



United Nations Development Programme

Country: Azerbaijan

PROJECT DOCUMENT¹



Project Title: Sustainable land and forest management in the Greater Caucasus landscape

Outcome 1: By 2015, non-oil development policies result in better economic status, decent work opportunities and a healthier environment in all regions and across all social groups.

UNDAF Outcome(s): Component 3: Reducing the vulnerability of the environment to the effects of economic growth, while reducing the vulnerability of the economy and the population to the effects of climate change and natural disasters through climate risk management.

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:

Mobilizing environmental financing

UNDP Strategic Plan Secondary Outcome: Promoting Adaptation to Climate Change

Expected CP Outcome (s):

Outcome 1.3: Relevant national strategies, policies, and capacities strengthened to address environmental degradation, promote the green economy, and reduce vulnerability to climate change.

Output 1.3.5: Pasture degradation in mountainous areas reduced through improved land management practices.

(Those linked to the project and extracted from the country programme document)

Expected CPAP Output (s)

n/a

Executing Entity/Implementing Partner: Ministry of Ecology and Natural Resources.

Implementing Entity/Responsible Partners: Ministry of Ecology and Natural Resources

Brief Description

The objective of the project is the sustainable land and forest management in the Greater Caucasus Landscape secures the flow of multiple ecosystem services, including carbon storage and sequestration and water provisioning services, while ensuring ecosystem resilience to climate change. The project will engineer a paradigm shift from the current unsustainable practices to sustainable land and forest management practice. The project will address barriers to sustainable pasture and forest management. In doing so it will support measures to mitigate CC such as managing natural forests to emphasize natural regeneration through improved grazing and wood collecting in forests. It will avoid GHG emissions caused by degradation, increase sequestration through enhanced biomass and improve the productivity of forests and pasturelands. This would result in short and long-term global benefits.

Programme Period:	2011-2015	Total allocated resources:	\$18,532,595*
Atlas Award ID:	00063140	• Regular	
GEF Project ID:	00080444	o UNDP	\$383,895
EC component Atlas Award ID	00072191	• Other:	
EC component Project ID:	00085357	o GEF	\$5,680,000
PIMS #	4418	o EC	€1,000,000
Start date:	January 2013	o Government	\$4,500,000
End Date	December 2017	• In-kind contributions	
Management Arrangements	NEX	o FAO	\$500,000
PAC Meeting Date		o Government	\$6,170,000
		* EC contribution included in the total was converted with the rate 1.2987	

¹ For UNDP supported GEF funded projects as this includes GEF-specific requirements

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

Date/Month/Year

Agreed by (UNDP):



Date/Month/Year

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List of acronyms

AFLD	Azeri Forum on Land Degradation
AZ	Azerbaijan
C	Carbon
CC	Climate Change
DFD	Department of Forest Development
FAO	Food and Agriculture Organization
FUA	Forest User Association
GC	Greater Caucasus
GEF	Global Environment Facility
IPCC	Inter-Governmental Panel on Climate Change
IPFMP	Integrated pasture and forest management plan
LC	Land Code
LFL	Land Fertility Law
LLL	Land Lease Law
LULUCF	Land-use, Land-use Change and Forestry
LWG	legal working group
MoA	Ministry of Agriculture
MoENR	Ministry of Ecology and Natural Resources
MoES	Ministry of Emergency Situations
MRV	means of reporting and verification
NAS	National Academy of Sciences
NLA	Normative Legal Act
NAPCD	National Action Plan to Combat Desertification
NTFP	non-timber forest products
PES	Payment for ecosystem services
PUA	Pasture User Association
REDD	reduced emissions from deforestation and degradation
REA	Rayon Executive Authority
RSC	Rayon Stakeholder Committee
SLM	Sustainable Land Management
SCLC	State Committee on Land and Cartography
SFM	Sustainable Forest Management
tCO ₂ eq	tonnes CO ₂ equivalent
TSPF	Ten-year Strategic Plan and Framework, UNCCD
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	UN Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNECE	UN Economic Commission for Europe
SPPRSD	State Programme for Poverty Reduction and Sustainable Development

SITUATION ANALYSIS

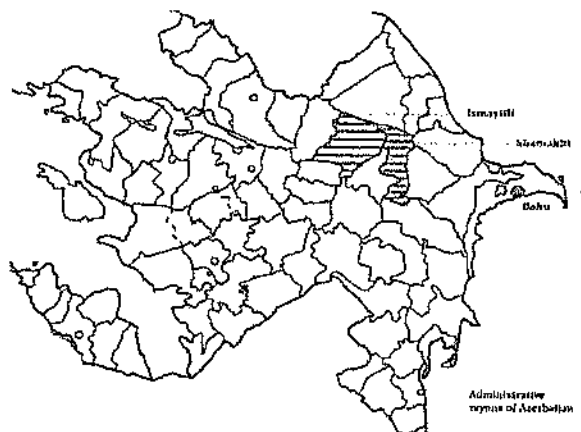
1. Azerbaijan (AZ) is a mountainous country on the western coast of the Caspian Sea of 86,600 km² and a population of approximately eight million people. Forests cover 1,178,500 hectares, or 11.6% of the country's land area. The Greater Caucasus Mountains of northwestern Azerbaijan contain the country's highest peaks, most extensive forests and 50% of the country's pasturelands. The variety of microclimates, soil and vegetative conditions has led to a broad range of landscapes and unusually high levels of species diversity in the temperate zone. Of the six land-use categories defined for the LULUCF sector, forests and pasturelands represent two of the most important sinks for Carbon (C) in AZ. Critical ecosystem services sustained by forests and pastures include: supporting (nutrient cycling, soil formation); provisioning (food, fresh water, wood, fuel); regulating (climate & flood regulation), and cultural (aesthetic, educational, recreational).

2. **Pastures:** Approximately 591,100 hectares of pasture can be found in the GC: 247,300 ha of summer pastures and 343,800 ha of winter pastures. Although C emission and sequestration figures for grasslands have not yet been developed in AZ, a significant body of work worldwide makes it possible to estimate the potential (an average value under sustainable management) for C sequestration in AZ's pasturelands². Carbon stocks vary associated with climate zone, vegetation type, soils, and management. The potential Carbon is estimated at 4,939,374 t C and 33,492,098 t C for the project rayons and GC, respectively. Critical ecosystem services sustained by forests and pastures include: supporting (nutrient cycling, soil formation); provisioning (food, fresh water, wood, fuel); regulating (climate & flood regulation), and cultural (aesthetic, educational, recreational).

3. **Forests:** The GC's 483,800 ha of forests are comprised of three main types: coniferous (1.5%), broadleaved (92.6%) and other deciduous trees (5.9% ha). Approximately 15% of these are considered to be "closed forest" with a canopy cover of greater than 40% and the remaining 85% are considered to be "open and fragmented" with 10% - 40% canopy cover and a height of less than 5 meters. These figures demonstrate the significant potential to increase the C stocks and to enhance Azerbaijan's global role as a Carbon sink.

Project area:

4. The project area encompasses the region of Azerbaijan known as the Greater Caucasus Mountains, encompassing 11 rayons or districts of northwestern Azerbaijan. It includes two rayon's in the southeast of this region, Ismayilli and Shamakhi, which will serve as pilot areas for demonstrating improved pasture and forest management (see the figure to the right). This covers an area of just over 22,000 km². Their characteristics include: (i) their forest and pasturelands are representative of forest and pastureland across the GC region, which will facilitate replication; (ii) they are prone to degradation largely from over-grazing, with steep upper catchments and upper river beds and have a history of increasing problems related to erosion; (iii) there are many communities within them, who are users of the pasturelands and forest resources; (iv) the economy of the basins and the human activities associated with them are typical of the



² C. Neeely et. al. 2009. Review of Evidence on Dryland Pastoral Systems and Climate Change. FAO. & Follet, R. F. et. al. 2001. The Potential of US Grazing Lands to Sequester Carbon and Mitigate the Greenhouse Effect. CRC Press.

region; and (v) they are relatively close to Baku, which makes it more cost-effective to work and demonstrate SLM and SFM in these areas.

5. The project concentrates on the summer pastures of Ismayilli rayon, winter pastures of Shamakhi rayon and forest lands and river valleys of both rayons. Semi-arid areas dominate the lower elevation lands, forests dominate at mid-elevations, and summer pastures occur at the higher elevations. Climate in the rayons varies from warm semi-desert and dry steppes in the lower elevation plains, to warm subtropical climate to about 600 m and then a cold mountain environment at higher elevations. Shamakhi and Ismayilli rayons are dominated by a temperate continental forest ecoregion with smaller areas of temperate desert at lower elevations and a temperate mountain system at higher elevations. IPCC categorization places the rayons in the Warm Temperate Dry and Cool Temperate Dry and Cool Temperate Moist IPCC climate zones (Table 1). For Ismayilli rayon the digital elevation model (DEM) used for analyses showed a maximum elevation of 3150 m and a minimum of 1 m. The mean elevation for Ismayilli is 985 m (sd 628.1 m) compared to a mean elevation of 883.6 m (s.d. 615.8 m) for Shamakhi rayon. The minimum and maximum elevations for Shamakhi are -13 m and 2,501 m, respectively.

Table 1. Ecological regions (ha) and IPCC climate types (ha) for Ismayilli and Shamakhi rayons.

Rayon	Ecological Region (ha)			IPCC Climate Type (ha)		
	Temperate continental forest	Temperate Desert	Temperate Mountain	Warm Temperate Dry	Cool Temperate Dry	Cool Temperate Moist
Ismayilli	158,834	17,033	31,391	121,051	67,213	20,141
Shamakhi	100,755	25,822	8,203	79,340	52,892	3,306
Totals	259,589	42,855	39,594	200,391	120,106	23,447

Note: Total area of rayons by ecological region and IPCC Climate Type will vary slightly – less than 0.5%– due to differences in pixel sizes of spatial data.

6. Pastures of pilot rayons. Ismayilli Rayon contains 26,591 ha of summer pasture, of which 12,667 are leased by Ismayilli rayon to pastoralists. The remaining hectares of the summer pastures in Ismayilli are under the management of other neighboring rayons. In Ismayilli municipal summer pastures comprise 4,475 ha and the sheep numbers on this area are estimated to be 30,000. See Table 2.

Table 2: Ismayilli and Shamakhi rayons: Pasture area, livestock numbers and area leased (Source: Local rayon executive authority).

Rayons	Total winter Pasture	Total summer pastures	Total area of leased rayon pastures *	Number of livestock	Stocking rate on leased pastures (summer)
Ismayilli	0	26,591	25,961	142,587	5.4
Shamakhi	15,362	24,943	20,468*	143,320	7.00
Totals	15,362	51,534	46,429	285,907	6.16

*Total area of leased pasture is different from total pasture as some areas are too rocky or have other limitations that make grazing infeasible.

7. The winter pasture areas of Shamakhi are dominated by semi-desert and dry steppe vegetation associated with low precipitation and warm climate. The semi-desert type is dominated by various *Artemisia* species (i.e., *A. lerchiana*), chenopod shrubs (i.e., *Kochia* sp., *Salsola* sp.), grasses (*Poa bulbosa*, *Festuca* sp., *Hordeum* sp., *Stipa* sp.), and numerous forbs with high numbers of ephemeral species. The dry steppes will have similar species but less Chenopods except in salty areas and greater coverage of perennial forbs and bunchgrasses. Soils are generally carbonate rich clays and silts and for winter pastures are broadly classed as chromic cambisols and luvisols using the World Soil Database (WSD). The summer pastures are found in the high mountain meadows and subalpine and alpine areas of the two rayons. Temperature and precipitation is greatly influenced by the

ographic effect of elevation and large mountain valleys. Most of the precipitation occurs from May to September. In December the maximum average thickness of snow cover is about 10 cm in the foothills, 20-25 cm in middle mountainous relief, and more than 70 cm in the high mountains. The summer pastures in general contain high potential for soil organic carbon, but also losses associated with unsustainable livestock grazing.

