forestry-related objectives, and data/information on the forests is not available. In Uzbekistan, a modern, statistically based National Forest Inventory has never been implemented. The last forest inventory was carried out during Soviet times (1987-1988) and forest inventory methods were largely relying on ocular and subjective assessments, and the spatial coverage was restricted to only Forest Fund land.

In 2016 FAO and the Government of Uzbekistan (GoU) launched a technical cooperation project (TCP) named "Integrated Forest Land and Tree Resources Assessment". The expected outcome is "Informed and evidence-based decision-making on forestry-related issues using a landscape approach and focusing on livelihoods". So far, the results indicate that:

(i) The total area of Forest according to FRA definition is much lower (450.2 ± 81.8 thousand ha, about 1% of Uzbekistan's extent, see figure 1) then previously estimated;

(ii) The total area of OWL (Other Wooded Land) is much larger (9230.4 ± 257.8 thousand ha, about 20.6 %, see Figure 1) compared to a recent FRA report i.e. 115 thousand ha. These lands typically display a bushland physiognomy and are mainly found in the western part of the country (steppes and Kyzyl-Kum dessert). Though the density of wood resource

(biomass, carbon stock etc.) is rather low in these stands, the overall importance is high because of the very large total area and many protective, ecological and socio-economic functions of these stands).

(iii) A significant part of forests and bushlands suffer from overgrazing which makes any natural regeneration of stands next to impossible. This is by far most serious in the natural, mountainous forests (mainly Archa i.e. Juniperus sp. and Pistachio i.e. Pistacia sp.), which need long time to regenerate but are extremely important from the point of view of protection against soil erosion as well as biodiversity and conservation of genetic resources of the autochthonous populations. Lack of awareness of the long term impacts of grazing is obvious. Forest enterprises generate significant if not major parts of their revenues from land leases – for the purpose of grazing.

(iv) Afforestation figures reported at the national level may not appropriately reflect the share of areas where afforestation failed. A Collect Earth survey estimated that 216 ± 62 thousand ha of unsuccessful afforestation (mainly by Haloxylon sp.) or an afforestation with an inappropriate density i.e. not reaching canopy cover threshold of 10 % (minimum for a piece of land to be classified as OWL for shrubs or their mixture with trees).

Institutional framework

The Land Code (1998) classifies all land in Uzbekistan into eight categories, i.e.: forest lands (approximately 8-9 million hectares[1]), agricultural land (approximately 20 million hectares), reserve land (approximately 12.6 million hectares), private lands, industrial land, recreational lands, heritage and architectural lands and water bodies. It is important to note that there may be some forest cover or trees in any of these eight categories - both agricultural and reserve lands contain important areas of tree and forest cover.

Forest land - referred to as the "Forest Fund" - includes forest lands covered with forest, forest lands not covered with forests, and non-forest lands. In 2008 (the last year for which official, comprehensive data is available) the Forest Fund covered 8.178 million hectares. Of this, only 3.9 million hectares were considered forest lands, and of these, 955,600 ha were *not covered* with forest. In addition 4.239 million hectares were considered 'non-forest land'. Since 1998, the amount of land classified as Forest Fund has grown; hence official figures differ from year to year. Moreover, the various initiatives to measure land use and land cover have used different methodologies and have generated different findings. The existing data on forest land, forest cover, and forest types are therefore inconsistent and contradictory. During the preparation of this Project, the State Committee on Forestry (SCF) communicated updated official figures (Table 1). Hence the overall Forest Fund is now estimated at approximately 9.75 million hectares, including 3 million ha covered with forests. This amounts to approximately 6.8% of the country's area.

Table 1. Forest fund of Uzbekistan (lands designated to forestry purposes) – by regions and categories, thousand ha (SCF, 2017).

№	Regions	Total SFF area, ha	Including			
			Mountains	Deserts	Valleys	Tugai
1	**Republic of Karakalpakstan**	4,489,028	0	4,267,119	152,347	69,563
2	**Andijan region**	2,030	931	0	1,099	0
3	**Bukhara region**	609,840	0	609,840	0	0
4	**Djizak region**	255,635	203,977	50,795	863	0

[1] Since 1998 the amount of land classified as forests as growng, hence official figures from different years differ slightly.

5	**Navoi region**	2900,641	36,759	2,854,756	6,626	2,500
6	**Namangan region**	123,834	120,433	0	2,106	1,295
7	**Samarkand region**	30,037	14,979	5,645	2,982	6,431
8	**Syrdarya region**	7,691	0	3,025	0	4,666
9	**Surkhandarya region**	324,394	305,357	15,224	1,676	2,137
10	**Tashkent region**	14,494	2,305	425	312	11,452
11	**Fergana region**	12,762	0	2,179	5,187	5,396
12	**Khorezm region**	87,504	0	82,931	0	4,573
13	**Kashkadarya region**	288,342	261,155	25,886	1,301	0
Total Uzbekistan		9,146,233	945,896	7,917,825	174,499	108,013

The Forest Law approved in 1999 (and two subsequent amendments) provides the basis for forest management in Uzbekistan and specifies forestry functions, as well as specifying the competence of relevant public authorities and the types of forestry use, among others. While forests are state-owned[2], they can in principle be transferred[3] to other physical and legal persons. In addition, the 'use' of forest land can be transferred through *constant* or *temporary* leases.[4] Notwithstanding, the vast majority of Forest Fund land is directly managed by state agencies, notably SCF. Approximately 84% of Forest Fund is managed by the SCF, and the vast majority of this is managed by one of the 55 'Forest Organizations' that SCF had established across the country.[5] In addition, according to the Forest Law, citizens have the right to access and harvest medicinal plants, food plants, berries and mushrooms for their own needs.

The institutional framework in Uzbekistan for Sustainable Forest Management (SFM) is comprised of a number of national and sub-national institutions whose mandates are summarized in Table 2 below:

Table 2. Institutional framework

Institution	**Mandate**
National, Oblast and Rayon Governments	
State Committee on Forestry (SCF) of the Republic of Uzbekistan	SCF is responsible for policy formulation in the forestry sector. SCF is responsible for forest assessments and inventory. It controls and supervises all forests and all forestry activity (including most Protected Areas), through the Forest Cadastral Unit (see below). SCF also hosts the Lesproject (Uzgiprourmonloyha). The SCF reports to the Cabinet of Ministers of the Republic of Uzbekistan
Forest Cadastral Unit of SCF	State Committee on Land Resources, Geodesy, Cartography and State Cadastre - responsible for the national land and land-use inventories and summarizes information about forests coming from leskhozes.
Forests Organizations (FO) of SCF	Responsible for forest management. Forest Organizations prepare decennial forest management plans, and are directly responsible for the

[2] Article 4 of the Forest Law

[3] Article 7 of the forest Law. However the required legislation to prescribe such transfers has not been issued, therefore transfer to legal and physical persons is not possible

[4] *Constant* leases can be assigned to forestry enterprises and establishments while *temporary* leases can be assigned to all other users, including local population and social groups. *Temporary* leases last between 3 and 10 years.

[5] Note, small areas of Forest Fund are also managed by the State Concern "Uzavtodor"; the State Committee on Geology; the Academy of Sciences and; the State JS Railway Company.

	implementation of most activities (including inventorying, monitoring, protection, reforestation, etc).
State Committee on Ecology and Environmental Protection	Responsible for environmental protection in Uzbekistan. Convention on biodiver-sity focal point.
Centre of Hydrometeorological Service (Uzhydromet)	GEF, UNFCCC and UNCCD focal point. Responsible for coordination of the preparation of all UNCCD and UNFCCC reports, including UNFCCC National Communications with GHG inventory.
State Committee on Land Re-sources, Geodesy, Cartography and State Cadastre	Executive agency in the system of regulating land relations and managing unit system of state cadaster, responsible for inspection of rational land usage and government programs on enhancing productivity.
Other Forest Managers (e.g. Tashkent Municipality)	6% of Uzbek forests are managed by forest organizations or units that are not under the supervision of SCF. One example of this is the Ugam-Chatkal National Park that is managed by two FO and one Protected Area under the supervision of the Tashkent Municipality Government.
Research Institutes	
Forestry Research Institute	Responsible for scientific research in the forestry sector related to protection, conservation and production – including for none wood forest products.
Academia and Universities	For example, Tashkent Agrarian University, Uzbekistan Academy of Sciences, etc.
Others	
Farmer Councils and Local Self-governing communities	Non-governmental organizations that can be an entry point for participatory natural resource management at the local level.
Forests Projects Enterprise (FPE) of SCF	A key unit in SCF that supports all FO in the planning and implementation and activities. Notably, FPE supports the preparation of Forest Management Plans and related inventory work at the FO level.

Legal and policy framework

Forest lands are the property of the state. There is no private ownership of forests. The government is keenly committed to strengthen the forestry sector. The amendments to the Law on Forest have been drafted to restructure the SCF (former Main Forestry Department under the Ministry of Agriculture and Water Rersources) into an independent committee with broader range of authorities and opportunities. The principle of equal rights between women and men is stipulated in the Article 18 of the Constitution and other legislative acts. For example, the Criminal Code, the Labor Code and the Family Code protect against discrimination on the basis of sex. The Labor Code guarantees equality in employment, in working conditions, remuneration, and promotion and, in several cases, affords special protections to female workers. The Family Code proclaims husband and wives equal rights to property.

The main component of the National Forest Policy of the Republic of Uzbekistan is to develop strategies for sustainable forest management in the long term. Sustainable forest management in this context means not only continuous and sustainable management, but also a profitable management that ensures security, protection, regeneration of forest resources and biodiversity conservation. Table 3 provides an analysis and assessment of the policy and legal baseline and current gaps in relation to sustainable forest management in Uzbekistan conducted during the PPG phase.

Table 3. Legal and policy framework.

Title of the legislation/policy	**Description of relevant laws and legal acts on sustainable forest management**
Legislations	

The **Constitution** of the Republic of Uzbekistan, adopted in 1992.	Includes basic principles relating to sustainable use of natural resources and ensuring access to environmental information. Land and natural resources are the National property and are subject to sustainable use (Art. 55).
The **Land Code**, adopted in 1992	A special chapter in the Land Code is devoted to the issues of forest fund (Chapter 10, Articles 76 - 78). This chapter states that forest fund lands are recognized as lands allocated for forestry needs. Firstly, leasing of forest fund land is resolved locally, and not by forestry authorities. Although other legislations determine that the General Department of Forestry bears responsibility for management of the state forest fund. Secondly, it is emphasized that the forest land can be transferred "for temporary use for agriculture," i.e., permanent, long-term use or private ownership is excluded.
The **Law on Nature Protection**, adopted in 1992	This law establishes the legal, economic and organizational basis for conservation of conditions of the environment and rational use of natural resources. Since the forest is a part of nature, all the provisions of the Act apply to forests as well. The Law stresses that "specially protected natural territories and objects include national parks, national, historical, natural and memorial parks, reserves ...", which refer to the forestry sector.
The **Forestry Law,** adopted in 1999	Since 1999, it has been amended for four times. The law reflects the basics of forest management, functions of forests are established, the competence of state authorities, the basic provisions of the organization of forestry, forest types, etc. Under Article 4 of the Forestry Law, "forests are state owned national wealth, and shall be rationally used and protected by the state." The Law excludes other forms of forest ownership, including private ownership.
The Law on Property, adopted in 1999	This law relates to the forest sector only in the sense that it underlines that "the land (with the exception of land granted to ownership in cases, manner and conditions stipulated by the legislation) and its subsoil, internal waters, flora and fauna, air basin within the territory of the republic" is a public property. Thus, the law does not allow other types of property in the forest fund, besides the state ownership.
The Law on Protection and Use of Flora, adopted in 1997, amended in 2000 and 2016	The law regulates relations in the field of protection and use of flora growing in natural conditions, as well as wild plants maintained in the conditions of crops for their regeneration and conservation of the genetic stock. The law "On protection and use of flora" covers almost all aspects of the forestry sector.
The Law on Protection and Use of Fauna, adopted in 1997, amended in 2000 and 2016	This law regulates the relations in the field of protection and use of wild animals that live in a state of natural freedom on dry land, water, atmosphere and soil, permanently or temporarily inhabiting in the territory of the Republic of Uzbekistan, as well as contained in semi-free conditions or artificially created habitat for scientific or environmental purposes. Since some fauna inhabits the forests, certain aspects of the Law relates to the forest sector.

The Law on Protected Areas, adopted in 1997 and amendments were made in 2004	The state reserves, complex (landscape) sanctuaries, natural parks, state natural monuments, areas for conservation, regeneration and restoration of separate natural objects and complexes, protected landscapes, areas for management of separate natural resources have the status of protected areas. The main part of the state forest fund is considered to be protected areas, and all the provisions of the law automatically apply to the forestry sector. According to the Law, protected areas are state property and are protected by the state. Land and other natural resources can be provided for use by legal entities and individuals to form private sanctuaries and natural nurseries. However, the Law does not stipulate how the private sanctuaries and natural nurseries should be managed. Other specific regulations and rules related to this issue are also not available.
Legal documents in management of forest sector	
Resolution of the Cabinet of Ministers of the Republic of Uzbekistan on **Approval of some legal acts on protection of forests of the Republic" dated 22.11.1999, No. 506.**	Annex 1 of this Resolution establishes rules of fire safety in the forests of the Republic of Uzbekistan. The regulations set requirements for legal entities and individuals to comply with fire safety rules in forests. Appendix 2 provides rules for forest thinning. It defines when and what kind of trees can be felled by forestry authorities and authorized bodies, as well as it determines that any felling is prohibited in the protected areas. Appendix 3 contains rules for haying and grazing. Institutions involved in forestry, together with the administrations of regions, determine the area suitable for haying and grazing livestock. However, in areas covered by forest, mowing and grazing is prohibited (Article 6). To obtain permission a "forest ticket" must be requested from organizations and institutions conducting forestry (Article 16). These tickets give the right to use sites for haying and grazing on short-term (up to 3 years) and long term (3-10 years) periods.
Resolution of the Cabinet of Ministers **on Approval of the procedure for determining the protection categories of forests" as of 05.06.2000, No. 215.**	This Resolution specifies protection categories of forests in the territory of the forest fund. Definition of categories are important since other regulations refer to them in determining the resolved and unresolved forms of use, unauthorized actions and thus the order of penalties. This Resolution approved the allocation of forests for protection categories in the country, and the list of forest fund holders.
Resolution of the Cabinet of Ministers **on Approval of regulations of the Ministry of Agriculture and Water Resources, the General Department of Forestry, the Department of Water Resources, the Uzbek Scientific-Production Center of Agriculture, the General State Inspectorate for monitoring fulfillment of contractual obligations as of 30.03.2001, No.160.**	This Decree defines the main objectives and activities, functions and rights of the Main Forest Department.

Resolution of the Cabinet of Ministers on **Approval of provisions on the procedure of individual state inventory as of 15 November, 2005, No. 250.**	The State Forest Inventory (SFI) is conducted in order to determine the protection categories of forests, organization of rational use, protection and regeneration of forests, establishment of a uniform procedure for documentation and monitoring of changes in the structure of the state forest reserves. According to the approved Regulation, the authorized body to conduct SFI is the SCF. SFI is designed to provide public authorities and departments, interested legal entities and individuals with accurate inventory information on forests for the purposes of regulating forest relations, protection and organization of rational use and regeneration of forests.
Resolution of the Cabinet of Ministers on **the regulation and use of biological resources and on the order of licensing procedures in the field of nature as of 20 October, 2014, No. 290 and so on.**	This Resolution revises and improves the procedures for use of fauna and flora sites. The resolution requires changes and additions.
Resolution of the Cabinet of Ministers of Uzbekistan **"On measures to further improve the use of flora objects" as of September 30, 2015, No. 278.**	The resolution was adopted to further regulate the use of forests, develop the domestic pharmaceutical industry, expand the range of manufactured medicines, arrange systemic cultivation of wild plant collection, harvest and process, and create favorable conditions for business entities. Appendix No. 1 of this resolution approved the Regulation on the procedure for regulating and charging fees for forest use. Point 4 of this Annex specifies that the areas of the state forest fund are provided for use on a fee basis by permanent forest users to temporary forest users for the following types of forest use: Cattle grazing; Hay mowing; Placement of hives and apiaries; Collection of twigs and brushwood without cutting trees and shrubs; Use of the state forest fund in cultural, educational, recreational and aesthetic purposes; Use of the state forest fund for scientific research purposes.
Resolution of the Cabinet of Ministers **"On measures to further improve the provision of branches of agriculture and water management with highly qualified personnel with higher education degrees" of November 3, 2015, No. 311**	The Faculty of Forestry and Medicinal Plants was established at the Tashkent State Agrarian University in order to provide the forestry industry with highly qualified personnel.
Resolution of the Cabinet of Ministers **"On measures to further improve the financing of forestry development" of June 10, 2016, No. 198.**	The Fund was established in purposes of creating funds for development of forestry, strengthening the material and technical resource base of forestry, protection, security, regeneration and restoration of flora and fauna on the lands of the forest fund.

Gaps in national legislation

There is a range of policy provisions for forest management in Uzbekistan, but they are gender neutral and gender mainstreaming is not a part of forestry normative framework. One of the major limitations in the use of forests in Uzbekistan, including the project area, is that forest lands are owned by the

state and the legislation does not provide for their transfer to private ownership. Restrictions on the use of forests are also due to the fact that the forests in project areas do not have significant industrial importance and their purpose is protective. Due to unlimited use of natural forest resources they are depleted, which can cause irreversible negative processes: degradation, wind and water erosion of soil. The lease agreements concluded with the forestry enterprises are short-term and the tenants are not interested in long-term cultivation of timber (10-20 years), but instead in making a profit each year. Lease contracts are mainly concluded by higher segments of the population, as the poor cannot afford equipment for planting and harvesting.

There is thus a clear need for new policies for forestry development, which includes the participation of different parties concerned, and the priority of which is the role of the forestry sector in the development of rural areas and improvement of living standards. Strengthening the role of local communities, through the provision of greater access to natural resources and their effective participation in the development of forestry, as well as government support through the allocation of necessary funds will help reduce and gradually restore degraded forests. Participation of local communities in forest restoration, improvement of technology of forests can be sustained and does not require high-cost cultivation of forest plantations and protective forest plantations.

1.1.2 Areas of intervention

Forests of Uzbekistan[6] are divided into the following categories: desert-like plains, valley-tugai (floodplains) forests and mountain area forests:

Mountain forests are found mostly on slopes of Western Tien Shan. Mountain vegetation has a zonal character and ranges from desert-like and dry steppes, through meadow steppes, bushes, deciduous and includes coniferous (juniper) forests, and ultimately subalpine and alpine meadows. Although relatively small in terms of area, the mountain forests of Uzbekistan are diverse by species composition and more than 100 tree and shrub species are found. The mountain forests can be classified by type such as juniper, pistachio, almond, walnut-tree, apple-tree, hawthorn, mixed forests, and shrubbery. The most important in terms of coverage area are juniper, pistachio and walnut.

Valley-tugai forests. The so-called tugai forest occurs naturally on islands and in strips in the river floodplains. The total area in the country is estimated at 103,300 ha. The largest concentrations of tugai forests can be found in the delta of the Amudarya River in the Republic of Karakalpakstan, as well as along the Syrdarya River, in the lower reach of the Chirchik River, and along the Zerafshan River near to Samarkand. In addition, traditionally, stretches of planted wind-breaks (mostly poplar) have played an important role in ecosystem protection and agriculture in valleys in Uzbekistan. These windbreaks have traditionally protected the high-value irrigated agricultural land near main rivers. The area of this productive and important land-use has shrunk in the past two decades from over 40,000 hectares to under 20,000 hectares.

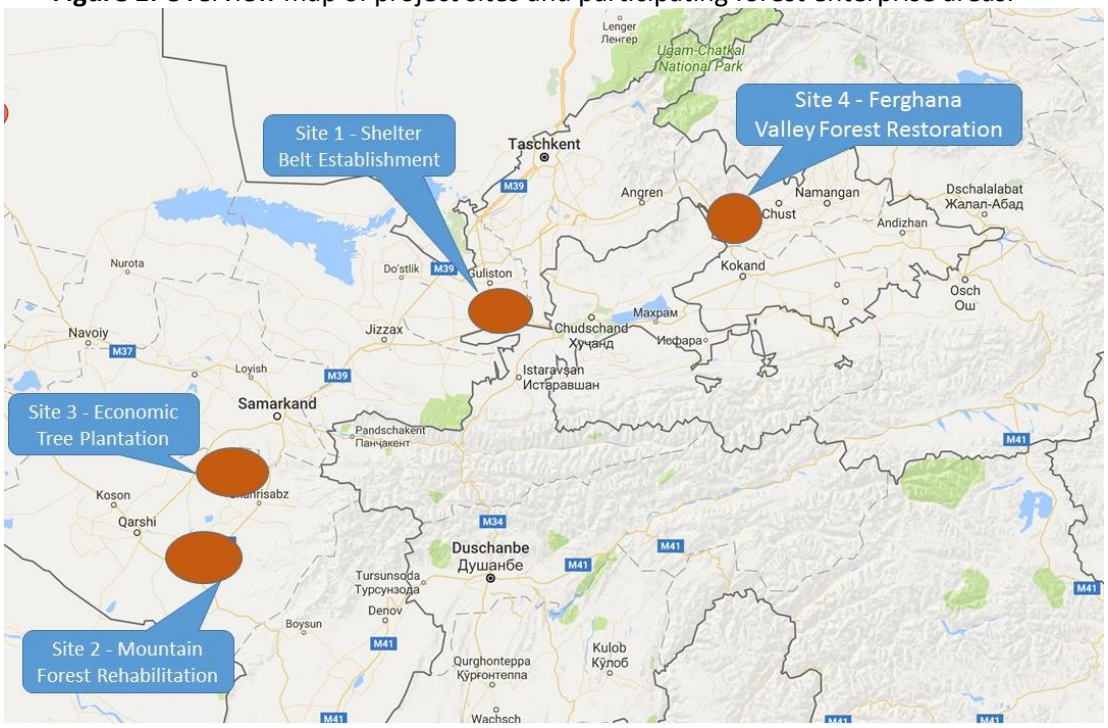
The project demonstration areas are located both in mountain forests and in valley forests. Based on the analysis of baseline investments and opportunities to influence both the institutional, legal and policy enabling conditions as well as management interventions on-the-ground, the following demonstration sites were selected (see map Figure 1):

1. **Sirdaryo** – shelterbelt plantations and tree nursery
2. **Dekhkanabad** – high mountain plantation of Almond and Pistachio, mountain natural forest of Juniperus zeravshanica in combination with rangeland

[6] Source: Botman, 2010

3. **Kitab** – Mountain natural forest with Juniper (Zarafshanica), tree nursery and plantation of Pistachio on mountain slopes using grove terassing system for water collection and erosion control
4. **Pop** – plantation of medicinal and aromatic plants and pistachio in combination with agricultural crops on irrigated lands in otherwise very dry soils, tree nursery. This FO is specialized for the conservation and production of medicinal and aromatic plants.

Figure 1: Overview map of project sites and participating forest enterprise areas.



1.2 THE CURRENT SITUATION

1.2.1 Threats to Global Environmental Benefits

Forest degradation has been ongoing for at least one century in Uzbekistan. The most notable root causes have been (Botman, 2009) (i) the expansion of agricultural land (for example, irrigated land grew from 2.2 million to 3.6 million hectares during 1913 – 2008, which notably had a major direct impact on the limited amounts of tugai forest and; (ii) the increase in the livestock population (cattle, sheep and goat numbers grew between 300-400 % during the period 1916 – 2008). This has affected all forest land, notably desert and mountains, and has greatly reduced the possibility of natural succession or regeneration. Notably, this has greatly reduced the ability of forests to store and sequester carbon, and leads to loss of carbon in forest ecosystems.

Agricultural expansion is no longer a threat to remaining high quality forests. However, it does remain a barrier to the natural regeneration of forests and to the successful design and implementation of reforestation and afforestation schemes. The drivers of degradation, and the barriers to natural forest regeneration and to the successful implementation of reforestation and afforestation schemes, vary greatly from site to site and depend very much on the forest type. Notwithstanding, the forests in Uzbekistan face some common threats. It is important to note that these threats both continue to cause degradation and are a barrier to natural forest regeneration and to the successful implementation of reforestation and afforestation schemes. These common threats include:

- **Livestock raising in and near to existing forests**. This continues to degrade existing forest, and hampers the regeneration/reforestation of new forest. This is a factor in almost all forests except the most remote and those with high levels of state protection;

- **The increasing demand for timber and wood-fuel**. Demand for wood fuel has notably grown since the break-up of the Soviet Union due to socio-economic reasons. There is also an increasing production of local timber, connected to the growing population and the increased prices for imported timber;

- **The unsustainable harvesting of non-wood forest products (NWFP)**, such as grass, walnut, rose-hips. In places this is far above sustainable levels and direct affects forest quality. This is most notable in mountain areas. The associated disturbance also reduces natural succession and regeneration;

- **Pests and disease**. Data provided by SCF suggests that in the five-year period 1998 – 2002, over 94,000 hectares of forests were affected by pests and almost 35,000 hectares were affected by disease;

- Finally, **climate change** is expected to become an important challenge, notably to the mountain (juniper) forests as they are not able to adapt quickly enough to the changes.

Two examples of this ongoing forest degradation relate to wild pistachio forest and wind-breaks in the valleys. During 1998-2013, the area of wild pistachio declined from 31,274 hectares to 22,908 hectares. At the same time, the proportion of young and medium-aged trees declined sharply, revealing a dangerous ageing in the population. Also, since 1990, the area of valley forest/wind breaks has declined from 40,000 to less than 19,000 hectares, thereby contributing not only to forest degradation but also to the degradation of the land it was protecting.

The **long-term solution** is to ensure effective management of forest land and trees in production landscapes so that they can perform expected functions and continue to provide ecosystem services essential for people's livelihoods, local and national development and environmental sustainability. However, there are several barriers that need to be removed to achieve this vision.

1.2.2 Baseline initiatives

The principal activities in the baseline are implemented through the government structure and mostly by the SCF and its dependent agencies. In 2010, the State budget through SCF was 11.88 billion UZS (or approximately US$ 6 million). This figure had risen consistently from under 2 billion UZS in 2003. The major portion of this budget is transferred directly to the Forest Organizations (FO) and is utilized for inventory, planning and management activities. This equates to an average of approximately $110,000 per annum for each of the FOs. In addition, each FO generates revenue through the sales of timber, nursery products, livestock products, NWFP. Nationally, this revenue was estimated at 1.3 billion UZS (or $650,000) for 2010.[7]

Separately, Ugam Chatkal National Park under Tashkent Region Khokimiyat is a relatively well financed operation with three management units – two FOs and one nature reserve as a core zone. One of the two FO has a reported budget from the state of $1.5 million per year, and generates an additional $1.2 million from local production activities. Based on these figures, the budget for Ugam Chatkal National Park overall could be well over $5 million per year, and similar to the SCF national budget.

[7] Source: *Financial Strategy for Forestry Sector of Uzbekistan*, circa 2012 (SCF/FAO)

In terms of forest assessments and monitoring, the government is unable to devote adequate resources to this. Accordingly, data on forests, both at national and local level, will remain inconsistent, incomplete and out of date.

In terms of forest policy, government technical staff, with support from international partners, have prepared a draft National Forest Program. This Program supports improvements in the technical approach and sets out several important reform measures. The draft Program has been under review for several years. Under the baseline scenario it is unlikely to be approved, and even if approved, the required capacity and financial resources for its implementation are unlikely to be available.

In recent years, within the framework of the UNFCCC, government technical staff with international support have developed two major initiatives for carbon-related financing: a CDM proposal entitled: "*Pilot Reforestation Activities in Two Selected Forest Management Area in Central Uzbekistan*" in 2008 and a NAMA proposal entitled: "*Rainfed Mountain Belt Reforestation*" in 2012. Although these proposals are mostly adequate in technical terms, they are incomplete and not ready yet for approval by government. Moreover, they are not optimally designed in order to optimize potential under the UNFCCC. In the baseline scenario, they are very unlikely to become an important source of financing for sustainable forest management.

The baseline also includes a range of forest management activities, financed by the State, at the FO level. Many of these forestry activities are implemented through the SCF. The major focus is on reforestation and afforestation for land protection. As stated above, each year an area of 40, 000 hectares is planted, of which over 80% is in desert areas, including in and near the Aral Sea. Another baseline initiative is the recently launched government program to develop medicinal and aromatic plants (MAP). This will continue to be a priority, at least until the end of 2017. The SCF is the lead implementation partner. This program should lead to a big increase in MAP production. Currently the latter constitutes up to 40% of the project pilot FOs annual revenue. Hence only in the Chodak FO, medicinal and aromatic plants are processed to the phase of ready pharmaceutical products. The other FOs sell MAP as raw material due to lack of technical capacity manifested in both absence of necessary equipment and skills, while MAP processing could create hundreds of jobs for local community members, especially women and youth.

The baseline also includes several initiatives supported by FAO:

- FAO supports the SCF with a Technical Cooperation Project (TCP) on national forest and tree resources assessment and monitoring. This project, with a budget of $430,000, is running from early 2015 into 2017, and will strengthen the SCF's capacity to prepare national level assessments of forests and trees;
- FAO in cooperation with Michael Succow Foundation for the Protection of Nature (MSF) and the University of Greifswald with financial support from the International Climate Initiative (ICI) is to start implementation of the regional project called "Central Asian Desert Initiative (CADI)", which is planned to run in 2017-2019. With a total budget of 3,3 million Euro, the project aims to: improve national and regional conservation of cold winter deserts; demonstrate new approaches for biodiversity conservation and carbon sinks; strengthen national capacities, improve governance and establish regional as well as international cooperation; strengthen the scientific knowledge base of ecosystem services; and introduce sustainable land management practices.

- FAO in Uzbekistan also has several related global and regional programs, including a GEF project on Decision support for mainstreaming and scaling up of sustainable land management (DS SLM);

- The SCF, GIZ and Michael Succow Foundation have prepared the project "*Ecosystem based land and forest management of the tugai habitats of Amudarya river for improved livelihood of local communities and as adaptation strategy to climate change*" for funding through ICI. This €2 million project (due to start in late 2017) will build capacity, demonstrate approaches and implement reforestation along rivers.

- The Central Asian Countries Initiative for Land Management (CACILM) is a partnership between Central Asian countries and international donor community to combat land degradation and improve rural livelihoods and adapt to climate change. It covers the five central Asian countries, including Uzbekistan. The requested budget is over $1 billion for ten years, although commitments until now are considerably less. GEF has been a major supporter of CACILM, as have the Asian Development Bank, CIDA, GIZ, IFAD, SDC, FAO and UNDP. The strong complementarity of CACILM with the proposed Project means that CACILM is linked to the baseline, although it cannot be considered co-financing.

These forest management interventions have several weaknesses. Notably, these baseline activities do not address the barriers to sustainable forest management as set out in the previous section. Overall, the baseline activities are insufficient to counter the forest degradation that is occurring in forests across Uzbekistan and to introduce sustainable forest management practices.

1.2.3 Remaining barriers

- Introduction of sustainable forest management that balances environmental with socio-economic benefits could reverse degradation, facilitate natural regeneration and lead to large areas being reforested and afforested. With implementation of sustainable forest management practices, forest cover in Uzbekistan would increase and critical ecosystem services would be restored that sequester carbon, reduce soil erosion and sedimentation and provide habitats important for maintaining ecological functions. Assessments suggest that sustainable forest management would make strong ecological and economic sense as it would lead to multiple ecological, economic and global benefits, including for local forest users. However, there is a common set of ***barriers*** to sustainable forest management for all land in Uzbekistan. These include: **Inefficient, methodologically inappropriate, spatially, temporally and thematically incomplete system of forest assessment and monitoring.** The only system of data acquisition existing in the country is based on forest inventories designed for the purpose of Forest Management Planning (FMP). However, the information from this source is:

    - Already outdated – the periodic renewal of FMP has not been followed for decades.

    - The thematic scope is restricted - available parameters describe mainly forest productivity (total areas covered by forest stands, growing stock, affordable cut, growth prediction etc.). SFM must be based on a broader spectrum of information including e.g. biodiversity, carbon sequestration, protective functions of forest, provision of ecosystem services and other indicators related to environmental and socioeconomic issues.

    - The information is biased - as a result of subjective methods (driven by forest development strategies at that time and pre-defined silvicultural models) used during field assessments designed during Soviet times.

    - The information does not cover all forests in the country - FMP inventories cover only FF (Forest Fund) lands, forests and forest-like ecosystems outside FF are not taken into consideration.

- The information is not available in a digital, spatially georeferenced format - this limits its availability and integration with other data sources. The consequence is that it cannot be analyzed and any on-demand study relying on this data cannot be conducted efficiently.

- **Insufficient budget allocated for FMPs from SCF and FMI and absence of legally anchored, clear and understandable development strategy of the forestry sector.** This situation has many negative consequences preventing the further development of a sound forests assessment and monitoring system to support SFM through evidence based decision making and sound forestry policy:

    - A serious lack of qualified personnel – in terms of quantity as well as quality, both at managerial and technical level.

    - Inadequate methodology for forest monitoring – based on Soviet-time forest management planning approaches which largely depend on subjective assessments.

    - Due to budget constraints - the state funded foresters have to supervise up to 6 000 ha (according to the current norms one forester should supervise 1000 ha of forest lands).

    - Inadequate technical infrastructure – data collection and processing is not computerized, no GIS system is regularly in use at the FMI, mapping and acquisition of positional information is not based on current standards e.g. GPS or any other Global Navigation Satellite Systems (GNSS).

    - The institutions and their workplaces are located in inadequate facilities – buildings and offices do not comply with the contemporary civil construction standards (heating, air-conditioning, elevators, power supply, distribution and safety, water management, waste management, thermal insolation etc.). These circumstances complicate the everyday work of all staff and make the situation of the sector even worse.

    - Gender dimension. There is a range of legal and policy provisions for forest management in Uzbekistan that are gender blind. Together with traditional attitudes to the roles of women and men, FO practices are more male focused resulting in underrepresentation of women on decision making level, and limited access to training, income-generating and career opportunities.