8. Forest cover of Ismayilli and Shamakhi rayons are estimated at 31,147 ha and 8,195 ha respectively and consist almost entirely of deciduous forests (see Table 3). The forests are separated into 3 major types (beech, oak and hornbeam) associated with the dominant species. Other important forest species include ash, maple, birch, elm, alder, *Tilia*, and many wild fruit tree species and nut species (plum, mulberry, walnut, chestnut, hazelnut, pistachio, apple, and pear). Also, gallery forests along rivers and streams comprise an unknown area of an important forest type, which is extremely degraded from past uses. Understory species of the forests are diverse and supply local people with non-timber forest products (NTFP) such as medicinal plants, berries, and herbs. These forests are also important as a fuel source for those without gas; however, trees are only cut for fuel or lumber if the forests are in need of maintenance (disease, insects, or stagnation).

Table 3. Total of common¹ and forest covered lands of Great Caucasus.

Rayon	Common Forest Fund Lands (ha)	Forest covered lands (ha)
Ismayilli	33,878	31,147
Shamakhi	12,084	8,195
Total	45,962	39,342

¹ Common forestland is a mosaic of various types in the forest region. Forest covered lands are closed forests.

9. Forest inventories are conducted once a decade to determine the forest condition and productivity. Higher production forests are lower bonitet³ class and data for the rayons from the last inventory (2004) are presented in Table 4. From the data it is evident that there are few forests in the higher productivity classes (I-II) with only 7.2% and 6% in Shamakhi and Ismayilli rayons, respectively. The middle productivity trees (Class III) comprise a 27% and 50% of forest area in Shamakhi and Ismayilli rayons, respectively. Low productivity trees (class IV-V) make up a significant portion of the forests in Shamakhi (66%) and in Ismayilli (44%). The large percentage of forests in bonitet classes representing poor stand structure (low density or volume) is evidence of unsustainable forestry practices in the past, including the inadequate management of forests for robust ecosystem values such as healthy species composition, age structure and carbon sequestration. These figures once again demonstrate the significant potential to increase the C stocks in the pilot rayon's and to enhance Azerbaijan's global role as a carbon sink. There is no inventory data on the 3,000 ha of municipal forests of Ismayilli rayon. Field inspection of some of these areas showed significant fuel wood harvest, poor density of trees, but also a good potential for improved forest management.

Table 4: Tree type and bonitet class in each pilot rayon.

Rayon	Tree Type	Trees bonitet (ha/class)							Total	Mean bonitet
		I ^a	I	II	III	IV	V	V ^a		
Shamakhi	Beech	-	8.4	69.8	153.0	59.2	12.4	-	302.8	III, 0
	Oak	11.4	28.5	188.2	1050.8	2252.3	1160.2	139.9	4,831.3	IV, 2

³ Bonitet classes are determined according to natural conditions and anthropogenic impacts on forest conditions. The basic parameter of bonitet is average height and diameter of trunks of tree at a given age. In the current classification a low bonitet is near its potential and a higher class is farther from its potential.

	Hornbeam	5.7	24.1	288.8	969.6	1029.5	332.1	76.3	2,726.1	III, 7
Ismayilli	Beech	-	-	1991.3	1823.1	4070.6	430.5	-	8,315.5	III, 2
	Oak	-	-	89.3	2108.9	3775.7	1324.6	-	7,298	III, 9
	Hornbeam	-	-	531.6	6644.2	6761.5	1598.7	-	15,536	III, 6

10. PPG analyses reveal significant losses of carbon associated with current conditions of forest and pastures and potential improvement in carbon with improved management (see Barrier #3 below and Annex G for details). The project will improve forest and pasture carbon by improving forest and pasture management through demonstration of improved SLM and SFM practices and demonstration of projects to enhance and measure/verify carbon changes. Over time the improved management practices will be replicated cover the GC rayons significantly improving carbon stocks.

Factors Contributing to Land Degradation and CO2 emissions in the LULUCF sector in the Greater Caucasus:

11. Maintaining current poor management of pastures and forests will continue to degrade these resources and reduce their resilience. Carbon losses will occur with continued soil erosion with the carbon lost when oxidized in soil aggregates (perhaps 30%) and transported down mountainsides and into rivers. As the system becomes more degraded the pressures will increase on pastures and forests threatening livelihoods and continuing a cycle of poverty and poor management.

12. Climate Change and its Impacts on Forest and Pasture lands. Climate Change (CC) is the overarching factor contributing to land degradation in the Greater Caucasus. CC will impact and is thought to already be impacting the composition, extent and distribution of forests and pastures in the GC. Several models and existing data have examined the differences in climate and climate changes for Azerbaijan (UNFCCC, 2010). Temperature data from the National Hydrometeorology Department of MENR for 10-year period 1991-2000 showed that the mean temperature has risen by 0.41°C or three times higher than that of the 30-year period 1961-1990. This finding was consistent with the results derived from climate modeling (UNFCCC, 2010). The highest rise will be observed in the middle and higher mountainous zones of the Great Caucasus. The models also show that rainfall in 2021-2050 will increase by 10-20% compared to the period 1961-1990. The prediction is that despite the fact that climate change will be quite favorable for winter pastures, their area will not expand, and might even diminish. This will be mainly caused by soil erosion and an increasing use of lands for crops (UNFCCC 2010) as well as increased evaporative demands. Warmer temperatures mean higher rates of evaporation and evapotranspiration. In turn, this means an increase in water demands for plants, animals, humans and the natural environment. It would also mean drier soil conditions that could aggravate erosion and loss of soil integrity. In the future, the area of summer pastures might expand, but due to limited availability of suitable lands in these areas there will not be a great change. The expected rise in rainfall level in these areas with humid or extremely humid conditions will have little effect on productivity growth. However, if anthropogenic pressure is not reduced, erosion processes will be more intensive as a result of the rise in rainfall. These findings only emphasize the need for improved land management to restore the resilience of forest and pastureland vegetation cover in the face of climate change impacts. As a result of the impacts from temperature and precipitation changes, Azeri experts project that noticeable changes will take place in the GC forest's climatic borders, which may cause even more pronounced degradation of the forest zone. The models of climate thus show an increase in elevation (>150 m) for forest growth associated with warmer temperatures and higher moisture. However,

under current management, severely overgrazed summer pastures and over-harvest of fuel wood near pasture lands, it is apparent that the forests will not be able to “move” up the mountain and as such there will be a loss of forest area as lower elevation areas become less hospitable to forests and upward movement is stymied by overgrazing and inappropriate forest management practices. As such, there is a significant potential for decreased carbon storage as climate warms if management remains the same. The following changes are expected: (i) a decrease of hard-deciduous areas by ~2.5% and soft-deciduous by ~20%; (ii) an increase by nearly 70% of the areas of shrubs; (iv) due to changing of ground composition and the decrease of the carbon stock in forests by 859,000 ha the annual increase of removed carbon will decrease by approximately 10,000 tons or 2%; (v) long-term land degradation in the GC Mountains; etc.

13. Overgrazing: is one of the primary contributing factors to pasture and forest ecosystem degradation. Between 1951–2008, the stocking rate for the pastures increased 5 times over the established carrying capacity (Table 5). Only in the past decade, sheep grazing in the GC has nearly tripled.

Table 5: Grazing pressure on Azerbaijan’s Pasturelands

Year	Winter pastures (million ha)	Summer pastures (million ha)	Number of sheep (million)	Stocking rate sheep equivalents/ha
1951	1.436	0.406	1.93	1.1
1982	1.395	0.26	2.88	1.7 – degradation started
2008	1.345	0.062*	8.2	5.8 (3x 1982 & 5x 1951 levels)
Estimated real number			12	8.4 (5x 1982 & 8x 1951 levels)

14. Over grazing results in: (i) soil loss (wind and water erosion); and (ii) soil impoverishment (change in physical and chemical aspects, e.g.: greater compaction, less macroporosity, decreased nutrient levels and organic matter. These factors interact. Increased soil loss from water erosion results in less water infiltration into the soil for plants; less water for plants lowers productivity; loss of organic matter into the system potentially reduces soil aggregate stability; which increases the likelihood of greater water runoff associated with decreased pore space, poor aggregate stability and so on.

- (i) Soil loss: More than 60% of winter pastures and 70% of summer pastures are eroded. Erosion is exacerbated by anthropogenic factors, particularly inappropriate grazing activities and localized cutting of forests on sloping lands. Nationwide, in 2001, 3.6 million ha, or roughly 42% of total land area was affected by erosion. Thirty-two percent was subject to severe erosion, 36% to moderate erosion, and 32% to mild erosion. Approximately 20% of forests are exposed to erosion includes about 49% of farmland and 20% of forests (UNECE 2003). Increasing grazing pressure, combined with increased temperatures over the last 50 years due to climate change, have resulted in an increasing intensity of erosion in the GC mountains each year, which results in more sedimentation (material being made available for big floods to wash downstream), causing river bed aggradation (a rising of the riverbed level in relation to the banks), which in turn results in more frequent and more damaging floods.
- (ii) Soil impoverishment reduces water infiltration, and retention capacity, increasing the level and rate runoff that leads to higher levels of erosion and resulting sedimentation. The same causal chain leads to increasing level of mudflows, due to weaker soil infiltration and retention capacity. Soil impoverishment also results in a shift where the original vegetation is replaced by unpalatable or grazing-resistant species. Consequently, the fodder availability on degraded land is less and with related species composition changes associated with

degradation and what fodder that is available is less nutritious than in healthy pastures. The organic impoverishment of the soil results in depleted soil carbon stocks and increased emission of carbon as well. Overgrazing reduces the ability of the plants to absorb carbon, reduces the amount of carbon stored in the roots, and ultimately reduces the amount that will be stored in the soil as organic compounds (for example, humus). Sustainable grazing practices can increase the rate in which some nutrients are exchanged with the plants and may even provide for compensatory growth and increased productivity in some grazed ecosystems; however, overgrazing will always result in a loss of ecosystem values.

15. Pastoralists and government entities dealing with pasture issues are continuing to adjust to many changes and stressors brought about by the collapse of the Soviet Union, the subsequent alteration of transhumant grazing systems, the loss of access to thousands of hectares of summer pastures as a result of the Armenian conflict and increased livestock numbers with refugees, and subsequent land ownership reforms under the 1996 Land Reform Law. The factors leading to overgrazing are ultimately associated with poorly coordinated government policies and programs or activities, few to no incentives for pastoralists to improve degraded pastures or even to manage their pastures sustainably, and a lack of understanding by pastoralists of multiple-resource values of pastures. Pasture management practices have not kept pace with these changes and the new challenges that require improved management. This is reflected in the inadequate regulatory support for such improved management, for applying state-of-the-art range ecology and rangeland management techniques, for meaningful stakeholder participation and in a lack of stakeholder experience in developing such approaches and capacity to implement them. It is reflected in the outdated and inadequate data available on existing pasture condition with the last pasture land inventory conducted in the 1950s. It is reflected in the lack of any kind of local grazing management program or extension support to help pastoralists build their capacity to apply modern rangeland management and monitoring practices, such as assessing and resting lands at higher risk of erosion/degradation, rotational grazing and site conservation threshold analysis.

16. Inadequate regulatory and policy support contributes to poorly coordinated management activities, a lack of incentives and disincentives for controlling animal numbers, and little to no engagement of resource users in land use planning and management. The lack of coordination can be observed by the complexity of government organizations involved (6) in direct responsibility of aspects of pasture issues, but with no structure for these organizations to coordinate activities or to work with pastoralists to improve management. As a result of these factors governance of pasture laws and regulations is at best uncoordinated and at worst non-existent, particularly with regard to stewardship.

17. The problems associated with poor governance have exacerbated problems herders have in managing their summer and winter pastures and ultimately ability to maintain viable livestock operations. Degraded winter pasture infrastructure and pasture condition reduce livestock nutrition and health reducing profits and ultimately decreasing options for pastoralists to modify grazing on the summer pastures. Azeri law allows for only 3% of winter pasture lands to be cultivated to raise critical feed for pregnant ewes and newborn lambs. An estimated 50% of winter pastures are degraded, due primarily to the inappropriate and excessive cultivation of these lands in recent decades. The lands were cultivated and then left with no follow-up restoration or treatment, degrading the pastures and leading to the predominance of unpalatable plant species, reducing the nutrients available to sheep in the pasture and threatening their health. In addition, most winter pastures lack suitable infrastructure (basic functional sheds and corrals) to provide shelter from extreme weather events and to control sheep herds during veterinary treatments. For example, if sheep are not able to be isolated after treatment for parasites, they can simply re-infect themselves, the pastures and the rest of the flock, rendering the treatment useless and the animals weaker. In

response and in an effort to minimize animal mortality from disease or extreme weather events, herders keep a larger number of animals than would normally be required in a “quantity over quality” approach.

18. Contributing factors to the degradation of forest resources in Azerbaijan’s Greater Caucasus include: overgrazing of livestock, inappropriate tree harvest for fuel wood and timber, and non-timber forest product harvest. Current forest conditions are associated with areas of degraded structure and species composition, as evidenced by lower densities and volumes of standing trees (bonitet class distribution). The factors contributing to current forest conditions can be linked to current management and past uses. With respect to current management, a common, casual “problem definition” offered during stakeholder discussions is that the contributing factors can be attributed to a lack of capacity to control illegal uses. This analysis questions this definition and offers a more nuanced one in the following paragraphs.

19. Specific gaps in current management form a common element underlying most of these contributing factors. Current management practice and approaches tend to stress default practices of “complete control” of forest resources by the government (in response to livestock grazing or use of some fuel woods), but this narrow management focus results in very high enforcement costs to the government in both money and good-will of nearby forest communities. Today the main problems of controlling livestock grazing, timber and fuel-woods, and the use of non-timber forest products, are attributed to unrealistic restrictions remaining from the command and control approach of the Soviet period. International best practice for improved multi-functional forest management practices replaces “command and control” with “communicate and collaborate.” International best practice stresses working with local communities and stakeholders in managing and monitoring forests for multiple products and values. The Forest Code (Article 63) also states people and public associations can participate in the sustainable use, protection and reproduction of forests. As such, people must also be part of the planning and monitoring of forest uses.

20. Other gaps in current management practice contribute to degraded forest conditions: First, if a forest has poor native species composition and/or degraded structure, current management practices do not seek proactively to improve these conditions through the application of modern silvicultural methods and techniques. There is no proactive forest condition improvement mechanism in current management that might build on restoration of forest structure, function and composition to provide ecosystem services and values. Second, although the degree and causative factors of degradation vary by area, it is apparent that the role of various stakeholders in forestry management is under appreciated in Azerbaijan and the value of forests for multiple products, values and services was undervalued until recently. Third, existing management does not apply a landscape approach to analyzing forest cover and age-class distribution, resource use patterns, areas at high risk of erosion and degradation, areas of high value for biodiversity or old growth status and so on. This hampers the ability of forest managers to set strategic goals and then to design a management program to reach those goals.

21. Timber or fuelwood harvest: Commercial forestry, especially in the late 1980s and early 90s over-harvested the country’s native hardwoods with high commercial value (chestnut, alder, linden, oak, beech), which degraded forest composition and structure. The chaotic transition period worsened the situation and in 1991, the government prohibited commercial timber harvest. Despite a ban on commercial harvest, illegal logging remained a concern up to the late 1990s and into the new millennia (estimated at 30,000-40,000 m³ annually (UNECE 2003, WB 2005a). Although timber harvest does still occur, the level has decreased dramatically during the last decade. Following the collapse of the Soviet Union and the end of subsidized energy, many rural households turned to wood for fuel, resulting in local deforestation. This use of fuel-wood is also declining as a result of ongoing ambitious programs by the national government to increase natural gas availability in rural

areas, programs that are intended in part to decrease the need for fuel wood. However, because of continued levels of poverty in many rural areas and convenience, fuel wood use is likely to remain a factor to be considered in planning of forest uses for the next 10 years.

22. Grazing has replaced inappropriate tree harvest as the primary contributing factor to the degradation of healthy natural forests in the GC Mountains. As pastureland productivity decreases, pastoralists will search out fodder and grazing opportunities in neighbouring forest regions, “drifting” across the pasture-forest border and encroaching upon forestlands more and more each year, degrading forest health, structure, quality, and carbon storage potential.

23. Livestock are grazed in forests primarily as a convenience (adjacency) and some forest pastures offer a desirable forage source at no cost to the pastoralists (illegal access with little control). In addition, selective harvest for timber or fuel-wood created trails and forest openings that allowed livestock to graze. With overgrazing these areas often did not regenerate and forests remain in poor structure and far from potential in regards to producing multiple forest values and products. Grazing is not “managed” by forest authorities currently, i.e. there is no official basis upon which or mechanism through which pastoralists and forest managers can meet and elaborate mutually beneficial arrangements to protect and restore forest health and contribute to improved nutrition and health for domestic animals. With the lack of a participatory planning process with local forest users reduces the stake local stakeholders have in the sustainable management of local forests. These factors are all contributing to reducing the ability of these forests to serve multiple functions on a sustainable basis.

The Baseline Project and the Problem the Project Seeks to Address:

24. The State Programme on Poverty Reduction and Sustainable Development (SPPRSD) #3043 (2008-2015) stands out as the primary State Program of relevance to this project as it has several components related to pasture and forest management. The Program: (i) calls for forest area to be increased from 11.5% to 12.5% of total land area by 2015; (ii) has specific provisions to address protection of lands from wind and water erosion; (iii) highlights the importance of participatory processes between government and civil society and international organizations; (iv) calls for training programs to increase the capacity of local staff of the central executive authorities in sustainable management of forest resources; (v) calls for improving the legal and regulatory framework and monitoring systems and resources for environmental management and preservation and to bring the national legal regulatory framework on environmental protection in line with international norms and standards, and the requirements of relevant conventions and treaties, as well as the legislative framework will be improved to better reflect the aims of environmental protection and effective use of natural resources. The SPPRSD is a milestone in Azeri development planning because for the first time, such a far-reaching State Poverty Program incorporated environmental issues into its work.

25. As stated in the co-funding letter from the Ministry of Ecology and Natural Resources (MoENR) co-financing to the project for the total amount of US\$10,670,000 cash and in-kind will be provided within the framework of the Action Plan (2011-2015) for the Implementation of the SPPRSD in Azerbaijan under the following priority activities:

- (i) 1.6.23. Rehabilitation of fertility of winter and summer pastures, improvement of soil cover, implementation of measures eliminating its use for purposes other than its designation; The SPPRSD and MoENR co-funding will build upon the State Program on Summer and Winter Pastures’ priority outcomes such as the “improvement of normative legal basis” and the “implementation of necessary land condition improvement activities” to restore pasture condition and productivity. However without GEF’s incremental and strategic support, efforts to improve pasture condition under the baseline project will be

severely hampered by a lack of pastureland ecology expertise, a low level of integrated multi-sectoral approaches to pastureland management; and the almost absence of useful data to underlie improved pastureland management. GEF's incremental support will enable stakeholders to fill such gaps and to pilot new tools and approaches to improve pastureland condition, productivity and CO₂ storage abilities. The SPPRSD also calls for the adoption of a National Action Plan to Combat Desertification and an action plan to be developed and implemented, to stimulate the sustainable use of land resources, and to protect and improve land fertility as well as to prevent water and wind corrosion of lands.

- (ii) 3.3.1. Sustainable management of forest reserves: the MoENR's Department of Forest Development (DFD) has planted nearly 70,000 hectares of forest from 2003 to 2010 with the goal of restoring forests in already forested areas and creating new forests in areas not normally forested. While the program continues to work nationwide, the emphasis of it was on planting trees in areas not part of the forest fund – along highways or around reservoirs and so on. The program focuses almost entirely upon mechanical planting of forest “plantations” and has fewer elements that seek to encourage or catalyze natural regeneration of areas once forested that have been clear cut or overgrazed. The program also has no element in it that seeks to increase carbon sequestration as an important goal of the program. These are areas where the GEF's incremental investment will add and contribute to the forest baseline project to improve multi-functional forest management and increase the CO₂ absorption capacity of forestlands in the Greater Caucasus.

26. Forest management priorities and MoENR co-funding will focus upon a new national cadastre of forestlands, in addition to a new Bonitet classification of the standing forest to be conducted in 2014. Furthermore, new plantations of fast-growing tree types will be planted to meet the demand of the people for wood and provide a temporary solution to local deforestation issues while new natural gas infrastructure is installed in villages across the project region.

27. Forest management priorities and MoENR co-funding will focus upon a new national cadastre of forestlands, in addition to a new Bonitet classification of the standing forest to be conducted in 2014. Furthermore, new plantations of fast-growing tree types will be planted to meet the demand of the people for wood and provide a temporary solution to local deforestation issues while new natural gas infrastructure is installed in villages across the project region. Where “faster growing” tree species are recommended the species will be native, site adapted and often lower or mid-seral tree species to provide forest cover and improve the rate of restoration. Species planted will be dependent on site conditions (for example, riparian species will consist of native *Populus*, *Salix*, *Alnus*, *Betula*, etc.) and include the following: common ash (*Fraxinus excelsior*), white poplar (*Populus alba*), beech (*Fagus orientalis*), elms (*Ulmus sukaczewii*), oleaster (*Elaeagnus angustifolia*), walnuts (*Juglan regia*), Caucasian persimmon (*Diospyros lotus*), Eldar pine (*Pinus brutia* var *eldarica*), mulberries (*Morus alba*), Caucasian hornbeams (*Carpinus caucasicus*), Caucasian hackberry (*Celtis caucasica*), birch (*Betula litwinovii*), maples (*Acer platanoides*, *A. velutinum*, *A. spp.*), Linden (*Tilia caucasica*), oaks (*Quercus castaneifolia* *Quercus iberica*, *Q. lognipes*, *Q. macranthera*), mountain ash (*Sorbus spp.*), alders (*Alnus sp.*), plums and apricots (*Prunus sp.*), pistachios (*Pistacia vera*) and apples (*Malus domestica*).