- **Short-term incentives prevailing over long-term objectives**. In many areas, forest users face short-term incentives to unsustainably harvest. This notably leads to the felling of valuable windbreaks and tugai forest to extend agricultural cropland and collect short term gains. This also leads directly to over-grazing in mountain areas. For example, the three large mountain area forest enterprises concentrate mainly on the generation of income from activities that involve using the forest fund land, but not necessarily related to forestry. About half of the annual revenues are generated from sales of grazing leases, through a system of annual tickets, for forest fund lands. The other half is generated from growing and sales of agricultural crops, such as beans, vegetables, and medicinal and aromatic plants that are often intercropped between rows of fruit trees. This is only partly caused by the land tenure situation (see next point);

- **Land tenure**. Currently, non-State forest users are limited to a ten-year lease. This acts as a barrier to non-state investors investing in any forest activity that requires more than ten years to be profitable. It notably makes any private investment in carbon sequestration on forest land very unprofitable. There are two specific barriers to the sustainable management of valley forests and shelterbelt forests. These are (i) the current system of land lease, which doesn't recognize the value of shelterbelts as a tool against wind erosion and land salinization, and (ii) the current system

of small land parcels, which does not facilitate planning and action at the appropriate scale. Tenure lands, especially the irrigated ones, e.g. used for fruit tree planting or rose-hip growing are usually leased by the same lessees who "inherit" them from their parents thus limiting the options for new investors to enter with innovations;

- **Administrative attitudes**. Forest managers and decision-makers are conservative and generally unwilling to test and adopt new practices and measures. Forestry has never been a priority in the development of the national economy of Uzbekistan and there is no finalised state policy in place for sustainable development of forestry. In addition, insufficient funding to the sector makes forestry seek additional funds from e.g. leasing of pastures, which leads to overgrazing if not better regulated.

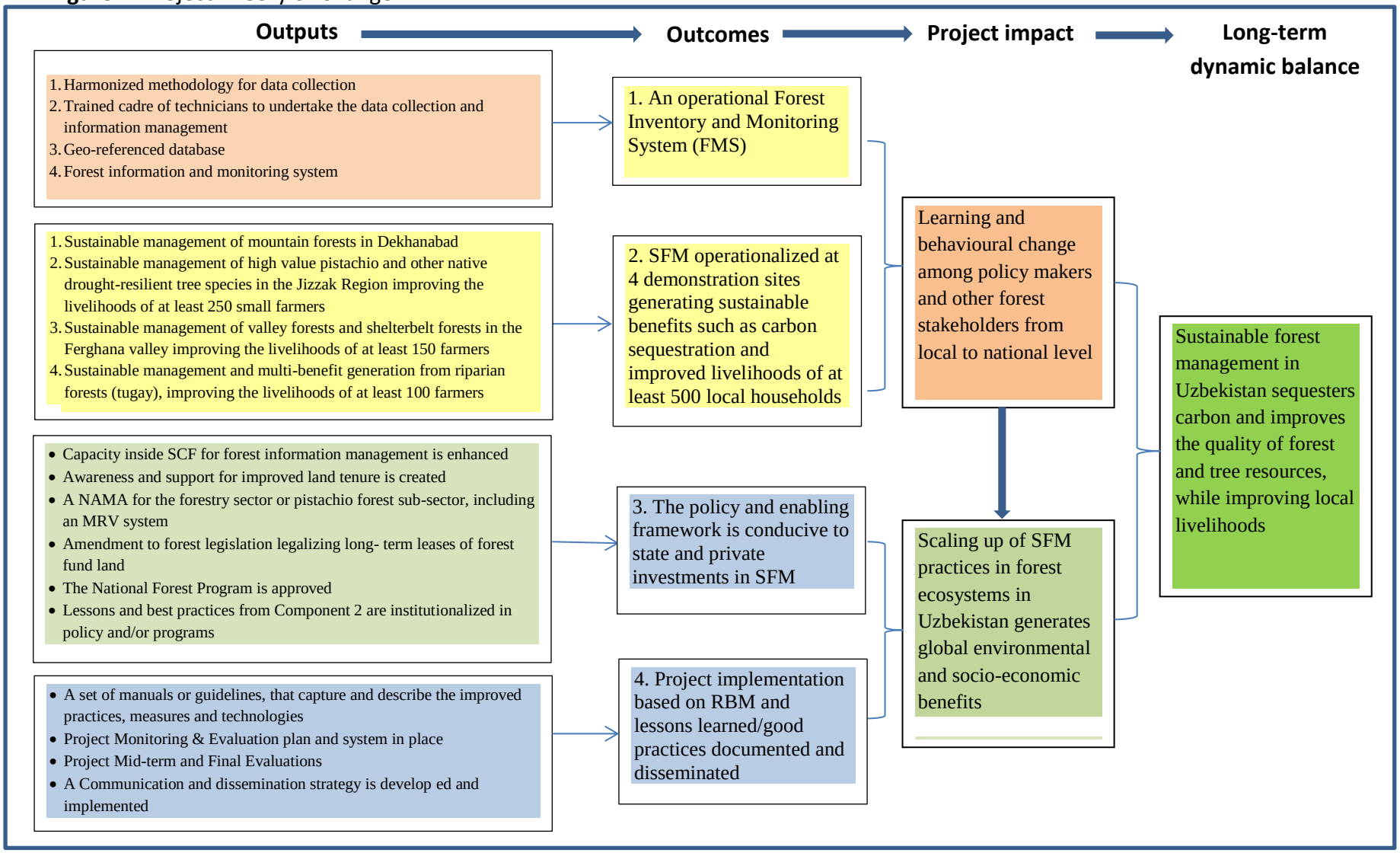
In addition, there is a specific set of barriers facing private sector farmers who manage agricultural land that is contiguous to forests and suitable for forestry and could lead to significant carbon sequestration. In general, these farmers have very little site-specific data regarding alternative crops and they do not have access to technology and information on alternative forestry practices. Moreover, the current extension system is not able to provide them with information and access to technology, and they face high entry costs and an associated high risk. As a result, many of these farmers continue to grow wheat and raise livestock, which are not very sustainable in the long-term and contribute to land degradation.

1.3 THE GEF ALTERNATIVE

1.3.1 Project strategy

Uzbekistan's rich forests represent a vast untapped potential in terms of carbon sequestration and delivery of ecosystem services important for human well being and the environment. Moreover, there are vast areas of land in Uzbekistan that currently have little or no forest cover yet are suitable for forestry. If brought under sustainable forest management this land could make a major contribution to carbon sequestration as well as local livelihoods and protection of nature. Much of the existing forest is currently being degraded, thereby accelerating the loss of ecosystem services, such as regulation of water and nutrient cycles, sedimentation, as well as provisioning services related to habitat conservation and food, feed and fibre production. The alternative proposed through this Project is to remove the barriers to sustainable forest management. This will contribute to the reversal of the current situation of degradation, and help switch forestry in Uzbekistan onto a path of increased forest cover, increased social and economic benefits from forests, increased carbon sequestration and an improved quality of existing forest.

Figure 2. Project Theory of Change



1.3.2 Project objectives, outcomes and outputs

The objective of the proposed Project is to introduce sustainable forest management in Uzbekistan, thereby sequestering carbon and improving the delivery of ecosystem services and the quality of forest and tree resources. The barriers to sustainable forest management will be removed by implementation of four components and delivery of related outcomes and ouputs:

Component 1: Information management systems for sustainable forest management

SFM cannot be developed and its principles followed without up-to-date information on the status and trends of forest ecosystems. Therefore, under this Component, the Project will support the development of a system to provide reliable, up to date information on forests and forest cover and of trends at the project site/FO level, including appropriate attention to carbon. This assessment will cover forests and trees both inside and outside of the Forest Fund. The project will develop a modern Forest Inventory (FI) system, which will include accurate forest inventorying at the FO level. The FI will provide the basis for development of the management plans to implement multifunctional forest management at the project sites. There is one outcome and four outputs under this Component:

Outcome 1: An operational Forest Inventory and Monitoring System (FMS). The Project will develop a modern FMS based on statistically sound methods, which on the one hand make it possible and affordable to get the necessary information with reasonable frequency, and on the other hand largely eliminates potential bias (systematic errors) of the information provided. The FMS will be based on enterprise-level forest inventory, which will collect data in the field as well as use remotely sensed data to deliver the necessary information. . The outcome will be achieved through four outputs:

Output 1.1 Harmonized methodology for data collection. The methodology will be designed to ensure that the data collected is harmonized i.e. international reporting standards and definitions will be followed from the start of data collection. This will make it possible to use inventory results as part of national reporting (UNFCCC, UNCCD, CBD, IPCC and FAO/FRA) without any conversion, which usually means loss of accuracy or interpretability. The methodology will cover four main areas:

1. **Design of the enterprise (leskhoz) level Forest Inventory (FI):** A proposal of sampling design has been formulated within FAO's TCP/UZB/3503 project (Adolt, 2016c, 2017a). Though it addresses National Forest Inventory (NFI, whole country level) it may serve as a basis for eneterprise-level forest inventory. At the very beginning informational needs (linked to forest management planning) should be identified. Knowing the actual needs, a specific sampling design will be formulated. In contrast to the NFIs, enterprise level inventories put considerable emphasis to mapping and qualitative desriptions of forest stands. So the design of the enterpsise level inventory will cover not only the statistical (sampling) component, but appropriate attention must be paid to stand level mapping as well.

   National definitions of land categories were identified and links to internationaly acknowledeged FAO's FRA and IPCC definitions were established during the FAO'S TCP/UZB/3503 project. These results and knowledge will be reused to deliver Output 1.1. It should be emphasized that the cost for future enterprise level FI must be manageable solely from the government's budget – this limitation will be central to the design because national resources available for forest management planning have been very limited until now.
   Last but not least, it has to be noted, that in addition to other attributes, the design will also address monitoring of carbon stock and its changes.

2. **Working instructions for field data collection and mapping:** A two-phase survey approach is proposed. In the first phase a densified grid of sample points is assessed by means of visual interpretation of high resolution imagery (using e.g. Collect Earth app developed as part of the

FAO's Open Foris initiative). At the same time a course map covering the wole FO (leskhoz) will be produced by means of semi-automatic classification of Sentinel 2 imagery and other available sources (national topographic maps, digital terrain model by SRTM). Thematically the map will focus on land cover information, terrain conditions and road infrastructure and water resources. The corresponding mapping scale would be between 1:25 000 and 1:75 000. In the second phase a subset of the first phase sample plots will be surveyed in the field (the second phase of sampling, 100 plots in each pilot area). Field data will prevent bias in the inventory result. It will be combined with first phase data to deliver unbiased and accurate informaton at the level of the whole FO.

The map derived during first phase will be further elaborated through a field survey to include the information about forest stands at an appropriate level of detail (mappng scale between 1:10 000 and 1:25 000). This accuracy improvement will target an area of 500 ha in each of the FOs, which is sufficient to demonstrate and prove the concept, which can be extended to larger territories by the national partners themselves. Within the TCP/UZB/3503 a forest cover map (containing also other land categories - mainly combination of FRA and IPCC definitions) was produced using Landsat imagery (Fejfar, 2016). The training and validation data came from Collect Earth survey (10 k sample points visually classified on the territory of Uzbekistan). The overall thematic accuracy of the map is about 70 % and the map's detail and positional precision roughly correspond to 1:200 000 mapping scale. The experience and technological solutions (based on Free and Open Source Software) will be reused for the mapping at the leskhoz level.

Four types of working instructions are needed: (i) Instructions for the high resolution (HR) imagery interpretation; (ii) Instructions for Sentinell 2 based mapping, (iii) Manual for field data collection of sample plots, (iv) Manual for stand level field mapping and survey.The manual for HR imagery interpretation (Collect Earth survey) was compiled in its first version within the TCP/UZB/3503.

3. **Methodology of statistical evaluation at the FO (leskhoz) level:** This methodology specifies how target parameters (nominated during assessment of needs) will be estimated (calculated) for the level of the whole forest enterprise (leskhoz). Such a methodology is closely linked to sampling design – one must correspond to the other – otherwise no reliable or useful information can be obtained. A methodology for the evaluation of Collect Earth survey (visual interpretation) has been delivered as part of the TCP/UZB/3503 and will be reused here, though it must be emphasiszed that more should be done to extend the methodology in terms of two-phase sampling as well as to estimate attributes other than total areas of land-categories and their changes over time. Special attention will be paid to the extimation of carbon stocks at the level of the whole leskhoz (FO).

4. **Methodology to predict timber volume for standing trees:** A sampling design, survey instructions and evaluation methodology to derive so called volume tables for main species (*Juniperus sp.*, *Haloxylon sp*., *Pistacia sp*.) will be elaborated within the GEF project.
Volume tables represent an analog form of a regression model to predict timber volume at the level of a tree or shrub. It has been realized that such models are not in use in the forest management/forest inventory practice in Uzbekistan. Moreover, such prediction models are not even available and all forest inventory work starts at the level of subjectively assessed forest compartment (stand).

Data collection will require felling and precise measurements of a limited number of trees or stems. The number of samples per species should be adjusted to obtain a working version of the model and to demonstrate the approach so that the national partners can continue the

survey themselves and obtain even more precise parametrization of the models. Felling and analysis of a maximum of 50 sample stems is proposed. A so called randomized branch sampling could be used to select and fell only one or just a few stems of a tree (Gregoire & Valentine, 2008).

Output 1.2 Trained cadre of technicians to undertake the data collection and information management. This specific output will be achieved through active involvement of Uzbek colleagues in the project implementation. In addition, various trainings and capacity buildings activities are planned. Though knowledge and experience of national consultants will be further supported by means of their participation in the Project's activities, the training and capacity building efforts will be primarily oriented to employees of the Uzlesproject (the implementing institution of component one), and the State Committee on Forestry (SCF) under the Mistry of Agriculture and Water Resources (the coordination institution). Training of staff from other national institutions will be planned on a case by case basis. The selection criteria for the trainings of the Project's technicians will include gender dimension to ensure women and girls' participation in the data collection and information management.

Output 1.3 Geo-referenced database. In line with the methodology from Output 1.1, the data will be collected from the selected FOs and encoded into a database. The result will be a forest and tree resources database. Data will focus on forests, other wooded land (FRA classification) and other target land categories. Data coming from external sources, including spatial data (e.g. boundaries of the country and its regions, altitude data originated from SRTM radar mission, satellite imagery) will be stored and processed in the same DB.

Digtal maps of of the selected FOs will be also available in this DB. Technically the DB will be an integral part of the forest information and monitoring system schematically shown in figure 3. To be more specific, the DB will be located in one or more PostgreSQL servers, extended by PostGIS to get capabilities to handle large and structured spatial data of various nature (rasters, polygons, points, lines, multi-variants of the basic data types, collections etc.). The above proposed software is from the Free and Open Source Software (FOSS) family, very mature, with very large developer and user communities, up-to date and perfectly structured documentation, see https://www.postgresql.org/ and http://postgis.net/ for further details.

Output 1.4 Forest information and monitoring system. After the initial assessment has been produced (Output 1.3), in line with the methodology from Output 1.1, monitoring will then be undertaken regularly and systematically. In figure 3, a proposed structure of a forest monitoring system is shown. The whole system can be broken down and it implementation can be organized in terms of three main components outlined below.

Data acquisition and quality control: Significant parts of this component will be delivered by TCP/UZB/3503 "Integrated Forest Land and Tree Resources Assessment" project. Auxiliary data have been successfully handled in PostgreSQL database with PostGIS spatial extension. New auxiliary data will likely become available during GEF project implementation (Collect Earth data plus maps produced on the bases of Sentinel 2 imagery). The current DB structure can be easily extended to contain additional datasets. Also, the module for visual interpretation of sample points using high resolution satellite imagery has been implemented. Collect Earth application has been employed for this purpose. A specific setup for Uzbekistan has been designed and made ready for data collection, quality control and storage (PostgreSQL/PostGIS). In 2016 the Collect Earth survey covered the whole country (10 thousand sample points were interpreted). The GEF project will densify the survey in the four pilot areas (leskhozes). Without an assement of additional locations the already available intepretations would be too sparse to provide information at the leve of the four pilot areas.

The module for field data collection and its quality control will be implemented in its first version by TCP/UZB/3503 – as part of the pilot field survey in 2017. It is a complex technological component which needs to evolve through several years or even inventory cycles to fully mature. This is especially true for the quality control system – corrections of data generate versioning issues that require firm technological response. Small methodological changes, survey extensions or reductions often require demanding technological adjustments.

Though the TCP/UZB/3503 focuses on the whole country, its contribution to the GEF projet is very significant. Without the TCP experience and results it would not be possible to make the FMS operational in a country where digital data acquisition (including field data) and processing has never been part of forestry practice.

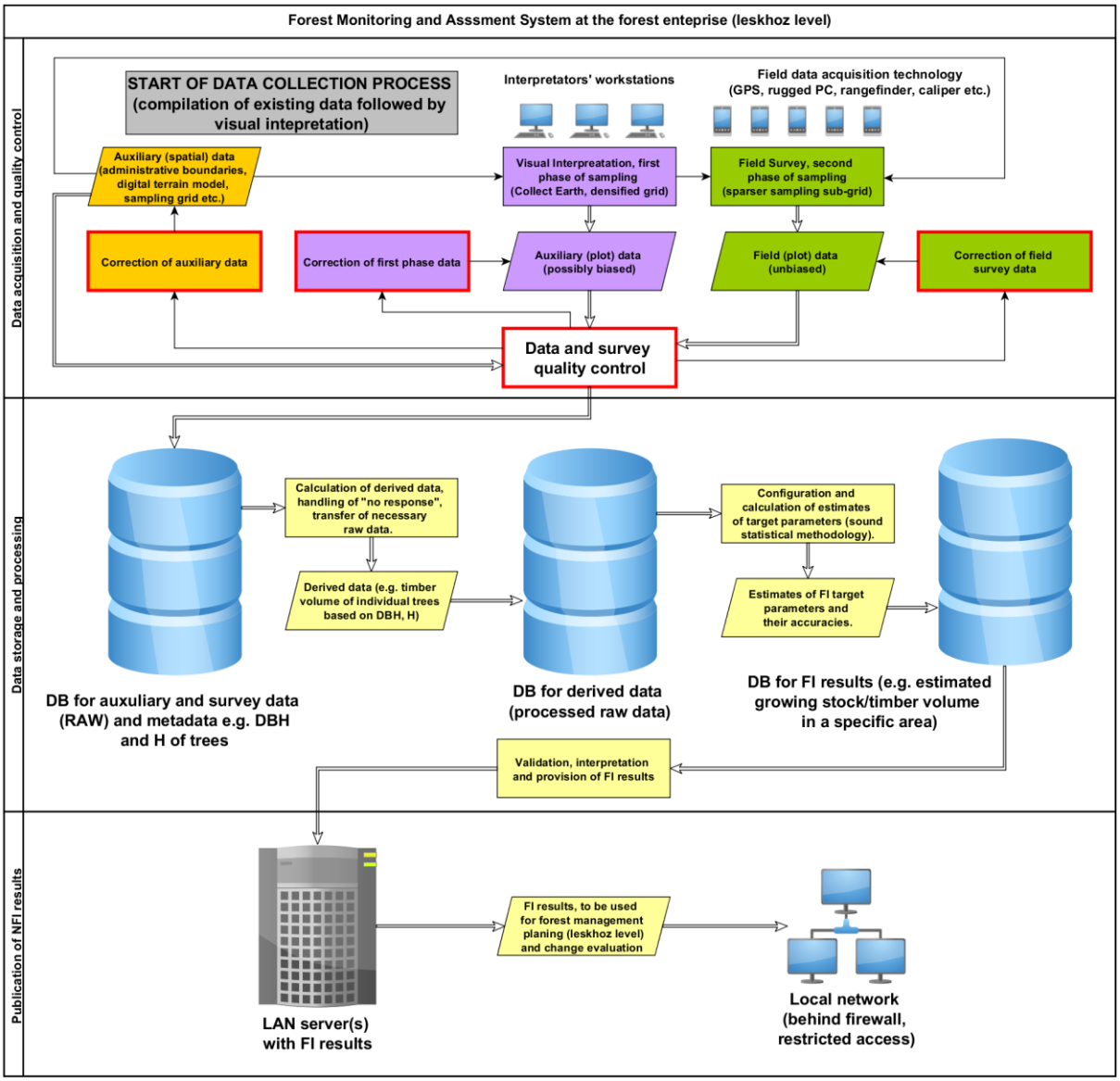


Figure 3: Schema of main components (modules) of the FMS information system

Data storage and processing: This component has been partially implemented within TCP/UZB/3503, namely the necessary DB functionality to estimate the extent of land categories and its changes has been developed and successfully used to derive these estimates (Pulatov et al., 2017). However, this functionality is only a small fraction of what needs to be developed here. A system to handle hierarchically structured field data, capable to derive tree attributes by means of dendrometric model predictions (e.g. DBH-H curves, timber volume, biomass or carbon), to link field and auxiliary data

(Collect Earth, Sentinel 2 based maps) and to handle data versions and corresponding metadata is needed. Formally the data processing component can be seen as a union of three modules:

- DB (schema) for raw data - field, Collect Earth, auxiliary data, these are never touched during results evaluation.
- DB (schema) for derived data - e.g. corrected raw data, imputation data generated to fix non-response situations, new categories defined as combinations of original ones, these data are used as a source for FI results calculations.
- DB (schema) containing results produced by the system and their metadata – metadata are necessary to find way out of different versions of the same result. This DB is usually accessed only internally, whilst already validated FI results to be used by other users are mirrored to an independent DB infrastructure.

Component 2: Multifunctional forest management leading to carbon sequestration, an improvement in forest and tree resources, and other benefits

Under this Component, the Project will work with SCF, FPEs and four Forest Organizations to develop and implement strengthened forest management at four diverse locations across the country. Strengthened forest management will lead to increased carbon sequestration as well as many other economic and ecological benefits. Sustainable forest management will include accurate forest inventorying at the FO level and the necessary actions to measure, report and validate (MRV) carbon sequestration in line with UNFCCC protocols. Close collaboration with the GEF Small Grants Programme (SGP) will be forged, focusing on reducing illegal cutting of wood from natural forest by supporting firewood plantations, creation of business models for substituting wood fuel, and pilot testing of biogas for cooking, etc. Opportunities to implement FSC certification for NWFPs will also be explored at the different field sites. There is one outcome and four outputs under this Component:

Outcome 2: SFM operationalized at 4 demonstration sites generating sustainable benefits such as carbon sequestration and improved livelihoods of at least 500 local households

SFM is a new concept in Uzbekistan and will therefore be tested and applied at four project sites and FOs representative of the different types of forest ecosystems in Uzbekistan:

Site 1: Sirdaryo Forestry Organization (valley forest area) – the intention is to establish more shelterbelt plantations together with private land owners and farmers. However, the technical knowledge and participatory planning processes are no longer available in the forest enterprises to do this.

Sites 2, 3 and 4 (Mountain forest area): Dekhkanabad, Kitab and the Ferghana Valley – the objective is tree planting, especially for mountain forest restoration applying watershed management principles as well as pistachio forestry development using the agroforestry approach. However, available knowledge on site and climate requirements for production of tree products and timber is limited. Planning processes to include the local population in pasture/rangeland management and protection of natural forests will be applied and social benefits and gender sensitivity and responsiveness will be ensured throughout the process at all four project locations. Thus, at each location, a similar and gender sensitive **participatory process** will be supported, working comprehensively with the concerned Forest Organizations.

- The following three common approaches will be used for 1) forest management planning and 2) implementing project activities in mountain forests (Dekhkanabad, Kitab and Pop forestry organizations at project sites):
    - **Watershed management** will be the key approach for each selected mountain forestry pilot site. It will provide a framework for restoration and conservations of forests, protection of water resources, and engagement of local communities and support to sustainable livelihoods in mountain areas. This approach will also help to integrate

different land-use and livelihood systems e.g. forestry, pasture and agriculture as well as mixed systems. The project actions will focus on determining the geographical area drained by a watercourse, protecting water resources and soil from erosion integrating forest restoration at the project sites in the mountains.

- **Afforestation and reforestation** activities will be the main focus at he mountain forestry pilot sites and will contribute to achieving the carbon sequestration target of the project. Mountain forest ecosystem are characterized mainly by the cover of Juniper (Zarafshanica) forest in all selected project pilot sites. This will include a wide range of technical trainings, awareness raising and practical implementation of forest restoration activities in all selected project pilot sites in mountain areas. Community forestry would be a potential intervention through establishment of a common agreement between state forestry organizations and local communities. It could be arranged through introducing the long-term leasing mechanism of forest land to local communities or individuals. There is a big interest from local communities in industrial tree plantations which have economic value. As best practice, ***pistachio forest development*** could be an option. GEF Small Grants Programme has already promoted this in the different regions of the country. This could be up-scaled together with the selected forestry organizations in the project pilot sites, establishing the point of growth for pistachio forestry development.
- **Grazing/Pasture management**. The treatment and management of the mountain forest area must cover and combine the range/grazing land and the forest covered area in an integrative manner. Rangeland management needs to have a more detailed grazing schedule and be regulated to ensure rotation that gives sufficient time for the vegetation to recover after a grazing period. Low productivity of grass and herb vegetation is very often related to very early grazing, when the grazing animals are damaging the root stock and growth capacities of the young grasses. Thus, an optimum timing of grazing should be identified, which ensures the highest productivity of the pasture. The ratio of perennial and annual vegetation in the pasturing area needs to be controlled and if possible improved towards increasing the perennial vegetation and perennial grasses. Monitoring of this ratio and limitation of grazing licences/tickets in case of changes of the ratio towards more annual grasses should be part of the range land management strategy.

Output 2.1 Sustainable management of mountain forests on 36 530 ha and improving the livelihoods of at least 100 farmers/households in Dekhkanabad forestry organization.

The Forestry Organization (FO) manages 109,000 ha of forest fund lands. 70% of these are natural forest, mainly Juniper. The funding of staff of the FO comes from the government budget allocation. Major incomes are generated from pasture leases (annual grazing tickets) on forest fund lands (55%), and from agricultural activities (wheat, medicinal and aromatic plants, livestock and beekeeping), which generate most of the remaining 40 % of the income. Some revenues are from lease of land for agricultural tree plantation, but lease contract periods are only short for fear of loosing control over land. The annual revenue is reported to be USD 300,000. The enterprise supports afforestation of 60 ha annually, mainly almond, walnut, pistachio and apple tree plantations. Problems reported are timber and fuel wood theft, lack of suitable machinery, low survival rates of saplings in the tree plantations and lack of irrigation in the lowlands. The FO does not have necessary capacity for planning, mapping and monitoring of forests and these activities are not up to modern standards. Plans and maps are produced by a central institution “Uzgiprourmonloyiha” responsible for forest management planning development under the SCF. Project interventions will focus on four areas of support described below:

1. Forest management plan. Based on the detailed map of the Dekhkanabad forestry organization generated under 1.1, a forest management plan will be developed covering all categories of land. Activities include technical trainings and establishment and demonstration of the monitoring system

at FO level, as well as a resilience assessment using the Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP).

2. Forest restoration activities in Dekhanabad forestry organization will address mainly afforestation of Juniper forests using the watershed management approach. Technical trainings and practical demonstration of forest restoration using the best technical practices will be applied.

3. Rangeland/pasture management. Overgrazing is the main threat to the natural mountain forests of the Dekhanabad. Several measures are proposed below for sustainable management of rangeland/pasture with the active involvement of local communities to decrease the pressure on the natural mountain forest and its regeneration:

- Mapping of the land with indication of vegetation type and coverage classification of woody plants.
- Identification of vulnerable areas in need of restrictions for grazing (long term protection – excluded from grazing).
- Identification of stripes and spots which should serve as nucleus for natural regeneration of woody vegetation (temporary protection needed – fence for 5 – 10 years). Here can not only natural regeneration be promoted but vegetation recovery actively supported by planting of selected tree species.
- Identification of stripes and spots for rangeland/grazing in need of species recovery (temporary protection – short period 1-2 years fence and seeding and planning of fodder and grass species), which should spread out to neighbouring areas to increase production of fodder species
- Sub-Division of area into rotational used compartments for grazing. Rotation allows vegetation to recover and increases production of fodder and thus improvement of meat or milk production of domestic animals
- Regulation and control of no grazing period. Early spring grazing needs to be avoided/prohibited to avoid damage to the roots and bulbs of perennial grass and herb species to allow high productive growth in spring
- Preparing various materials on pasture management, recommendations on use and increasing the efficiency of pasture management in the mountains on the lands of the State Forest Fund
- Contract models need to be developed for grazing leases that outline not only the rights of the lease holder but also his obligations and eventual penalties for violation of the latter.

4. Livelihood improvement and community involvement. In the framework of the project alternative options of livelihood improvement and community involvement for forest management will be addressed. Project interventions will cover the following areas:

- Creation of the mother plantation of 5-8 varieties
- Creation of an industrial plantation of different varieties of pistachios
- Creation of a firewood plantation with the involvement of local communities.

Effective mechanisms of community involvement will be developed through establishing the agreement process between forestry organization and local communities. At least 100 local households will benefit from livelihood improvements of which at least 30% will be female headed. As follow up and up-scaling under component 3, policy recommendations and integration of community involvement practices for the National Forest Programme will be introduced.

Output 2.2 Sustainable management of mountain forests on 16 200 ha and improving the livelihoods of at least 200 farmers/houesholds in Kitab forestry organization.

The Forestry organization has 54 000 ha of forest fund land of which 12 000 ha covered with forest. Pasture lands are found on 19 000 ha, of which 6000 ha cannot be used because of their location near to the border where pasturing is prohibited. The Forestry organization issues annual grazing tickets for about 20 000 animals. The annual revenues are some USD200 000, of which 1/3 are from pasture permits, 1/3 from agricultural activities and 1/3 from the operation of a tree nursery, which mainly supplies saplings for city greening, for which the nursery not only provides the seedlings but also planting and tending services. The FO cooperates with the local population also on the establishment of afforestation with fruit and nut tree plantations and apple orchards. The FO also intends to introduce pine as a forest plantation species to be used for afforestation plots, as pines are expected to be productive and useful as construction wood. The FO would like the project to support the improvement of cooperation with the local population, which would include the establishment of a second nursery closer to the forest lands of the FO. Firewood is not a problem in this region, as the local population has woodlots to satisfy their needs for wood and timber. The capacities and equipment for planning mapping and monitoring are weak. The pool of farmers and FO contractors involved in Output 2.2. interventions will include at least 30% of female contractors or female family members of the contracts with FOs. Project interventions will focus on four areas of support described below:

1. Forest management plan. Based on the detailed map of the Kitab forestry organization generated under 1.1, a forest management plan will be developed covering all categories of land. Activities include technical trainings and establishment and demonstration of the monitoring system at FO level, as well as a resilience assessment using SHARP.

2. Forest restoration. Forest restoration will focus in the Kitab forestry organization applying the watershed management approach as well as restoration of forests on the existing terraces which were established by the forestry organization. A mixed forest plantation approach can be used together with Juniper forest as this area is suitable for different type of tree species. It is also recommended to establish a regional training and extension center for Mountain forestry development based in the Kitab forestry organization as it is situated in the suitable area to demonstrate project achievement for other forestry organizations in the country dealing with mountain forestry development. Activities will include the following:

- Conducting trainings on the features of growing the planting material of the zaravshan juniper and Crimean pine.
- Preparing information materials with recommendations for growing Zaravshan juniper, Sievers and Nedzvetsky apple trees, local Hawthorns, Crimean pine, Oak, ash in the nurseries of Kitab forestry organization.
- Creating a nursery - Cultivation of planting material with a closed root system (in plastic containers), creation of nursery of zaravshan juniper and Crimean pineSeed collection, stratification, soil preparation and practical forest restoration measures.

3. Range land management/pasture management. Demonstration and dissemination of appropriate rangeland management practices to protect and allow rehabilitation of adjacent high mountain natural forests, mainly Juniper forest but also other forest types, will be supported.

4. Livelihood improvement and community involvement. The project considers this Forestry Organization as a core pilot area. Taking this into account, a Regional Forestry Training and Extension Centre will be established in cooperation with local authorities and SCF. The overall objectives of this Centre will be:

- Promotion and dissemination of information about SFM among the local population;
- Provision of information to farmers to facilitate problem solving related to forest and rangeland management, as well as to strengthen local capacities;
- Promotion of innovations and addressing rural challenges;

- The Centre will serve as a platform for knowledge, information exchange between farmers, Forestry organization, SCF, research institutions and advisors.
- Development of extension materials and manuals.

Pistachio development and promoting firewood plantations with the involvement of local communities will also be the main activities in this Forestry Organization. This applies to land that is currently used for food production and/or livestock grazing, but which is more suitable for sustainable forestry (pistachio or walnut orchards). Previous action research suggests this also makes good economic sense for the farmer/land-user. This will be achieved by working with the farmers and demonstrating how this conversion of land-use can lead to multiple benefits, including carbon sequestration and economic benefits for the concerned farmers. It will also demonstrate the need for long term land leases and for improved extension services, which will be met with support from Outcome 3. Under this output, a well managed demonstration of productive and profitable forest plantation with fruit and nut bearing trees (mainly pistachio, almond, walnut) will be set up to encourage private entities to lease land from forest organizations to establish their own profitable tree plantations. It will be supported by the development of high-quality manuals under Component 4 which describe the procedure of site selection, selection of appropriate seedlings, planting techniques with description of watering and fertilization needs to ensure success and sufficient survival rates, treatment after planting to grow marketable products and harvesting techniques to ensure best quality of harvested products. The manuals will also include economic valuation of the plantations under various site conditions to allow private farmers to make an informed decision on entering into business related to tree planting. This is definitely needed, since farmers are expected to venture into a business that will bear fruit only after several years, depending on the type of trees they plant. Appropriate adjustments of land lease contracts for private farmers to use government land for their plantations should be made to minimise the risk of the investments for farmers. The technical manuals will include

1. Site selection: Appropriate site conditions regarding soil, exposition, water regime and elevation have to be described to allow identification of appropriate sites for profitable management of the tree plantations
2. Selection of appropriate seedlings: Here advice will be needed on the varieties of the trees to ensure productive and marketable varieties are selected. It will probably also be necessary to describe the techniques and treatments for most species to ensure high germination rates in the nurseries and the treatment of the small seedlings in the nursery.
3. Planting techniques: Here it will be necessary to describe in detail how the trees should be best planted, from size and shape of the planting hole, size and shape of surface water collection measures (for example half moon shaped small dams or groves along contour lines (see figure 7), which create a kind of terrace to collect surface water, with description of needed watering during the planting or short after and application of fertilizer to ensure success and sufficient survival rates.
4. Treatment needed after planting needed to ensure tree and fruits to grow marketable products, such as pruning, fertilization and pollination or other measures need to be included in the manuals for each proposed and promoted tree species.
5. Harvesting techniques need to be described when they are special, and different harvesting techniques can make a difference in the quality and yield of a tree plantation.