28. The Department for Forest Development has made steady progress increasing total forest area nationwide by 0.4% mainly through aforestation. However, the progress of rehabilitation of natural forestlands in the GC has been even slower, mainly due to the lack of funding, but also to weak capacity and one-dimensional forest management approaches (protection only). This is beginning to change. To further address the threats coming from the illegal collection of wood for fuel and emerging threats related to illegal logging, the DFD is considering creating community forests together with local villages. This is a significant development as it is a harbinger of a new, more integrated approach to forest management in Azerbaijan. This project's incremental investments will help to nurture this development going forward.

29. The implementation of SPPRSD in the relevant priority areas described above is and will continue to be hampered by inadequate regulatory guidance on “how” to carry out the sustainable land and forest management work that will yield national and global benefits. GEF's incremental

investments as described in this project and the GEF influenced changes to the baseline project summarized in Table 6 will enable stakeholders to increase their capacity to elaborate and implement SLM and SFM activities that will improve pasture and forest land condition and prepare Azerbaijan to participate in cutting edge global climate change mitigation initiatives such as REDD. GEF's incremental investments will enable stakeholders to pilot new practices in sustainable pasture management (monitoring, grazing practices, restoration) and new tools such as PES to protect and restore critical ecosystem services provided by healthy summer pastures in the Greater Caucasus Mountains.

Table 6: Relevant co-funded activities by component

MoENR Co-funding by Component	Relevant Ongoing Activities providing co-funding	GEF influenced changes to baseline project activities providing co-funding
Component 1 Co-financing: \$1,800,000 (in-kind)	<ul style="list-style-type: none"> - Elaboration of new state programs for forest and pastureland management. - Training programs to increase the capacity of local staff of the central executive authorities in sustainable management of forest resources. 	<ul style="list-style-type: none"> - Support and engagement in the strengthening of the law and policy framework for strengthened multi-functional forest and sustainable pasture land management; - Participation in legal working group. - Revised training programs incorporate ecosystem-based forest management principles, carbon monitoring, carbon sequestration-oriented management, and so on.
Component 2 Co-financing: \$4,260,000 (Cash)	<ul style="list-style-type: none"> - Reforestation/aforestation management planning - Implementation of technical, top-down reforestation/aforestation projects using a non-participatory, unilateral approach. 	<ul style="list-style-type: none"> - Support and participation in the development of integrated pasture and forest management plans; - Support and participation in new multi-stakeholder committees. - Improved management of pastures through new and improved collaboration with local pastoralists and improved multi-functional forest management through a more participatory approach designed to clarify and maximize multiple benefits of forest resource use. - new national cadastre of forestlands, in addition to a new Bonitet classification of the standing forest to be conducted.
Component 3 Co-financing: \$4,200,000 (in-kind)	<ul style="list-style-type: none"> - New plantations of fast-growing tree types will be planted. 	<ul style="list-style-type: none"> - New plantations of fast-growing trees planted in a way to maximize CO2 sequestration; - Pastureland management and restoration practiced in a way to enhance soil carbon sequestration, including seeding of native nitrogen fixers; - Participation in/leadership of project-inspired local stakeholder committees. - Support for replication of the project's work.

30. Table 6 summarizes the relevant ongoing co-funded activities as well as those co-funded activities that will be "re-oriented" as a result of this GEF project's incremental investments. This project will complement and influence the MoENR and Government of Azerbaijan's SLM and SFM efforts by emphasizing the use of collaborative, participatory data-informed processes to achieve improved land condition, maintenance of ecosystem services, improved CO2 storage, and, improved carbon monitoring. This will include the piloting of PES to achieve improved pasture condition in upper catchment summer pastures. By working closely with the MoENR and its partner organization, the project will introduce and demonstrate the cost-effectiveness of these SLM and SFM management practices and in so doing, overcome the lack of awareness of such measures in Azerbaijan and help to direct the budget allocations of the MoENR and other entities to more cost-

effective SLM and SFM investments in the future. Other Azerbaijan State Programs (summarized under section A.2 above) lend weight to this baseline project but are not linked to project co-financing.

31. The baseline project falls short of achieving the long-term solution of sustainable land and forest management in the Greater Caucasus landscape securing the flow of multiple ecosystem services, while ensuring ecosystem resilience to climate change, due to the following three barriers in the baseline scenario:

Barrier #1: Inadequate legal, regulatory and institutional framework for sustainable forest and pasture management.

32. Currently, there is effectively no strategic and operational sustainable land management (SLM) agenda in Azerbaijan. There are pieces of what is the emerging SLM agenda, as manifested in the several important laws that deal with or are concerned with land degradation issues and the restoration of forestlands. There also exists an incomplete draft National Action Plan to Combat Desertification (NAPCD). However this NAPCD was drafted before the NCCD elaborated its “10-year strategic plan and framework (2008-2018).” The existing draft contains relevant background information but little no strategic program that incorporates international best practice to combat desertification. Like many of the land programs in Azerbaijan, this NAPCD also focuses mostly upon cultivated lands and degraded lands in old oil-producing areas. Forests and pasturelands are not addressed. There are approximately four major laws and government decisions relevant to the law and policy baseline of pasture and forest management in Azerbaijan.

33. Land Code (LC): The LC alls for the creation of proper conditions to use land efficiently and in an environmentally friendly way. While there are a number of normative legal acts (regulations) under the LC, none deal specifically with land-degradation or sustainable land and forest management. Although the Code designates Rayon and Municipal officials as being responsible for leasing summer and winter pastures under State ownership, the Code provides for no lead institution or agency with a clear-cut mandate for land (pasture) management, nor does it clarify divisions of responsibility and competencies among relevant institutions (MoENR, MoA, SCLC, REA), with respect to carrying out land (pasture) management in the land code. And finally, this is no regulatory guidance under the LC that spells out how the respective government bodies at national and rayon levels can most effectively collaborate to sustainably manage the nation’s pastures and forestlands. This hampers the ability of Azerbaijan’s primary institutions to engage and build consensus among all stakeholders in order to establish partnerships needed to achieve their objectives. New kinds of tools, methods, and incentives for SLM are not part of the Code. Indeed, the concept of providing incentives for positive outcomes has not yet been integrated into Azeri land-use law.

34. Land Lease Law (LLL) (1998): requires each land lease contract to include the terms for sustainable use. However, these terms are not comprehensively reflected either in the law itself, in any related NLA or in pasture lease agreements themselves. The LLL is an ideal entry point for regulatory guidance that would enable lessors to engage lessees in order to improve the capacity to monitor, evaluate, report and learn. This could be as simple as including basic indicators of “sustainable use” for pasturelands (forest lands are rarely leased) into the leasing agreements per regulatory guidance under the LLL. Azerbaijan lacks range ecology or pasture management specialists and there is a real lack of capacity in being able to incorporate such terms for the sustainable use and protection of pasture lands.

35. Land Fertility Law (LFL) (1999): is an important piece of legislation in Azerbaijan focused specifically upon land degradation issues. The LFL establishes the legal basis for restoring and/or maintaining the fertility of land in Azerbaijan. This law indicates the seriousness to which the Government of Azerbaijan views the problem of land degradation. However, to date, the focus of

this interest and government investment has been on degraded cultivated land across Azerbaijan's extensive lowland agricultural areas, and lands formerly used by the oil industry. To date, pasturelands have not benefited from the policy priorities declared in this law. LFL calls for the preparation of standards, guidelines, and normative legal acts (NLA) to provide guidance on how to restore, increase and maintain land fertility, but few if any have been elaborated for pasture and forestlands in the past 20 years in Azerbaijan and never under the LFL. The law calls for the coordination of restoration activities among relevant state bodies, municipalities, land users and tenants to ensure land fertility and to coordinate and match restoration measures with environmental protection but provides no regulatory guidance on how this should be done. These stipulations provide direct support for the piloting of a PES demonstration for strengthening coordination among key agencies to effect sustainable land and forest management.

36. The Forest Code: specifies multiple forest resources that are allowed to be used in Azerbaijan. Many forests border on summer pastures. The Code lacks any kind of regulatory guidance on how to handle grazing management in forest areas that border pasturelands. The Code pays no attention to carbon sequestration as a goal or purpose, and lacks any guidance on how to maximize the natural absorption and storage of carbon in Azerbaijan's forest fund. Some NLA are relevant to forest management, however the content of these NLA is outdated and has not been revised in over three decades. For example, there is a tendency for them to view forests not as a complex ecosystem but as standing timber, with little appreciation for the difference between "trees" and a "forest ecosystem." For example, there are no guidelines for how to use NTFP without degrading the forest ecosystem and in turn, the forest's ability to prevent erosion and absorb carbon. The Code includes no guidance on climate change and how the forests can be best managed, restored, and monitored in a way that will enable Azerbaijan to take part in and benefit from the global community's emerging programs in reduced emissions from deforestation and degradation or REDD. In addition, although forests and pasturelands are contiguous in many areas and overgrazing is a problem in many forest areas, there is no regulatory guidance in the Code that provides a mechanism for the DFD and pasture management organizations to work effectively together as a team.

37. "Guidelines for allocation and use of pastures, meadows and hayfields" Resolution #42, Cabinet of Ministers (15 March 2000) is the main legislation that regulates pastureland management. Although the guidelines require that the calculation of the acceptable animal load (stocking rate) for pastures be subject to an assessment of each pasture's plant cover, quality, volume, unique topography and soil humus layer thickness, the key management authorities (Rayon authorities, MoENR) lack the knowledge, experience and capacity to apply modern pasture ecology principles to sustainable pasture management planning and practice. The equipment to calculate this is outdated and the experts make their judgments based on desk estimates rather than specific data from the field. The guidelines include perverse incentives for what has led to widespread overgrazing. The guidelines specify penalties in the event of "under-grazing," ignoring "over-grazing" completely. The guidelines state that when a lessee fails to graze the promised number of sheep or if the herd completely fails due to disease or disaster or the ownership is replaced, the right for the use of the abandoned pasture areas is terminated by the decision of local executive authority or municipality.

38. "Guidelines for Allocation of funds from the state budget for improving financial incentives for wheat and rice producers and stimulating wheat and rice production", approved in November 2007. Under the Guidelines, farmers appeal to the special village-level commissions with the documents indicating their land ownership entitlement and title to use. The commission has 3 days to inspect the cultivated areas and prepare a report in 3 copies, one of which is given to the farmer. The incentive is then paid in the form of a debit card from the Government. These guidelines set the precedence for the government to use similar incentives to achieve other policy goals, such as SLM

and SFM. This precedence in Azeri law provides a baseline upon which to build a “payment for ecosystem services” kind of approach to support pasture and forest management.

39. The State Program on Pasture Management provides a solid conceptual basis and acknowledgement of the importance of maintaining and restoring the productivity and integrity of summer and winter pastures across Azerbaijan. However, the program lacks a comprehensive step by step program to do this, relying instead upon a list of environmentally related measures that place too much emphasis on overly technical and structural solutions and not enough on empowering stakeholders with new incentives and training program and institutional coordination to adopt practical new practices to bring about changed conditions for pasturelands.

40. Capacity of national, rayon and local level stakeholders to conceptualize and implement SLM and SFM policies and programs. No capacity assessment has ever been conducted to clearly and concisely characterize the capacity of national, rayon and local level stakeholders. But PPG activities and the Capacity Scorecard (score) (see Annex I) show clearly that capacity is quite low. There are no training programs in place or under implementation on these issues for national and rayon level officials. There are no training programs for use by rayon-level administrations to help build the knowledge and capacity of the actual resource users themselves with respect to SLM and SFM. Rayon administrations maintain some extension support services for pastoralists. These services primarily involve veterinary help and expertise in treating domestic animals. For example, Shamakhi Rayon employs eleven veterinarians for this purpose. Rayon extension support does not include any assistance provided in sustainable pasture management or in pasture surveys and restoration work, or in how pastoralists can maximize economic return using sustainable management and sustainable grazing practices.

Barrier #2: Minimal experience among key government and civil society stakeholders in developing and implementing SL&FM practices on the ground.

41. Improving management practices for pasture and natural forestlands in AZ has been hampered by inadequate coordination at the local level among the MENR, the MoA, REAs and Municipalities. Under the baseline scenario, the level of cooperation among key stakeholder groups on SLM and SFM issues will remain very low. Although at four national organizations have key responsibilities with respect to pasture and forest management (MoENR, SCLC, MoA, REA) no mechanism exists to enable these organizations to collaborate on both defining and solving problems. For example, although the MENR is responsible for conservation and sustainable use of natural resources, it has no role in permitting/leasing grazing lands, which is the purview of MoA and each REA. In addition, there is no mechanism that bridges the gap between and among local resource users (pastoralists, forest resource users, rayon level administrators (REA), and the national level ministries and committees. In an important development for resource use and management in Azerbaijan, water user associations have been set up in several rayon’s across the Greater Caucasus. Although these are not directly involved in this project, they are relevant in that they represent an emerging trend of organizing and empowering resource users at the local level to begin to fill the critical gap between national level programs and local level implementation and action, among other gaps. In the baseline scenario, without incremental support from the GEF, there will likely be no similar forest user or pasture user associations established as a means to enable pastoralists and forest users to improve their capacity and strengthen the level of interaction with rayon level and national level organizations.

42. The adoption and implementation of SLM/SFM at the local rayon level is hampered by the lack of experience among stakeholders in land and resource use planning for pasture and forestlands and the lack of a cross-sectoral, participatory land-use planning process at the rayon level. Although forest and pasture resources often are intermixed or contiguous to each other, there has been no

integrated management approach applied with respect to forests and pastures. Forest and pasture areas prone to erosion or areas of particularly high levels of degradation have never been identified and prioritized in a systematic way at the rayon level or any other level in Azerbaijan. In the baseline scenario, most efforts to address land degradation in Azerbaijan will continue to focus on two types of lands: degraded croplands and degraded lands formerly used by the oil industry (the pollution legacy from soviet times). In the baseline scenario, pasture and forestlands will continue to receive little if any attention with respect to sustainable land management.

43. The last inventory for pastures of any kind (national, rayon level, local) was done in 1959. No calculation of carrying capacity of these pastures has ever been done. Current stocking levels are based upon outdated data or non-existent data. In the last pasture survey there was an established stocking rate in which current leases are still partially based upon. Since the development of these surveys pasture degradation has continued, especially since the 1980s, further reducing pasture productivity associated with loss of desirable plant communities and dominance by weeds (especially in winter pastures but also on some summer pastures) and a decrease in soil fertility caused by wind erosion (winter pastures) and water erosion (summer pastures). During the Soviet period there was little thought given to multiple-use values or ecosystem services. Pastures were considered only for their value for livestock production and other values were not integrated into estimates of stocking levels.

44. Forest inventories in Azerbaijan are required to be conducted every 10-years. Since the end of the Soviet period, however, forest inventories have become increasingly more of a desk exercise, with fewer field checks conducted and fewer staff qualified to conduct such checks. The last forest inventories were conducted during 2004 in the pilot rayons, with the next forest inventory scheduled for 2014. A lack of basic inventory equipment and a lack of continuing education for foresters have hampered forest inventories in the past and will hamper the next inventory even more significantly, with the attrition of trained staff. There are no multi-resource values associated with the existing forest inventory methodology in use and the resulting data collected. Instead the inventories provide information on timber volume and age structure but do not include information on carbon, non-timber forest products, ecosystem services or other values and products that people use from the forest. In the baseline scenario, without incremental investments from the GEF, stakeholders will not be empowered in a participatory manner to map their forest and pasture land resources and to capture this information on practical digital maps to facilitate transparency and ongoing, proactive management. Likewise, there will no additional data collected on other values (carbon).

45. SLM-Pasture management: In the baseline scenario, improvements in the management of Azerbaijan's pasture lands will continue to lag behind the rate of degradation current practices are imposing upon the same pasturelands. In the baseline scenario, while pasture management programs and policies call for sustainable use, there will continue to be little if any practical, on-the-ground solutions for pasture and degradation and mechanisms to implement these solutions. Government programs will continue to apply top-down structural kinds of solutions rather than bottom-up processes and capacity building solutions. Bottom-up programs to enable pastoralists to develop their own simple and practical pasture management plans will continue to be unknown in Azerbaijan. Without incremental investments from GEF, use of new tools and the application of new pasture and rangeland management concepts such as "Site Conservation Threshold" will continue to be unknown in Azerbaijan. As a result, emissions resulting from the degradation of pasturelands, particularly from soil carbon released as a result of degradation, will continue unabated with no systematic effort undertaken to avoid these emissions. Monitoring of pasture condition using practical and affordable techniques will also continue to be unknown in Azerbaijan, resulting in pasture management policy making and management that is not based upon the actual pasture condition.

46. SFM-Forest Management. All the forests in Azerbaijan are state-owned. The Government has long recognized the importance of forests to its national well-being and has made and continues to make considerable baseline investment to address the forest loss and degradation through reforestation and afforestation, as described under the baseline project section. But in the baseline scenario, most forest management work in Azerbaijan will focus on planting forests in places that have not had forests traditionally and to a lesser degree in areas more recently forested. Without incremental GEF investments, multi-functional forest management and ecosystem-based forest management will continue to be only partially known and little practiced in Azerbaijan. Current forestry policy and practice is already oriented somewhat towards multi-functional management priorities. However there is no proactive “management” of Greater Caucasus forests currently undertaken. The basic concept of the forest providing multiple values and services is recognized, but the how to manage the forest in this way is not. The intention is there, but the ability to do so is not yet there without incremental support from the GEF. For example, the Forest Code makes the forest available to all citizens of Azerbaijan for recreation and the use/harvesting of non-timber forest products. Grazing and logging, however, are officially forbidden except with respect to the latter, for firewood cutting in designated areas. Overall, Azeri Government forest policy priority is first and foremost to protect the forest and secondly to allow nearly every use of the forest except grazing and logging. This well-meaning policy seeks to conserve the values that a healthy forest provides to Azeri society. Although forest policy calls for the protection of the forest and the restoration/replanting of new forest areas, actual proactive, participatory forest management in Azerbaijan is almost unknown.

47. The emerging forest management approach in AZ: (a) is not designed to engage effectively those grazing animals in the forest and causing forest degradation; (b) tends to focus more upon afforestation and reforestation and less upon proactive management and natural rehabilitation of natural forest in a way that avoids CO₂ emissions; (c) falls short of accounting for multiple forest ecosystem services such as carbon sequestration, flood regulation and forage. To date, Department of Forest Development (DFD) staff have focused on afforestation of non-forest areas and sporadic enforcement of prohibitions on natural forest resource use rather than engaging in participatory forest management and engagement with forest users. The nascent forest management capacity and the suspension of commercial cutting in AZ provides an opportunity to develop and adopt forest management practices to avoid carbon emissions from the GC’s extensive broad-leafed forests. The fact that AZ is in its initial stages of developing modern forest management capacity may facilitate the adoption of new approaches that reduce grazing pressure, restore forest structure, maintain forest cover, and minimize losses of dead organic matter.

48. There are no management plans for individual forest areas, there is little to no stakeholder participation in forest management planning or implementation by local communities and other stakeholders. As a result of this low level of stakeholder engagement in proactive, multi-value based forest management planning, the overall health of forest ecosystems in the Greater Caucasus has been weakened in many places because the non-timber values are not actively managed. For example, grazing is not proactively managed in forest areas, but rather tolerated, ignored or wished away. The Forest Enterprise/DFD establishes quotas for sanitary cutting in each rayon for firewood. The only forest resource for which permits are issued (and thus managed) are dead and/or diseased trees cut for “sanitary” reasons. Some permits are issued for “recreational tourism,” which in the GC consists of popular barbecue restaurants located along roads in the forest. No permits are issued or monitoring conducted on the use or harvest levels for NTFP (e.g. fruits, nuts).

49. In the baseline scenario, without GEF’s incremental support for piloting new tools such as “payment for ecosystem services,” pasture management will continue to suffer from a dearth of new

ideas and new tools to avoid future emissions caused by pastureland degradation, improved pastureland condition and reduced erosion and from pasturelands.

Barrier #3: Lack of robust (but practical) monitoring protocols and practices for carbon flows and the absence of AZ-tailored methodological approaches for carbon stock field assessment.

50. The MENR lacks a mechanism to access the cross-sectoral capacity necessary to update the GHG inventory with data on LULUCF for the next national plan. REDD can play key role as an incentive for SFM in AZ, but there is an inadequate policy framework and a lack of standards and methodologies for carbon forestry and SFM. In the baseline scenario, Azerbaijan will be slow to realize the potential advantages of taking part in the emerging REDD mechanism. Without incremental support from GEF, very little to no staff attention within the MoENR will be dedicated to the emerging field of REDD action planning and no national level forest sector reference emission levels will be set. Carbon sequestration will not be recognized as a valid management objective nor will verifiable measurements of carbon pools be conducted.

51. *Carbon flow monitoring baseline:* The baseline is an untested field methodology for forest inventory from which broad estimates of carbon have been resulting in data of un-verified accuracy. Currently, field carbon stock assessments of forest are not conducted in Azerbaijan and there are no formally accepted protocols recognized by MoENR for this. MoENR is responsible for managing the forest, but the State Land Committee does the mapping of forest areas, requiring close coordination for carbon flow monitoring and reporting. These maps have yet to be digitized with the benefit of satellite and GIS technologies, reducing their usefulness to MoENR in applying them for carbon flow monitoring.

52. Forest Protection and Rehabilitation Units are currently responsible for developing forest management plans, which are approved by the DFD and financed by the State budget. Emerging forest management in AZ has not yet started to plan for carbon market engagement and there is no practical experience with how to maximize the coverage and health of natural forests to contribute to REDD. The capacities to plan, implement and monitor specific REDD+ activities and practical SLM initiatives remain limited. To develop a plan, an inventory is required to assess the condition of forest; however, the quality of forest inventories has suffered because of a lack of expertise and/or training and low budget support. In order to integrate environmental considerations, such as carbon sampling, there will need to be institutional development (training to improve knowledge of forestry staff). The lack of continuing education of staff and reduction of trained forest professionals since the collapse of the Soviet Union has created significant lack of capacity that can be used in establishment of an inventory and land information system to provide updated and accessible information to government and stakeholders.