Output 2.3 Sustainable management of valley forests and shelterbelt forests on 2 995 ha in Sirdarya Forestry improving the livelihoods of at least 100 farmers.

With only 3 025 ha forest area, this forestry organization is the smallest of the proposed project sites. The Forestry Organization laments the lack of sufficient irrigation to cover all their lands and the salinization of some other parts of their lands. The region is suffering from strong winds during 7

months of the year, which leads to wind erosion and difficulties in pollination or drying out of crop lands. The soil yield power rating is only 45 points of 100. Farmers are interested in establishing more shelterbelts on their farmland, since their positive effect on crop yields is clear. The crops, in this case cotton, are exposed to wind and the soil is exposed to wind erosion in the period after harvesting of crops and new planting. This sub-component will work with at least 100 households, of which at least 30% are female headed, to establish shelterbelts on their land to protect crops and to generate other ecosystem services, such as sequestration of carbon.

To be effective, shelterbelts need to be incorporated into a system of belts and tree lines that reduce the wind speed from the main wind direction. A shelterbelt system consists of primary belts, sub-primary belts, secondary belts, sub-secondary belts, and supplementary (single-line) belts. All of them are closely combined, forming an integrated network system, with several meshes where cropland plots are located and protected, see diagram (Figure 4) below.

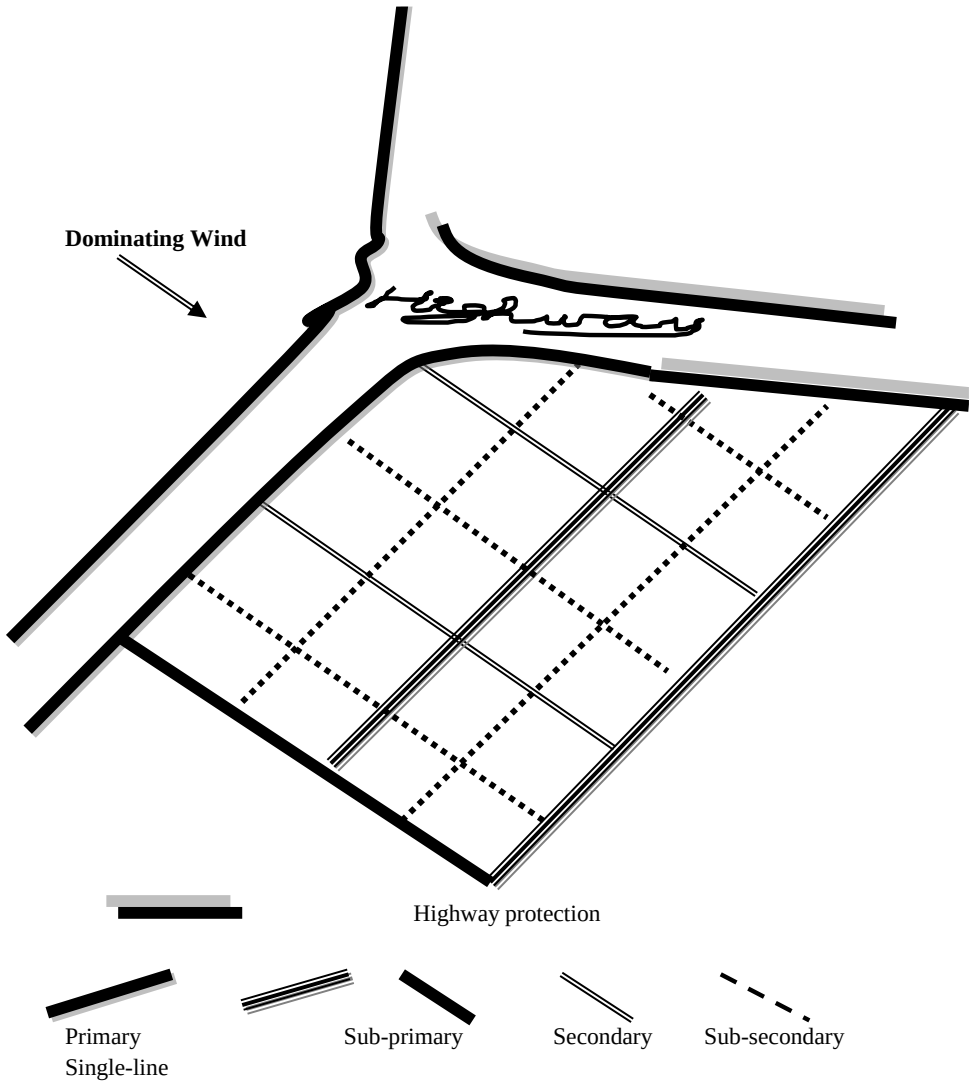


Figure 4: Example of complex shelter belt design for agricultural development area.

The different belts have different strengths in wind protection, depending on the height of the trees planted and the shape of the cross-section of the belt plantation. The plantation of tree belts does not only have a wind stopping function but also an ecological function. Especially in regions of intensive agricultural land use it is important to have parts of the landscape serving ecological functions such as habitats for birds and insects and flowering vegetation. With these functions, the ecosystem will also

be stabilized and insect or mouse infestations may be better controlled by a predatory bird population, and pollination of agricultural crops will be facilitated by an insect populations living in these ecological belts. The task of the project will be the development of a participatory planning procedure to agree with all stakeholders, the municipality, the road department, the forest enterprise, the farmers in the planning region and other possible stakeholders on an overall design, the outline and location of the different type of shelterbelts, the responsibilities and obligations of the different participants and also the sharing of benefits from managing the belts, e.g. harvesting of trees. All details have to be clear and transparently planned and contracts made between the different partners (land owners and land users) to agree on the responsibilities and eventual penalties in case of failure to meet obligations as well as the sharing of benefits. Project interventions will focus on the following areas:

1. Forest management plan. Based on the detailed map of the Sirdarya forestry organization generated under 1.1, a forest management plan will be developed covering all categories of land. Activities include technical trainings and establishment and demonstration of the monitoring system at FO level, as well as a resilience assessment using SHARP.

2. Forest restoration

- Creation of the mother plantation of 5-8 hybrid poplars or alternative species of native origin with high productivity and rapid growth for the cuttings production,
- Creation of a branch in the nursery for obtaining seedlings of these poplars from cuttings
- Cultivation of saplings of elm and ash.
- Preparation of information materials about forest shelter belts.

3. Livelihood improvement and community involvement

- Economic valuation of the firewood and industrial wood plantation with the cultivation of agricultural crops (cotton, wheat)
- Economic valuation of the ecological functions of field shelterbelts
- Demonstration of appropriate and site adapted shelter belt plantations on private farmlands with technical support from the Forestry Organization;
- Awareness raising and training campaigns to encourage farmers to establish shelter belts on their lands.
- Participatory planning campaign could be done for a larger area to indicate the needed belts and areas to be planted to integrate all tree planting activities into an integrated scheme that includes the private efforts as well as those of the municipality, the roads authority and the forest enterprise.

Output 2.4 Sustainable forestry management on 29 010 ha and improving the livelihoods of at least 100 farmers/households in the Ferghana Valley, Pop Forestry Organization

The Forestry Organization manages 118 600 ha forest fund land of which only 15 000 ha are covered with forest. This FO is specialized on the conservation and production of medicinal and aromatic plants. A forest management plan was elaborated in 2007. Its renewal is due this year. The management plan was implemented to about 60%, mainly because the implementation of activities was overruled by government policies and SCF instructions and directives. The FO, in the last years, supported about 15 ha of afforestation per year. Only last year this annual area of afforestation has been increased to 36 ha. The main species used for afforestation were Poplar, Saphora and Rose hip. Only this year the FO established 30 ha of Pistachio. Planting of Pistachio is the new declared focus of the SCF. For tree nursery work, the enterprise is cooperating with farmers owning irrigated lands. From them they lease land at the cost of a share of the seedling production. The forest fund land is not suitable for establishment of tree nurseries. The production in the nursery is mainly for city greening purposes,

and saplings are sold to municipalities and private persons. The FO revenue is some USD460 000 per year, of which 55% are generated from grazing tickets and 45% from agriculture and production of medicinal and aromatic plants. Some of these are processed and packaged in the facilities of the FO. But, the processing facilities are very old and loss of production during processing is high. In former times the FO had a focus on Walnut-Management. But this production is now neglected and replaced by the production of medicinal and aromatic plants. The natural forest is mainly Juniper, which is found in the lower mountains. The upper mountain parts are mainly used for grazing. As the areas are not overlapping the FO assumes that there is no threat to the natural forest through grazing.

The plantation activities of the FO so far have concentrated on land in the lower parts of the mountain slopes which have access to irrigation. The irrigation is done as flood irrigation, with the irrigation water running downslope along groves in areas with moderate slopes. Project activities under this output will cover the following:

1. Forest management plan.

- Based on the detailed map of the Pop forestry organization generated under 1.1, a forest management plan will be developed covering all categories of land. Activities include technical trainings and establishment and demonstration of the monitoring system at FO level, as well as a resilience assessment using SHARP.

2. Forest restoration

- Establishing a nursery of Zaravshan juniper and Crimean pine
- Conducting the training on growing of zaravshan juniper and Crimean pine to encourage farmers to replicate the plantations.

3. Rangeland/Pasture management

- Training materials for Range land/pasture management

4. Livelihood improvement and community involvement

- Support for production and processing of medicinal and aromatic plants with better technologies.
- Preparing information materials for production and processing of medical and aromatic plants.
- Establishing plantation of pistachios
- Preparing information materials to be included in the manuals for each proposed and promoted tree species.
- Promote and demonstrate effective mechanisms for encouraging private individuals and local communities to lease land from forest organization to establish their own profitable tree plantations.

Outputs 2.1 to 2.4 above will yield direct benefits to approximately 500 households, of which at least 30% will be female headed, located in the local communities at the four sites supported by the Project by increasing revenue and improving the quality of the natural resource base (land and forest). The beneficiary household selection criteria will be developed in close consultation with SCF and project related FOs to include social prioritization and gender dimension ensuring involvement of the most vulnerable population in the Project area (inclusive of single female headed households). All land is currently being utilized by local communities, most of which are remote and not well integrated into the national economy. The Project will include interventions on possibilities for micro and small entrepreneurship (MSE) development for NWFP, including FSC certification, and required capacity building within the forest related local communities with a focus on women. Replication and upscaling

under Component 3 will help spread these approaches, benefitting more local people across the country. Indicators that will be considered for monitoring of benefits include: (i) increase in local community's income, (ii) change in type and quantity of forest products (wood and non-wood) obtained from target areas, and (iii) increase in productivity from sustainable forestry and multi-benefit industrial plantations. Project site information is summarized in Table 4 below.

A detailed summary of the type of intervention, the hectares covered and the respective estimated carbon benefits in each pilot site is provided in Table 1, Annex 8 at pag. 114.

Component 3: Upscaling of sustainable forest management - with carbon sequestration – by strengthening of the enabling environment

Under this Component, the Project will promote changes in the policy and enabling environment that either directly lead to or greatly facilitate broader investment in sustainable forest management, including government investments and non-government investments. Some of the required changes are already known others are dependent on the findings and lessons learnt from Component 2. There is one outcome and six outputs under this Component:

Outcome 3: The policy and enabling framework is conducive to state and private investment in SFM.

This outcome will be led by the SCF and provides the critical first step for integrating SFM into sector policies and legislation related to forest management, agriculture, combating land degradation and shelterbelt management. Institutional structures and legislation will be strengthened, especially with respect to ownership and management responsibility. Measuring, reporting and validation (MRV) systems will be strengthened with the help of remote sensing and geospatial data, and improved access to information leading to improved assessment of carbon stocks. The outcome will be achieved through the following outputs:

Output 3.1 Capacity inside SCF for forest information management is enhanced, notably in the Uzlesproject. This is closely linked to Output 1.4 on establishing a Forest information and monitoring system. Under this output support to capacity development and training of SCF staff at central and provincial level will be provided together with provision of equipment related to GIS and to preparation of maps, as SCF personnel often lack the necessary technical skills as well as equipment to effectively manage and interpret forestry information, and outdated methods are used for monitoring and evaluation. Enhanced capacity in forest information management will empower SCF to oversee inventorying at the FO level.

Output 3.2 Awareness and support for improved land tenure is created. The Project will introduce best practices related to improving land tenure, notably the FAO developed tool Voluntary Guidance on Governance and Tenure (VGGT).[8] Public awareness raising campaigns and community consultations will be organized by SCF and FOs in partnership with state (local municipalities/khokimiyats) and non-state stakeholders (Chamber of Commerce and Industry, Makhallya Foundation local branches, community leaders). The Project will provide training on how to use VGGT, and will support its use to build support for land tenure reform in Uzbekistan. The ticketing system for grazing on Forest Fund land will be a special focus and issuing of individual agreements rather than communal will be spearheaded together with adjustment of the leasing period.

Output 3.3 A Nationally Appropriate Mitigation Action (NAMA) for the forestry sector or pistachio forest sub-sector, including a national measuring, reporting and validation (MRV) system. A draft

[8] VGGT is a tool for developing the local *governance* capacity and increasing resilience. VGGT is a comprehensive, fully-inclusive, structured and participatory tool to create dialogue, to support negotiations, to identify win-win pathways, to collaboratively determine priorities and challenges, to formulate joint objectives and activities, and to establish structures for management, decision-making and conflict resolution.

NAMA for the pistachio sector was prepared in 2012 and is under review. Activities in Output 3.3 will identify the bottlenecks to its approval, will raise awareness, and will support the redevelopment of the NAMA and support its approval by both the Uzbekistan government and UNFCCC. It is noted that activities under Outcomes 1 and 2 will lead to improved forest data at FO and national level – these will provide the basis for MRV of NAMA in the forestry sector.

The GIS and database system to be developed will be established as a Forest Monitoring System, with a database where information on forest sub-compartments, including the activities implemented and the results of carbon stocks assessment are stored. The system can then be used to produce summary reports and detailed reports for any purpose, including internal activity and result reporting, forest area change reporting to central government and carbon stock change reporting in the framework of REDD+. To determine the Carbon stocks, a field sampling method will be applied for measuring sample trees to estimate the biomass and carbon stocks. It may be considered if only one forest site or different location are assessed together. The first step is the estimation of needed sampling points:

To determine the number of samples, *n*, given a certain confidence interval and maximum error, one can apply the following formula:

$$n = \left(\frac{z^* \cdot \sigma}{e \cdot \mu}\right)^2$$

where *z** is the distribution critical value at a certain confidence interval (published in any textbook on statistics), σ is the standard deviation, *e* is the maximum allowable error, and μ is the average biomass in the forest stratum.

For a forest where μ is 150 t/ha with σ 68 t/ha, to arrive at an error of at most 5%, with 90% confidence interval (*z** = 1.645):

$$n = \left(\frac{1.645 \cdot 68}{0.05 \cdot 150}\right)^2 = 222.48 = 223$$

For a 95% confidence interval (*z** = 1.960; IPCC *good practice* value):

$$n = \left(\frac{1.960 \cdot 68}{0.05 \cdot 150}\right)^2 = 315.80 = 316$$

The required number of sampling points for a certain accuracy can be distributed over several forests (all forest covered areas or only those treated with afforestation activities in the forest fund land, or in Community Forest, or in Private Lands, etc.) in the area of the enterprise, or even in a region. The required accuracy will be based on the national requirement for standardization. The biomass calculations will have to follow UNFCCC and IPCC requirements for Tier 2 level.

Output 3.4 Amendment to forest legislation legalizing long term leases of forest fund land. Workshops and studies will be undertaken to generate support for long term – at least 49-year – leases of forest fund land. Legislation should establish not only the necessary rental fees and duration of contracts, but should also require that there is a management plan in place for planting and management of forestry resources. The necessary associated standards and guidelines will be prepared. During Soviet times forest resources were centrally managed and many problems in the Project areas are associated with the lack of involvement of local people in forest management and decision-making. The forest legislation therefore also needs to be amended to provide for proper access to information on forestry resources, and public participation in forestry development.

Output 3.5 The National Forest Program is approved. The draft National Forest Program was initially prepared in 2008. It has since been subject to review and revision with the support of the

FLERMONECA project[9]. The current basis for the NFP is the NFI as the result of the TCP. First of all, it is necessary to draw up a production and financial plan for the period of 10-30 years, followed by analysis of obstacles to the approval of the National Forest Program. Based on this, the proposed Project will then facilitate the approval process as appropriate.

Output 3.6 Lessons and best practices from Component 2 are institutionalized in policy and/or programs. The forest planning and management process under Component 2 is expected to lead to testing and/or demonstration of many innovative tools or approaches (e.g. implementing FSC certification for NWFP, or reducing the current quotas for wheat/cotton production, or replicating the 'points of growth' extension approach to new regions). In this sense, Component 2 consists of four pilot activities. Activities under this output will assess Component 2 achievements, identify which tools or approaches should be replicated or upscaled, identify any upstream barriers to their replication/upscaling, and support the removal of those barriers.

A Project Gender Strategy and Action Plan (GAP) - see draft GAP in Appendix 7 - will be developed under the PMU work plan and endorsed by SCF as a part of its long-term strategy. The Project concerned FOs will pilot GAP to provide best practices and lessons learnt for scaling up nationwide. Public awareness campaigns and community consultations in the frame of GAP implementation will be organized by SCF/PMU and FOs in partnership with state (local municipalities/khokimiyats) and non-state stakeholders (Business Women Association, Chamber of Commerce and Industry, Makhallya Foundation local branches. The outreach materials (brochures, leaflets, posters, public service announcements for radio and TV) on SFM processes with sharpened gender focus will be developed and produced using GEF and national funds.

Component 4: Monitoring, evaluation and knowledge sharing

The Project implementation and M&E systems will be supported under this Component. In addition, guidelines and extension material will be developed to be used by technicians and forestry extension workers in Uzbekistan. Some of the knowledge generated will be of use across the Central Asia region and in other regions and disseminated through collaboration with CACILM-2. There is one outcome and four outputs under this Component:

Outcome 4: Project implementation based on RBM and lessons learned/good practices documented and disseminated

This will ensure that project's progress is tracked and periodic evaluations are conducted for learning and adaptive management. Project results, innovative approaches and achievements will be disseminated for replication and scaling up. The outcome will be delivered through the following outputs:

Output 4.1: A set of manuals or guidelines that captures and describe the improved practices, measures and technologies. The output focuses on synthesizing best practices and lessons learnt from the project. Outcome 1 will have introduced revisions to the approach to forest resources assessment. Outcome 2, through its consultative and research-action approach, will have developed affordable measures, practices and technologies that have been, tested, refined and implemented over a sizeable area. Outcome 3 will introduce and support policy and institutional developments. Output 4.1 will capture all these successes and products and make them available for dissemination in a format for use by forest managers and technicians in Uzbekistan and beyond.

Output 4.2 Project Monitoring & Evaluation plan and system in place. A project M&E system will be established to measure project progress and impacts in terms of multiple global environmental benefits (GEBs), social and economic benefits. Baseline and targets for project indicators will be refined

[9] Supported by the EU

and used for monitoring project progress and impacts and reporting through four annual project reports (PIRS) submitted to GEF Secretariat and 8 half-yearly project progress reports submitted by the PMU to LTU and the FAO/GEF unit.

Output 4.3 Project Mid-term and Final Evaluations. A mid-term evaluation will be carried out with field visits to project sites and consultation with project partners at national and sub-national level. A final evaluation will also be conducted and will include review of project reports, web-based information, and field visits to selected sites, with recommendations for ensuring sustainability of project outcomes.

Output 4.4 A Communication and dissemination strategy is developed and implemented. The output focuses on dissemination of results and will support development of a communication and dissemination plan with clearly identified target audiences, and establishment of a project website and social media pages. It will support development of outreach material and publications that will be published and also disseminated through modern ICT, including mobile phones and tablets. The project will produce information materials as well as public awareness publications. This will facilitate the strategic dissemination of Project best practices and lessons learned. The Strategy will also create linkages with regional and global lesson learning processes, for example by linking to the FAO Global Forest Resources Assessments (FRA) and the FAO/Global Forest and Landscape Restoration Mechanism[10] as well as CACILM-2. A set of multi-media products to raise public awareness and public appreciation of forests (e.g. video, website, posters etc.) will be developed.

1.3.3 Project Stakeholders

During Project preparation, multiple consultations have been held with potential stakeholders and partners. The main stakeholder is the State Committee on Forestry (SCF) and its subordinates, notably the locally based Forest Organizations which are responsible for managing the great majority of the Forest Fund land. The ultimate beneficiaries of the Project will be communities and individuals dependent on forest resources. Currently, these communities are suffering from degrading resources and from sub-optimal production approaches. Specifically, under Component 2, the project will implement different activities for developing community based forestry that generates multiple benefits. These small-scale initiatives will bring different ecological and socio-economic benefits to members of local communities, including women. At the site level, the Project will work with Farmer Councils and Self-Governing Communities. These are civil society organizations. At all sites under Outcome 2 these CSOs will be involved as direct beneficiaries and local implementing partners. This will also establish models for SCF working with these CSOs that can be replicated.

The project will work with a wide array of stakeholders, from the local, national level to international level. The main stakeholders include (Table 5):

Table 5. Project stakeholders.

Stakeholder	Role in Project
FAO	FAO has extensive experience in supporting agriculture and forest sectorpolicy reform in Uzbekistan. It will be the GEF agency for the project and provide support to implementation and execution of project activities, and technical backstopping.
State Committee on Forestry (SCF) of the Republic of Uzbekistan	• Overall project coordination and institutional guidance of the project • Responsible for project success to Govern-ment of Uzbekistan • Provide technical and logistical support and so a co-financier • Contribute to assessing impact of the project • Benefit from capacity building activities

[10] More information on these provided later in the document.

Stakeholder	Role in Project
Forests Projects Enterprise (FPE) of SCF	• A technical partner in the development and implementation of many Project activities at the site level • Will benefit from capacity building, notably related to forest planning and forest moni-toring and carbon
Forest Cadastral Unit of SCF	A technical partner in the development of the national forest assessment, and will benefit from related capacity building, (in-cluding on carbon related issues)
Forests Organizations (FO) of SCF	• Four of the SCF FOs will be operational partners at the site level • The same FO will benefit greatly from capacity building and from Project outputs • All FO will benefit from some capacity build-ing, and possibly from upscaling under Out-come 3
Forestry Research Institute under SCF	• A technical partner in the identification of strategies at the FO level and in the imple-mentation of activities • Will benefit from related capacity building, (including on financial, socio-economic and carbon related issues)
State Committee on Ecology and Environmental Protection	• Will benefit from knowledge and data generated from Project on sustainable forest management, including data on forest biodiversity • Will benefit from some capacity building
Centre of Hydrometeorological Service (Uzhydromet)	Will benefit from data generated from Pro-ject on forest inventories. Will also benefit from some capacity building.
Rayon Councils	• A technical partner in the identification of strategies at the FO level (in particular, the issuesof irrigated lands availability, etc) and in the implementation of activities • Will contribute on the local level to public outreach campaigns on SFM processes with special focus on women; • Will participate in beneficiary household selection and mini-grants process; • Will benefit from related capacity building (including on socio-economic and carbon related issues)
Local Self-governing communities/ Makhallya Foundation	• Implementation partner for local, participatory, forestry activities • Will contribute on the local level to public outreach campaigns on SFM processes with special focus on women; • Will participate in beneficiary household selection and mini-grants process; • Will benefit from related capacity building (including on socio-economic and carbon related issues)
Chamber of Commerce and Industry (CCI) (TBD)	• Implementation partner for local capacity building activities on micro and small entrepreneurship (MSE) basic package; • Beneficiary of improved information and some capacity building
Business Women Association and its local branches (TBD)	• Implementation partner for local capacity building activities on micro and small entrepreneurship (MSE) basic package; beneficiary of improved information and some capacity building
Agrobank or Ipak Yuli commercial bank	Will contribute to improved information on microcredits opportunities and bank credit procedures

Stakeholder	Role in Project
Michael Succow Foundation	• A potential co-financier • A potential technical and operational partner
GEF Small Grants Programme (SGP)	• Collaborating partner at project sites to support livelihoods and reduce the dependence on wood fuel.

Gender considerations in forestry in Uzbekistan

A rapid socio-economic and gender survey conducted at the Project preparation stage included an ex-ante and gender-sensitive impact assessment and analysis of livelihoods, vulnerability, and stakeholders. The analysis was based on the field research in four pilot areas identified for the Project, and visits to the FOs and forest-dependent communities in remote mountaneous areas. In-depth interviews and focus group discussions were conducted both at policy and community level with: district municipalities/khokimiyat management; SCF and FOs' management and staff; workers in WP ans NWFP cultivation and processing; female and male representatives from the households in forest-dependent communities; lessees and owners of grazing tickets; students of vocational colleges; local community leaders and community-based advisors on women's issues (maslakhatchi); representatives of private business, etc. Some of the finding of the survey related to the four pilot Project areas are presented below:

1. Currently over 90% of the staff in the Project pilot FOs are males. The foresters are predominantly male and the occupation is considered more appropriate for men as it requires irregular working hours and continuous overtime. Very often the foresters must keep on duty for several weeks without breaks to go home and be on horseback. Men are preferred and women not encouraged engaging in this profession because the forests are seen as unsafe place due to the presence of wild animals or offenders of law;
2. Another reason for women's low presence in the sector can be a requirement in a higher education diploma in Forestry while only few female graduates are enrolled in the forestry faculty in the State Agrarian University;
3. Women carry out all home chores that traditionally are considered as 'female'. Alongside with that, women engage in different types of income-generation activities to contribute to the family budget. The household responsibilities and work in the household plots and family farms is usually unpaid, not calculated and not taken into consideration as a contribution to family budget;
4. Decisions about family's income generating strategy are taken by a collective decision of a larger family, involving the parents-in-law;
5. Female members of households do not take small loans from a bank due to: a) lack of start capital; b) lack of property registered on their names to be used as collateral; c) lack of formal employment with stable salary and social guarantees; d) lack of basic knowledge on MSE; e) lack of skills to access credits; f) lack of confidence and low self-esteem;
6. Usually women do not engage into formal relations with the forest enterprise due to widespread stereotypes which consider men as the main breadwinners, while women are limited to their role of housekeepers;
7. There is also a kind of stigma in the community against female engagement into forestry sphere as it is male dominated;
8. One of the key issues across Uzbekistan, including in rural areas near the forests, is the emigration of males to urban areas and even to other countries, in search of better paid jobs, meaning there is a large number of de facto female-headed households;
9. Female heads of the households conclude contracts with the forest enterprise mainly for fruit tree or medicine plants growing. However, de facto females are proactively engaged into grazing of livestock and activities related to growing, collection and processing of NWFP;

10. The grazing tickets are usually purchased for 3-5 months: May through September. During grazing seasons women move with their husbands and pre-school aged children to the pastures and fulfil their traditional chores: collecting wood for cooking, bread baking and boiling water, washing, looking after the kids, feeding the cattle. When the school is over, the elder children join the family and help with the cattle;
11. In high mountainous areas due to the cultural attitudes, there is a strong segregation of sexes.
12. Although the legislation provides equal rights to both women and men to own property, there are significant gender disparities in land and real estate ownership: most of residential houses and land is acquired through inheritance, which favours men over women. Other assets such as cars, agricultural machinery, equipment and livestock are also owned by men. This status quo limits women's participation and opportunities to start a private business.;
13. In the 4 pilot areas, only few women have NWFP businesse, registered in their names;
14. The prevailing majority of forest grazing tickets owners and contractors are males.

Gender is mainstreamed into the project as follows:

- Under component 1, the project seeks to train a set of technicians to undertake data collection and information management in order to develop and maintain the forest information management system. While training of staff from national institutions will be planned on a case by case basis, the selection criteria for technicians will include a gender dimension to ensure women participation in the data collection and information management. The project will keep track of the number of women trained as a percent of total trainees.
- Under component 2, the project will carry out livelihood-improvement activities with the aim to benefit at least 500 households, of which at least 30% will be female-headed. These include medicinal and aromatic plants (i.e. development of material, production and processing) and establishment of pistachio plantations. The beneficiary household selection criteria will be developed in close consultation with SCF and project related FOs to include social prioritization and gender dimension ensuring involvement of the most vulnerable population in the Project area (inclusive of single female headed households). Simlarly, the Project will include interventions on possibilities for micro and small entrepreneurship (MSE) development for NWFP, including FSC certification, and required capacity building within the forest related local communities, with a focus on women. Replication and upscaling under Component 3 will help spread these approaches, benefitting more local people across the country. Indicators that will be considered for monitoring of benefits include: (i) increase in local community's income (gender disaggregated), (ii) change in type and quantity of forest products (wood and non-wood) obtained from target areas, and (iii) increase in productivity from sustainable forestry and multi-benefit industrial plantations.

Finally, and in line with the GEF Policy on Gender Mainstreaming, the GEF-6 approach on gender mainstreaming and women's empowerment, and the FAO Policy on Gender Equality and its Environmental and Social Management Safeguards, gender concerns will be addressed throughout the Project implementation cycle, its monitoring and evaluation. A draft Gender Strategy and Action Plan has been developed and will be updated throughout project implementation (see Appendix 7 of the project Document). This way the project will seek to contribute to the empowerment of women through gender mainstreaming in the forestry sector.

1.3.4 Expected global environmental and socio-economic benefits

The proposed project will deliver global environmental benefits related to mitigation of climate change, reversal of land degradation processes and sustainable forest management. Table 6 provides information on the selected GEF 6 programming indicators, the baseline value (where appropriate) and the end-of-project target value. Table 7 provides the background information on how the targets for carbon emissions and the area under sustainable forest management were estimated.

Table 6: GEF 6 Indicators and targets

Indicator	Baseline and End-of Project Target
Climate Change Mitigation	
CC Indicator 1 – Tons of GHG reduced or avoided	Baseline: not applicable Target: 4.1 million tCO_2eq*
CC Indicator 2 –Volume of investment mobilized and leveraged by GEF projects for low GHG development (public/private investment should be disaggregated)	Baseline: not applicable Target: to be determined at project outset
CC Indicator 3 – MRV systems for emission reduction in place and reporting verified data	Baseline: rating level 2[11] Target: rating level 5[12]
CC Indicator no. 4: deployment of low GHG technologies and practices (with the following sector clarification: "area under low GHG management practices")	Baseline: not applicable Target: 84 735 hectares
Land Degradation	
Indicator 2.2 Land area under sustainable forest management and/or restoration practices	Baseline: not applicable Target: 84 735 hectares
Socio-economic indicator: Number of beneficiary households	Baseline: not applicable Target: 500
Sustainable Forest Management	
Indicator 5: Area of forest resources restored in the landscape, stratified by forest management actors.	Baseline: not applicable Target: 28 000 hectares (This will be stratified by men/women and governmental/non-governmental at the Project start-up.)

The carbon benefits accruing from SFM and SLM on different types of land were calculated using the EX-ACT tool and are summarised in Table 7 below.

Table 7. Calculation of project carbon benefits using EX-ACT.

EX-ACT Module	SFM Activity	Area (ha)	C balance (tCO2-eq)	C Balance tCO2-eq.year^{-1}	Emission Factor (tCO2-eq.year^{-1}.ha
Afforestation (under LUC)	*Forest Restoration – Juniper*	1,000	*-851,154*	*-42,558*	*-42,6*
	Firewood Plantation	230	*-110,650*	*-5,532*	*-24*
	Shrubs Plantation	20	*-7,217*	*-360*	*-18*
	Creation of shelterbelts	2,225	*-757,826*	*-37,891*	*-17*
	Total	***3475***	***-1,726,848***	***86,342***	***-24.8***
Agriculture (under LUC/ Crop Production)	*Pistachio Tree Plantation (Perennial)*	1,910	*-222,212*	*-11,110*	*-5,8*
	Plantation of Medicinal/Aromatic annual crops (Annual)	600	*-816*	*-40.8*	*-0.06*
	Total	***2,510***	***-223,028***	*-11,151*	*-4.4*

[11] i.e.: Measurement systems are in place but data is of poor quality and/or methodologies are not very robust; reporting is done only on request or to limited audience or partially; verification is not there.

[12] i.e.: Measurement systems are strong for a limited set of activities and periodically report on key GHG related indicators i.e. mainstreamed into the activity implementation; reporting is improved through few pathways but limited audience and formats; verification limited.

Grassland	*Improved management of degraded grassland*	**50,750**	***-1,546,818***	***-77,341***	***-1.5***
Forest Degradation and management	*Improved management of degraded forest lands*	**28,000**	***-623,733***	***-31,187***	***-1,1***
Net Carbon Balance			**-4,120,427**		
Net carbon balance Per hectare per year					***-2,4***

Socio-economic benefits

The project seeks to put 84,735 ha under sustainable land management, improving the livelihoods of nearly 500 families. To achieve this, the project seeks to restore forest lands, to improve agriculture production, to improve the management of grasslands and to reduce forest degradation by improving management practices. As discussed above, much of the forest and forest land is currently being utilized by local communities, most of which are remote and not well integrated into the national economy. Project outputs 2.1 to 2.4 will apply integrated social prioritization and gender dimensions principles. By increasing revenue and improving the quality of the natural resource base (land and forest), these Outputs will yield significant benefits to the local community. A significant social benefit of the Project will be the creation of new jobs and increased opportunities for income generation and MSE development, inclusive for women, for the FOs related communities who will be involved into increased MAP and other NWFP production and processing, including certification. These activities will imply:

- increased capacity of FOs;
- capacity development interventions for the staff on the innovative strategies applied by the Project. One of such strategies to support under the Project is sheep wool processing and weaving cilim (the traditional wool carpets and rugs) for business purposes;
- capacity development interventions for existing and new stakeholders – contractors, farmers and other private business representatives;
- outreach campaigns on the SFM Project processes with sharpened gender focus;
- enhanced connections of FOs with commercial banks e.g. outreach campaigns on micro and small entrepreneurship (MSE) opportunities for women and men from the Project related communities).