53. *Carbon storage:* On the site level, the capacity to implement multi-functional forest management while capturing the carbon mitigation functions of forests is practically non-existent. Reducing CO₂ emissions from and increasing sinks in the LULUCF sector of AZ is hampered by a lack of monitoring protocols and practices for carbon flows and the absence of AZ-tailored methodological approaches for carbon stock field assessment. In the baseline scenario, the productivity of natural forest in the GC will be much below its capacity⁴, with carbon stock levels also below capacity. In the baseline scenario, the capacity of forest management professionals will be low because of a lack of continuing education/training, especially on multiple values of forest ecosystems, and a lack of equipment and resources (including providing information to the public on forest values) to manage forests. With respect to municipal forests, no inventories of forest values and uses have been conducted of municipal forestlands and for many riparian forests sites for

⁴ The last forest inventory in Shamakhi and Ismayilli rayons shows a very strong potential for increases in bonitet classes of forest stands and thus improved potential for increased carbon storage and improvement of other values.

decades. Project preparation work found that municipal forests visited were unmanaged, often with poor species composition, and there were no plans to meet more desirable stand structures or production of values and products for communities. It was also evident that some trees were being removed without any forest plan (removal was illegal harvesting). Riparian forests have suffered severe degradation from cutting, overgrazing, dewatering, channel alterations, as well as other land use changes. As the baseline is no monitoring, no management, no planning, and little or no controls of uses a change in baseline using participatory monitoring and planning will improve the current situation. A significant area of forest fund lands have been overgrazed by livestock with no little or no control of livestock grazing in summer pastures adjacent to forest lands. As a result of degraded forest conditions carbon stocks are estimated at significantly below their potential and current annual increment maybe near 0 from illegal harvest, overgrazing or poor stand conditions. Baseline carbon stock calculations for forests are provided in Annex G. The forest carbon stock (SOC + CVEG) under current management conditions is estimated at 8,278,926 t C and 47,967,415 t C (99.15 t C/ha), respectively for pilot rayons and GC forests using IPCC (2006) guidelines and conservative estimates of degraded condition. The reduction of carbon associated with degraded conditions is 17.8%. Considering the forest fund lands of both rayons this decline results in a loss of 776,857 t C under the current baseline scenario.

54. *Baseline and Improved Grassland Carbon Storage.* Current summer pastures are overgrazed, many sites have accelerated erosion associated with mismanagement of grazing, and in general summer pastures are producing much below their potential. There is currently no carbon stock determinations or monitoring of pastures and this output will initiate pasture monitoring, carbon monitoring, and tracking of carbon using web-based tools. The default SOC IPCC (2006) for severely degraded pastures is a 30% reduction in soil carbon. Baseline estimates of carbon in soil and vegetation in the project rayons are 3,724,013 t C (49.12 t C/ha) and 215,169 t C (2.8 t C/ha), respectively. In the GC the baseline estimates of carbon in soil and vegetation are 25.8 M t C (43.6 t C/ha) and 1.5 M t C (2.5 t C/ha), respectively.

STRATEGY

55. The GEF funded alternative will address barriers to sustainable pasture and forest management in the Greater Caucasus Landscape. In doing so would influence production practices employed by economic sectors and will support measures to mitigate CC such as managing natural forests to emphasize natural regeneration through improved management of grazing and wood collecting in forests will avoid emissions caused by degradation, increase sequestration through enhanced biomass and improve the productivity of forests and pasturelands. This would result in global benefits both in the short and longer terms.

56. The **objective** of the GEF funded alternative is the sustainable land and forest management in the Greater Caucasus Landscape secures the flow of multiple ecosystem services, including carbon storage and sequestration and water provisioning services, while ensuring ecosystem resilience to climate change. The project will engineer a paradigm shift from the current unsustainable practices to sustainable land and forest management practice, as detailed in the table below:

Table 7. SLM/SFM Practices to be put in place by the project and associated benefits

Current Practice	Alternative to be put in place by the project	Selected Global Benefits
Overgrazing of pasture and forest lands exceeds carrying capacity by eight times; resulting in increased erosion, loss of site productivity, and loss of ecological resilience	Pilot stakeholder cooperation mechanisms established (Rayon multi-stakeholder committees, Pasture user associations, Forest user associations) to fully engage in the process of demonstrating improved pasture	a) Increased social capital (defined as trust, norms of reciprocity, and networks). b) 20,000 hectares of forests and 12,500 ha of pastures (summer and winter) in two pilot rayons under improved SLM and SFM.

Current Practice	Alternative to be put in place by the project	Selected Global Benefits						
<p>threatening livelihoods of pastoral communities, reduced ecosystem service values including a threat to biodiversity and contributing carbon emissions from reduced soil carbon entrainment.</p> <p>Little or no coordination of needs for pasture management among key stakeholders (pastoralists, national government, rayon government, and municipal government agencies).</p> <p>Integrated land management not practiced and cross-sectoral enabling environment (such as institutional coordination mechanisms) for integrated landscape management under-developed.</p> <p>No or little information on areas of concern regarding degradation. No pasture and forest mapping, inventory or monitoring.</p> <p>Government staff involved in pasture management working with pasture inventories do not consider multiple resource values (i.e. erosion control, animal health, C sequestration).</p> <p>Little or no integration of planning for summer/winter pasture use by pastoralists using the transhumant system. Livelihoods at risk due to degraded pasture condition.</p>	<p>management. Collaborative Resource management</p> <p>Development of stakeholder participation mechanism in forest and pasture management and empowered to reduce land and forest degradation and improve or restore land condition.</p> <p>Improved levels of cooperation and community among key stakeholder groups.</p> <p>Integrated pasture and forest management planning.</p> <p>- Development of integrated participatory planning of natural resources. Integration will consist of multiple products, values and services from forest and pastures.</p> <p>- Development of a pasture inventory using modern principles of pasture resources considering multiple products and values and for monitoring/tracking carbon changes. Pasture conditions mapped and determined for use in participatory planning processes and for development of participatory monitoring activities.</p> <p>Improved enforcement of regulations concerning stocking rates and monitoring; improved capacity to restore degraded pastures. The use of moderate stocking rates to improve current conditions will be demonstrated to improve pasture conditions and monitor carbon changes.</p>	<p>c) Forest plans developed in two rayons with biodiversity mainstreamed as a forest management objective.</p> <p>d) Carbon sequestration through: improved pasture management on 12,500 ha of pastures: 183,337.5 tCO₂ eq over project period (See Annex G for calculations)</p> <p>e) Avoiding emissions from avoided forest degradation at 20,000 ha: 256,666 t CO₂ eq/project period (See Annex G for calculations)</p> <p>f) Maintenance or increase in vegetation cover across 12,500 ha of pastures under improved land management. Measured via net primary productivity (NPP) value.</p> <table border="1" data-bbox="986 840 1449 1003"> <thead> <tr> <th data-bbox="986 840 1137 1003">NPP for summer pastures mean value:</th> <th data-bbox="1145 840 1297 1003">Baseline Value</th> <th data-bbox="1305 840 1449 1003">15% increase</th> </tr> </thead> <tbody> <tr> <td data-bbox="986 902 1137 1003"></td> <td data-bbox="1145 902 1297 1003">481.3 g C/m²</td> <td data-bbox="1305 902 1449 1003">554 g C/m²</td> </tr> </tbody> </table> <p>Improved productivity (NPP 15% increase) of natural ecosystems providing evidence of improving natural functions. Increased NPP is direct measure of increased C uptake of sites. The increased uptake of C will be associated with increased leaf area (greater vegetation cover), better site protection (increased vegetation cover reduces rain-drop impact, slows water and air movement, lowers runoff and reduces soil loss.</p> <p>g) Enhanced Ecosystem Services provided by healthy pasturelands. Flood regulation through soil conservation and erosion control. Animal health and meat production. Watershed protection/water quality</p>	NPP for summer pastures mean value:	Baseline Value	15% increase		481.3 g C/m ²	554 g C/m ²
NPP for summer pastures mean value:	Baseline Value	15% increase						
	481.3 g C/m ²	554 g C/m ²						
<p>Good practices in sustainable forest and pastureland management not adopted or supported by key stakeholders through relevant plans and programs.</p> <p>Restoration and enhancement of carbon stocks not a focus of good management practice.</p> <p>Communities/users in or near forests are not consulted by</p>	<p>National LULUCF/REDD+ Action Planning process instituted.</p> <p>Institutional capacity enhanced to account for GHG emission reductions and an increase in carbon stocks through development of national forest C monitoring system.</p> <p>Development of participatory planning and monitoring to provide forest users with more "ownership" in forest management and more understanding</p>	<p>a) Carbon sequestration through pasture restoration at 9000 ha: 311,025 tCO₂ eq for the project life (see Annex G for calculations)</p> <p>b) Carbon sequestration (enhanced ecosystem service of) through Forest restoration (5,000 ha): 253,100 tCO₂eq (See Annex G for calculations)</p> <p>c) Increase in forest cover: Measured by the mean of forest bonitet classes in the GC forests. The project will improve forest conditions allowing greater area of forest to "move" to a class representing improved volume</p>						

Current Practice	Alternative to be put in place by the project	Selected Global Benefits																											
<p>government (local, regional and national) on needs or coordination of needs regarding forest management.</p> <p>Forest management planning is absent of public input and non-transparent. Forest values and ecosystem services are poorly understood by the general public leading do overgrazing of forested areas and degradation.</p> <p>Outdated pasture inventories (>60 years old) do not consider multiple resource values and hamper proactive pasture management.</p> <p>Illegal logging and harvest of wood & uncontrolled use of non-timber resources threatens ecosystem function; Grazing in forests reduces regeneration, degrades understory and reduces vegetation that helps protect soil productivity, maintain other species (biodiversity), sequester carbon, and provide other products and values for local communities and society in general.</p> <p>Forestry as currently practiced focuses on plantations and not restoration or rehabilitation of natural forests.</p>	<p>in needs regarding forests to supply multiple values, services, and products. Plans that provide communities involvement in management of products from forests. Resulting in improved stand structure and products or values (including C).</p> <ul style="list-style-type: none"> - Development of a forest inventory using modern principles considering multiple functions. Forests conditions mapped and determined for use in participatory planning processes and for development of participatory monitoring activities and for monitoring and tracking C stocks for REDD. - Restriction of grazing on steep slopes (>50%) with high potential for significant increased erosion (pasture inventory will remove areas of steep slopes from grazing capacity estimates). - Closure of severely degraded pastures for up to 4 years to demonstrate improved conditions and to monitor changes in C and other values (designed to demonstrate change over time and to allow seed produced on upper slopes to move down hill); - Decrease grazing rate of moderately degraded pastures by 50%; - A rotational grazing system demonstrated to enhance C and improve soil and vegetation community resilience; - Improvement of control of livestock and initiating moderate stocking levels will provide conditions for improved productivity of grass and other forage species and promote healthy root systems, improved C and other ecosystem services; <p>Demonstrate inter-seeding, replanting and improved management of pastures containing legumes or other high productivity species on summer and winter pastures to enhance C, reduce soil erosion, and improve pasture productivity and other values/ ecosystem services. On winter pastures reseeding perennial grasses resistant to drought, salinity and heat to meet feed demands. In summer pastures enhancement of C and improved</p>	<p>or density of the forest. The mean productivity, as measured by the lower bonitet class, will increase by 10% compared to current mean values during the project. <i>(Note: lower bonitet classes are the more productive forests. For bonitet definition see foot note 7)</i></p> <table border="1" data-bbox="981 481 1484 795"> <thead> <tr> <th>Rayon/Tree species</th> <th>Baseline Bonitet Class Averages</th> <th>Target value (-10%)</th> </tr> </thead> <tbody> <tr> <td>Ismayilli</td> <td></td> <td></td> </tr> <tr> <td>Beech</td> <td>3.2</td> <td>2.9</td> </tr> <tr> <td>Oak</td> <td>3.9</td> <td>3.5</td> </tr> <tr> <td>Hornbeam</td> <td>3.6</td> <td>3.2</td> </tr> <tr> <td>Shamakhi</td> <td></td> <td></td> </tr> <tr> <td>Beech</td> <td>3.0</td> <td>2.7</td> </tr> <tr> <td>Oak</td> <td>4.2</td> <td>3.8</td> </tr> <tr> <td>Hornbeam</td> <td>3.7</td> <td>3.3</td> </tr> </tbody> </table>	Rayon/Tree species	Baseline Bonitet Class Averages	Target value (-10%)	Ismayilli			Beech	3.2	2.9	Oak	3.9	3.5	Hornbeam	3.6	3.2	Shamakhi			Beech	3.0	2.7	Oak	4.2	3.8	Hornbeam	3.7	3.3
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Current Practice	Alternative to be put in place by the project	Selected Global Benefits
	<p>productivity as soil C is potentially significant in these soils. Losses are also potentially great with degradation.</p> <ul style="list-style-type: none"> - Improved summer pasture management will provide for improved feed and nutrition of livestock and thus improve livestock health and condition going into the winter through improved ability of plants to capture C, maintain healthy root systems and maintain/improve soil-plant nutrient cycles. - Integration of pasture/livestock/livelihood planning regarding summer and winter pastures and livestock management (health, nutrition, economics). Extension activities more effectively provided to pastoralists. - With the improved participatory planning process restoration of 5000 ha is demonstrated using sound forest management and silviculture principles. Local users are involved in monitoring of changes in forests including C. <p>Included in the 5000 ha are restoration and demonstration of 3000 ha of municipal forests, 500 ha of riparian forests, and 1500 ha of forest fund forests.</p>	

OUTCOME 1: ENABLING POLICY AND INSTITUTIONAL ENVIRONMENT FOR INTEGRATING SLM AND SFM PRINCIPLES WITHIN THE STATE PROGRAMS AND RAYON LEVEL LAND USE AND FOREST MANAGEMENT FRAMEWORKS.

57. Outcome 1 will result in an improved management of 483,800 ha of forests and 591,100 ha of pastures in the Greater Caucasus over long-term. Under Outcome 1, stakeholders will produce an enabling legal, policy, planning and institutional environment for integrating sustainable land and forest management principles within the State Programmes and district level frameworks. By-laws under the core group of laws relevant to sustainable land management (SLM) and sustainable forest management (SFM) will be developed with specific healthy pasture criteria and guidance on how these criteria are to be enforced and monitored. Minimum management standards for pasture and soil health to inform and improve grazing and pastureland management will be developed and adopted. Targeted amendments to State policy and programming will be promulgated to support the objectives of SLM, SFM and REDD, which will be demonstrated under Outcomes 2 and 3, including appropriate agro-environmental incentives for sustainable forest and pastureland management.

Output 1.1: A package of modifications in land and forest legislation and related regulations, policies, and standards for SLM and SFM at national and local level, including:

58. Updated National Action Plan to Combat Desertification (NAPCD): This will be done participatory by a working group including the MoENR, Parliamentary Committee on the Environment, State Committee on Land and Cartography (SCLC) and Ministry of Agriculture (MoA) supported by international expertise.

Project resources will support an open inclusive and participatory process bringing a larger representative group of stakeholders together from national ministries, rayon executive authorities, and civil society to discuss the early outline, the first and the final drafts of the NAPCD. This will enhance ownership of the NAPCD in sectors that have not traditionally been concerned with desertification and degradation, such as emergency services or economic development, enhancing the likelihood that the NAPCD actions will be budgeted under one or more future State Programmes. The work will build upon clear guidance from the UNCCD on how to align Azerbaijan’s NAPCD with the UNCCD’s Ten-year Strategic Plan and Framework (TSPF). The UNCCD’s TSPF contains “strategic objectives” to be achieved and “operational objectives” that guide the actions of short and medium-term effects. COP-9 of the UNCCD called upon country Parties to align their NAPs and other relevant implementation activities with these strategic and operational objectives. Work to update the NAPCD will also draw upon new biophysical and socio-economic information that will be generated by this project’s pilot monitoring and field work. An important element of this process will be to integrate the updated NAPCD priorities, SLM and land degradation issues into development planning and relevant sectoral and investment plans and policies such as Azerbaijan’s State Programme on Poverty Reduction and Sustainable Development (SPPRSD). The action plan will focus on the following key areas:

- (i) Nature, root causes, consequences of land degradation in key sectors, including pasture and forest lands.
- (ii) Changes in key concepts of how to achieve SLM results – from dictatorial top-down to participatory bottom-up.
- (iii) Economic, social and cultural services of land – what are they and what are they worth?
- (iv) Monitoring and evaluation ecosystems - practical indicators and affordable monitoring strategies.
- (v) Interconnection of LD, CC and biodiversity and opportunities for synergy.
- (vi) Local, national & global linkages – what are they and how can they benefit Azerbaijan.
- (vii) Knowledge and technology – current status and minimum new required to address SLM.
- (viii) Policy, institutions and governance strengths and weaknesses in addressing SLM.
- (ix) Economic and financial tools to fight root causes of land degradation and provide incentives for SLM.
- (x) Capacity-building needs – new curricula in SLM; strengthening university programs; systematic training programs at MoENR and other bodies.

59. By-laws with specific healthy pasture criteria, management standards for SLM/SFM and guidelines for monitoring and enforcement: The project will focus on the elaboration of new “Normative Legal Acts” (NLA) associated with the five primary laws relevant to the land (pasture) and forest management. The Normative Legal Acts are like regulations that support a particular implementation of a law. They detail the responsible organizations, their competencies and other considerations needed to implement the article or articles under a law. They are simpler to elaborate and enact, as they require only a review and approval by the Cabinet of Ministers, rather than a full parliamentary process as amendments to law require. The project will establish a national Legal Working Group (LWG) to be responsible for the elaboration of the NLAs. The LWG will be composed of representatives of the line agencies and legislative bodies (MoENR, MoA, Ministry of Justice, SCLC and Parliamentary Committee on Environment). Other ministries and organizations will be consulted as needed. The LWG will be supported by an international pasture ecology expert with best international practice on SLM and policy to provide a starting point for the review, as well as a national legal expert. The LWG will also be informed by the Rayon Stakeholder Committee (RSC, formed under Output 2.1). LWG will be constituted as a priority in the early stages of the project so new and/or revised NLA can be enacted quickly to support this project’s work. Several activities in the three Outcomes will inform the specifics for elaborating NLAs. The majority of the new NLA will be completed by the end of Year 1. Working through the Cabinet of Ministers, the enactment of the NLA should be complete by the end of Year 2. The LWG will elaborate the following eight NLAs to strengthen guidance under the existing body of law relevant to land and forest management sectors:

Law/NLA	Provisions
Land Code NLA #1	<ul style="list-style-type: none"> - regulatory basis for improved institutional action, coordination and capacity building; - provide lead institutions or agencies with clear mandates for pasture management and name the primary organizations responsible for different elements of pasture management; - will call for individuals working on forest and pasture management to work together as a team on relevant shared issues such as grazing in forest areas or reforestation in pasturelands;

Law/NLA	Provisions
	- will authorize a partnership mechanism, mandated and operationally linked to the revised NAPCD.
Land Lease Law NLA #2	- specify terms of sustainable use and provide examples of model pasture management practices; - contain specific healthy pasture criteria and guidance on how these criteria are to be enforced and monitored; - include minimum management standards for healthy pasture and healthy soil with simple, practical indicators to be monitored and integrated into model pasture lease contracts; - support improved implementation of key provisions of the Land Fertility Law.
Land Lease Law NLA #3:	- comprised of model up-to-date pasture lease contracts that incorporate specific roles and responsibilities for the lessor and lessee in the contracts in terms of implementing, sustaining and monitoring SLM grazing practices. - provide guidance on how to specify these "terms of use" from an SLM/SFM perspective; - elaborate anti-land degradation provisions in the model lease agreements to aid with improving accountability of resource users and the ability of officials to enforce the sustainable use provisions of the agreement. For example, the model lease agreements will include strong language to: (i) reduce and/or stop accelerated soil erosion caused by management practices; (ii) allow the lease to be terminated where soil erosion is threatening the long-term productivity of the site and the ability of the site to provide ecosystem services, unless the lessee agrees to modify grazing practices, so as to allow for sustainable use.
Land Fertility Law NLA #4:	- will provide the legal "cover" for piloting new and innovative incentive mechanisms such as PES and an official review path for such pilots to facilitate learning and replication if pilot is successful; - will emphasize the importance of organizational learning and adaptability in order to be able to respond effectively to change.
Land Fertility Law NLA #5:	- legal guidance for key government agencies at the national and rayon levels to address fertility issues of pasturelands under the Land Fertility Law; - clear, practical and easily understood standards and how-to guidelines for the restoration of land fertility to enable state institutions to do their duty under the Law and to promote and support pasture land maintenance and/or restoration. Training in how to apply these standards and guidelines will be included under Output 1.3. The standards and guidelines will enable MoENR, REA and local stakeholders to monitor and assess changes in land fertility, by including indicators that are easily measured through a simple monitoring effort. Such indicators will be elaborated after consultation among Azeri and international experts, but could include: changes in soil litter/cover, perennial cover, and gaps between perennial plants.
Land Fertility Law NLA #6:	- will strengthen enforcement of the Land Fertility Law in case of severe land degradation due to over-grazing. Just as a rental car company requires the renter to assess the condition of the rental car before driving away, so too, will this NLA require the lessee to assess the condition of the pasture and agree with the lessor on a "baseline condition" of the pasture prior to the renewal of a lease. This will then serve as the basis upon which monitoring of pasture health will continue and enforcement action taken if needed in the future.
Forest Code NLA #7: will update and modernize the following NLA for forest management under the Forest Code	- NLA under <i>Guidelines for monitoring of forest</i> (1998) #230; Modifications will enable stakeholders to use the latest, appropriate technology and methods to monitor forest areas most affordably and efficaciously in the Azerbaijani context. These guidelines will also be updated as part of the REDD+ action planning process under Output 3.1 and the work under Output 3.2 to integrate carbon monitoring protocols into forest monitoring guidelines in Azerbaijan. - NLA under <i>Guidelines for implementation of forest restoration works</i> (1998) #230; These guidelines will be updated to focus on how to restore forest to ensure improved ecosystem structure and function, with specific requirements for participation and consultation. The guidelines will focus on the most promising types of forest restoration in the Greater Caucasus: natural regeneration in degraded natural forests and reforestation of areas once forested but no longer with forest (primarily riparian zones and gallery forest). For the first time, such guidelines will detail how to engage local forest resource users to develop a restoration plan for a particular forest area. Local people will be an important part of any forest restoration solution and these guidelines will emphasize this point. Natural restoration, where native seed sources are present, will be the least expensive and likely most successful. Previously forested areas that are significantly altered from "natural conditions" (for example, gallery forests) will require more intervention, such as planting of trees, and control of human impacts that threaten

Law/NLA	Provisions
	restoration success (i.e. grazing). The guidelines will de-emphasize heavy, engineering approaches that unnecessarily disturb soil in preparing ground for replanting and highlight minimal disturbance of surrounding areas during replanting, such as the digging of individual holes for replanting rather than using a tractor to cultivate the ground as if for planting crops. Work under this activity will also focus upon how to reduce forest degradation caused from two uses: a) how to cut fuel wood in a way that maximizes natural regeneration of forest areas and how to re-plant or protect newly regenerating forests from too much grazing pressure; and b) sustainable harvest practices with respect to non-timber forest products. Such guidelines will also include new kinds of incentives for Forest Department officials to use in working with local communities to encourage their support and participation in ensuring healthy forest regeneration in fuel-wood harvesting areas.
Guidelines for allocation and use of pastures, meadows and hayfields #42 Cabinet of Ministers (15 March 2000); NLA #8,	- will elaborate how stakeholders at the rayon level can meet the requirements of this law, which are to calculate acceptable animal load (stocking rate) for pastures assessing each pasture's plant cover, quality, volume, unique topography and soil humus layer thickness. The NLA will have specific healthy pasture criteria and indicators, together with clear and understandable management standards for SLM. This will likely include a capability classification that would prohibit grazing on lands susceptible to increased erosion, mass slumping, and potential for mass wasting into stream and rivers (lands with a slope that exceeds a certain degree).