Another social impact of the Project will include empowerment of women living in the concerned FO areas through their increased participation in SFM processes, in particular meetings, information sharing, trainings and decision making. Replication and upscaling under Outcome 3 will help spread these approaches and benefits to other similar communities and households. Collaboration with the SGP will ensure wider dissemination of identified best practices in SFM that generate socio-economic co-benefits.

Financial and incentive mechanisms for SFM at national and sub-national levels promoted by the project will contribute significantly to financial and economic sustainability of the project, including legalization of of long-term leases of Forest Fund land. Longer leases are expected to strengthen the incentives of local land users to invest in plantations of economic trees, such as pistachios, almonds and walnuts, and also lead to more sustainable management of pastures.

The selection of the SFM best practices for demonstration and upscaling on management of high mountain forest, economic tree plantations, shelterbelts, and valley and riparian forests will be based

on management practices already pilot-tested by research institutes, other programs and projects, and analysed for their environmental impact and economic feasibility. The final fine-tuning of SFM interventions will be undertaken in close consultation with local communities and forest project enterprises participating in the project.

1.3.5 Knowledge management

The project will enhance communication and visibility of SFM at the national level through support to dissemination of best practices and lessons learnt under Component 4, and at the field level through support under Component 2 to demonstrations of SFM related to mountain forests, riparian forests and shelterbelt management in valleys and lowlands. Knowledge and information will be captured across project components, as follows:

Project component	Knowledge management outcomes
Component 1: Information management systems for sustainable forest management	The project will help establish the National Forest Inventory and Monitoring System (FMS). This is the basis for knowledge and knowledge management and dissemination related to forestry in Uzbekistan. The project will ensure that the FMS is harmonized with the multi-country SLM/INRM knowledge management platform that will be developed under the CACILM-II project, allowing for data and knowledge sharing also at the regional level. The project will also make it possible to use inventory results as part of national reporting processes (UNFCCC, UNCCD, CBD, IPCC and FAO/Forest Resource Assesment) without any conversion, which usually means loss of accuracy or interpretability. This will be achieved by designing a methodology that is harmonized with international reporting standards, definitions and classification categories. Data from the FMS will feed FAO's 2020 Forest Resource Assesment (FRA). The inventory will be a main source of data to feed most of the 60 variables assessed on land use and forest cover changes over time.
Component 2: Multifunctional forest management leading to carbon sequestration, an improvement in forest and tree resources, and other benefits	This component will generate lessons and best practices from field demonstrations of SFM that will be documented and disseminated under Component 4 and institutionalized under Component 3 (see below). Coordination efforts with CACILM II will be particularly relevant in the Kitab region, which is an area of intervention for both projects. A Regional Forestry Training and Extension Centre will there be established in cooperation with local authorities and the SCF and will serve as the main platform for knowledge, information exchange between farmers, Forestry organization, SCF, research institutions and advisors in the country. The Sustainable Forest management Plans developed under this component will be closely coordinated with the assesments and land use plans for mountain agroecosystems foreseen under CACILM II.
Component 3: Upscaling of sustainable forest management - with carbon sequestration – by strengthening of the enabling environment	This component will create capacity for knowledge management on SFM. For example, under Output 3.1, SCF staff will be trained in forest information management, and under Output 3.6 lessons and best practices from Component 2 will be institutionalized in policy and/or programs.

	Under Output 3.3 with linkages to component 1, the project will help establish an MRV system. This will systematically generate knowledge related mostly to GHG emissions and factors, but also contribute to knowledge for dissemination related to biodiversity and land management.
Component 4:	Under this component the project will establish tools and mechanisms to systematically collect data from components 1-3, to document lessons learnt, to validate technical options, and to share lessons to national, regional and international partners, including CACILM. This will be done in close connection with project monitoring and evaluation and communications. This will lead to an increase in the SFM knowledge base of the country.

The Project's participatory process, involving relevant policy making, research, and operational institutions, will ensure that knowledge is shared efficiently within the country. Internationally, FAO will play a leading role in lesson sharing and knowledge management.

Proposed tools for enhancing visibility and knowledge sharing also include:

- General aspects – the PMU will ensure that general aspects of project visibility are fulfilled, such as: (i) visual identity of project and partners; (ii) highlighting the project' partners in media interviews, press releases, etc.); (iii) supporting documents such as photos of logos in the field, photos of activities, copies of press released will be included in the progress and final reports.
- Basic visibility at field level – At this level visibility strategy will consider: (i) signboards, display panels and banners; (ii) operational publications and materials such as training manuals and posters; (iii) supplies and equipment.
- Printed publications – Brochures, leaflets, flyers, newsletters and other publications to project activities and results.
- Website, webpage and social media pages – This will include: (i) partnerships and links; (ii) project information (objectives, activities, expected results, etc.).
- Audio-visuals – (i) Films for distribution by the media (mainly for television, campaigns and Internet); (ii) operational films (films to provide technical information and practices to local population, project partners and authorities).
- Public events – Many types of events are possible and attracting media interest will always be a key consideration in making the events cost-effective. Press release will be an integral part of the events.

1.4 LESSONS LEARNED

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

I. The project should include a broad and diverse number of stakeholders with representatives of line ministries, the private sector and civil society, and when relevant, regional and international institutions;
II. Flexibility should be integrated into project design to allow for changing conditions that may occur between the design phase and actual implementation;
III. Projects supporting sustainable forest management should adopt a holistic ecosystem based approach and address the main barriers and associated economic and regulatory issues at the design stage;
IV. A phased approach to the testing and upscaling of new technologies is required (e.g. for

climate-smart agriculture and shelterbelt management) to inform the formulation of relevant policies and legislation;

V. Overly ambitious project design should be avoided and assumptions critically verified;

VI. The use of business models for sustained action beyond the project cycle;

VII. Given the significant differences between men and women involved in sustainable forest and land management in terms of access to resources, knowledge and decision-making, a gender-sensitive approach that aims to mitigate historical inequalities is required in project design, implementation and M&E; and

VIII. Participatory design of an agreement on specific M&E plan elements and indicators is advisable.

1.5 STRATEGIC ALIGNMENT

1.5.1 Consistency with national development goals and policies

The approach and goals of this Project are central to the following national development and sectoral plans and strategies:

(i) Forestry: The following laws have directly or indirectly influenced the forestry of Uzbekistan: the Constitution of the Republic of Uzbekistan (1992); Laws and Regulations on "Nature Protection" (1992); "Protection and Use of Flora" (1997); The Forest Act of 1999; the Land Code of the Republic of Uzbekistan (1998), and; the Law on Protected Areas" (2004). The Forest Act (1999, with two subsequent amendments) regulates all matters concerning the management and protection of forests is the most important. In 2006, the SCF developed and approved a Forestry Development Program for the period of 2006 - 2010. The program included sections devoted to reforestation, afforestation, enhancement of the environmental and protective functions of forests, and expanding the forest cover. Subsequently, with support from FAO and other partners, the Government is developing a follow-up National Forest Programme. In addition to maintaining the strategic priorities of the early program, the draft for the follow-up program includes important policy initiatives, for example in the area of land tenure and participation in forestry. In this sense, the Uzbekistan forest sector can be considered to be on the eve of significant reforms. This proposed Project, while fully supporting the objectives and priorities set out in the Forestry Development Program, has also been designed to be able to help facilitate policy reforms, should opportunities arise.

(ii) The Regional Environmental Action Plan for Central Asia (REAPCA, issued in 2004) which highlights the degradation of mountain ecosystem as one of its priority problems;

(iii) The Uzbekistan Welfare Improvement Strategy, 2008 -2010 (WIS) that targets transformation of the agricultural sector by the improvement and sustainable use of natural resources.

1.5.2 Consistency with national communications and reports to the United Nations Convention to Combat Desertification, Convention on Biological Diversity, Stockholm Convention on POPs, United Nations Framework Convention on Climate Change (as applicable).

UNFCCC: Uzbekistan prepared a *National Strategy on GHG Emission Reductions* in 2000. This document prioritized the increasing use of GHG sinks in forest ecosystem through afforestation, reforestation and improvement of existing forests. This proposed Project is aligned to that priority. Subsequently, the *Second National Communication* (2008, SNC) validated the above-mentioned National Strategy

and further developed the priorities. The SNC identifies that currently the forestry sector is not a major sector in GHG emissions in Uzbekistan, but clarifies that it has the potential to significantly increase sequestration. Further, it notably promotes the widespread application of local tree species in order to increase GHG removals, as well as to generate other benefits such as land recreation, environment protection and biodiversity conservation.

Finally, the proposed project will support the implementation of the Uzbeksitan's Intended Nationally Determined Contribution (INDC).13 In the INDC, the country commits to reducing carbon intensity (i.e. GHG emissions per unit of GDP) by 10 percent by 2030 relative to the 2010 level. The proposed project will support a series of climate change mitigation measures related to forestry included in the INDC. These are: (i) conservation and restoration of forest resources, including afforestation of the dried Aral Sea bottom and (ii) the development of a system for inventory, reporting and control over greenhouse gas emissions. With respect to climate change adaptation measures included in the INDC, the proposed project will support the restoration of forests in mountain and piedmont areas, and conservation of indigenous plant species in semi-deserts and deserts as a way to enhance the resilience capacity of ecosystems.

UNCCD: The proposed Project responds to the priority actions identified in the National Action Program to Combat Desertification (NAPCD, 2002). In particular, the proposed Project will address the following NAPCD general recommendations: Improving land organization in order to prevent its degradation and secure environmentally and economically productive patterns based on landscape and environmental norms; Restoring forests and growing them on lands of the state reserve and other territories suitable for it, and; Developing economic mechanisms for ensuring more sustainable use of natural resources. With support from UNEP, the Government of Uzbekistan is currently preparing an updated National Action Program to implement the UNCCD. The unapproved draft prioritizes assessment and monitoring of land degradation and sustainable forest management. Hence, this proposed Project is in line with the draft document.

CBD: The Project is aligned with National Strategy and Action Plan for Biodiversity Conservation (1998) which included the following priorities (i) Protection of biological resources, including forests and grasslands and (ii) restoration of structures and functions of degraded ecosystems. With support from UNDP/GEF, Uzbekistan is currently updating this action plan. This proposed Project – with its focus on sustainable forest management and sustainable use of forest resources - is aligned to the recommendations and priorities in the draft updated action plan.

Finally, in January 2015, the Government issued a Protocol related to medicinal and aromatic plants requiring that production of these increase rapidly to contribute to exports. This is also supported through the present proposed Project.

1.5.3 Consistency with GEF focal area

Climate Change Objective 2 (CCM-2): Demonstrate systemic impacts of mitigation options/ Program 4: Promote conservation and enhancement of carbon stocks in forest, and other land use, and support climate smart agriculture. The proposed Project, through introducing improved forest management over 121,750 hectares and therefore sequestrating Carbon, and by creating the conditions for upscaling, will lead to direct and indirect benefits in terms of carbon sequestrated and avoided carbon emission (see indicators and targets in table below). See Annex 1 for a discussion and a calculation of the estimated carbon benefits.

Generate sustainable flows of ecosystem services from forests, including in drylands (LD-2)/Program 3: Landscape Management and Restoration. The proposed Project, through addressing trees and

[13] http://www4.unfccc.int/Submissions/INDC/Published%20Documents/Uzbekistan/1/INDC%20Uzbekistan%2018-04-2017_Eng_20170419093154_171926.pdf

forests mostly in production landscapes, and making the linkages with carbon sequestration, will contribute to this program. Notably it will include: landscape regeneration through use of locally adaptive species, including agroforestry and farmer-managed natural regeneration; and SLM approaches to avoid deforestation and forest degradation in production landscapes - including practices for sustainable supply of wood (see indicators and targets in table below).

Sustainable Forest Management Objective (SFM-3): Restored Forest Ecosystems: Reverse the loss of ecosystem services within degraded. The proposed Project will, in line with GEF 6 programming guidance, use the restoration of forest lands to support the maintenance and rehabilitation of forest ecosystem services. It will also building technical and institutional capacities to identify degraded forest landscapes and monitor forest restoration, helping to build a foundation for forest landscape restoration at a large scale. Finally, it will include the integration of SFM into landscape restoration (see indicators and targets in table below).

1.5.4 Consistency with FAO's Strategic Framework and Objectives

The Project is fully in line with FAO's Strategic Objectives (SOs) that provide the overall direction, goals and targets for the organization until 2018, specifically: SO1: Contribute to the eradication of hunger, food insecurity and malnutrition; SO2: Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner; SO3: Reduce rural poverty; and SO5: Increase the resilience of livelihoods to threats and crises. The project is also consistent with FAO's regional priorities as well as FAO's Country Programming Framework for Uzbekistan and will contribute to the following objectives/priorities of the organization:

FAO Strategic Objective/Organizational Result:

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

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

SO3: Reduce rural poverty

SO5: Increase the resilience of livelihoods to threats and crises

b. Regional Result/Priority Areas:

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

c. Country Programming Framework for the Republic of Uzbekistan, 2014 to 2017:

Priority area E. Sustainable natural resources management and increasing the resilience to climate change

Outcome 1. Development of forestry for sustainable management of natural resources and increased income-generating opportunities for rural population supported

> Output 1.1. National capacities for afforestation increased, including delivering support to nurseries, seed breeding development and staff capacity building
>
> Output 1.2. Support to poplar and willow cultivation for agroforestry production systems and; to national forest and tree resources assessment and monitoring provided including inventory for multi-functional planning and management of forest and tree resources

Output 1.3. Support provided to the formulation of GEF project on sustainable management of forests and trees resources based on the broad landscape approach and; to the demonstration of new technologies for enhanced processing of wood and non-wood products

SECTION 2 – FEASIBILITY

2.1 ENVIRONMENTAL IMPACT EVALUATION

The project is rated as a category C project. An environmental and social assessment is presented in Appendix 5.

Although many different ethnic groups live in Uzbekistan, the population is highly homogeneous. In 1996, the group known as Uzbeks constituted 80 percent of the population. Most of the ethnic minorities are concentrated in particular areas: the vast majority of ethnic Russians live in Tashkent and other industrial centres; Tajiks are concentrated in Samarkand and Bukhara; Karakalpaks reside principally in the Autonomous Republic of Karakalpaokstan and; Kazakhs are concentrated in areas near Tashkent and Bukhara. The full socio-economic assessment is provided in Appendix 5.

2.2 RISK MANAGEMENT

2.2.1 Risks and mitigation measures

A full risk analysis following FAO guidance with identification of mitigation actions is found in Appendix 4. A simplified risk analysis is found in Table 8 below.

Table 8. Project risks.

Risk/Assumptions	Level	Management strategy
Government engagement in the Project at the highest level is insufficient to ensure mainstreaming, upscaling and replication. As a result, the enabling and institutional measures proposed by the Project will not be adopted.	Low	The Project has several strategies to mitigate this risk: (i) the early implementation phase focuses at the local level, so this period of time will be taken to advocate and build partnerships at high governmental level; (ii) the project will demonstrate the advantages of SFM in economic terms, which should attract high level government interest; (iii) the project will establish partnerships with many stakeholders and will create joint approaches to fostering high-level commitment.
The enabling legal and institutional framework is not sufficiently conducive to the Project Objectives, and is not modified/adopted in a timely way.	Medium	Component 3 addresses weaknesses in the legal and institutional framework and will ensure that SFM adopted as an overarching strategy. Progress with strengthening the enabling environment for SFM will be continuously monitored by the Government and FAO, and strategic changes to the Project approach will be identified and implemented if necessary.
Financially sustainable models of forest management cannot be identified/developed for Uzbekistan.	Medium	Fostering financial sustainability is a core strategy of the Project and includes creating incentives for SFM both among local land users, through improved land tenure arrangements, and among the FOs through identification of longer-term benefits from tree plantations, generated from harvesting of fruits and nuts, carbon sequestration, etc.

Risk/Assumptions	Level	Management strategy
Forest conservation strategies proposed by the project will not be accepted by the population or will cause conflict with contractors who have occupied the same land plot for many years and do not allow anyone to use it.	Low	Incentives for SFM and forest conservation will be created through income generation activities for local communities from harvesting of fruits, nuts and NWFPs. Stakeholder consultation and participatory mechnisms will be put in place to avoid conflicts between communities and other contractors.
Climate change may lead to increased threats to forests through fire, pests, diseases and changing climatic conditions (temperature, precipitation).	Low	The timeframe for climate change means that it does not significantly impact forests during the Project implementation period. Further, the Project, by greatly increasing overall forest management capacity, will contribute significantly to enhanced climate change resilience of forest ecosystems in Uzbekistan.
Globally, the value of carbon on international markets remains low, or gets lower, further decreasing enthusiasm for SFM.	Low	It is true that, should the price of carbon increase rapidly, this would greatly help reach the Project objectives. Hence, the Project treats carbon as one possible source of finance for sustainable forestry. However, Project success does not depend on this.

2.2.2 Analysis of fiduciary risks and mitigation measures (only for OPIM projects)

Not applicable.

SECTION 3 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

3.1 INSTITUTIONAL ARRANGEMENTS

Lead government agencies in the Project are:

SCFState Committee on Forestry (SCF) of the Republic of Uzbekistan that is the lead national implementing partner. It will provide technical and logistical support and also co-financing and contribute to assessing impact of the project through:

- **Forests Project Enterprises (FPE)** of SCF will be technical partners in the development and implementation of Project activities at the site level.
- **Uzlesproject institution** of SCF will be a technical partner in the development of the national forest assessment and provide co-financing to the Project.
- **Forest Organizations (FOs)** of SCF. Four of the SCF FOs will be operational partners at the site level.

Forestry Research Institute (FRI) will be a technical partner in the identification of strategies at the FO level and in the implementation of activities.

3.1.1 Coordination with other relevant GEF-financed and other initiatives

The Project will be coordinated with the following past and planned GEF projects to ensure that lessons learned are taken into consideration and that synergies are established with relevant initiatives:

- "Establishment of the Nuratau-Kyzylkum Biosphere Reserve as a Model for Biodiversity Conservation" and "Conservation of Tugai Forest and Strengthening Protected Areas System in the Amu Darya Delta of Karakalpakstan" (both completed several years ago with support from UNDP). Although completed some time ago, these projects generated knowledge related to forest management in Uzbekistan, particularly on the piloting of more participatory approaches. This knowledge will feed into the present project. These projects were implemented with the State Committee on Ecology and Environmental Protection;
- "Reducing Pressures on Natural Resources from Competing Land Use in Nonirrigated Arid Mountain, Semi-desert and Desert Landscapes" (started in 2013, with support from UNDP, referred to as the 'LAND' project). This project, working with the State Committee for Land Resources, is also piloting approaches to sustainable land management, primarily on agricultural land. Lessons and knowledge will be shared with the present proposed Project;
- "Sustainable Agriculture and Climate Change Mitigation Project" (started in 2013, with the World Bank). Although this project focusses on agricultural (irrigated) land, and has a major focus on renewable energies, some approaches and lessons will be of interest to the present proposed Project;
- "Conservation and sustainable use of agricultural biodiversity to improve regulating and supporting ecosystem services in agriculture production in Uzbekistan" (PIF approved in 2013, with support from UNEP). This project focusses on the conservation and use of fruit tree biodiversity and the enhancement of ecosystem services. Lessons and knowledge will be shared with the present proposed Project;
- "Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity" (PIF approved in 2015, with support from UNDP, and implemented by the State Committee on Ecology and Environmental Protection). This project focusses in particular on habitat for the snow leopard, hence mostly high altitude forests. Geographically, the proposed Project will complement this project. Lessons and knowledge will be shared between this project and the proposed Project.
- The proposed Project will also be coordinated with the *Central Asian Countries Initiative for Land Management* (CACILM), phase 2 on *Integrated Natural Resources Management in Drought-prone*

and Salt-affected Agricultural Production Systems in Central Asia and Turkey (CACILM-2). CACILM is a multi-phase, multi-country, multi-donor program promoting sustainable land management to restore, maintain, and enhance productivity of drylands. GEF has supported, and continues to support, CACILM at both regional level and in Uzbekistan. In order to implement projects effectively, each participating country has developed a National Programming Framework for tackling the root causes of desertification. CACILM focuses on drylands (and therefore Uzbekistan's desert forests) and there are several technical areas of overlap where lessons can be shared, for example on carbon sequestration and participatory natural resource management. The CACILM-2 project is starting and while specific areas of intervention are yet to be finalised with the government, the project will focus in Uzbekistan on integration of resilience into policy, legal and institutional frameworks for INRM as well as upscaling of climate-smart agriculture in salt-affected production landscapes. A more detailed coordination plan that may include annual meetings to discuss each respective project's work will be developed during project inception.

The Project will also be coordinated with the following related activities in Uzbekistan:

- BMZ/GIZ: "Adapting to Climate Change through Sustainable Management of Resources and Cross-Border Cooperation on Disaster Prevention in Central Asia" (2011 – 2013) and "Programme for the sustainable use of natural resources in Central Asia" (2002 -). Although Uzbekistan was not a major focus of these projects, they have built capacity in Uzbekistan and undertaken small-scale on the ground activities. The proposed Project will draw from these lessons.
- EU/GIZ, FLERMONECA – Forest and Biodiversity Governance including Environmental Monitoring. The project ended in 2015. There is a possibility of a follow-up project;
- Several partners (including FAO and Michael Succow Foundation) have joined together and recently submitted a request to the German government's International Climate Initiative (ICI) for the "Central Asian Desert Initiative (CADI) - Conservation and adaptive use of cold winter deserts in Central Asia". This €3.3 million project focuses on sustainable management of desert forests. Although it covers 3 countries, the emphasis is to be on Uzbekistan;
- Finally, the Project "Ecosystem based land and forest management of the tugai habitats of Amudarya river for improved livelihood of local communities and as adaptation strategy to climate change (Uzbekistan/Turkmenistan)", supported by ICI, and to be implemented by SCF, GIZ and Michael Succow Foundation (€2 million).

3.2 IMPLEMENTATION ARRANGEMENTS

3.2.2 FAO's roles and responsibilities

FAO's role in the project governance structure

FAO will be the the GEF Agency of the Project as well as the financial and operational executing agency. As financial and operational executing agency, FAO will provide procurement services and financial management services for GEF resources. As the GEF Agency, FAO will supervise and provide technical guidance for the overall implementation of the project. The administration of GEF grants will be in accordance with FAO rules and procedures and in accordance with the agreement between FAO and the GEF Trustee. As the GEF agency for the project, FAO will:

- Administrate funds from GEF in accordance with the rules and procedures of FAO;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers and the rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;

- Conduct at least one supervision mission per year; and
- Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, on project progress and provide financial reports to the GEF Trustee.

At the request of the Government of Uzbekistan, FAO will also be executing agency of GEF resources, including financial management, procurement of goods and contracting of services, according to FAO rules and procedures. As financial executor, FAO will provide to the Project Steering Committee semi-annual reports including a financial statement of project expenditures.

In accordance with the present Project Document and the AWP/B(s) approved by the PSC, FAO will prepare budget revisions to maintain the budget updated in the financial management system of FAO and will provide this information to the PSC to facilitate the planning and implemementation of project activities. In collaboration with the PMU and the PSC, FAO will participate in the planning of contracting and procurement processes. FAO will process due payments for delivery of goods, services and products upon request of the PMU and based on the AWP/B and Procurement Plans that will be annually approved by the PSC.

FAO's roles in internal organization

The roles and responsibilities of FAO staff are regulated by the *FAO Guide to the Project Cycle, Quality for Results, 2015*, Annex 4: Roles and Responsibilities of the Project Task Force Members, and its updates.

The FAO's Office in Uzbekistan (UZB) will be the **Budget Holder** (BH) and will be responsible for the management of GEF resources. As a first step in the implementation of the project, the FAO UZB will establish an interdisciplinary Project Task Force (PTF) within FAO, to guide the implementation of the project.

The PTF is a management and consultative body that integrates the necessary technical qualifications from the FAO relevant units to support the project. The PTM is composed of a Budget Holder, a Lead Technical Officer (LTO), the Funding Liaison Officer (FLO) and one or more technical officers based on FAO Headquaters (HQ Technical Officer).

In consultation with the LTO, the FAO UZB will be responsible for timely operational, administrative and financial management of the GEF project resources, including in particular: (1) the acquisition of goods and contracting of services for the activities of the project, according to FAO's rules and procedures, in accordance with the approved AWP/B; (2) process the payments corresponding to delivery of goods, services and technical products in consultation with the PSC; (3) provide six-monthly financial reports including a statement of project expenditures to the PSC; and (4) at least once a year, or more frequently if required, prepare budget revisions for submission to the FAO-GEF Coordination Unit through the Field Programme Management Information System (FPMIS) of FAO.

The FAO UZB, in accordance with the PTF, will give its non-objection to the AWP/Bs submitted by the PMU as well as the Project Progress Reports (PPRs). PPRs may be commented by the PTF and should be approved by the LTO before being uploaded by the BH in FPMIS.

The **Lead Technical Officer (LTO**) for the project will be the FAO Sub-Regional Office for Central Asia (SEC) Forestry Officer. The role of the LTO is central to FAO's comparative advantage for projects. The LTO will oversee and carry out technical backstopping to the project implementation. The LTO will support the BH in the implementation and monitoring of the AWP/Bs, 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 will provide technical backstopping to the PT to ensure the delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical support from PTF to respond to requests from the PSC. The LTO will be responsible for:

- Review and give no-objection to TORs for consultancies and contracts to be performed under the project, and to CVs and technical proposals short-listed by the PMU for key project positions, goods, minor works, and services to be financed by GEF resources;

- Supported by the FAO UZB, review and clear final technical products delivered by consultants and contract holders financed by GEF resources before the final payment can be processed;

- Assist with review and provision of technical comments to draft technical products/reports during project execution;

- Review and approve project progress reports submitted by the Project Manager (PM), in cooperation with the BH;

- Support the FAO Representative in examining, reviewing and giving no-objection to AWP/B submitted by the PM, for their approval by the Project Steering Committee;

- Ensure the technical quality of the six-monthly Project Progress Reports (PPRs). The PPRs will be prepared by the PM, with inputs from the PT. The BH will submit the PPR to the FAO/GEF Coordination Unit for comments, and the LTO for technical clearance. The PPRs will be submitted to the PSC for approval twice a year. The BH will upload the approved PPR to FPMIS.

- Supervise the preparation and ensure the technical quality of the annual PIR. The PIR will be drafted by the NPC, with inputs from the PT. The PIR will be submitted to the BH and the FAO-GEF Coordination Unit for approval and finalization. The FAO/GEF Coordination Unit will submit the PIRs to the GEF Secretariat and the GEF Evaluation Office, as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO must ensure that the PM and the PT have provided information on the co-financing provided during the year for inclusion in the PIR;

- Conduct annual (or as needed) supervision missions;

- Review the TORs for the mid-term review, participate in the the mid-term workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation; and

- Review the TORs for the final evaluation; participate in the mission including the final workshop with all key project stakeholders, development and follow-up to recommendations on how to insure sustainability of project outputs and results after the end of the project.

The **HQ Officer** is a member of the PTF, as a mandatory requirement of the FAO Guide to the Project Cycle. The HQ Officer has most relevant technical expertise - within FAO technical departments - related to the thematic of the project. The HQ Technical Officer will provide effective functional advice to the LTO to ensure adherence to FAO corporate technical standards during project implementation, in particular:

- Supports the LTO in monitoring and reporting on implementation of environmental and social commitment plans for moderate projects. The HQ officer will support the LTO in monitoring and reporting the identified risks and mitigation measures (Appendix 4) in close coordination with the project partners.
- Provides technical backstopping for the project work plan.

- Clears technical reports, contributes to and oversees the quality of Project Progress Report(s) (PPRs – see Section 3.5).
- May be requested to support the LTO and PTF for implementation and monitoring.
- Supports the LTO and BH in producing the first darft TOR of the Evaluation team in for the Final Evaluation, review the composition of the evaluation team and support the evaluation function.

The FAO-GEF Coordination Unit will act as **Funding Liaison Officer (FLO).** The FAO/GEF Coordination Unit will review the PPRs and financial reports, and will review and approve budget revisions based on the approved Project Budget and AWP/Bs. This FAO/GEF Coordination Unit will review and provide a rating in the annual PIR(s) and will undertake supervision missions as necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the FAO GEF Coordination Unit. The FAO GEF Coordination Unit may also participate in the mid-term review and final evaluation, and in the development of corrective actions in the project implementation strategy if needed to mitigate eventual risks affecting the timely and effective implementation of the project. The FAO GEF Coordination Unit will in collaboration with the FAO Finance Division request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed.

The FAO Financial Division will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO-GEF Coordination Unit, request project funds on a six-monthly basis to the GEF Trustee.

3.2.3 The Government's role in the project government structure

The State of Forest Committee (SCF) will be the main executing partner of the project and it will carry out its responsibilities to support Project execution through the designation of a National Project Director (NPD) not financed by the project. The NPD will be a senior staff member responsible for ensuring smooth execution of the project on behalf of the Government. The NPD is responsible to the Government for the successful implementation of the Project and the Project's impacts. The duties of the NPD include (i) acting as the responsible focal point at the political and policy level within the national lead institutions, and (ii) ensuring that all necessary support input from Government personnel are provided by national lead institutions to enable the project to implement all of the proposed component activities; and (iii) reviewing and providing input to annual work plans and budgets in consultation/collaboration with the FAO representative; (iv) and to participate in the selection of recruitment of consultants; (v) Chair the Project Steering Committee.

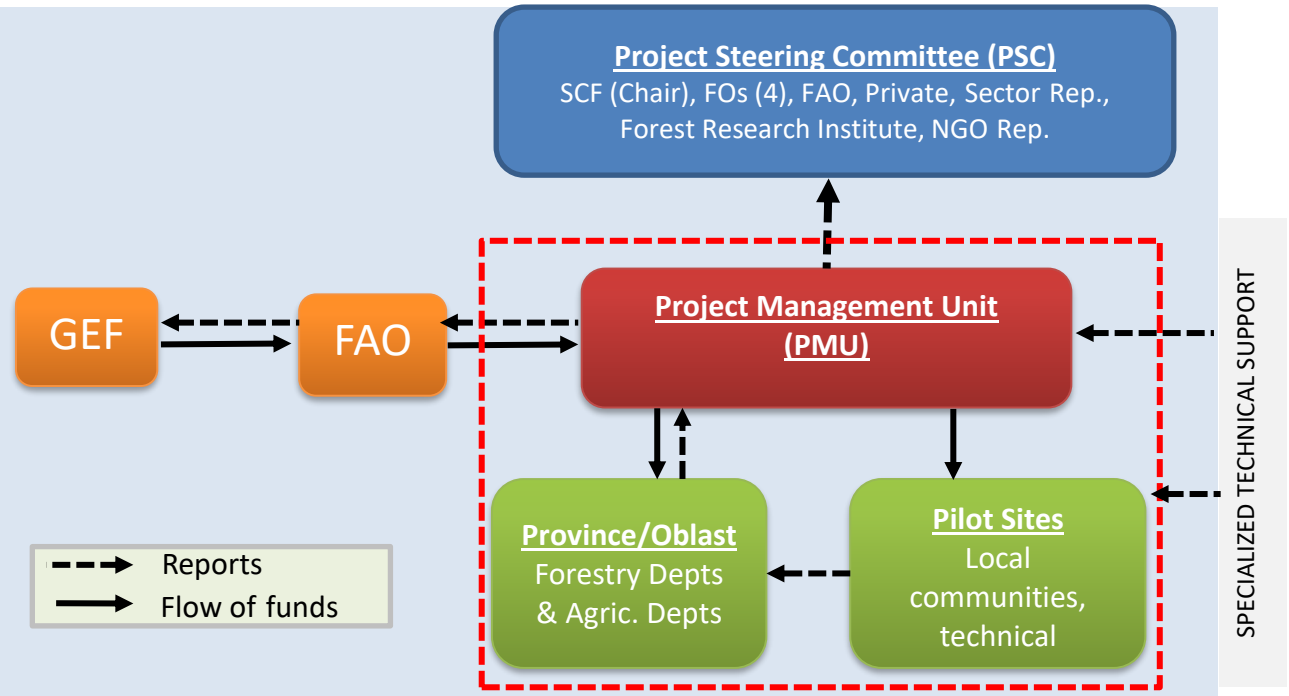
The NPD will ensure the active involvement of each national partner and he will ensure that each department of SCF, each subregional FO and each FO at the project site level will undertake their roles and responsabilities agreed under the project governance structure.

The FOs are the Project's key strategic mechanism for working with local communities and for building the capacity at district/oblast level. The FOs will take the lead in communicating with national government, advising on the preparation of local workplans, designing, hosting and running trainings for district officers and local communities, and other local-level stakeholders, designing local-level activities, trouble shooting at the local level and ensuring that Project inputs are delivered effectively.

3.2.4 Decision-making mechanisms of the project

The Project's decision-making mechanism is presented in Figure 5.

Figure 5. Decision-making mechanisms of the project.



The Project Management Unit (PMU) will be co-hosted by FAO and SCF and will be led by the Project Coordinator (PC), a full-time project position. The PMU will be comprised of a small core group of operational and technical staff, namely: the PC; operational and administrative officer and assistants, the M&E specialist, the national remote sensing/GIS expert and integrated by a representative from each FO supported by two field assistants funded by the project. FOs staff will be co-financed by SCF. The staff recruited by FAO will report to the BH, carrying out its functions in line with FAO rules and regulations while working in close coordination with SCF staff at all levels.

The following are some of the key functions of the PMU:

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

The Project Steering Committee (PSC) will be the main governing and decision-making body of the project. The objective of the Project Steering Committee (PSC) is also to provide support and advice and to ensure effective implementation to make the project successful. Its mission is not only an advisory body but also to provide necessary guidance for the project's staff and support their efforts to ensure all scheduled and previewed activities accomplished in time and to encourage the cooperation between all partners.

The Chair of the PSC is the National Project Director from SCF. The Secretary of the PSC is the Project Coordinator. The PSC can invite other institutions and/or persons for participation on an *ad hoc* basis.

The PSC will meet at least twice a year. The following are some its key functions:

(i) review and endorse the annual workplan and budget;
(ii) monitor the progress of the project and the results achieved such as those presented in the six-monthly progress reports;
(iii) facilitate cooperation between the project and other pertinent projects and programs underway;
(iv) supervise efficient coordination between implementation partners;
(v) ensure the sustainability of the key results of the project; and
(vi) endorse potential suggested revision to te project results framework following the recommendation of the mid term-review.

The members of the PSC will each fill the role of focal point for the project in their respective agencies. As a result, and as such a focal point, it will ensure: (i) the supervision of the activities related to the mandate of the respective agency; (ii) a fluid two-way exchange of information and of knowledge between their agency and the project; (iii) coordination and alignment between the activities of the project and the strategies and the regular program of their agency; and (iv) reporting on parallel financing related to the project, including endorsed co-financing as per the Project Document.

3.3 PLANNING AND FINANCIAL MANAGEMENT

3.3.1 Financial plan (by components, outcome and co-financiers)

Table 9. Financial plan (by components, outcome and co-financier).

Component / Outcome	SCF	Kitab FO	Pop FO	Dekhkanabad FO	Syrdaya FO	FAO		GIZ	ICRAF	Total Co-financing	Percent Co-financing	Total GEF Funds	Percent GEF	Total
	In kind	In kind	In kind	In kind	In kind	In kind	Cash	Cash						
Component 1: Information System for Sustainable Forest Management														
Outcome 1: An operational Forest Inventory and Monitoring System (FMS)	763,182	45,471	1,679,001	152,636	254,394	30,000	387,000	-		3,311,684	91%	346,000	9%	3,657,684
Component 2: : Multifunctional Forest Management														
Outcome 2: SFM operationalized at 4 demonstration sites generating sustainable benefits such as carbon sequestration and improved livelihoods of at least 500 local households	763,182	45,471	127,197	152,636	254,394	20,000	360,000	227,531	15,000	1,965,411	49%	2,057,060	51%	4,022,471
Component 3: Ensuring Sustainability and Upscaling of SFM														
Outcome 3: The policy and enabling framework is conducive to state and private investment in SFM.	2,162,349	1,288,347	50,879	462,488	763,182	20,000	37,800	-		4,785,045	93%	373,000	7%	5,158,045
Component 4: Knowledge, Evaluation and Knowledge Sharing														
Outcome 4: Project implementation based on RBM and lessons learned/good practices documented and disseminated	3,561,516	2,121,984	254,394	747,918	1,271,970	20,000	72,900	-		8,050,682		259,200	3%	8,309,882
Project Management Cost (PMC)	50,878	30,314	305,273	10,686	50,879	10,000	95,300	-		553,330	78%	151,763	22%	705,093
Total Project	7,301,107	3,531,587	2,416,743	1,526,364	2,594,819	100,000	953,000	227,531	15,000	18,666,151	85%	3,187,023	15%	21,853,174

Table 10. Confirmed sources of co-financing.

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (in USD)
Recipient Government	State Committee on Foresty	In kind	7,301,107
Recipient Government	Kitab FO	In kind	3,531,587
Recipient Government	Pop FO	In kind	2,416,743
Recipient Government	Dekhkanabad FO	In kind	1,526,364
Recipient Government	Syrdaya FO	In kind	2,594,819
GEF Agency	FAO	In kind	100,000
GEF Agency	FAO	Cash	953,000
Donor Agency	GIZ	Cash	227,531
Research Institute	ICRAF	In kind	15,000
Total Co-financing			**18,666,151**

3.3.2 GEF Contribution

The GEF funds will finance inputs needed to generate the outputs and outcomes under the Project. These include: (i) local and international consultants for support to capacity building in sustainable forest management, as well as strengthening of local livelihoods and mainstreaming of gender in project activities, and project M&E; (ii) technical support to upscaling of SFM (iii) support to information and knowledge management; (vi) LoA/contracts with technical institutions and service providers supporting the delivery of specific project activities on the ground; (v) international flights and local transport and minor office equipment; and (vi) training and awareness raising material. Total GEF funding to the Project amounts to US$3 187 023.

3.3.3 Government Contribution

The government of Uzbekistan will allocate the following, necessary resources to contribute to each project component and to carry out the NFI survey, effectively, in time and entirely:

1. NPD - GoU will assign a National Project Director (NPD), with appropriate educational and practical background in forestry and forest inventory. NPD will work full-time for the project purposes between 2018 and 2022. NPD will supervise efforts by the PMU to produce a biannual report and hand it over to the steering committee for approval.

2. FI steering committee - GoU will nominate the FI steering committee composed by five members from following institutions – State Committee on Forestry, Forestry Research Institute, National Center for Geodesy and Cartography, Tashkent State Agrarian University and Institute for wildlife gene pool under the Academy of Sciences. NPC or any Uzlesproject employee should not be member of the steering committee (conflict of interest). The committee will be the NFI supervising and approving body which will monitor the status of NFI progress and inform the GoU about actual project situation in a biannual report (as to 30th June and 31st November). To its meetings steering committee will invite the FAO's representative of Uzbekistan, and the project's lead technical officer (LTO).

3. FI specialized workplaces at SCF – will be established by GoU and provided with appropriately sized and equipped offices (furniture, air-condition, heating, power supply, internet connection 10Mb/sec download/upload nominal speed and min. 5Mb/s warranty, sanitary facilities, kitchenette). Salary of employees of these workplaces will be covered from GoU's budget with a GEF contribution targeting key positions. Software, hardware and trainings will be provided from the project's (component one) budget. The required structure of NFI workplaces is shown on Figure 4.

4. Five field survey teams – GoU will allocate necessary human resources to carry out NFI field survey. More specifically 5 field teams (4 members in each of them) - in total five team leaders, five deputy team leaders, ten surveyors and additional five assistant surveyors (e.g. students of Tashkent State Agrarian University, faculty of forestry) are required. These workers have to be provided with appropriate salary, food and accommodation during the period of field survey (April to October 2018 to 2021).

5. Three leskhoz workers to fell stems and assist in volume and biomass data collection

6. Six 4-WD cars - in good technical condition complying with for the NFI field survey purposes will be made available at the cost of GoU. Five cars will be used by field teams (April to October, between 2018 and 2021), one by the Field Survey unit under Uzlesproject (all year long service, between 2018 and 2021). The operation and maintenance cost related to these six cars will be covered from GoU's budget as well.

7. Institutional support - the GoU will ensure necessary liaison and contributions from the institutions as specified in the previous section.

The above contributions will be made available primarily through the State Committee on Forestry and amounts to a total amount of USD 7,301,107 in kind.

Additionally, each of the 4 Forestry Organizations involved at the demonstration sites will provide contributions from their assets and regular budget to carry out reforestation and regeneration activities, to support capacity development and to carry out their monitoring and management responsabilities for a total amount of USD 10,069,511 in kind.

3.3.4 FAO Contribution and other co-financers inputs

FAO will provide technical assistance, backstopping, training and supervision of the execution of activities financed by GEF resources. In addition, FAO will provide cash co-financing in the form of projects being implemented by FAO Uzbekistan, by the Subregional Office for Central Asia, by FAO Technical Cooperation Program and by other donors' trust fund arrangements for an amount equal to USD 953,000.

Other co-financiers include GIZ (EUR 200,000) and ICRAF (USD 15,000) whose cash contibutions will support the implementation of component 2.

3.3.5 Financial management and reporting on GEF resources

Financial management and reporting in relation to the GEF resources will be carried out in accordance with FAO's rules and procedures, and in accordance with the agreement between FAO and the GEF Trustee. On the basis of the activities foreseen in the budget and the project, FAO will undertake all operations for disbursements, procurement and contracting for the total amount of GEF resources.

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

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

1. Details of project expenditures on outcome-by-outcome basis, reported in line with Project Budget (Appendix 3 of this Project document), as at 30 June and 31 December each year.
2. Final accounts on completion of the Project on a component-by-component and outcome-by-outcome basis, reported in line with the Project Budget (Appendix 3 of this Project Document).
3. A final statement of account in line with FAO Oracle Project budget codes, reflecting actual final expenditures under the Project, when all obligations have been liquidated.

Financial statements: Within 30 working days of the end of each semester, the FAO UZB shall submit six-monthly statements of expenditure of GEF resources, to present to the Liaison Committees and the Project Steering Committee. The purpose of the financial statement is to list the expenditures incurred on the project on a six-monthly basis compared to the budget, so as to monitor project progress and to reconcile outstanding advances during the six-month period. The financial statement shall contain information that will serve as the basis for a periodic revision of the budget.

The BH will submit the above financial reports for review and monitoring by the LTO and the FAO GEF Coordination Unit. Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the GEF Financial Procedures Agreement and submitted by the FAO Finance Division.

Responsibility for cost overruns: The BH shall utilize the GEF project funds in strict compliance with the Project Budget (Appendix 3) and the approved AWP/Bs. The BH can make variations provided that the total allocated for each budgeted project component is not exceeded and the reallocation of funds does not impact the achievement of any project output as per the project Results Framework (Appendix 1). At least once a year, the BH will submit a budget revision for approval of the LTO and the FAO/GEF Coordination Unit through FPMIS. Cost overruns shall be the sole responsibility of the BH.

Audit

The Project shall be subject to the internal and external auditing procedures provided for in FAO financial regulations, rules and directives and in keeping with the Financial Procedures Agreement between the GEF Trustee and FAO.

The audit regime at FAO consists of an external audit provided by the Auditor-General (or persons exercising an equivalent function) of a member nation appointed by the Governing Bodies of the Organization and reporting directly to them, and an internal audit function headed by the FAO Inspector-General who reports directly to the Director-General. This function operates as an integral part of the Organization under policies established by senior management, and furthermore has a reporting line to the governing bodies. Both functions are required under the Basic Texts of FAO which establish a framework for the terms of reference of each. Internal audits of imprest accounts, records, bank reconciliation and asset verification take place at FAO field and liaison offices on a cyclical basis.

3.4 PROCUREMENT

At the request of the Government of Uzbekistan, FAO will procure the equipment and services foreseen in the budget (Appendix 3) and the AWP/Bs, in accordance with FAO rules and procedures.

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 Appendix A – 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”).

The FAO UZB 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.

Before commencing procurement, the PM will develop the project´s Procurement Plan using the FAO standard template for approval by the Project Steering Committee. This plan will be reviewed during the inception workshop and will be approved by the FAO UZB. The PC will update the Plan every six months and submit the plan to the FAO UZB for approval.

3.5 MONITORING AND REPORTING

The monitoring and evaluation of progress in achieving the results and objectives of the project will be based on targets and indicators in the Project Results Framework (Appendix 1 and descriptions in sub-section 1.3.2). Project monitoring and the evaluation activities are budgeted at USD 113,550 (see Table 11). Monitoring and evaluation activities will follow FAO and GEF policies and guidelines for monitoring and evaluation. The monitoring and evaluation system will also facilitate learning and replication of the project's results and lessons in relation to the integrated management of natural resources.

3.5.1 Oversight and monitoring responsibilities

The monitoring and evaluation roles and responsibilities specifically described in the Monitoring and Evaluation table (see Table 11 below) will be undertaken through: (i) day-to-day monitoring and project progress supervision missions (PMU); (ii) technical monitoring of indicators to measure a reduction in land degradation (PMU and LTU in coordination with partners); (iii) mid-term review and final evaluation (independent consultants and FAO Evaluation Office); and (v) monitoring and supervision missions (FAO).

At the beginning of the implementation of the GEF project, the PMU will establish a system to monitor the project's progress. Participatory mechanisms and methodologies to support the monitoring and evaluation of performance indicators and outputs will be developed. During the project inception workshop (see section 3.5.3 below), the tasks of monitoring and evaluation will include: (i) presentation and explanation (if needed) of the project's Results Framework with all project stakeholders; (ii) review of monitoring and evaluation indicators and their baselines; (iii) preparation of draft clauses that will be required for inclusion in consultant contracts, to ensure compliance with the monitoring and evaluation reporting functions (if applicable); and (iv) clarification of the division of monitoring and evaluation tasks among the different stakeholders in the project. The M&E Expert (see TORs in Appendix 6) will prepare a draft monitoring and evaluation matrix that will be discussed and agreed upon by all stakeholders during the inception workshop. The **M&E matrix** will be a management tool for the PM and the Project Partners to: i) six-monthly monitor the achievement of output indicators; ii) annually monitor the achievement of outcome indicators; iii) clearly define responsibilities and verification means; iv) select a method to process the indicators and data.

The **M&E Plan** will be prepared by the M&E Expert in the three first months of the PY1 and validated with the PSC. The M&E Plan will be based on the M&E Table 11 and the M&E Matrix and will include: i) the updated results framework, with clear indicators per year; ii) updated baseline, if needed, and selected tools for data collection (including sample definition); iii) narrative of the monitoring strategy, including roles and responsibilities for data collection and processing, reporting flows, monitoring matrix, and brief analysis of who, when and how will each indicator be measured. Responsibility of project activities may or may not coincide with data collection responsibility; iv) updated implementation arrangements, if needed; v) inclusion of the tracking tool indicators, data collection and monitoring strategy to be included in the mid-term review and final evaluation; vi) calendar of evaluation workshops, including self-evaluation techniques.

The day-to-day monitoring of the project's implementation will be the responsibility of the PM and will be driven by the preparation and implementation of an AWP/B followed up through six-monthly PPRs. The preparation of the AWP/B and six-monthly PPRs will represent the product of a unified planning process between main project stakeholders. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details

on output and outcome targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of output and outcome targets. Specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with all stakeholders and coordinated and facilitated through project planning and progress review workshops. These contributions will be consolidated by the PM in the draft AWP/B and the PPRs.

An annual project progress review and planning meeting should be held with the participation of the project partners to finalize the AWP/B and the PPRs. Once finalized, the AWP/B and the PPRs will be submitted to the FAO LTO for technical clearance, and to the Project Steering Committee for revision and approval. The AWP/B will be developed in a manner consistent with the Project Results Framework to ensure adequate fulfillment and monitoring of project outputs and outcomes.

Following the approval of the Project, the PY1 AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with the annual reporting calendar. In subsequent years, the AWP/Bs will follow an annual preparation and reporting cycle as specified in section 3.5.3 below.

3.5.2 Indicators and sources of information

3.5.3 Reporting schedule

Specific reports that will be prepared under the monitoring and evaluation program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) Annual Project Implementation Review (PIR); (v) Technical reports; (vi) Co-financing reports; and (vii) Terminal Report. In addition, the GEF[14] tracking tool for land degradation will be completed and will be used to compare progress with the baseline established during the preparation of the project.

Project Inception Report. After FAO internal approval of the project an inception workshop will be held. Immediately after the workshop, the PM will prepare a project inception report in consultation with the FAO UZB and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B and the M&E Matrix (see above). The draft inception report will be circulated to FAO and the PSC for review and comments before its finalization, no later than three months after project start-up. The report will be cleared by the FAO BH, LTO and the FAO/GEF Coordination Unit. The BH will upload it in FPMIS.

Annual Work Plan and Budget(s) (AWP/Bs). The PM will present a draft AWP/B to the PSC no later than 10 December of each year. The AWP/B should include detailed activities to be implemented by project outcomes and outputs and divided into monthly timeframes and targets and milestone dates for output and outcome indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The FAO UZB will circulate the draft AWP/B to the FAO Project Task Force and will consolidate and submit FAO comments. The AWP/B will be reviewed by the PSC and the PMU will incorporate any comments. The final AWP/B will be sent to the PSC for approval and to FAO for final no-objection. The BH will upload the AWP/Bs in FPMIS.

Project Progress Reports (PPR). The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the Project Results Framework (Appendix 1), AWP/B and M&E Plan. Each semester the PM will prepare a draft PPR, and will collect and consolidate any comments from the FAO PTF. The PM will submit the final PPRs to the FAO SEC every six months, prior to 10 June (covering the period between January and June) and before

[14] GEF LD and CC-M Tracking Tools.

10 December (covering the period between July and December). The July-December report should be accompanied by the updated AWP/B for the following Project Year (PY) for review and no-objection by the FAO PTF. The Budget Holder has the responsibility to coordinate the preparation and finalization of the PPR, in consultation with the PMU, LTO and the FLO. After LTO, BH and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.

Annual Project Implementation Review (PIR). The PM, under the supervision of the LTO and BH and in coordination with the national project partners, will prepare a draft annual PIR report[15] covering the period July (the previous year) through June (current year) no later than July 1st every year. The LTO will finalize the PIR and will submit it to the FAO-GEF Coordination Unit for review by July 10th. The FAO-GEF Coordination Unit, the LTO, and the BH will discuss the PIR and the ratings[16]. The LTO is responsible for conducting the final review and providing the technical clearance to the PIR(s). The LTO will submit the final version of the PIR to the FAO-GEF Coordination Unit for final approval. The FAO-GEF Coordination Unit will then submit the PIR(s) to the GEF Secretariat and the GEF Independent Evaluation Office as part of the Annual Monitoring Review of the FAO-GEF portfolio. The PIR will be uploaded to FPMIS by the FAO-GEF Coordination Unit.

Technical reports. The technical reports will be prepared as part of the project outputs and will document and disseminate lessons learned. Drafts of all technical reports must be submitted by the PM to the PSC and FAO UZB, which in turn will be shared with the LTO for review and approval and to the FAO-GEF Coordination Unit for information and comments before finalization and publication. Copies of the technical reports will be distributed to the PSC and other project stakeholders, as appropriate. These reports will be uploaded in FAO FPMIS by the BH.

Co-financing reports. The PM will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by all the project cofinanciers and eventual other new partners not foreseen in the Project Document. Every year, the PM will submit the report to the FAO UZB before July 10th covering the period July (the previous year) through June (current year). This information will be used in the PIRs.

GEF Land Degradation and Climate Change Tracking Tools. In compliance with GEF policies and procedures, tracking tools on the Land Degradation and Climate Change focal areas should be sent to the GEF Secretariat in three stages: (i) with the project approval document by the GEF Executive Director; (ii) with the mid-term review of the project; and (iii) with the final evaluation of the project.

Final Report. Within two months prior to the project's completion date, the PM will submit to the PSC and FAO UZB a draft final report. The main purpose of the final report is to give guidance to authorities (ministerial or senior government level) on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. Therefore, the terminal report is a concise account of the main **products, results, conclusions and recommendations** of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for ensuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application to the integrated landscape management in the three microregions in the context of the development priorities at national and departmental levels, as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 3.6 below. A project evaluation meeting will be held to discuss the draft final report with the PSC and the Project

[15] Prior to the preparation of the PIR report, the FAO-GEF Coordination Unit will provide the updated format as every year some new requirements may come from the GEF.

[16] The NPC, the BH, the LTO and the FAO/GEF Coordination Unit should assign ratings to the PIR every year. The ratings can or cannot coincide among the project managers.

Liaison Committee before completion by the PM and approval by the BH, LTO, and FAO-GEF Coordination Unit.

3.5.4 Monitoring and Evaluation summary

The project's M&E plan is detailed in table 11 below. The monitoring and evaluation roles and responsibilities are summarized in Table 3 below. M&E activities will be undertaken through: (i) day-to-day monitoring and project progress supervision missions (PMU); (ii) technical monitoring of indicators to measure a reduction in land degradation (PMU and LTU in coordination with partners); (iii) mid-term review and final evaluation (independent consultants and FAO Evaluation Office); and (v) monitoring and supervision missions (FAO). Proejct M&E activities are estimated at USD 113,550.

Table 11. Summary of main monitoring and evaluation activities (*example*)

M&E Activity	Responsible parties	Time frame/ Periodicity	Budget
Inception workshop	PM; FAO UZB (with support from the LTO, and FAO-GEF Coordination Unit)	Within two months of project start up	USD 3,000
Project Inception report	PM, Expert M&E and FAO UZB with clearance by the LTO, BH and FAO-GEF Coordination Unit	Immediately after the workshop	-
Field-based impact monitoring	PM; project partners, local organizations	Continuous	USD 10,000
Supervision visits and rating of progress in PPRs and PIRs	PMU; FAO (FAO UZB, LTO). FAO-GEF Coordination Unit may participate in the visits if needed.	Annual, or as needed	FAO visits will be borne by GEF agency fees Project Coordination visits shall be borne by the project's travel budget
Project Progress Reports (PPRs)	PMU, with stakeholder contributions and other participating institutions	Six-monthly	USD 3,000
Project Implementation Review (PIR)	Drafted by the PM, with the supervision of the LTO and BH. Approved and submitted to GEF by the FAO-GEF Coordination Unit	Annual	FAO staff time financed though GEF agency fees. PMU time covered by the project budget.
Co-financing reports	PM with input from other co-financiers	Annual	USD 1,000
Technical reports	PM, FAO (LTO, FAO UZB)	As needed	-
Mid-term review	FAO UZB, External consultant, in consultation with the project team, including the FAO-GEF Coordination Unit and others	Midway through the project implementation period	USD 30,000 by an external consultancy
Final evaluation	External consultant, FAO Evaluation Office (OED) in consultation with the project	At the end of the project	USD 60,000 by an external consultancy. FAO staff time and travel costs will

M&E Activity	Responsible parties	Time frame/ Periodicity	Budget
	team, including the FAO-GEF Coordination Unit and others		be financed by GEF agency fees.
Terminal Report	PMU; FAO (FAO UZB, LTO, FAO-GEF Coordination Unit, TCS Reporting Unit)	Two months prior to the end of the project.	USD 6,550
Total budget			**USD 113,550**

3.6 EVALUATION PROVISIONS

At the end of the first 24 months of the project, the BH will arrange a decentralized **Mid-Term Review (MTR)** in consultation with the PSC, the PMU, the LTO, the FAO Office of Evaluation (OED) and the FAO-GEF Coordination Unit. The MTR will be conducted to review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. The MTR will allow mid-course corrective actions, if needed. The MTR will provide a systematic analysis of the information provided under the M&E Plan (see above) with emphasis on the progress in the achievement of expected outcome and output targets against budget expenditures. The MTR will refer to the Project Budget (see Appendix 3) and the approved AWP/Bs for PY1 and PY2. The MTR will contribute to highlight replicable good practices and main problems faced during project implementation and will suggest mitigation actions to be discussed by the PSC, the LTO and FAO-GEF Coordination Unit.

An independent Final Evaluation (FE) will be initiated six months before the end of the project period. To be managed by OED, the FE will aim to identify the project impacts, sustainability of project outcomes and the degree of achievement of long-term results. The FE will also have the purpose of indicating future actions needed to expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities and institutions with responsibilities in food security, conservation and sustainable use of natural resources, small-scale farmer agricultural production and ecosystem conservation to assure continuity of the processes initiated by the Project. Both the MTR and FE will pay special attention to outcome indicators and will be aligned with the GEF Tracking tool (LD & CC focal areas).

3.7 COMMUNICATION AND VISIBILITY

The project will enhance communication and visibility of SFM at the national level through support to dissemination of best practices and lessons learnt under Component 4 and field level through support under Component 2 to demonstrations of SFM related to mountain forests, riparian forests and shelterbelt management in valleys and lowlands.

Under Outcome 1, the proposed Project helps establish the national forest assessment. This is the basis for knowledge and knowledge management and dissemination related to forestry.

Under Output 1.1 and Outcome 2, the Project helps establish an MRV system. This will systematically generate knowledge related mostly to GHG emissions and factors, but also contribute to knowledge for dissemination related to biodiversity and land management.

Under Outcome 4, the proposed Project will establish tools and mechanisms to systematically collect data, to document lessons learnt, to validate technical options, and to share lessons to national, regional and international partners. This will be done in close connection to Project monitoring and evaluation and to the Project communications strategy. This will lead to an increase in the concerned knowledge base of the country.

The Project's participatory process, involving relevant policy making, research, and operational institutions, will ensure that knowledge is shared efficiently within the country. Internationally, FAO will play a leading role in lesson sharing and knowledge management.

Proposed tools for enhancing visibility include:

- **General aspects** – the PMU will ensure that general aspects of project visibility are fulfilled, such as: (i) visual identity of project and partners; (ii) highlighting the project' partners in media interviews, press releases, etc.); (iii) supporting documents such as photos of logos in the field, photos of activities, copies of press released will be included in the progress and final reports.

- **Basic visibility at field level** – At this level visibility strategy will consider: (i) signboards, display panels and banners; (ii) operational publications and materials such as training manuals and posters; (iii) supplies and equipment.

- **Printed publications** – Brochures, leaflets, flyers, newsletters and other publications to project activities and results.

- **Website, webpage and social media pages** – This will include: (i) partnerships and links; (ii) project information (objectives, activities, expected results, etc.).

- **Audio-visuals** – (i) Films for distribution by the media (mainly for television, campaigns and Internet); (ii) operational films (films to provide technical information and practices to local population, project partners and authorities).

- **Public events** – Many types of events are possible and attracting media interest will always be a key consideration in making the events cost-effective. Press release will be an integral part of the events.

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

SECTION 4 – SUSTAINABILITY OF RESULTS

4.1 SOCIAL SUSTAINABILITY

This Project will contribute to socio-economic sustainability in four demonstration areas where environmental benefits will be balanced with social benefits and the well-being of local communities through implementation of SFM on Forest Fund land. Forest management planning with public participation will be combined with development of individual contractual agreements for use of Forest Fund land for grazing and agriculture under an overall SFM framework. The project will pay special attention to identifying and supporting the special needs of rural women to ensure that their important role in natural resources management is recognized and that they reap the benefits of investments in SFM. A long-term impact of the project also includes improved food security and nutrition in the pilot areas, with a particular focus on provision of ecosystem services supporting SFM and sustainable harvesting of NWFPs.

4.2 ENVIRONMENTAL SUSTAINABILITY

The project will support demonstration and scaling up of SFM best practices on management of high mountain forests, establishment of economic tree plantations of nuts and fruits, management of shelterbelts in the production landscape, and management of valley as well as riparian forests essential for controlling soil erosion and improve agricultural productivity. Strengthened institutional, legal and policy enabling conditions for SFM, including review of land tenure and land lease arrangements and periods will also enhance environmental sustainability and contribute to strengthened capacity of Uzbekistan to maintain and increase its forest cover and sequester carbon in its forest ecosystems. In addition, with the selection of site adapted tree plantations, the project contributes to climate change resilience by reducing risks related to changes of local climate.

4.3 FINANCIAL AND ECONOMIC SUSTAINABILITY

Financial and incentive mechanisms for SFM at national and sub-national levels will contribute significantly to financial and economic sustainability of the project, including legalization of of long-term leases of Forest Fund land. Longer leases are expected to strengthen the incentives of local land users to invest in plantations of economic trees, such as pistachios, almonds and walnuts, and also lead to more sustainable management of pastures.

4.4 SUSTAINABILITY OF CAPACITY DEVELOPMENT

Capacity development of the SCF in forest assessment and monitoring to strengthen evidence-based decision making on SFM is a key stratey of the project. The Project will strengthen existing institutional capacities within SCF and provide targeted technical training on forest information management. At the local level, the Project is designed to enhance the capacity of local communities and Forest Enterprises. It will work with Farmers Councils and Self-Governing Communities to enhance their capacity to access new knowledge and implement best management practices in SFM. These capacities will be sustained through strengthened national capacity at the SCF level and continued outreach and dissemination of good practices and management advice.

4.5 APPROPRIATENESS AND COST/EFFECTIVENESS OF TECHNOLOGIES INTRODUCED

The selection of the SFM best practices for demonstration and upscaling on management of high mountain forest, economic tree plantations, shelterbelts, and valley and riparian forests will be based on management practices already pilot tested by research institutes, other programs and projects, and analysed for their environmental impact and economic feasibility. The final fine-tuning of SFM interventions will be undertaken in close consultation with local communities and forest project enterprises participating in the project.

4.6 INNOVATIVENESS, REPLICATION AND SCALE-UP

Innovativeness: This is the first large-scale forestry project in Uzbekistan with the State Committee on Forestry and supported by GEF. It occurs at a time that the Forest sector is both ripe for reform, and when there is considerable support for reform. Hence the Project it is likely to have significant leverage. Moreover, many of the individual practices and forestry management practices to be demonstrated and supported by the Project are innovative for Uzbekistan, in particular at their selected sites. Moreover, the overall participatory approach to planning and management is innovative in the country and the region. Also, the improved assessment and inventorying, the emphasis on carbon sequestration, and the combined protection/production approaches to forestry management, are all considered innovative in the country and the Central Asia region.

Sustainability and scaling-up: As mentioned above, the proportion of forest land that is actually covered with forest in Uzbekistan is less than one third. Hence, in general terms, there is excellent potential for scaling-up the Project approaches across Uzbekistan over the coming decade on land classified as forest land. Outcome 3 of this Project is entirely devoted to sustainability and upscaling. The approach is to build support amongst policy and decision makers, to raise awareness amongst local stakeholders, to provide convincing technical and economic data and to technically demonstrate the success of the introduced approaches. These achievements will form the basis for lobbying for and facilitating the necessary institutional and legal changes to unleash a sustainable forest management approach that reverses ongoing land degradation and increases carbon sequestration across Uzbekistan. The Project will also support the development of the financing mechanisms necessary for replication, including through NAMA.

APPENDICES

APPENDIX 1: RESULTS FRAMEWORK

APPENDIX 2: WORK PLAN

APPENDIX 3: PROJECT BUDGET

APPENDIX 4: RISK MATRIX

APPENDIX 5: ENVIRONMENTAL AND SOCIAL ASSESSMENT

APPENDIX 6: TERMS OF REFERENCE

APPENDIX 7: DRAFT PROJECT GENDER ACTION PLAN (GAP)

APPENDIX 8: CARBON ESTIMATIONS

APPENDIX 1: RESULTS FRAMEWORK

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Objective: to introduce sustainable forest management in Uzbekistan, thereby sequestrating carbon and improving the quality of forest and tree resources							
Component 1: Component 1: Information systems for sustainable forest management							
Outcome 1: An operational Forest Inventory (FI) and Monitoring System	FI and monitoring systemin place	Inefficient, methodologically inappropriate, spatially, temporally and thematically incomplete system for FI and monitoring.	FI and monitoring systemin place	FI and monitoring systemin place and generating coherent information for planning and decision making at the Leskhoz level	Database and maps available in the Cadastral Unit	Sufficient co-financing and capacity available in the Uzlesproject to establish forest database and to undertake the FI	SCF, Uzlesproject
Output 1.1: Harmonized methodology for data collection.	Harmonized methodology for SFM data collection Leskhoz level field maps	Inadequate methodology for forest monitoring – based on Soviet-time forest management planning approaches, largely depend on subjective assessments	Harmonized methodology for SFM data collection in place based on a broader spectrum of information	Harmonized methodology for SFM data collection in place and generating coherent data for FI and field maps	Database available in the Cadastral Unit 4 field maps	Sufficient co-financing and capacty available in the Cadastral Unit to establish forest database and to produce maps	SCF, Cadastral Unit
Output 1.2: trained cadre of technicians to undertake the data collection and information management	X number of technicians in SCF, Uzlesproject and the Cadastral Unit trained	A serious lack of qualified personnel in SCF, Uzlesproject and the Cadastral Unit	5 technicians in SCF, Uzlesproject and the Cadastral Unit trained	5 technicians in SCF, Uzlesproject and the Cadastral Unit trained	Reports and participants lists from training events	Technicians in the SCF have the capacity and motivation to participate in trainings and gain new knowledge	SCF, Uzlesproject, Cadastral Unit

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 1.3: Geo-referenced database	A geo-referenced database for forested land	The information is not available in a digital, georeferenced format - this limits its availability and integration with other data sources.	A geo-referenced database for forested land in place	A geo-referenced database for forested land in place capable of generating maps and other geo-spatial information	A geo-referenced database for forested land	Capacity to establish and maintain the database in place in SCF	SCF
Output 1.4: Forest information and monitoring system	Forest information and monitoring system covering FF land as well as other forested land	FMP inventories cover only Forest Fund lands, forests and forest-like ecosystems outside FF are not taken into consideration	Forest information and monitoring system covering FF land as well as other forested land in place	Forest information and monitoring system covering FF land as well as other forested land in place and operational	Access to FI results through an Internet portal	Capacity to establish and maintain the FI in place in SCF	SCF

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Component 2: Multifunctional forest management leading to carbon sequestration, an improvement in forest and tree resources, and other benefits							
Outcome 2: SFM operationalized at 4 demonstration sites generating sustainable benefits such as carbon sequestration and improved livelihoods of at least 500 local households	SFM operationalised at X sites covering X ha of land leading to sequestration of X tCO2eq.	SFM is not operationalised in the different types of forest ecosystems in Uzbekistan	SFM operationalized at 4 demo sites covering 84 735 ha of land	SFM operationalised on 84 735 ha at 4 demo sites leading to sequestration of 4 118 451 tCO2eq and improved livelihoods of at least 500 local households of which at least 30% are female headed	4 Forest management plans PIRs/PPRs Mid-term and final evaluations	FPEs and FOs have capacity and incentives to adopt SFM practices	FPEs, FOs
Output 2.1: Sustainable management of mountain forests in Dekhanabad	SFM practices for high mountain forest covering X ha of land leading to improvement of livelihoods of at least X households.	Available knowledge on site and climate requirements for production of tree products and timber is limited. Planning processes to include the local population in protection of natural forests and pasture management are not applied	SFM covering 36 530 ha of land	SFM covering 36 530 ha of land leading to sequestration of 1 839 056 tCO2eq and improved livelihoods of at least 100 local households of which at lest 30% are female headed	Forest management plan for Dekhanabad FMA reports PIRs/PPRs Mid-term and final evaluations	FPEs and FOs have capacity and incentives to adopt SFM practices	FPEs, FOs

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 2.2: Sustainable management of mountain forests and improving the livelihoods of at least 200 farmers/houesholds in Kitab forestry	SFM practices for economic tree species covering X ha of land leading to improvement of livelihoods of at least X households.	Available knowledge on site and climate requirements for production of tree products is limited. Planning processes to include the local population in rangeland management are not applied	SFM practices for economic tree species covering 16 200 ha of land	SFM practices for economic tree species covering 16 200 ha of land leading to sequestration of 628 813 tCO2eq and improved livelihoods of at least 200 local households of which at least 30% are female headed	Forest management plan for Kitab FMA reports PIRs/PPRs Mid-term and final evaluations	FPEs and FOs have capacity and incentives to adopt SFM practices	FPEs, FOs
Output 2.3: Sustainable management of valley forests and shelterbelt forests in Sirdarya forestry improving the livelihoods of at least 100 farmers	SFM practices for valley forests and shelterbelts covering X ha of land leading to improvement of livelihoods of at least X households.	Planning techniques to identify suitable sites for valley and shelterbelt forest enhancement and conservation of biodiversity in forested areas are not widely available	SFM practices for valley forests and shelterbelts covering 2 995 ha of land	SFM practices for valley forests and shelterbelts covering 2 995 ha of land leading to sequestration of 787 902 tCO2eq and improved livelihoods of at least 100 local households of which at least 30% are female headed	Forest management plan for SirdaryaFMA reports PIRs/PPRs Mid-term and final evaluations	FPEs and FOs have capacity and incentives to adopt SFM practices	FPEs, FOs

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 2.4 Sustainable management of mountain forests and improving the livelihoods of at least 100 farmers in Fergana Valley, Pop forestry	SFM practices for forest covering X ha of land leading to improvement of livelihoods of at least X households.	The technical knowledge and participatory planning processes are no longer available in the forest enterprises to establish more shelterbelt plantations together with private land owners and farmers.	SFM practices for forest covering 29 010 ha of land	SFM practices for forest covering 29 010 ha of land leading to sequestration of 862 680 tCO2eq and improved livelihoods of at least 100 local households of which at least 30% are female headed	Forest management plan for Pop FMA reports PIRs/PPRs Mid-term and final evaluations	FPEs and FOs have capacity and incentives to adopt SFM practices	FPEs, FOs

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Component 3: Upscaling of sustainable forest management - with carbon sequestration – by strengthening of the enabling environment							
Outcome 3: The policy and enabling framework is conducive to state and private investment in SFM	SFM principles integrated forest sector frameworks, policies and programs	Weak policy and legal framework for SFM and lack of management plans at local level to implement SFM Lack of long-term leases for sustainable use of FF land	NAMA for the forestry sector including MRV in place SFM principles integrated into key national forest policy frameworks and programs	Strong enabling environment facilitates upscaling of SFM and enhanced carbon sequestration on all forest land	Documented policy revisions legalizing long-term leases of FF land Training reports and participants lists PIRs, PPRs	SCF committed to policy reform and SFM	SCF, FAO
Output 3.1: Capacity inside SCF for forest information management is enhanced	Training of X SCF staff at central and provincial level; provision of equipment related to GIS and to preparation of maps	SCF personnel, notably in the Cadastral Unit, often lack the necessary technical skills as well as equipment to effectively manage and interpret forestry information	Training of 25 SCF staff at central and provincial level; provision of equipment related to GIS and to preparation of maps	Training of 50 SCF staff at central and provincial level; provision of equipment related to GIS and to preparation of maps	Reports and participants lists from training events Inventory lists of equipment PIRs, PPRs	SCF staff has the capacity and incentives to aquire new knowledge	SCF, Cadastral Unit
Output 3.2: Awareness and support for improved land tenure is created	Training and awareness raising of X forestry officials in the application of the Voluntary Guidance on Governance and Tenure (VGGT) and need for	Currently, non-State forest users are limited to a ten-year lease of FF land. This acts as a barrier to non-state investors investing in any forest activity that requires more than ten years to be profitable. It	Training and awareness raising of 100 officials in the application of the Voluntary Guidance on Governance and Tenure (VGGT) and need for revision of the grazing	Training and awareness raising of 200 officials in the application of the Voluntary Guidance on Governance and Tenure (VGGT) and need for revision of the	Training reports and participants lists PIRs, PPRs	Forestry officials willing to participate in training and awareness raising events	SCF, FAO

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	revision of the grazing ticketing system on FF land	notably makes any private investment in carbon sequestration on forest land very unprofitable.	ticketing system on FF land	grazing ticketing system on FF land			
Output 3.3: A Nationally Appropriate Mitigation Action (NAMA) for the forestry sector or pistachio forest sub-sector, including a national measuring, reporting and validation (MRV) system	NAMA for the forestry sector including MRV in place	A draft NAMA for the pistachio was prepared in 2012 and is under review No MRV in place	NAMA for the forestry sector including MRV in place	NAMA for the forestry sector including MRV in place	NAMA report to the UNFCCC	Activities and FI under Outcomes 1 and 2 will lead to improved forest data at FO providing the basis for MRV of NAMA	SCF
Output 3.4: Amendment to forest legislation legalizing long- term leases of forest fund land	Amendment to forest legislation legalizing long-term leases of forest fund land	There is no state policy in place for sustainable development of forestry. Insufficient funding to the sector makes forestry seek additional funds from e.g. leasing of pastures, which leads to overgrazing	Proposals for revision of policy legislation	2 revisions to the forestry legislation	Documented policy revisions legalizing long-term leases of FF land	Political will to reform the forestry sector is maintained	MOAW, SCF
Output 3.5: The National Forest Program is approved	The National Forest Program is approved	The draft National Forest Program was initially prepared in 2008. It has since	The National Forest Program is approved	The National Forest Program is approved	Approved document with new national Forest Program	Political commitment to reform of the	SCF

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
		been subject to review and revision.				forestry sector maintained	
Output 3.6: Lessons and best practices from Component 2 are institutionalized in policy and/or programs	Number of lessons and best practices from Component 2 institutionalized in policy and/or programs Gender Action Plan (GAP)	0 0	5 lessons and BPs identified from Component 2 1 GAP developed	10 lessons and BPs, including on FSC certification, integrated into policies and or programs GAP implemented	Policy and program documents that refer to lessons and BPs from the current Project GAP and monitoring reports	The assessment and planning process under Component 2 leads to demonstration and testing of many innovative tools or approaches	SCF

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Component 4: Monitoring, evaluation and knowledge sharing							
Outcome 4: Project implementation based on RBM and lessons learned/good practices documented and disseminated	M&E system is in place to support adaptive results-based management and monitoring of upscaling resulting from the project.	No system in place	Implemented project based on adaptive results based-management	Project delivers expected results and shares best practices	GEF LD and CC Tracking Tools, PIRs, PPRs Midterm Review and Final Evaluation	National lead agencies and other stakeholders support M&E processes, and are committed to continuous learning and exchange of knowledge on SFM	SCF, FAO
Output 4.1: A set of manuals or guidelines, that capture and describe the improved practices, measures and technologies	Number of manuals and guidelines on SFM in different forest types	No manuals or guidelines exist	2 manuals and 2 guidelines developed and published	Manuals and guidelines applied at project demonstration sites and beyond	Published manuals and guidelines PIRs, PPRs	Project partners have the skills, knowledge and resources to support the development of manuals and guidelines for SFM	SCF, FAO
Output 4.2: Project Monitoring & Evaluation plan and system in place	M&E system in place	0	M&E system in place and providing inputs to PIRs, PPRs and mid-term evaluation	M&E system in place and providing inputs to final evaluation	Monitoring reports	Adequate funding allocated to monitoring	PMU, FAO
Output 4.3: Project Mid-term and Final Evaluations	Mid-term and final evaluation reports	0	Mid-term project review recommendations implemented	Final evaluation	Evaluation reports (FAO evaluation office)	Adequate funding allocated evaluations	PMU, FAO

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 4.4: A Communication and dissemination strategy is develop and implemented	Communication and dissemination plan Project website and social media pages X number of project newsletters X number of awareness/ outreach events organized	Low awareness of SFM	Communication and dissemination plan in place Project website and social media pages established Outreach event organised in connection with project launch	6 project newsletters 4 outreach events	Awareness/outreach events & materials Statistics of website visitors, Facebook likes, number of Tweets	The PMU is functioning and has adequate capacity in KM and communication	SCF, PMU, FAO

APPENDIX 2: WORK PLAN

Output	Activities	Responsible entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1																						
Output 1.1: A harmonized methodology for data collection	1. Design of the enterprise (leskhoz) level Forest Inventory (FI)	SCF	X																			
	2. Development of working instructions for field data collection and mapping	SCF, FRI		X	X																	
	3. Implementation of methodology of statistical evaluation at the FO (leskhoz) level	SCF, FRI		X	X																	
	4. Implementation of Methodology to predict timber volume for standing trees	SCF, FRI		X	X																	
Output 1.2: A trained cadre of technicians to undertake the data collection and information management	1. Training and capacity development in field data collection	SCF, FRI			X	X																
	2. Training of enterprise-level field mapping, RS map validation	SCF			X	X																
	4. Training on Collect Earth interpretation	SCF, FRI			X	X																
Output 1.3: A geo-referenced database	1. Data collection and encodment in database	SCF			X	X																
	2. Additional data produced and centralized	SCF			X	X																

Output	Activities	Responsible entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	in the DB, including spatial data																					
Output 1.4: A Forest information and	1. Data acquisition and quality control	SCF			X	X																
	2. Data storage and processing	SCF			X	X																
	3. Publication of FI results	SCF			X	X																
Component 2																						
Output 2.1: Sustainable management of mountain forests in Dekhanabad improving the livelihoods of at least 150 farmers/households in Dekhanabad forestry organization	1. Forest management plan	Dek FO			X	X																
	2. Forest restoration	Dek FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	3. Rangeland/pasture management	Dek FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4. Livelihood improvement and community involvement	Dek FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.2: Sustainable management of mountain forests and improving the livelihoods of at least 150 farmers/households in Kitab forestry organization	1. Forest management plan	Kitab FO			X	X																
	2. Forest restoration	Kitab FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	3. Rangeland/pasture management	Kitab FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4. Livelihood improvement and community involvement				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.3: Sustainable management of	1. Forest management plan	Sir FO			X	X																
	2. Forest restoration	Sir FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Output	Activities	Responsible entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
valley forests and shelterbelt forests in the Sirdarya forestry improving the livelihoods of at least 100 farmers	3. Livelihood improvement and community involvement	Sir FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.4: Sustainable forestry management and improving the livelihoods of at least 100 farmers in Pop forestry	1. Forest management plan	Pop FO			X	X																
	2. Forest restoration	Pop FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	3. Rangeland/pasture management	Pop FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4. Livelihood improvement and community involvement	Pop FO			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Component 3																						
Output 3.1: Capacity inside SCF for forest information management is enhanced	1. Capacity development and training of SCF staff at central and provincial level	FAO, FRI	X	X	X	X																
	2. Provision of GIS equipment	FAO			X	X																
Output 3.2: Awareness and support for improved land tenure is created	1. Introduction of best practices related to improving land tenure, notably the VGGT	FAO, SCF			X	X																
	2. Public awareness raising campaigns and community consultations	SCF, FOs			X	X																
	3. Training on how to use VGGT	FAO					X	X														

Output	Activities	Responsible entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 3.3: Nationally Appropriate Mitigation Action (NAMA) for the forestry sector or pistachio forest sub-sector, including a national measuring, reporting and validation (MRV) system	1. Awareness raising and redevelopment of the NAMA	SCF					X	X	X	X												
	2. Adoption of field sampling method for measuring sample trees to estimate the biomass and carbon stocks	SCF			X	X																
	3. Production of reports including internal activity and result reporting, forest area change reporting to central government and carbon stock change reporting in the framework of REDD+	SCF									X	X	X	X								
Output 3.4: Amendment to forest legislation legalizing long-term leases of forest fund land	1. Workshops to generate support for long term – at least 49-year – leases on forest fund land	SCF									X	X										
	2. Preparation of standards and guidelines	SCF											X	X								
	3.Amendment of forest legislation to provide for proper access to information on forestry resources, and public participation	SCF													X	X	X	X				
Output 3.5: The National Forest Program is approved	1. Development of a production and financial plan for the period of 10-30 years	SCF			X	X																

Output	Activities	Responsible entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2. Analysis of obstacles to the approval of the National Forest Program	SCF			X	X																
	3. Facilitation of the approval process	SCF					X	X														
Output 3.6: Lessons and best practices from Component 2 are institutionalized in policy and/or programs	1. Assess of Component 2 achievements	SCF									X	X										
	2. Identification of which tools or approaches should be replicated or upscaled	SCF											X	X								
	3. Development of a Gender Action Plan (GAP)	SCF	X																			
Comp. 4																						
Output 4.1: A set of manuals or guidelines, that capture and describe the improved practices, measures and technologies	1. Synthesis of best practices and lessons learnt from the project	SCF, FAO																	X	X	X	X
	2. Development of SFM manuals and guidelines for different forest types	SCF																	X	X	X	X
Output 4.2: Project Monitoring & Evaluation plan and system in place	1. Establishment of project M&E system	SCF, FAO	X																			
	2. Refinement of baseline and targets for project indicators	SCF	X	X																		
	3. Development of 5 annual project reports (PIRS) and 10 half-yearly project progress reports	SCF, FAO			X				X				X				X				X	
	1. Mid-term evaluation	FAO										X	X									

Output	Activities	Responsible entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 4.3: Project Mid-term and Final Evaluations	2. Final evaluation	FAO																			X	X
Output 4.4: A Communication and dissemination strategy is develop and implemented	1. Development of a communication and dissemination plan	SCF	X	X																		
	2. Establishment of project website and social media pages	SCF	X	X																		
	3. Development of outreach material and publications	SCF																	X	X	X	X

APPENDIX 3: PROJECT BUDGET

Oracle code and description	Unit	No. of units	Unit cost	Comp. 1	Comp. 2	Comp. 3	Comp. 4:	PM	GEF	Year 1	Year 2	Year 3	Year 4	Year 5
				Total	Total	Total	Total							
5300 Salaries professionals														
Operations and M&E Officer	month	60	1,500	0	0	0	0	90,000	90,000	18,000	18,000	18,000	18,000	18,000
Financial and Admin officer	month	30	1,100	0	0	0	0	33,000	33,000	6,600	6,600	6,600	6,600	6,600
HR and procurement officer	month	26	1,100	0	0	0	0	28,763	28,763	5,753	5,753	5,753	5,753	5,751
5300 Sub-total salaries professionals				0	0	0	0	151,763	151,763	30,353	30,353	30,353	30,353	30,351
5570 Consultants														
5542 International Consultants														
International FMA and Management Planning Expert	days	125	400	50,000	0	0	0		50,000	20,000	20,000	10,000		
International Remote Sensing Expert	days	85	400	34,000	0	0	0		34,000	17,000	17,000			
International Rangeland Management Expert	days	50	400	10,000	10,000	0	0		20,000	5,000	5,000	5,000	5,000	
Gender and Livelihood Expert	days	60	400	0	24,000	0	0		24,000	4,800	4,800	4,800	4,800	4,800
Ecosystem Services Specialist	days	60	400	0	24,000	0	0		24,000	4,800	4,800	4,800	4,800	4,800
Carbon sequestration and Monitoring Expert	days	50	400	0	20,000	0	0		20,000	5,000	5,000	5,000	5,000	
Participatory Planning Expert	days	55	400	0	22,000	0	0		22,000	11,000	11,000			
Sub-total international Consultants				94,000	100,000	0	0	0	194,000	67,600	67,600	29,600	19,600	9,600
5543 National consultants														
Project Technical Coordinator	month	60	1,800	0	0	108,000	0		108,000	21,600	21,600	21,600	21,600	21,600
Forest Monitoring and Database expert	month	60	1,200	0	0	0	72,000		72,000	14,400	14,400	14,400	14,400	14,400

Oracle code and description	Unit	No. of units	Unit cost	Comp. 1	Comp. 2	Comp. 3	Comp. 4:	PM	GEF	Year 1	Year 2	Year 3	Year 4	Year 5
				Total	Total	Total	Total							
Gender and livelihood/Socioeconomic analysis expert	days	240	100	0	24,000	0	0		24,000	4,800	4,800	4,800	4,800	4,800
National NFMA Expert	days	240	100	24,000	0	0	0		24,000	8,000	8,000	8,000		
Field Assistants (Pop and Kitab)	months	120	700	0	84,000	0	0		84,000	16,800	16,800	16,800	16,800	16,800
National Database/IT Expert	days	50	100	0	0	5,000	0		5,000	2,500	2,500			
National Remote Sensing/GIS Expert	days	240	100	24,000	0	0	0		24,000	8,000	8,000	8,000		
Legal Expert in Land Leasing and Contracts	days	170	100	0	0	17,000	0		17,000	8,500	8,500			
Forest Management Specialist	days	300	100	0	30,000	0	0		30,000	10,000	10,000	10,000		
NAMA and MRV Expert	days	170	100	0	0	17,000	0		17,000	8,500	8,500			
Communication	month	18	800	0	14,400	0	0		14,400	2,880	2,880	2,880	2,880	2,880
Pasture management expert	days	134	100	0	13,400	0	0		13,400		13,400			
Sub-total national Consultants				48,000	165,800	147,000	72,000	0	432,800	105,980	119,380	86,480	60,480	60,480
5570 Sub-total consultants				142,000	265,800	147,000	72,000	0	626,800	173,580	186,980	116,080	80,080	70,080
5650 Contracts (LoAs)														
Digital field data collection	Lump sum	1	30,000	30,000	0	0	0		30,000	15,000	15,000			
Collect Earth Survey / SHARP	Lump sum	1	50,000	50,000	0	0	0		50,000	25,000	25,000			
Technical support and capacity building for improved shelterbelt management	Lump sum	1	60,000	0	60,000	0	0		60,000	30,000	30,000			
Technical support for management of fruit and nut trees	Lump sum	3	50,000	0	150,000	0	0		150,000	75,000	75,000			

Oracle code and description	Unit	No. of units	Unit cost	Comp. 1	Comp. 2	Comp. 3	Comp. 4:	PM	GEF	Year 1	Year 2	Year 3	Year 4	Year 5
				Total	Total	Total	Total							
Technical support to pasture/rangeland management	Lump sum	3	50,000	0	150,000	0	0		150,000	75,000	75,000			
Mid-term review	Lump sum	1	30,000	0	0	0	30,000		30,000		30,000			
Final evaluation	Lump sum	1	60,000	0	0	0	60,000		60,000					60,000
Terminal report	Lump sum	1	6,600				6,600		6,600					6,600
Technical support to establish a geo-referenced database	Lump sum	1	90,400	90,400	0	0	0		90,400	45,200	45,200			
5650 Sub-total Contracts				170,400	360,000	0	96,600	0	627,000	265,200	295,200	0	0	66,600
5900 Travel														
PMU (incl DSA)	Lump sum year	5	14,000	0	0	70,000	0		70,000	14,000	14,000	14,000	14,000	14,000
Local travel (field work)	Lump sum year	6	8,300	0	50,000	0	0		50,000	10,000	10,000	10,000	10,000	10,000
National consultation meetings	Lump sum	6	3,000	0	0	18,000	0		18,000	3,600	3,600	3,600	3,600	3,600
Exhange visits by land users to demonstration sites	Lump sum	7	10,000	0	70,000	0	0		70,000		35,000	35,000		
Postgrad students for field work	lump sum	5	5,000	0	25,000	0	0		25,000		12,500	12,500		
International consultants' travel	Trips	5	17,000	0	85,000	0	0		85,000	17,000	17,000	17,000	17,000	17,000
5900 Sub-total travel				0	230,000	88,000	0	0	318,000	44,600	92,100	92,100	44,600	44,600
5020 Training and workshops														

Oracle code and description	Unit	No. of units	Unit cost	Comp. 1	Comp. 2	Comp. 3	Comp. 4:	PM	GEF	Year 1	Year 2	Year 3	Year 4	Year 5
				Total	Total	Total	Total							
Annual work planning meetings and steering committee meetings	Meetings	5	10,000	0	50,000	0	0	0	50,000	10,000	10,000	10,000	10,000	10,000
Training on sampling design, field surveys and validation	curricula	3	25000	0	0	75,000	0		75,000	37,500	37,500			
Training on remote sensing and GIS tools	curricula	3	19000	0	0	57,000	0		57,000	38,000	19,000			
Training on shelterbelt management	curricula	4	25000	0	100,000	0	0		100,000	20,000	40,000	20,000	20,000	
Training on management of fruit and nut trees	curricula	2	45,000	0	90,000	0	0		90,000	18,000	18,000	18,000	18,000	18,000
Training on pasture/rangeland management	curricula	2	45,000	0	90,000	0	0		90,000	18,000	18,000	18,000	18,000	18,000
Training in opportunities for women in SFM	curricula	4	25,000	0	100,000	0	0		100,000	20,000	20,000	20,000	20,000	20,000
Review of National Forest Program	WS:	1	6,000	0	0	6,000	0		6,000	6,000				
5020 Sub-total training				0	430,000	138,000	0	0	568,000	167,500	162,500	86,000	86,000	66,000
6000 Expendable procurement														
Brochures design and printing	Copy	10	1,500	0	0	0	15,000		15,000	3,000	3,000	3,000	3,000	3,000
Six-monthly project news letter	Issue	10	800	0	0	0	8,000		8,000	1,600	1,600	1,600	1,600	1,600
Manuals and guidelines for SFM	Publication	4	4,400	0	0	0	17,600		17,600	8,800	8,800			
Bi-annual status reports	Report	4	1,000	0	0	0	4,000	0	4,000	800	800	800	800	800
Posters	Poster	4	1,500	0	0	0	6,000		6,000		3,000		3,000	
Material for mountain forest (e.g. seeds, etc.)	Lump sum	3	55,000	0	165,000	0	0		165,000	33,000	33,000	33,000	33,000	33,000
Materials for shelterbelts (saplings, etc.)	Lump sum	3	55,000	0	165,000	0	0		165,000	33,000	33,000	33,000	33,000	33,000

Oracle code and description	Unit	No. of units	Unit cost	Comp. 1	Comp. 2	Comp. 3	Comp. 4:	PM	GEF	Year 1	Year 2	Year 3	Year 4	Year 5
				Total	Total	Total	Total							
Materials for nut and fruit tree plantation	Lump sum	3	50,000	0	150,000	0	0		150,000	30,000	30,000	30,000	30,000	30,000
PMU expendables	Lump sum		15,000	0	15,000	0	0		15,000	3,000	3,000	3,000	3,000	3,000
Software & licenses	Lump sum	8	5,000	0	0	0	40,000		40,000	20,000	20,000			
Billboard signs -info and demarcation	Signs	5	2,000	0	10,000	0	0		10,000	2,000	2,000	2,000	2,000	2,000
6000 Sub-total expendable procurement				0	505,000	0	90,600	0	595,600	135,200	138,200	106,400	109,400	106,400
6100 Non-expendable procurement														
Smartphone/tablet/data recorder	handset	4	1,500	0	6,000	0	0		6,000	6,000				
Small field implements	Lump sum	1	26,260	0	26,260	0	0		26,260	26,260				
Biolab	Lab	4	7,000	0	28,000	0	0		28,000	28,000				
Greenhouse	Green-house	4	7,000	0	28,000	0	0		28,000	28,000				
Rugged PC with integrated GPS	PC	6	2,500	0	15,000	0	0		15,000	15,000				
Height Meter	HM	6	6,000	0	36,000	0	0		36,000	36,000				
Rugged range finder	HM	6	2,000	0	12,000	0	0		12,000	12,000				
4WD	Vehicle	1	25,000	0	25,000	0	0		25,000	25,000				
Tractor	Tractor	2	25,000	0	50,000	0	0		50,000	50,000				
Laptops	Laptop	4	2,000	0	8,000	0	0		8,000	8,000				
Color printer/photocopier/scan	C Printer	4	6,000	24,000	0	0	0		24,000	24,000				
Desktop computer	Desktop	8	1,200	9,600	0	0	0		9,600	9,600				
6100 Sub-total non-expendable procurement				33,600	234,260	0	0	0	267,860	267,860	0	0	0	0
6300 GOE budget														
Miscellaneous		4	8,000	0	32,000	0	0		32,000	6,400	6,400	6,400	6,400	6,400

Oracle code and description	Unit	No. of units	Unit cost	Comp. 1	Comp. 2	Comp. 3	Comp. 4:	PM	GEF	Year 1	Year 2	Year 3	Year 4	Year 5
				Total	Total	Total	Total							
6300 Sub-total GOE budget				0	32,000	0	0	0	32,000	6,400	6,400	6,400	6,400	6,400
TOTAL				**346,000**	**2,057,060**	**373,000**	**259,200**	**151,763**	**3,187,023**	**1,090,693**	**911,733**	**437,333**	**356,833**	**390,431**

SUBTOTAL Comp 1	**346,000**	11%
SUBTOTAL Comp 2	**2,057,060**	65%
SUBTOTAL Comp 3	**373,000**	12%
SUBTOTAL Comp 4	**259,200**	8%
Subtotal Comp 1 to 3	**3,035,260**	
SUBTOTAL Project Management	**151,763**	5%
TOTAL GEF	**3,187,023**	100%

APPENDIX 4: RISK MATRIX[1]

	Description of risk	Impact[2]	Probability of occurance[1]	Degree of incidence	Mitigation actions	Responsible party
1	Government engagement in the Project at the highest level is insufficient to ensure mainstreaming, upscaling and replication. As a result, the enabling and institutional measures proposed by the Project will not be adopted.	H	L		The Project has several strategies to mitigate this risk: (i) the early implementation phase focuses at the local level, so this period of time will be taken to advocate and build partnerships at high governmental level; (ii) the project will demonstrate the advantages of SFM in economic terms, which should attract high level government interest; (iii) the project will establish partnerships with many stakeholders and will create joint approaches to fostering high-level commitment.	SCF
2	The enabling legal and institutional framework is not sufficiently conducive to the Project Objectives, and is not modified/adopted in a timely way.	ML	ML		Component 3 addresses weaknesses in the legal and institutional framework and will ensure that SFM adopted as an overarching strategy. Progress with strengthening the enabling environment for SFM will be continuously monitored by the Government and FAO, and strategic changes to the Project approach will be identified and implemented if necessary.	
3	Financially sustainable models of forest management cannot be identified/developed for Uzbekistan.	ML	ML		Fostering financial sustainability is a core strategy of the Project and includes creating incentives for SFM both among local land users, through improved land tenure arrangements, and among the FOs through	

[1] Please consult available corporate guidelines and training for information on how to complete the risk log on the ERM website.

[2] H: High; MH: Moderately High; ML: Moderately Low; L: Low

	Description of risk	Impact[2]	Probability of occurance[1]	Degree of incidence	Mitigation actions	Responsible party
					identification of longer-term benefits from tree plantations, generated from harvesting of fruits and nuts, carbon sequestration, etc.	
4	Forest conservation strategies proposed by the project will not be accepted by the population or will cause conflict with contractors who have occupied the same land plot for many years and do not allow anyone to use it.	ML	L		Incentives for SFM and forest conservation will be created through income generation activities for local communities from harvesting of fruits, nuts and NWFPs. Stakeholder consultation and participatory mechnisms will be put in place to avoid conflicts between communities and other contractors.	
5	Climate change may lead to increased threats to forests through fire, pests, diseases and changing climatic conditions (temperature, precipitation).	MH	ML		The timeframe for climate change means that it does not significantly impact forests during the Project implementation period. Further, the Project, by greatly increasing overall forest management capacity, will contribute significantly to enhanced climate change resilience of forest ecosystems in Uzbekistan.	
6	Globally, the value of carbon on international markets remains low, or gets lower, further decreasing enthusiasm for SFM.	ML	MH		It is true that, should the price of carbon increase rapidly, this would greatly help reach the Project objectives. Hence, the Project treats carbon as one possible source of finance for sustainable forestry. However, Project success does not depend on this.	

APPENDIX 5: ENVIRONMENTAL AND SOCIAL ASSESSMENT

Annex 1: Trigger questions

	Question	Response (YES / NO)
1	Would this project: • result in the degradation (biological or physical) of soils or undermine sustainable land management practices; or • include the development of a large irrigation scheme, dam construction, use of waste water or affect the quality of water; or • reduce the adaptive capacity to climate change or increase GHG emissions significantly; or • result in any changes to existing tenure rights[19] (formal and informal[20]) of individuals, communities or others to land, fishery and forest resources?	No. The project seeks to improve management practices in order to improve capacity to adapt to climate change and to reduce GHG emission.
2	Would this project be executed in or around protected areas or natural habitats, decrease the biodiversity or alter the ecosystem functionality, use alien species, or use genetic resources?	No
3	Would this project: • Introduce crops and varieties previously not grown, and/or; • Provide seeds/planting material for cultivation, and/or; • Involve the importing or transfer of seeds and or planting material for cultivation or research and development; • Supply or use modern biotechnologies or their products in crop production, and/or • Establish or manage planted forests?	Yes, the project will support the restoration of xx hectares in pilot areas by providing planting material. Please go to questions in section 3 below.
4	Would this project introduce non-native or non-locally adapted species, breeds, genotypes or other genetic material to an area or production system, or modify in any way the surrounding habitat or production system used by existing genetic resources?	No, only native or locally adapted species will be used.

[19] [19] Tenure rights are rights to own, use or benefit from natural resources such as land, water bodies or forests

[20] Socially or traditionally recognized tenure rights that are not defined in law may still be considered to be 'legitimate tenure rights'.

	Question	Response (YES / NO)
5	Would this project: • result in the direct or indirect procurement, supply or use of pesticides[21]: ▪ on crops, livestock, aquaculture, forestry, household; or ▪ as seed/crop treatment in field or storage; or ▪ through input supply programmes including voucher schemes; or ▪ for small demonstration and research purposes; or ▪ for strategic stocks (locust) and emergencies; or ▪ causing adverse effects to health and/or environment; or • result in an increased use of pesticides in the project area as a result of production intensification; or • result in the management or disposal of pesticide waste and pesticide contaminated materials; or • result in violations of the Code of Conduct?	No
6	Would this project permanently or temporarily remove people from their homes or means of production/livelihood or restrict their access to their means of livelihood?	No
7	Would this project affect the current or future employment situation of the rural poor, and in particular the labour productivity, employability, labour conditions and rights at work of self-employed rural producers and other rural workers?	No, the project seeks to improve the livelihoods in project site areas
8	Could this project risk overlooking existing gender inequalities in access to productive resources, goods, services, markets, decent employment and decision-making? For example, by not addressing existing discrimination against women and girls, or by not taking into account the different needs of men and women.	No, the project has developed a draft Gender Action Plan and will implement it during it's lifetime.

[21] Pesticide means any substance, or mixture of substances of chemical or biological ingredients intended for repelling, destroying or controlling any pest, or regulating plant growth.

	Question	Response (YES / NO)
9	Would this project: • have indigenous peoples* living outside the project area[1] where activities will take place; or • have indigenous peoples living in the project area where activities will take place; or • adversely or seriously affect on indigenous peoples' rights, lands, natural resources, territories, livelihoods, knowledge, social fabric, traditions, governance systems, and culture or heritage (physical[2] and non-physical or intangible[3]) inside and/or outside the project area; or • be located in an area where cultural resources exist? * FAO considers the following criteria to identify indigenous peoples: priority in time with respect to occupation and use of a specific territory; the voluntary perpetuation of cultural distinctiveness (e.g. languages, laws and institutions); self-identification; an experience of subjugation, marginalization, dispossession, exclusion or discrimination (whether or not these conditions persist). [1]The phrase "Outside the project area" should be read taking into consideration the likelihood of project activities to influence the livelihoods, land access and/or rights of Indigenous Peoples' irrespective of physical distance. In example: If an indigenous community is living 100 km away from a project area where fishing activities will affect the river yield which is also accessed by this community, then the user should answer "YES" to the question. [2]Physical defined as movable or immovable objects, sites, structures, group of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance located in urban or rural settings, ground, underground or underwater. [3]Non-physical or intangible defined as "the practices, representations, expressions, knowledge and skills as well as the instruments, objects, artifacts and cultural spaces associated therewith that communities, groups, and in some cases individuals, recognize as part of their spiritual and/or cultural heritage"	No

SAFEGUARD 3 PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Question / Section			Response (Yes/No)	Risk level assessed	Comment
Introduce new crops and varieties					
3.1	Would this project Introduce crops and varieties previously not grown?		**No**	**Low**	The project does not foresee the introduction of varieties previously not grown in the region. In the exceptional case that this is considered, the project should: • Follow appropriate phytosanitary protocols in accordance with IPPC • Take measures to ensure that displaced varieties and/or crops, if any, are included in the national or international *ex situ* conservation programmes
Provision of seeds and planting materials					
3.2	Would this project provide seeds/planting material for cultivation?		**Yes**	**PROCEED TO NEXT QUESTION**	
	3.2.1	Would this project involve the importing or transfer of seeds and/or planting materials for cultivation?	**No**	**Low**	The GEF only supports the use of native species in forest/grassland restoration activities, therefore project will use local seeds of known varieties in line with existing government policies and plans.
	3.2.2	Would this project involve the importing or transfer of seeds and/or planting materials for research and development?	**No**	**Low**	
Modern biotechnologies and the deployment of their products in crop production					
3.3	Would this project supply or use modern plant biotechnologies and their products?		**No**	**Low**	

Question / Section		Response (Yes/No)	Risk level assessed	Comment
	Planted forests			**Yes**
3.4	Would this project establish or manage planted forests?	**Yes**	**Low**	The project will support the establishment of energy plantations on roughly 230 hectares to reduce pressures to collect firewood on nearby forests by local stakeholders. In addition, the project foresees the establishment of pistachio tree plantations in roughly 1,910 hectares and medicinal plants in 600 hectares. In this regard, the project will: • Adhere to existing national forest policies, forest programmes or equivalent strategies. • The observance of principles 9, 10, 11 and 12 of the Voluntary Guidelines on Planted Forests suffice for indigenous forests but must be read in full compliance with ESS 9- Indigenous People and Cultural Heritage. • Planners and managers must incorporate conservation of biological diversity as fundamental in their planning, management, utilization and monitoring of planted forest resources. • In order to reduce the environmental risk, incidence and impact of abiotic and biotic damaging agents and to maintain and improve planted forest health and productivity, FAO will work together with stakeholders to develop and derive appropriate and efficient response options in planted forest management.

APPENDIX 6. TERMS OF REFERENCE Draft[22]

National Project Coordinator/Director (no cost, government's contribution)

Timing/Duration Full time for project duration

Background The NPC will be a senior officer seconded to the Project by the national lead agency.

Main tasks

- Assume overall responsibility for the successful execution and implementation of the project, accountability to the Government and FAO for the proper and effective use of project resources;
- Serve as a focal point for the coordination of projects with other Government agencies, FAO and outside implementing agencies;
- Ensure that all Government inputs committed to the project are made available;
- Supervise the work of the Project Coordinator and ensure that the Project Coordinator is empowered to effectively manage the project and other project staff to perform their duties effectively;
- Select and arrange, in close collaboration with FAO, for the appointment of the Field Officers, as appropriate;
- Supervise the preparation of project work plans, updating, clearance and approval, in consultation with FAO and other stakeholders and ensure the timely request of inputs according to the project work plans;
- Represent the Government institution (national counterpart) at the tripartite review project meetings, and other stakeholder meetings;
- Build and strengthen synergies and collaboration with other countries and contribute to the regional collaboration component to ensure knowledge exchange and benefits at national level.

Administration, Operations and M&E Officer (FAO)

Timing/Duration Part time for project duration

Under the overall supervision of the FAOR, the incumbent will provide administrative and operational support to the implementation, monitoring and evaluation of the project for timely delivery of its outcomes and outputs. In particular he/she will perform the following tasks:

Main tasks:

- Ensure smooth and timely implementation of project activities in support of the results-based work plan, through operational and administrative procedures according to FAO rules and standards;
- Coordinate the project operational arrangements through contractual agreements with key project partners;
- Arrange the operations needed for signing and executing Letters of Agreement (LoA) and Government Cooperation Programme (GCP) agreements with relevant project partners;

[22] Consultants' Terms of Reference will be revised and validated during the project's inception.

- Maintain inter-departmental linkages with FAO units for donor liaison, Finance, and other units as required;
- Undertake day-to-day management of the project budget, including the monitoring of cash availability, budget preparation and budget revisions to be reviewed by the Project Coordinator;
- Supervise the accurate recording of all data relevant for operational, financial and results-based monitoring;
- Oversee the review of project level Monitoring and Evaluation (M&E) plan and associated work plans for each project component/ activity;
- Ensure that relevant reports on expenditures, forecasts, progress against work plans, project closure, are prepared and submitted in accordance with FAO and GEF defined procedures and reporting formats, schedules and communications channels, as required;
- Execute accurate and timely actions on all operational requirements for personnel-related matters, equipment and material procurement, and field disbursements;
- Participate and represent the project in collaborative meetings with project partners and the Project Steering Committee, as required;
- Be responsible for results achieved within her/his area of work and ensure issues affecting project delivery and success are brought to the attention of higher level authorities through the BH in a timely manner,
- In consultation with the FAO Evaluation Office, the and the FAO-GEF Coordination Unit, support the organization of the mid-term review and final evaluations, and provide inputs regarding project budgetary matters;

Minimal requirements:

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

Project Finance and Admin Assistant (FAO)

Timing/Duration Full time for project duration

Under the overall supervision of the FAOR and in close cooperation with other FAO UZB and FAO SEC staff, the incumbent will assist the the PMU, the admin and operations officer and the National Project Coordinator NPC in managing the administrative and financial issues of the project of the project for timely delivery of its outcomes and outputs. In particular he/she will perform the following tasks:

- ensure that all the financial information is accurate, relevant books are kept; reports are prepared and payments are done according to the FAO/GEF standards;
- ensure that all procurement activities are in line with FAO's procurement rules;
- assist in the preparation of periodic accounting records, finance and budget documents; record receipts and disbursements (ledgers, cash books, vouchers, etc.);
- support the NPC and Procurement Officer in the preparation and implementation of the project's annual procurement plans;
- support the monitoring of budgets and financial expenditures and support/inform all project counterparts on applicable administrative procedures;
- support the preparation of procurement and recruitment processes;
- process claims or invoices and other payments requests in line with relevant regulations and instructions;
- ensure that all supporting documents and information required to justify payment, including receipts, banking details, etc. are complete before releasing payments;
- settle invoices and claims after verification of supporting documents;

- reconcile data for recurring or special reports; maintain contacts with local banks, verify account status and currency exchange rates and obtain approval for cheque clearance; assist the project team in terms of logistic issues as well as preparations for meetings, training and workshops;
- perform other duties as required.

Minimum Requirements:

Secondary School Education Experience: Three years of relevant experience in finance / budget-related support work Languages: Working knowledge (Level C) of English IT Skills: Good knowledge of the MS Office applications, Internet and office technology equipment.

Human Resources and Procurement Officer

Under the overall supervision of the FAOR and in close cooperation with the PMU, the NPD and other FAO SEC staff, the Human Resources and Procurement Officer will lead and coordinate the HR function and provide timely HR advice, analysis, reporting and supervision on servicing to both project staff and management. In particular, he/she will perform the following main tasks:

a) Consults with Budget Holder and project management on specific HR and procurement requests, issues, and problems, and provides advice, policy interpretations, and options on how to proceed;
b) Supervise the procurement of goods and contracting of services in close collaboration with the Budget Holder, Admin and Operations Officer and the Project Coordinator and in accordance with the Lead technical Officer based in Ankara, FAO rules and procedures and the AWP/B approved by the Project Steering Committee;
c) Oversee timely planning and implementation of procurement plans providing advice as needed on most appropriate procurement actions;
d) Reviews project service and staffing delivery and procedures, develop proposals, and coordinate updates/revisions;
e) Monitors requests for human resources actions and determines/approves, within delegated authority, salary, entitlements, travel, social security and other benefits.
f) Liaises with HR Officer/s in Shared Services Center (SSC), Budapest, REU and HQ to provide and obtain guidance on technical aspects and keep abreast of the different HR initiatives and policies and maintains leading edge knowledge on human resources issues;

Minimum Requirements

1. Advanced university degree in human resources, management, business administration, organizational development, industrial psychology or a related field
2. Five years of relevant experience in human resources management and administration, including experience in staff servicing
3. Good Knowledge of FAO's procurement, operations procedures and project management systems

PMU Staff

Title	**Project Manager (PM)**
Timing/Duration	Full time for project duration
Background	The PM is a GEF funded position reporting to the FAOR and the FAO LTO.

Main tasks	• Lead Project Management Unit (PMU) • Prepare annual and quarterly workplans and prepare ToR for all inputs; • Ensure all PMU staff and all consultants fully understand their role and their tasks, and support them in their work; • Oversee day-to-day implementation of the project in line with the workplans; • Assure quality of project activities and project outputs; • Organise regular planning and communication events, starting with inception mission and inception workshop; • Oversee preparation and implementation of M&E framework; • Oversee preparation and implementation of Project communication and knowledge management frameworks; • Prepare progress reports and all monitoring reports. • Lead interactions with stakeholders • Liaise with government agencies and regularly advocate on behalf of the Project; • Coordinate project interventions with other ongoing activities, especially those of co-financers and other GEF projects; • Facilitate and strengthen collaboration between national project's stakeholders and regional/international partners to ensure smooth implementation and delivery of project's activities; • Support the establishment of the project as an umbrella SFM in Uzbekistan and encourage regional/international partners to support this initiative; • Regularly promote the project and its outputs and findings on a national, and where appropriate, regional stage; • Encourage awareness of and promotion of gender equality among project staff and partners; • Perform other duties related to the scope of work of the PM as required.
Key competencies/qualifications	• Advanced degree in in natural resources management or related fields • At least ten years of experience in the natural resources management sector; • Demonstrated ability to adopt new ideas; • Demonstrated commitment to participatory and bottom-up approaches; • Demonstrated ability to communicate, including advocating to government agencies; • Demonstrated ability to manage, including project management, office management; • Excellent English and Russian language skills
Title	**Field Assistants**
Timing/Duration	2 x Full time for project duration (1 for Kashkadarya province: Kitab and Dekhkanabad forestries; 1 for Pop forestry)
Background	These GEF funded positions will report to the PM.

Main tasks	The Field Assistants provide and channel guidance to local governments and to local communities at demonstration sites. • Provide all necessary support to the PM in the implementation and reporting on field project activities; • Monitor and keep field site equipment maintenance records; • Provide capacity development to district/oblast natural resources/agricultural units; • Provide training and awareness raising on SFM; • Oversee the preparation of participatory land-use plans, and their implementation at Project demonstration sites; • Lead field-based M&E, together with local communities, of project environmental and socio-economic impacts; • Liaise regularly with provincial government and with PMU and national government; • Provide regular feedback and advance warning on conflicts, and assist with conflict resolution.
Key competencies/qualifications	• Demonstrated experience in participatory natural resources management at the local level • Excellent communication skills, with district/oblast government, national and international experts and local communities • Demonstrated ability to open up to new approaches and new practices • Excellent Uzbek/Russian language skills

Title	**M&E and Communications Expert**
Timing/Duration	Full time for project duration
Background	This GEF funded position reports to the PM.
Main tasks	This assignment will support FAO and the PMU on M&E, and communicating and disseminating messages from the project. The assignment will cover written, verbal, electronic and other forms of media. The aim is to ensure that INRM is raised on the agenda of decision-makers and politicians and that the issues are fully understood and appreciated. This assignment contributes to all Outcomes of the project. The consultant will work with the PM. Specific tasks include: • Support the PM in monitoring and evaluation of key project results and impacts; • Design a system for monitoring the effectiveness of the project's communications; • Determine the principal messages to be disseminated by the Project; • Determine the key audiences for each message; • Determine the optimal media for conveying the messages to the targeted audience; • Draft a communication strategy;

- Train PMU and national staff on communication techniques;
- Work with the PMU to design, develop and support use of communication tools as the project evolves, conveying the project findings and outputs: websites, posters, leaflets, TV interviews, radio interviews, Facebook, twitter, etc.

Key competencies/qualifications

- Higher degree in impact monitoring and communications
- Ten years of experience in communications or media relations with a national government agency or international private sector organization
- Demonstrated ability to (i) train (ii) develop communication tools – written, verbal, electronic, etc.
- Excellent English, Uzbek and Russian language skills
- Previous work in Central Asia is highly preferential.

Title — **Gender and Livelihood Expert**

Timing/Duration — National Gender Specialist/Consultant (GS) will be hired at Project Coordination Unit (PCU) level for at least six (6) months on intermittent basis

Background — This GEF funded position reports to the PM.

Main tasks — The aim of this assignment is to ensure that gender and livelihood considerations are integrated into all project approaches, strategies, activities, inputs and outputs. The assignment will also be responsible for advising FAO and the PMU on gender issues. Specifically:

- Assess and analyze the project from a gender and socio-economic perspective;
- Identify key gender issues in the project and key gender entry points;
- Identify awareness and training needs regarding gender and livelihoods in the PMU and at national level;
- Draft GAP/Gender Strategy for the entire period (5 years) of the Project implementation and facilitate its endorsement by the EA.
- Train the PMU and national staff on gender and livelihood issues;
- Work with the PMU to (i) integrate gender into all project workplans (ii) integrate gender into all project ToR (iii) review all outputs from a gender perspective;
- On a regular basis, monitor the effectiveness of the project with regards to addressing gender ad livelihood issues;
- Prepare regular lessons learnt and best practices material.

Key competencies/qualifications

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

Terms of reference for the project steering committee

Role of the PSC

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

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

Meetings of the PSC

1. The Project Steering Committee meetings will normally be held annually (on rotational bases), but the Chairperson will have the discretion to call additional meetings, if this is considered necessary. Meetings of the PSC would not necessarily require a physical meeting and could be undertaken electronically. No more than 13 months may elapse between PSC meetings.

2. Invitations to a regular PSC meeting shall be issued not less than 90 days in advance of the date fixed for the meeting. Invitations to special meetings shall be issued not less than forty days in advance of the meeting date.

Agenda

1. A provisional agenda will be drawn up by the Project Manager and sent to members and observers following the approval of the Chairperson. The provisional agenda will be sent not less than 30 days before the date of the meeting.

2. A revised agenda including comments received from members will be circulated 5 working days before the meeting date.

3. The Agenda of each regular meeting shall include:

a) The election of the Vice-Chairperson

b) Adoption of the agenda

c) A report of the Project Coordinator on Project activities during the inter-sessional period

d) A report and recommendations from the Project Coordinator on the proposed Annual Work Plan and the proposed budget for the ensuing period

e) Reports that need PSC intervention

f) Consideration of the time and place (if appropriate) of the next meeting;

g) Any other matters as approved by the Chairperson

4. The agenda of a special meeting shall consist only of items relating to the purpose for which the meeting was called.

The PCU

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

Functions of the Chairperson

1. The Chairperson shall exercise the functions conferred on him elsewhere in these Rules, and in particular shall:

a) Declare the opening and closing of each PSC meeting

b) Direct the discussions at such meetings and ensure observance of these Rules, accord the right to speak, put questions and announce decisions

c) Rule on points of order

d) Subject to these Rules, have complete control over the proceedings of meetings

e) Appoint such ad hoc committees of the meeting as the PSC may direct

f) Ensure circulation by the Secretariat to PSC members of all relevant documents

g) Sign approved Annual Work Plans and Budgets and any subsequent proposed amendments submitted to FAO

h) In liaison with the PSC Secretariat, the Chairperson shall be responsible for determining the date, site (if appropriate) and agenda of the PSC meeting(s) during his/her period of tenure, as well as the chairing of such meetings

Participation

The PSC will be chaired by the State Committee on Forestry. FAO BH, LTO and the Project Coordinator will also be represented on the PSC, in ex-officio capacity. The Project Coordinator will be the Secretary to the PSC. Other active institutions, including representatives of implementing partners, may be invited or requested to participate as observers.

Decision-making

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

Reports and recommendations

1. At each meeting, the PSC shall approve report text that embodies its views, recommendations, and decisions, including, when requested, a statement of minority views.

2. A draft Report shall be circulated to the Members as soon as possible after the meeting for comments. Comments shall be accepted over a period of 20 days. Following its approval by the Chairperson, the Final Report will be distributed and posted on the Workspace as soon as possible after this.

Official language

The official languages of the PSC shall be Russian and English.

APPENDIX 7. DRAFT PROJECT GENDER ACTION PLAN (GAP)

Results Chain (outputs and activities)	**Verifiable Indicators**	**Baseline (year)**	**Target**	**Means of verification**	**Assumptions/Remarks**
Project objectives: Promote conservation and enhancement of carbon stocks in forest, and other land-use, and support climate smart agriculture; Landscape Management and Restoration; Restored Forest Ecosystems: Reverse the loss of ecosystem services within degraded forest landscapes					
I. ***Program GAP Coordination and Implementation. Improved planning and implementation of gender mainstreaming activities and increased gender analysis skills of partner government agencies and partner organization.* Output 4.5. *Project Gender Strategy and Action Plan (GAP) developed under the PCU work plan[23] and endorsed by MFD as a part of its long-term strategy.***					
I. 1. [24] Gender Specialist(GS) is recruited under the PCU, with relevant expertise and experience in gender analysis and mainstreaming I.2. Gender focal points identified and appointed at each FOs; I.3.. Finalize GAP in coordination with relevant partners and donor agencies and endorsed for implementation. I.4. Conduct gender awareness trainings based	I.1. GS with relevant gender competencies, experience and skills recruited by PCU for at least 6 months on intermittent basis; I.2.Gender focal points available at each of 4 Project FOs. I.3.Output 4.5. Gender Strategy/Gender Action Plan (GAP) developed and			Budget allocated in the frames of PCU for Gender Specialist as one staff person [target: 1 per year] envisioning quarterly travels of GS to Project sites.	Gender expert is hired for the PCU in consultation with FAO UZB and REU Gender team, based on the agreed ToR, with clear role and responsibilities. Qualifications to include profound knowledge and relevant experience in gender mainstreaming

[23]For details see ToR of national gender specialist annexed toProdoc
[24]PCU –Project Coordination Unit

on FAO/GEF Gender Mainstreaming training resources for relevant partner agencies, inclusive of GFPs of the FOs	endorsed by MFD by 02/2018[25]. I.4.. At least 2 training modules developed by GS; at least 2 training sessions conducted for MFD and FOs management and FOs staff in 2018.				
1.6. Baseline assessment	1.6. A baseline survey conducted in first year of the Project implementation by a team of national experts under the guidance of REU Gender team, and based on the results of the rapid socio-economic and gender assessment conducted during the project preparation phase.	Needs assessment on existing technical capacity and infrastructure will integrate a socio-economic impact analysis of women and men status, their roles in wood and NWFP production; income levels, and income diversification possibilities in forest dependent communities. .		Field work, including focus groups with male and female lessees, farmers, contractors, female headed households, community advisors, experts, FO staff, etc. conducted in each project site.	Conduct baseline surveys and gender analysis on the needs and problems of women and men from forest dependent communities and FOs. Use field work, such as interviews and focus groups, to collect quantitative and qualitative information from male and female beneficiaries and stakeholders at the project sites. Review and compile relevant sex-disaggregated data, wherever available.

[25]Gender Strategy/Gender Action Plan is not available at the preparation period as gender mainstreaming is not a part of MFD policy

I.7.Establish multi-partner coordination group/task force that includes representatives of decision-making (MFD, donor organizations and civil society organizations with mandates to address issues of rural women and/or women in development (e.g. Women's Committee of Uzbekistan (WCU), Business Women Association (BWA),Makhallya Foundation, ,Hunarmand Association, etc.) for knowledge sharing.	I.7. a. # of meetings held by the Coordination group I.7.b.# number of the project decisions informed by the Coordination group recommendations		Coordination group/task force established in first quarter 2018. Members identified, the work plan developed and endorsed by MFD.		
II. Outcome 1. An operational National Forest Assessment and Monitoring System. Output 1.2. At least 30% of all training beneficiaries under the project activities are females					
II.1. Develop selection criteria for trainings beneficiaries with regards of 30 % quota for women					
II.2. Trainees are selected for all capacity building interventions with regards of 30 % quota for women					
III. Component 1: Information management systems for sustainable forest management. Output 1.6. A database developed, integrating data disaggregated by sex, and is maintained and regularly updated					
III.1.Develop MFD human resources database integrating data disaggregated by sex and maintains on regular basis	III.1.a. HR template with sex-disaggregated data developed and maintained on regular basis				

	III.1.b. Reports by MFD presented to the donor on quarterly basis				
III.2. FOs develop database on human resources, lessees and contractorsintegrating data disaggregated by sex[26] and maintains on regular basis	III.2. a. HR, lessees and contractors' database templates with data disaggregated by sex developed and maintained on regular basis. III.2.b.Reports by FOs prepared and presented by FOs to MFD and donor on a quarterly basis.				Database should be accessible for the gender specialist and other stakeholders for monitoring and evaluation purposes
IV. Component 2: Multifunctional forest management leading to carbon sequestration, an improvement in forest and tree resources, and social-economic benefits. Output 2.2. 30% of Project beneficiary households are represented by female headed households.					
IV.1.Develop Project beneficiary households selection criteria integrating gender dimension	IV.1. a. Beneficiary HH selection criteria integrates 30% of female headed households				
IV.2.Establish a selection committee under each Project FO	IV.2.List of selection committee is presented by each FO and endorsed by MFD				
IV.3.Conduct selection of Project beneficiary households with regards of the agreed criteria	IV.3. Protocols of the beneficiary HHs selection process				

[26] No data is currently available, especially with respect to the access to forestry resources and users/holders of tickets

	presented to MFD and donors.				
V.	***Component 2: Multifunctional forest management leading to carbon sequestration, an improvement in forest and tree resources, and social-economic benefits. Output 2.5. Interventions on micro and small entrepreneurship (MSE) development for NWFPs and capacity building for the FOs related local communities, with a focus on women***				
V.1. Women and men' skills for starting the MSE for NWFPs enhanced through capacity building and training as a result of Project interventions.	V.1. a. Baseline of the existing FOs' employment capacity identified in the frames of the baseline assessment. V.1.b. # of MSE on NWFP started and run by women and their percentage to MSE NWFP opened by men				
V.2. Conduct capacity building(CB) interventions for FOs staff on innovative forestry strategies	V.2.a. # of CB interventions conducted by each FO V.2.b. number of women and men from forest dependent communities trained in income generation activities (30% of participants are women)				The training may also consider inclusion of gender awareness raising sessions
V.3.Conduct CB interventions for contractors and lesseeson innovative forestry strategies	V.3.a. # of CB interventions conducted by each FO V.3.b. 30% of CB interventions participants are women	Baseline to be identified during the Project Baseline assessment			

	V.3.c. # of women and men who increased their income as a result of project interventions				
V.4. In partnership with non-state organizations such as the Business Women Association of Uzbekistan (BWA) or others, conduct CB interventions for grass-roots women based on value chain analysis: e.g. MSE basics, rural crafts skills	V.4.a. Partnership agreement with BWA in place by mid- 2018; V.4.b. Value chain analysis conducted by the Gender specialist and (possibly) other involved experts, under the guidance of FAO REU; V.4.c. Project budget allocated for CB on crafts based business V.4.d. # of CB interventions conducted; V.4.e. # of women – participants of CB trainings; V.4.f. # of women and men participating in rural crafts (e.g. wool rugs) production				
V.5. Provide support for female-headed households (FHH) in the target areas to lease or free access to relevant agricultural inputs (e.g. equipment, seed varieties, etc.)	V.5.a.#of FHH in each project site. V.5.b. # of FHH provided with support to obtain agricultural inputs, by type of input				

V.6. In collaboration with commercial banks (e.g. Agrobank or Microcredit bank) conduct consultations on micro-credit opportunities for women and men	V.6.a. Collaboration agreement with a commercial bank V.6.b. # of consultations conducted jointly with a commercial bank on microcredit opportunities V.6.c. 30% of consultations ' participants are rural women				In development of women-friendly banking schemes, include women's microfinance organizations and other experts to design financial products that will be accessible to women-lessees and farmers.
VI. Component 4. Project Gender Strategy/Gender Action plan developed. Public awareness campaigns and community consultations in the frames of GAP organized by MFD/PCU and FOs in partnership with state and non-state stakeholders					
VI.1.Develop outreach/media plan with sharpened gender focus	VI.1.Availability of a comprehensive and gender-responsive outreach/media plan.				It is expected that the media plan will make use of FAO/GEF promo materials as well as varied channels (e.g. mobile phone updates, radio announcements, newsletters, etc.), ensuring that information under SFM will reach both male and female stakeholders and beneficiaries.
VI.2. Improve gender sensitization of SFM social messages and public information campaigns	VI.2.a. # budget allocated from donor and national funds for outreach/media campaigns; VI.2.b. # of social messages(brochures, leaflets, posters, publications, PCAs, radio and TV programs) with sharpened gender focused produced;				
VII. Output XXX (TBD) Increased access to knowledge and information through IT technologies (in case there is budget available)					

Establishment of computer & internet rooms for male and female farmers in Project FO sites to increase their access to knowledge (under SFM IT System)	VII.1.# of computer and internet rooms. VII.2. # of users, disaggregated by sex.				

APPENDIX 8 - CARBON ESTIMATIONS

EXECUTIVE SUMMARY

The project aims to promote Sustainable Forest Management (SFM) practices among the households and forest organizations, support the rehabilitation of forested areas to increase the carbon sequestration capacity of the targeted sites and the positive externalities associated. It will contribute to the reversal of the ongoing degradation of mountainous and valley forests and deal with the current issues; increasing demand for timber and wood-fuel, unsustainable harvesting of non-wood forest products, pests and disease, overgrazing and climate change.

Four project sites representative of the different types of forest ecosystems in Uzbekistan are concerned by the project, three sites representing valley forest area (Site 1: Sirdaryo Forestry Organization) and three mountainous forested areas (Sites 2, 3 and 4 respectively, Dehkanabad, Kitab and the Ferghana Valley (Pop).

The project components are the following:

Component 1: information management systems for Sustainable Forest Management;
Component 2: multifunctional forest management leading to carbon sequestration and the improvement in forest and tree resources;
Component 3: upscaling of SLM practices;
Component 4: monitoring, evaluation and knowledge sharing.

This document is reflecting a carbon estimation of the Component 2: Multifunctional forest management leading to carbon sequestration, improvement in forest and tree resources, and other benefits. Notwithstanding, the other components relating to the legislation, the monitoring of forest resources and the adoption of information management systems are primordial to ensure the achievement and success of the on-site activities and the development of SLM practices.

For the mountainous forested areas (Site 2, 3 and 4) the focus is made on tree planting, especially for mountain forest restoration applying watershed management principles as well as pistachio forestry development using the agro-forestry approach. For the valley project site, Sirdaryo FO the intention is to establish more shelterbelt plantation together with private land owners and farmers.

Table 1: Project Structure - With Project/Without Project

PROJECT STRUCTURE		Activity	With Project Scenario	BAU Scenario
Outcome 2: SFM operationalized at 4 demonstration sites generating sustainable benefits such as carbon sequestration and improved livelihoods of at least 500 local households	Output 2.1: Sustainable management of mountain forests and improving the livelihoods of at least 100 farmers/households in **Dehkanabad forestry organization**	**Forest Management**	**18,000 ha** of forest land for which the degradation level will be reduced from 40 percent (moderate) to 35 percent (low) capturing 20,048.6 tonnes of CO2eq per year. 400,971 tCO2eq sequestered for the entire duration of the project.	**18,000 ha** which would stay moderately degraded.
		Grassland Management	**17,000 ha** of severely degraded grassland will beneficiate of better grassland management practices and reduce the degradation to a moderately degradation state thus capturing 25,907 tonnes of CO2eq per year. 518,146 tCO2eq sequestered for the entire duration of the project.	**17,000 ha** of grassland that will remain severely degraded without improvement.
		Pistachio Tree plantation	**510 ha** of grassland converted into pistachio tree plantations capturing could sequester 2,966 tCO2eq per year. 59,334 tCO2eq sequestered for the entire duration of the project.	Assumption that **68 hectares** of pistachio tree plantations will be planted
		Forest restoration – Juniper	The afforestation of **1,000 ha** of Juniper forest could capture 42,558 tCO2eq per year. 851,154 tCO2eq sequestered for the entire duration of the project.	**No afforestation.**
		Firewood Plantation	**20 ha** of firewood plantations could capture 480.9 tCO2eq per year. 9,618 tCO2eq sequestered for the entire duration.	Assumption that **8.7 hectares** of firewood will be planted.
		Total	**Sustainable management activities in Dehkanabad FO concerning 36,530 ha could sequester -91,961.2 tonnes of CO2eq per year.** **For the entire duration of the project: -1,839,224 tonnes of CO2eq is captured.**	
	Output 2.2: Sustainable management of mountain forests and improving the livelihoods of at least 200 farmers/houesholds in **Kitab forestry organization.**	**Forest management**	**5,000 ha** of forest land for which the degradation level will be reduced from 40 percent (moderate) to 35 percent (low) capturing 5,569 tonnes of CO2eq per year. 111,381 tCO2eq sequestered for the entire duration of the project	**5,000 ha of Juniper forest** which would stay moderately degraded.
		Grassland Management	**10,000 ha** of severely degraded grassland will beneficiate of better grassland management practices and reduce the degradation to a moderately degradation state thus capturing 15,239 tonnes of CO2eq per year. 304,792 tCO2eq sequestered for the entire duration	**10,000 ha** of grassland that will remain severely degraded without improvement.
		Pistachio Tree plantation	**1,000 ha** of grassland converted into pistachio tree plantations could sequester 5,817 tCO2eq per year. 116,341 tCO2eq sequestered for the entire duration of the project.	Assumption that **130 hectares** of pistachio tree plantations will be planted
		Firewood Plantation	**200 ha** of firewood plantations could capture 4,809 tCO2eq per year. 96,180 tCO2eq sequestered for the entire duration.	Assumption that **87 hectares** of firewood will be planted.

		Total	Sustainable management activities in Kitab FO concerning 16,200 hectares could sequester 31,434.8 tonnes of CO2eq per year. For the entire duration of the project 628,695 tonnes of CO2eq is captured	
	Output 2.3: Sustainable management of valley forests and shelterbelt forests in **Sirdaryo Forestry** improving the livelihoods of at least 100 farmers.	Grassland Management	**750 ha** of severely degraded grassland will beneficiate from better grassland management practices and reduce the degradation to a moderately degradation state thus capturing 1,142.95 tonnes of CO2eq per year. 22,859 tCO2eq sequestered for the entire duration of the project	**750 ha** of grassland that will remain severely degraded without improvement.
		Shrubs Plantation	**20 ha** of shrubs planted on grassland could capture 360.85 tonnes of CO2eq per year. 7,217 tCO2eq sequestered for the entire duration of the project	**No shrubs plantations.**
		Creation of Shelterbelts	**2,225 ha** of forest shelterbelts created could capture nearly 37,891 tonnes of CO2eq per year. 757,826 tCO2eq captured for the entire duration of the project.	**125 ha** of shelterbelts would be created without the project.
		Total	Sustainable management activities in Sirdaryo FO on 2,995 ha could sequester 39,395.1tonnes of CO2eq per year. For the entire duration of the project 787,902 tonnes of CO2eq is captured.	
	Output 2.4: Sustainable forestry management and improving the livelihoods of at least 100 farmers/households in **the Ferghana Valley, Pop Forestry Organization**	Forest management	**5,000 ha** of forest land for which the degradation level will be reduced from 40 percent (moderate) to 35 percent (low) capturing 5,569 tonnes of CO2eq per year. 111,381 tCO2eq sequestered for the entire duration of the project	**5,000 ha** which would stay moderately degraded
		Grassland Management	**23,000 ha** of severely degraded grassland will beneficiate of better grassland management practices and reduce the degradation to a moderately degradation state thus capturing 35,051 tonnes of CO2eq per year. 701,021 tCO2eq sequestered for the entire duration of the project.	**23,000 ha** of grassland that will remain severely degraded without improvement.
		Plantation of Medicinal and aromatic plants crops	**600 ha** of grassland converted into annual medicinal and aromatic plantations could capture 40.8 tCO2eq per year. 816 tCO2eq sequestered for the entire duration of the project	**500 ha** of grassland converted into annual medicinal plantations.
		Plantation of pistachio/almond tree crops	**400 ha** of grassland converted into pistachio tree plantations could sequester 2,326.8 tCO2eq per year. 46,536 tCO2eq seque9stered for the entire duration of the project.	Assumption that **52 hectares** of pistachio tree plantations will be planted
		Firewood Plantation	**10 ha** of grassland converted into firewood plantations could sequester 242.6 tonnes of CO2eq per year. 4,852 tCO2eq sequestered for the entire duration of the project.	Assumption that **4.3 hectares** of firewood will be planted.
		Total	Sustainable management 9618activities in POP FO on 29,010 ha could sequester 43,230.3 tonnes of CO2eq per year. For the entire duration of the project, 864,606 tonnes of CO2eq is captured	

1. Forest management

Rehabilitation activities of 28,000 ha of moderately degraded Juniper forest by the establishment of tree nurseries, the conduction of trainings and the use of the watershed management approach could sequester carbon at an annual rate of 31,187 tonnes of carbon dioxide equivalent (CO2eq/year) or 623,733 tonnes of CO2eq for the entire accounting duration of the analysis (20 years).

Forests in the area of influence of the project, Site 2, 3 and 4 are classified as subtropical mountains systems based on FAO's Global Ecological Zones (FAO, 2011). These types of forest have, on average, an above-ground biomass of 63.5 tonnes of carbon per ha (tC/ha). The below-ground biomass, litter, and soil carbon are, respectively, 17.1, 24.3, and 38 tonnes of carbon per ha (tC/ha).

The management of the Juniper forests will lead to a lower level of degradation, from 40 percent of biomass lost without project to 35 percent of biomass lost with project-based on experts' consultation-. The specific biomass lost is entered as a Tier 2 values. It is assumed that without project intervention, the level of degradation would remain at a "moderate'' level. Additionally, no fire occurrence have been considered in both scenarios.

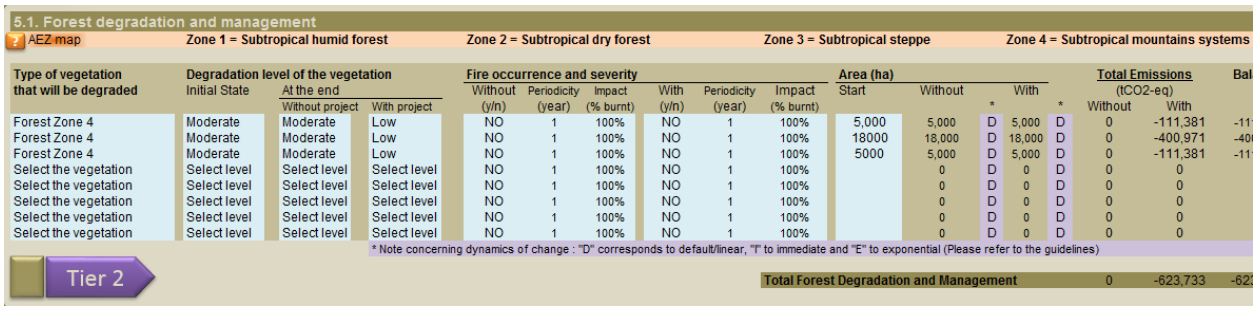
Baseline scenario: 28,000 ha of moderately degraded forest, no change in the forests state of degradation with hectares decomposed on;

- 5,000 hectares of moderately degraded forest in the Ferghana Valley (Pop FO)
- 18,000 ha of moderately degraded forest in the Dehkanabad FO and;
- 5,000 ha of moderately degraded forest in the Kitab site.

Management and degradation: Forest degradation and management.

Type of Vegetation that will be degraded	Forest Organization (FO)	Degradation level of the vegetation			Area (ha)		
		Initial State	Without Project	With Project	Start	Without	With
Juniper forests: Subtropical mountains systems	Ferghana Valley (Pop)	Moderate	Moderate	Low	5,000	5,000	5,000
	Dehkanabad	Moderate	Moderate	Low	18,000	18,000	18,000
	Kitab	Moderate	Moderate	Low	5,000	5,000	5,000

The Management Degradation module is filled as follows:



2. Rangeland management

Promoting better grassland management practices through participatory planning processes and trainings as well as applying rotational grazing systems, regulating and controlling could contribute to the sequestration of 77,341 tonnes of CO2eq per year or 1,546,818 tCO2eq on 20 years.

The highest carbon sequestration potential stems from the 23,000 hectares of improved grassland in the Ferghana Valley, POP FO (Site 4) with 35,051 tonnes of CO2eq sequestered per year or 701,021 tonnes of CO2eq sequestered for the entire duration of the project.

Following this performance, the Dehkanabad FO site (Site 2) with 17,000 hectares could capture 25,907 tonnes of CO2eq per year due to the active involvement of local communities, the implementation of rotational used compartments for grazing, the establishment of regulation and controls and a better understanding of the vulnerable areas and land mapping. A better grassland management of the 10,000 hectares of the Kitab Forest Organization Site (Site 3) has the potential to capture approximately 15,240 tonnes of CO2eq per year through the demonstration and dissemination of appropriate rangeland management practices. The last project site, Sirdaryo FO (Site 1) accounts for the sequestration of nearly 1,143 tCO2eq per year or 22,859 tCO2eq for the 20 years through improved grassland management practices.

For all the aforementioned grassland systems covered by the project, their low-productivity and ecosystem poorness correspond to a severely degraded initial state, which means an average soil carbon stock of 26,6 tC/ha that will be improved to a moderately degraded state -with the project implementation- with a corresponding value of 36,1 tC/ha. No fire use are considered to manage the grassland systems.

Baseline scenario: Without the project implementation, severely degraded grassland will remain at the same level of degradation and no improved practices will be developed.

4.1.2. Grassland systems remaining grassland systems (total area must remain contant)

Fill with your descriptio	Initial State	Final state of the grassland: Without project	Final state of the grassland: With project	Fire use to manage? Periodicity (Without) (y/n)	(year)	Periodicity (With) (y/n)	(year)	Yield Start	Yield Without (t/ha/yr)	Yield With	Area (ha) Start	Without	*	With	*	Total Emissions (tCO2-eq) Without	With	Balance
Pop Forest Organization	Severely Degraded	Severely Degraded	Moderately Degraded	NO	5	NO	5				23,000	23,000	D	23,000	D	0	-701,021	-701,021
Dehkanabad FO	Severely Degraded	Severely Degraded	Moderately Degraded	NO	5	NO	5				17,000	17,000	D	17,000	D	0	-518,146	-518,146
Kitab FO	Severely Degraded	Severely Degraded	Moderately Degraded	NO	5	NO	5				10,000	10,000	D	10,000	D	0	-304,792	-304,792
Sirdaryo FO	Severely Degraded	Severely Degraded	Moderately Degraded	NO	5	NO	5				750	750	D	750	D	0	-22,859	-22,859
	Select state	Select state	Select state	NO	5	NO	5				0	0	D	0	D	0	0	0
	Select state	Select state	Select state	NO	5	NO	5				0	0	D	0	D	0	0	0
	Select state	Select state	Select state	NO	5	NO	5				0	0	D	0	D	0	0	0
	Select state	Select state	Select state	NO	5	NO	5				0	0	D	0	D	0	0	0
	Select state	Select state	Select state	NO	5	NO	5				0	0	D	0	D	0	0	0
	Select state	Select state	Select state	NO	5	NO	5				0	0	D	0	D	0	0	0
Total Grassland Systems																0	#######	#######

* Note concerning dynamics of change : "D" corresponds to default/linear, "I" to immediate and "E" to exponential (Please refer to the guidelines)

Tier 2

3. Development of medicinal plants:

Planting medicinal plants on 600 hectares of grassland in the Ferghana Valley, POP project site (Site 4) could sequester carbon at an annual rate of 40.8 tCO2-eq or 816 tCO2eq emitted for the entire duration of the project. In consultation with the project's implementation unit we assumption that medicinal and aromatic plants will be a subject of improved agronomic practices with the project implementation. No specific residue management will be conducted and no fire will be used for the conversion.

Baseline scenario: Without project, 500 hectares of grassland will be converted into annual medicinal and aromatic crops.

As we are converting 600 hectares of grassland into annual crops, the Other Land Use Changes sub-module is filled as follows;

2.3. Other Land Use Changes

Fill with your description	Initial land use	Final land use	Message	Fire Use? (y/n)	Area transformed (ha) Without	*	With	*	Total Emissions (tCO2-eq) Without	With	Balance
Dekh Pistachio/Walnut	Grassland	Perennial/Tree Crop		NO	68	D	510	D	191	1,434	1,243
Kitab Pistachio/Walnut	Grassland	Perennial/Tree Crop		NO	130	D	1000	D	366	2,812	2,447
Pop Pistachio/Walnut	Grassland	Perennial/Tree Crop		NO	52	D	400	D	146	1,125	979
Pop Medicinal/Aromatic plai	Grassland	Annual Crop		NO	500	D	600	D	8,340	10,009	1,668
	Select Initial Land Use	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
Total Other LUC									9,044	15,380	6,337

* Note concerning dynamics of change : "D" corresponds to default/linear, "I" to immediate and "E" to exponential (Please refer to the guidelines)

Tier 2

3.1. Annual systems (to be used also for pluri-annual systems such as cotton or sugarcane)

3.1.1. Annual systems from other LU or converted to other LU (please fill step 2.LUC previously)

Description	Main season crop	Management options: Improved agronomic practices	Nutrient management	No till & residue retention	Water management	Manure application	Residue management	Yield (t/ha/yr)	Area (ha) Start	Area (ha) Without	Area (ha) With	Total Emissions (tCO2-eq) Without	Total Emissions (tCO2-eq) With	Balance
Annual after Deforestation	Default	?	?	?	?	?	Please select		0	0	0	0	0	0
Converted to A/R	Default	?	?	?	?	?	Please select		0	0	0	0	0	0
Annual after non-forest LU	Default	Yes	?	Yes	?	Yes			0	500	600	-12,419	-14,902	-2,484
Converted to OLUC	Default	?	?	?	?	?	Please select		0	0	0	0	0	0

4. Tree plantation – Pistachio/almond

To improve the livelihoods of at least 500 local households and improve the carbon sequestration of the sites, the project plans the plantation of crop trees, mainly pistachio and almond, on a total area of 1,910 ha of grassland through an agro-forestry approach capturing 11,110 tonnes of CO2eq per year or 222,212 tonnes of CO2eq for the entire accounting period of the project. With the project industrial plantations of different varieties of pistachios would be created and demonstration of productive and economically profitable forest plantation would be conducted. With the project, 1,919 hectares of grassland would be converted to pistachio/almond tree crops.

The conversion of grassland into perennial tree crops implies to take into account the carbon emitted with the land use change (4,669 tonnes of CO2eq emitted with the project) and the carbon stored through the development of perennial tree crops (226,881 tonnes of carbon sequestered).

Baseline scenario: Without the project (BAU scenario), only 250 ha of pistachio and almond trees should be planted on grassland. For the disaggregated data of the baseline scenario we make the assumption that without the project the respective superficies of pistachio and almond trees planted in each site would be proportional to the superficies with project. Thus, it is leading to the following data:

- 130 hectares of grassland converted to pistachio tree crops in Kitab project site.
- 68 hectares of grassland converted to pistachio/almond tree crops in Dehkanabad project site.
- 52 hectares of grassland converted to pistachio tree crops in Ferghana project site (POP FO).

We assume that no fire will be used during the conversion as well as for the residue management.

At disaggregated levels, the conversion of 1,000 ha of grassland in the Kitab site could capture 5,817 tonnes of CO2eq per year compared to a BAU scenario while the Dehkanabad site could sequester 2,966 tonnes of CO2eq per year with 510 hectares. The Pop FO project site with 400 hectares of tree crops could capture 2,326 tonnes of carbon per year compared to a BAU scenario.

Once those information are correctly entered in the Land Use Change (LUC) Module, EX-ACT will automatically fill the sub-module Perennial systems found under Crop Production Module as follows:

2.3. Other Land Use Changes

Fill with your description	Initial land use		Final land use	Message	Fire Use? (y/n)	Area transformed (ha) Without	*	Area transformed (ha) With	*	Total Emissions (tCO2-eq) Without	Total Emissions (tCO2-eq) With	Balance
Dehk Pistachio/Almond	Grassland	→	Perennial/Tree Crop		NO	68	D	510	D	191	1,434	1,243
Kitab Pistachio	Grassland	→	Perennial/Tree Crop		NO	130	D	1000	D	366	2,812	2,447
Pop Pistachio	Grassland	→	Perennial/Tree Crop		NO	52	D	400	D	146	1,125	979
Pop Medicinal/Aromatic plai	Grassland	→	Annual Crop		NO	500	D	600	D	8,340	10,009	1,668
	Select Initial Land Use	→	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	→	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	→	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	→	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	→	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
	Select Initial Land Use	→	Select Final Land Use	Fill initial LU	NO	0	D	0	D	0	0	0
								Total Other LUC		9,044	15,380	6,337

* Note concerning dynamics of change : "D" corresponds to default/linear, "I" to immediate and "E" to exponential (Please refer to the guidelines)

Tier 2

3.2. Perennial systems (agroforestry, orchards, tree crops...)

3.2.1. Perennial systems from other LU or converted to other LU (please fill step 2.LUC previously)

Description	Residue/ biomass burning	Yield (t/ha/yr)	Area (ha) Start	Area (ha) Without	Area (ha) With	Total Emissions (tCO2-eq) Without	Total Emissions (tCO2-eq) With	Balance
Perennial after Deforestation	NO		0	0	0	0	0	0
Converted to A/R	NO		0	0	0	0	0	0
Perennial after non-forest LU	NO		0	250	1,910	-34,169	-261,049	-226,881
Converted to OLUC	NO		0	0	0	0	0	0

5. Afforestation of Juniper forest trees

Afforestation activities of 1,000 hectares on rangelands using the watershed management approach and delivering technical trainings could sequester 42,558 tonnes of CO2eq per year or 851,154 tonnes of CO2eq on 20 years.

The forest in the area of influence of this restoration activity, in Dehkanabad forestry organization area is classified as subtropical mountain system. These types of forest have, on average, an annual above-ground biomass growth rate of 1.41 tonnes of carbon per ha per year (tC/ha/year) for systems up to 20-year old. The below-ground biomass annual growth rate is 0.38 tonnes of carbon per ha per year (tC/ha/year) for systems up to 20-year old. Those are the default values extracted from IPCC 2006.

However, to get more accurate estimations of the Juniper forests carbon stocks, the default values have been replaced by the above-ground biomass (AGB) and below-ground biomass (BGB) growth rates values extracted from the Country Report on Forest Resources Assessment realized by FAO in 2014 (FAO, 2014)[27]. The associated default values of the afforestation activities (in tC/ha) will be replaced for the subtropical mountain systems (Forest Zone 4) and are mentioned below;

Type of vegetation	Growth rates for systems up to 20-yr old		Growth rates for systems after 20-yr old	
	Above-ground	Below-ground	Above-ground	Below-ground
Forest Zone 4: Subtropical mountains systems	8.6	3.44	8.6	3.44

It should be noted that all the activities under a subtropical mountain system in the afforestation sub-module will be subject to changes within the Tier 2 values.

Baseline scenario: Without the project, no afforestation activities would be expected.

6. Plantation of firewood

The project is targeting the conversion of 230 hectares of grassland into firewood in the three subtropical mountainous sites (Site 2, Site 3 and Site 4). This conversion would capture 5,532.5tonnes of CO2eq per year or 110,650 tCO2eq for the entire duration of the project through the promotion of firewood plantations with the involvement of local communities and the assessment of economic benefits for the population.

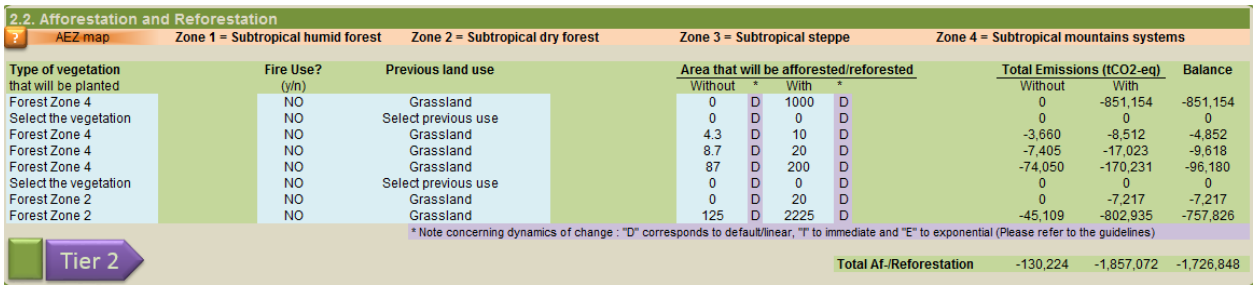
Planting firewood on 200 hectares of grassland in the Kitab project site (Site 3) could sequester 4,809 tonnes of CO2eq per year while the 20 hectares of the Dehk project site (Site 2) can capture 480.9 tCO2eq per year and the Ferghana project site could sequester 242.6 tCO2eq per year with 10 hectares.

The type of vegetation that need to be selected is Forest Zone 4: Subtropical mountains systems for the three zones. Also, as it has been mentioned, Tier 2 values have been previously entered for the AGB and the BGB and are integrated by EX-ACT for the carbon calculations. No fire will be used.

Baseline scenario: Without the project, 100 hectares of firewood plantations would be planted. In order to provide the disaggregated estimations per project sites, superficies have been proportionally allocated as follows;

- 4.3 hectares of firewood plantations that will be afforested on grassland in the Ferghana, POP site;
- 8.7 hectares of firewood plantations that will be afforested on grassland in the Dehkanabad site;
- 87 hectares of firewood plantations that will be afforested on grassland in the Kitab site.

[27] FAO. Country Report – Uzbekistan. Global Forest Resources Assessment 2015. Rome, 2014.



2.2. Afforestation and Reforestation

AEZ map | Zone 1 = Subtropical humid forest | Zone 2 = Subtropical dry forest | Zone 3 = Subtropical steppe | Zone 4 = Subtropical mountains systems

Type of vegetation that will be planted	Fire Use? (y/n)	Previous land use	Area that will be afforested/reforested Without	*	With	*	Total Emissions (tCO2-eq) Without	With	Balance
Forest Zone 4	NO	Grassland	0	D	1000	D	0	-851,154	-851,154
Select the vegetation	NO	Select previous use	0	D	0	D	0	0	0
Forest Zone 4	NO	Grassland	4.3	D	10	D	-3,660	-8,512	-4,852
Forest Zone 4	NO	Grassland	8.7	D	20	D	-7,405	-17,023	-9,618
Forest Zone 4	NO	Grassland	87	D	200	D	-74,050	-170,231	-96,180
Select the vegetation	NO	Select previous use	0	D	0	D	0	0	0
Forest Zone 2	NO	Grassland	0	D	20	D	0	-7,217	-7,217
Forest Zone 2	NO	Grassland	125	D	2225	D	-45,109	-802,935	-757,826

* Note concerning dynamics of change : "D" corresponds to default/linear, "I" to immediate and "E" to exponential (Please refer to the guidelines)

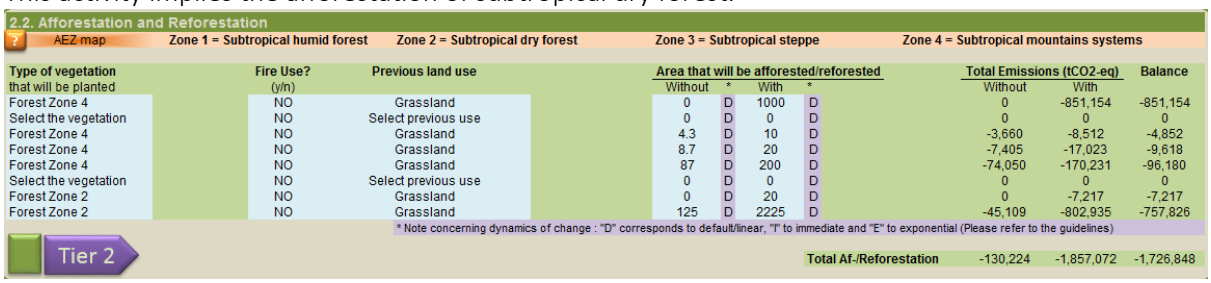
Tier 2

Total Af-/Reforestation -130,224 -1,857,072 -1,726,848

7. Plantation of shrubs in saline land

The plantation of 20 hectares of shrubs on saline land, Sirdaryo Project Site (Site 1) could approximately capture 361 tonnes of CO2eq per year or 7,217 tCO2eq for the entire duration of the project.

This activity implies the afforestation of subtropical dry forest.



2.2. Afforestation and Reforestation

AEZ map | Zone 1 = Subtropical humid forest | Zone 2 = Subtropical dry forest | Zone 3 = Subtropical steppe | Zone 4 = Subtropical mountains systems

Type of vegetation that will be planted	Fire Use? (y/n)	Previous land use	Area that will be afforested/reforested Without	*	With	*	Total Emissions (tCO2-eq) Without	With	Balance
Forest Zone 4	NO	Grassland	0	D	1000	D	0	-851,154	-851,154
Select the vegetation	NO	Select previous use	0	D	0	D	0	0	0
Forest Zone 4	NO	Grassland	4.3	D	10	D	-3,660	-8,512	-4,852
Forest Zone 4	NO	Grassland	8.7	D	20	D	-7,405	-17,023	-9,618
Forest Zone 4	NO	Grassland	87	D	200	D	-74,050	-170,231	-96,180
Select the vegetation	NO	Select previous use	0	D	0	D	0	0	0
Forest Zone 2	NO	Grassland	0	D	20	D	0	-7,217	-7,217
Forest Zone 2	NO	Grassland	125	D	2225	D	-45,109	-802,935	-757,826

* Note concerning dynamics of change : "D" corresponds to default/linear, "I" to immediate and "E" to exponential (Please refer to the guidelines)

Tier 2

Total Af-/Reforestation -130,224 -1,857,072 -1,726,848

8. Creation of forest shelterbelts

The creation of forest shelterbelts which concerns 2,225 hectares in the Sirdaryo Valley could sequester approximately 37,891 tonnes of CO2eq per year or -757,826 tCO2eq for the entire duration of the project.

The activities concern the protection of agricultural crops, especially cotton, to wind erosion and the reduction of soil yield power through the creation of effective shelterbelts with several meshes. Additionally, the landscape serving ecological functions is expected to be stabilized with the project.

As the entire area is located in the Sirdaryo Valley, Forest Zone 2 corresponding to subtropical dry forest should be selected in EX-ACT.

Baseline scenario: 125 hectares of grassland will be afforested with forest shelterbelts.

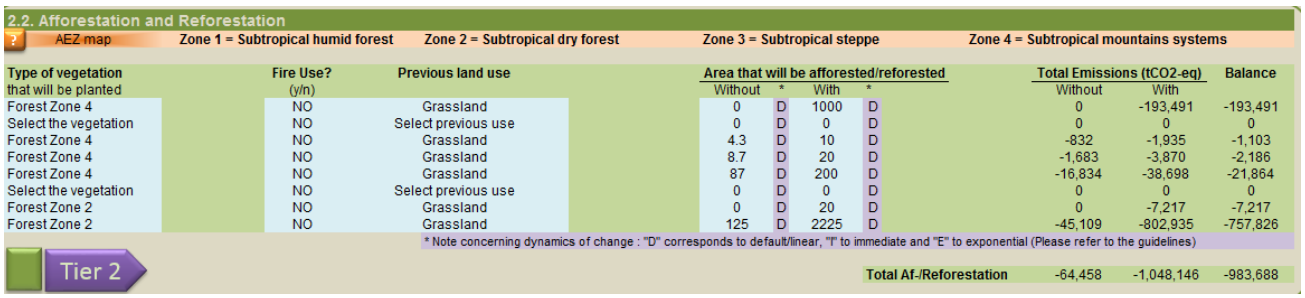
Here-below a table summarizing the different activities and the number of hectares concerned for each project site.

Table 2: Summary of the afforestation activities (from 5 to 8):

Project Site	Afforestation Activity	Type of Vegetation	Previous Land use	Area (ha)		Total Area (ha) per project site	
				Without	With	Without	With
Dehk	Afforestation of Juniper forest trees	Forest Zone 4: **Subtropical mountains systems**	Grassland	0	1000	8.7	1020
	Firewood plantations			8.7	20		

Kitab	Firewood plantations	Forest Zone 4: **Subtropical mountains systems**	Grassland	87	200	87	200
POP	Firewood plantations	Forest Zone 4: **Subtropical mountains systems**	Grassland	4.3	10	4.3	10
Sirdaryo	Shrubs	Forest Zone 2: **Subtropical dry forest**	Grassland	0	20	125	2245
	Creation of shelterbelts			125	2225		
Total hectares concerned by the afforestation activities				225	3475		

EX-ACT is filled as follows for the afforestation activities. Specific Above-ground and below-ground values are entered as explained previously;



2.2. Afforestation and Reforestation

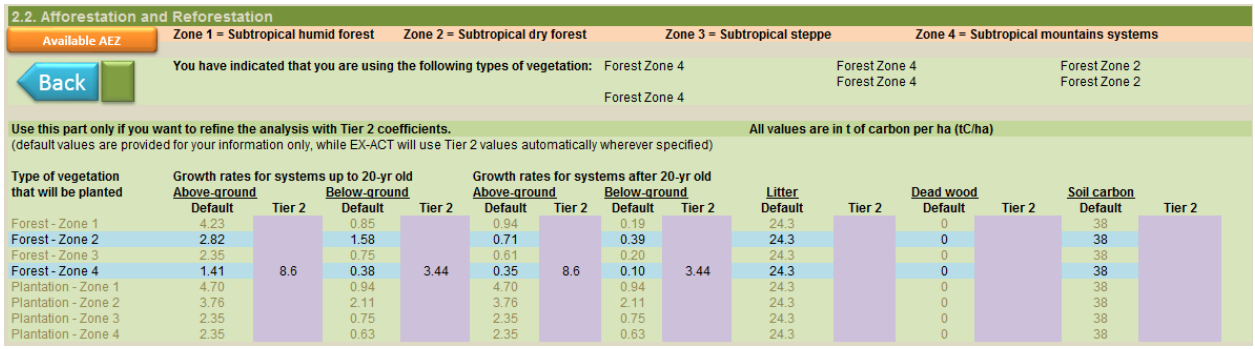
AEZ map | Zone 1 = Subtropical humid forest | Zone 2 = Subtropical dry forest | Zone 3 = Subtropical steppe | Zone 4 = Subtropical mountains systems

Type of vegetation that will be planted	Fire Use? (y/n)	Previous land use	Area that will be afforested/reforested Without	*	With	*	Total Emissions (tCO2-eq) Without	With	Balance
Forest Zone 4	NO	Grassland	0	D	1000	D	0	-193,491	-193,491
Select the vegetation	NO	Select previous use	0	D	0	D	0	0	0
Forest Zone 4	NO	Grassland	4.3	D	10	D	-832	-1,935	-1,103
Forest Zone 4	NO	Grassland	8.7	D	20	D	-1,683	-3,870	-2,186
Forest Zone 4	NO	Grassland	87	D	200	D	-16,834	-38,698	-21,864
Select the vegetation	NO	Select previous use	0	D	0	D	0	0	0
Forest Zone 2	NO	Grassland	0	D	20	D	0	-7,217	-7,217
Forest Zone 2	NO	Grassland	125	D	2225	D	-45,109	-802,935	-757,826

* Note concerning dynamics of change : "D" corresponds to default/linear, "I" to immediate and "E" to exponential (Please refer to the guidelines)

Tier 2

Total Af-/Reforestation -64,458 -1,048,146 -983,688



2.2. Afforestation and Reforestation

Available AEZ | Zone 1 = Subtropical humid forest | Zone 2 = Subtropical dry forest | Zone 3 = Subtropical steppe | Zone 4 = Subtropical mountains systems

Back

You have indicated that you are using the following types of vegetation: Forest Zone 4, Forest Zone 4, Forest Zone 4, Forest Zone 4, Forest Zone 2, Forest Zone 2

Use this part only if you want to refine the analysis with Tier 2 coefficients. All values are in t of carbon per ha (tC/ha)

(default values are provided for your information only, while EX-ACT will use Tier 2 values automatically wherever specified)

Type of vegetation that will be planted	Growth rates for systems up to 20-yr old: Above-ground Default	Above-ground Tier 2	Below-ground Default	Below-ground Tier 2	Growth rates for systems after 20-yr old: Above-ground Default	Above-ground Tier 2	Below-ground Default	Below-ground Tier 2	Litter Default	Litter Tier 2	Dead wood Default	Dead wood Tier 2	Soil carbon Default	Soil carbon Tier 2
Forest - Zone 1	4.23		0.85		0.94		0.19		24.3		0		38	
Forest - Zone 2	2.82		1.58		0.71		0.39		24.3		0		38	
Forest - Zone 3	2.35		0.75		0.61		0.20		24.3		0		38	
Forest - Zone 4	1.41	8.6	0.38	3.44	0.35	8.6	0.10	3.44	24.3		0		38	
Plantation - Zone 1	4.70		0.94		4.70		0.94		24.3		0		38	
Plantation - Zone 2	3.76		2.11		3.76		2.11		24.3		0		38	
Plantation - Zone 3	2.35		0.75		2.35		0.75		24.3		0		38	
Plantation - Zone 4	2.35		0.63		2.35		0.63		24.3		0		38	

Carbon monitoring system based on EX-ACT for SFM, Uzbekistan

The Ex-Ante Carbon-balance Tool (EX-ACT) developed by FAO in 2010[28], to assess a project's net carbon-balance. This is the net balance of tons of CO_2 equivalent (tCO_2-eq) GHGs that were emitted or carbon sequestered as a result of project implementation compared to a "without project" scenario. EX-ACT captures project activities in following five modules: land use change, crop production, livestock and grassland, land degradation, inputs and investment. EX-ACT estimates the carbon stock changes as well as GHG emissions per unit of land, expressed in tCO_2-eq per hectare and year. When the results are negative, it means the sequestration of carbon, a positive one means the emission of CO2eq. **It should be noted that the uncertainty level with project is 39,4 percent partly explained by the absence of essential data related to carbon sequestration and forest characteristics.**

EX-ACT is particularly applicable for SFM as it offers the following advantages:

- Simple, user friendly, interactive, and participatory;
- Robust and offers a broad of scope of GHG analysis;
- Flexible in terms of requirements for coefficients and site-specific data;
- Can handle land use conversion, changes in forest and grassland management practices and projections over long time horizons;
- Its outputs can also be used in the financial and economic analyses of projects.

Typically, GHG emissions are reported in units of carbon dioxide equivalent (CO2e). Gases are converted to CO2e by multiplying by their global warming potential (GWP)[29]. The emission factors listed in this document have been converted to CO2e automatically by EX-ACT using the GWP listed in the table below.

Gas	*100-year GWP*
CO_2	1
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC), fourth Assessment Report (ar4), 2007. See the footnote for further explanation.

The carbon balance (C Balance) of the project which consists on the difference of tCO2-eq emitted or sequestered between a scenario with project and a scenario business-as-usual (BAU or baseline scenario) demonstrate the benefits of implementing the project and its different components in terms of mitigation potential. For this project which covers 20 years in EX-ACT (5 years of implementation and 15 years of capitalization), the **net carbon balance is -4,120,427 tonnes of CO2-eq** which means the sequestration of almost 4,1 million of tCO2-eq on the entire project (20 years) and a **mitigation potential of -2,4 tonnes of CO2-eq per hectare and per year** compared to a scenario ''without project'' (Business-as-usual, BAU scenario).

[28] EX-ACT Tool - FAO

[29] Global Warming Potentials: The Global Warming Potentials (GWP) used for presentation of CH4 and N2O in terms of CO2 equivalent are 21 and 310, respectively. For HFCs, PFCs, and SF6 the GWP values for a 100 year time horizon have been used. (source of GWP: Climate Change 1995: The Science of Climate Change, table 4, p. 22, Intergovernmental Panel on Climate Change, 1996).

Among the components of the project, the afforestation activities which cover a total of 3,475 hectares through the four pilot sites presents the highest mitigation potential with a carbon balance of - -1,726,848 tCO2-eq or -24,8 tCO2-eq. /ha/year. Table 2 indicates that afforesting 1,000 of grassland with juniper trees has a mitigation potential of -42,558 tCO2. year^{-1} or 42,6 tCO2-eq per hectare per year, followed by the firewood plantation of 230 ha with a mitigation potential 5,532.5 tonnes of CO2eq per year or -24 tCO2-eq/ha/year.

Promoting a better management of 50,750 hectares of degraded grassland is the second project component with the highest mitigation potential in terms of net carbon balance with a mitigation potential of -1,546,818 tCO2-eq but a small emission factor of -1,5 tCO2-eq/ha/year.

Table 3. Carbon balance from SFM Project in Uzbekistan

EX-ACT Module	**SFM Activity**	**Area (ha)**	**C balance (tCO2-eq)**	**C Balance tCO2-eq.year^{-1}**	**Emission Factor (tCO2-eq.year^{-1}.ha**
Afforestation (under LUC)	*Forest Restoration – Juniper*	1,000	*-851,154*	*-42,558*	*-42,6*
	Firewood Plantation	230	*-110,650*	*-5,532*	*-24*
	Shrubs Plantation	20	*-7,217*	*-360*	*-18*
	Creation of shelterbelts	2,225	*-757,826*	*-37,891*	*-17*
	Total	***3475***	***-1,726,848***	***86,342***	***-24.8***
Agriculture (under LUC/ Crop Production)	*Pistachio Tree Plantation (Perennial)*	1,910	*-222,212*	*-11,110*	*-5,8*
	Plantation of Medicinal/Aromatic annual crops (Annual)	600	*-816*	*-40.8*	*-0.06*
	Total	***2,510***	***-223,028***	*-11,151*	*-4.4*
Grassland	*Improved management of degraded grassland*	**50,750**	***-1,546,818***	***-77,341***	***-1.5***
Forest Degradation and management	*Improved management of degraded forest lands*	**28,000**	***-623,733***	***-31,187***	***-1,1***
Net Carbon Balance			**-4,120,427**		
Net carbon balance Per hectare per year					***-2,4***

The highest carbon sinks will result from the afforestation activities ***(-1,726,848 of tCO2-eq)*** followed by the management of degraded grasslands ***(-1,546,818 tCO2-eq)*** and the better management of degraded forest areas ***(-623, 733 tCO2-eq).***

The table 4 describes the carbon balance of each project site. It emerges that the activities deployed in the Dehkanabad FO (site 2) which comprise a better forest management, a better grassland management, the conversion of grassland into pistachio tree plantation, the forest restoration of Juniper trees and the conversion of grassland into firewood plantation presents the highest carbon balance. With 36,530 ha affected by the project

intervention the carbon balance is close to -1,839 million of tonnes of CO2-eq for the entire duration of the project (implementation and capitalization phase) or -91,961.2 tCO2-eq.year-1. It means that the carbon sequestration potential is higher in this site and is followed by the POP FO (Site 4) site with a net carbon balance of -862,680 tCO2-eq. The Sirdaryo FO (Site 1) site presents a carbon balance of -39,395.1 tCO2-eq for the entire project duration and -39,395 tCO2-eq per year. The Kitab FO (Site 3) site is also presenting a carbon sink of -628,813 tCO2-eq for the entire project accounting period or -31,441 tCO2-eq per year.

Table 4: Carbon balance for each project site in Uzbekistan (in tCO2-eq and tCO2-eq.year^{-1})

Project Site	SFM Activity	Area (ha)	Carbon balance (tCO2-e)	Carbon Balance tCO2-eq.year^{-1}
Sirdaryo FO Site 1	*Improved management of degraded grassland*	750	*-22,859*	-1,142.95
	Plantation of shrubs	20	*-7,217*	-360.85
	Creation of shelterbelts	2,225	*-757,826*	-37,891.3
	Total	***2,995***	***-787,902***	***-39,395.1***
Dehkanabad FO Site 2	*Forest Management*	18,000	-400,971	-20,048.6
	Grassland Management	17,000	-518,146	-25,907.3
	Pistachio Tree Plantation (LUC)	510	-59,334	-2,966.7
	Forest Restoration – Juniper (Affor)	1,000	-851,154	-42,557.7
	Firewood Plantation	20	-9,618	-480.9
	Total	***36,530***	***-1,839,224***	***-91,961.2***
Kitab FO Site 3	*Forest Management*	5,000	-111,381	-5,569.05
	Grassland Management	10,000	-304,792	-15,239.6
	Pistachio Tree Plantation	1,000	-116,341	-5,817.05
	Firewood Plantation (Affor)	200	-96,180	-4,809
	Total	***16,200***	***-628,695***	***-31,434.8***
POP FO Site 4	*Improved management of degraded forest lands*	5,000	-111,381	-5,569.05
	Grassland Management	23,000	-701,021	-35,051.1
	Plantation of Medicinal and aromatic plants	600	-816	-40.8
	Pistachio Tree Plantation	400	-46,536	-2,326.8
	Firewood Plantation	10	-4,852	-242.6
	Total	***29,010***	***-864,606***	***-43,230.3***
Total GHG sink			**-4,120,427**	
Net Carbon Balance			**-4,120,427**	-206,021

Given the inserted information, EX-ACT indicates the following impacts on GHG emissions and carbon stock changes:

Results Provided by EX-ACT

Project Name	Uzbek SFM project (GEF)	Climate	Warm Temperate (Dry)	Duration of the Project (Years)	20
Continent	Asia (Continental)	Dominant Regional Soil Type	HAC Soils	Total area (ha)	84735

Components of the project	Gross fluxes Without	With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	Soil	Other	N_2O	CH_4	Result per year Without	With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	-130,224	-1,857,072	-1,726,848	-1,726,848	0		0	0	-6,511	-92,854	-86,342
Other LUC	9,044	15,380	6,337	3,886	2,438		12	0	452	769	317
Agriculture											
Annual	-12,419	-14,902	-2,484	0	-2,695		211	0	-621	-745	-124
Perennial	-34,169	-261,049	-226,881	-217,294	-9,587		0	0	-1,708	-13,052	-11,344
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	-1,546,818	-1,546,818	0	-1,546,818		0	0	0	-77,341	-77,341
Livestocks	0	0	0				0	0	0	0	0
Degradation & Management	0	-623,733	-623,733	-538,392	-85,342		0	0	0	-31,187	-31,187
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	-167,768	-4,288,195	**-4,120,427**	-2,478,647	-1,642,003	0	223	0	-8,388	-214,410	-206,021
Per hectare	-2	-51	-49	-29.3	-19.4	0.0	0.0	0.0			
Per hectare per year	-0.1	-2.5	-2.4	-1.5	-1.0	0.0	0.0	0.0	-0.1	-2.5	-2.4