60. Agro-environmental policy and related NLA (regulation) to incentivize sustainable forest and pastureland management at local levels in Azerbaijan: The project will support the elaboration of a new policy on agro-environmental incentives which will underly the future use of this kind of policy tool in Azerbaijan. The policy will draw upon and possibly incorporate the precedent setting Decision #181 of the Cabinet of Ministers (Nov 16 2007) on the "Allocation of funds from the state budget for improving financial incentives for wheat and rice producers and stimulating wheat and rice production.", which provides direct cash payments for each new hectare planted, to plant more wheat and rice. As pointed out in the baseline description, the underlying concept of government paying farmers to contribute to a public good is a familiar concept in Azerbaijan. The NLA will be elaborated under the Land Fertility Law to support the piloting of "Payment for Ecosystem Services" (PES) provided by summer pastures such as erosion control & flood regulation, food security (meat production) and clean water. Work under this output will build upon the model grazing lease agreements developed above, as well as the precedence in law created by Decision 181 and will create the regulatory basis for piloting a payment for ecosystem services (PES) program in the Greater Caucasus of Azerbaijan. The NLA will provide practical and clear guidance on how to pilot or test the "payment for ecosystem services" or PES concept in Azerbaijan.

61. Amendment to State Programme on Pasture Management to enable piloting of SLM practice and strengthen SLM/SFM aspects of pasture management at the national level: GEF resources will be used to update and improve the Priority Action #4 of the now outdated programme, entitled: "In the field of environmental protection and ensuring sustainable development." A working group of experts from the MoENR, MoA and SCLC, will draft a practical, step-by-step participatory program to begin restoring pastureland health one pasture at a time. This will: (i) incorporate the content and intent of the NLAs 1-6 and NLA 8 above into this newly amended State Program on Pasture Management, carrying forward the priorities of the revised and updated NAPCD; and (ii) incorporate the principles of the new agro-environmental/PES policy elaborated above and for the first time in such a program, the concept of ecosystem services generated by healthy pasturelands and the economic value of such services. Such work will be cross-fertilized by project supported efforts under Outcome 2, particularly the rayon-level planning and demonstration work under Outputs 2.2 and 2.3.

Output 1.2: Strengthened capacity of institutions across sectors to collaborate and manage the GC landscape.

62. The project will develop systematic, long-term approaches to capacity building through two different targeted training programs: (i) one for policy makers at national and rayon levels developed and delivered

through the existing “Expertise Enhancement Training Center” program of the MoENR, enhancing its sustainability and ownership; and (ii) one for technical staff and resource users at the local level, focusing on pasture leaseholders, forest resource users, and technical, field-level staff of the Ministries and Rayon authorities. This training program will be housed also within the MoENR’s training center, but often conducted in rayon centers and field sites for use by the rayon executive offices to strengthen the existing extension program for pastoralists.

63. Targeted training program for SFM/SLM for MoENR and other stakeholders The project will build capacity within the various organizations by focusing on core principles and practical skill development and the use of strategic measures and tools to enable effective sustainable land management. Based on the results of the needs assessment, a comprehensive and targeted training program with individual training modules or lesson plans will be designed and implemented. The training will focus upon enabling stakeholders to apply practical steps in their daily work to strengthen the SLM and SFM capacity. The developed modules will form the basis of multi-component training program to be organized and conducted within the MoENR’s Expertise Enhancement Training Center over the life of the project. The purpose of the training will be first to inform staff of the existence of these new regulatory tools and secondly to train them in their use. The training modules will be developed by an Azeri staff capacity building and training expert with support from a working group of relevant experts. The following are likely the main components of the training program:

1. Capacity to conceptualize and formulate and implement SLM and SFM policies, strategies and programmes: focus on additional training/continuing education activities for government staff in key agencies (MoENR, SCLC, MoA, REA) on how to implement the guidelines and NLAs. This will include training in:

- (i) SLM and SFM fundamentals. The basics of land degradation, enabling policy makers and implementers to understand “What is the problem with respect to such issues as soil degradation?” What are the causes? This will enable practitioners to understand how resource use practices impact land and forest health, carbon sequestration potential, and in many cases the bottom line returns for pastoralists, by asking and answering the questions: “How do human activities have an impact on pasture and forest lands in the Greater Caucasus?” “What are the consequences of this impact?” (e.g. contamination of surface and ground water, sedimentation of river beds, increased frequency of flooding, reduced pasture productivity and reduced livestock health)? Loss of natural diversity and why it is important for ecological resilience.
- (ii) A review of the process used in updating the NAPCD and drafting the NLA and how to begin to use and implement these tools; conducted by Azeri experts from the PCE in a peer-to-peer training.
- (iii) SLM and SFM implementation - how to apply and customize the SLM/SFM concepts to Azerbaijan’s Greater Caucasus region. This will include the “how-to’s” for land-use management planning practice, pasture and forest management planning: how land use can be managed in that context with hand-on training in identifying areas of concern, mapping, data management and related areas.
- (iv) Sustainable pasture and forest use practices for grazing management, forest resource use: where improved management efforts are most usefully put and how to apply them; how to analyze the situation at a rayon level. This will include overviews of best practice in pasture and forest restoration, erosion control methods.
- (v) Training in how to implement each new NLA and guidelines developed under Output 1.1 above.
- (vi) How to mobilize sufficient quantity of funding, human and material resources to effectively implement SLM and SFM mandate under the NAPCD and the existing legal framework. This will emphasize the necessity of mainstreaming SLM and SFM into non-traditional sectors and ministries such as Ministry of Emergency Services and Ministry of Economic Development.

2. Capacity to engage and build consensus among all stakeholders

- (i) How to highlight shared interests in the SLM/SFM sectors to facilitate win-win engagement with other government and civil-society partners. SLM is and should be a valuable “tool” in the toolbox of Ministries responsible for addressing flooding and/or drought related disasters.
- (ii) Incentives for collaboration: How to create simple shared workplans to achieve shared objectives, with a Green Team – Azerbaijan Award issued each year to the most innovative and successful collaborative effort to address land degradation in the GC.
- (iii) How to implement the drafted NLA to mandate this cross-sectoral engagement and consensus building for SLM and SFM; hands-on training on integrating SLM/SFM priorities into the “mission” of relevant institutions.
- (iv) The underlying logic of PES and an overview of the values of key ecosystem services generated by healthy forests and pastures in the GC and threatened by land degradation.

3. Capacity to mobilize information and knowledge through monitoring, evaluating, reporting and learning.

- (i) Annual “State of GC lands” round-table discussion to encourage dialogue about SLM and SFM issues;
- (ii) Introductory overview training in the latest remote sensing technologies and how they can be used to monitor pasture and forest condition across the GC.

64. Most of the training will take place at the MoENR training facility in Baku. The participants in the training will be drawn from the strategic cross section of institutions and stakeholders that underlie effective sustainable land and forest management in the Greater Caucasus, including: MoENR, Rayon Executive Authorities, MoA, SCLC, MoES with specific participation from rayon-level staff. Training will encompass all 11 the rayons in the project area, starting first with pilot rayons Ismayilli and Shamakhi to better facilitate the replication process. It is anticipated that about 90 people will participate. The training programme will take place during Years 2 - 4. The impact of the training programme will be assessed on an ongoing basis. This training program will give participants a solid basic grounding in SLM/SFM critical knowledge and skills. The Outcome 2 below will enable stakeholders to build on this knowledge by applying specific non-structural tools and approaches for adaptation.

65. “Greater Caucasus Pastureland Curriculum” for livestock owners (pastoralists), rayon and municipal leaders, natural resource managers, researchers and agency staff and students will incorporate both science and local knowledge and will reflect the social, cultural, political, economic and environmental context of livestock and pasture management in the Greater Caucasus and in particular in the project’s two pilot rayons. The training will be piloted under the project with at least two series of six workshops on the following topics: (i) Pastureland ecology in the Greater Caucasus (Summer and Winter); (ii) Animal health and management; (iii) Grazing management and erosion control; (iv) Vegetation monitoring; (v) Pasture management planning; and (vi) Business management and economics. The purpose of this training is to empower pastoralists and other community members to develop and implement pasture management plans for their pastures. This training curriculum will be designed as the preparatory step to pastoralists actually finalizing and implementing their own pasture management plans under Output 2.3. The project will work closely with key partners MoENR and Baku State University (BSU), Faculty of Ecology and Soil Science (FESS), to ensure the training program is incorporated into the MoENR’s training facility or the curriculum of the BSU-FESS. Important hands-on aspects will be done as part of the project’s pilot work under Outcome 2. This training is expected to reach about 80-100 people, covering the 10 PUA/FUAs of the two pilot rayons (see Output 2.1). The training will take place in the regional offices of the REA in Ismayilli and Shamakhi, which are most centrally located rayon offices. MoENR will provide resources to support the training as part of their co-financing of the project. Strengthening of the PUAs will be completed by the end of Year 1, resulting in PUA members ready to link with RSCs on pasture and forest management planning and other activities.

Output 1.3: Stakeholders at national and local level have improved access to knowledge and data, strengthened social networks and new social capital to enable more sustainable management of pastureland and forest resources of the GC.

66. This output will enable stakeholders to gain access to critical information and data, and will promote political support in Azerbaijan with regards to SLM and SFM-REDD. Project resources will enable the MoENR to develop a public SLM/SFM database, an SLM/SFM action registry in order to archive information, data, lessons-learned and best practices from a range of initiatives across Azerbaijan. By consolidating this information in an open web-based knowledge management platform, all stakeholders will have access to the same information, which is an important foundational element to building stronger social networks and creating new “social capital”⁵. The platform will also be designed to encourage collaboration across sectors and across levels (national-local), which is not a common practice currently in Azerbaijan. A potential benefit of collaboration is increased social capital, which may improve a group's ability to collaborate, manage risk, innovate, and adapt to change.

67. *Web-based platform to access information targeting national and rayon-level users:* An information support and exchange forum will be created to support and further strengthen the institutional coordination

⁵ Social capital here is defined as: trust, norms of reciprocity, and social networks. Studies on whether community-based collaborative resource management builds social capital have concluded that commitment and continuity; understanding, empathy, and respect; transparency; and dependability and predictability are critical elements for building social capital in collaborative settings.

mechanism for LD under Output 2.1. A new virtual entity called the Azeri Forum on Land Degradation (AFLD) will be created by the project to collect and systemize information sources on LD/LULUCF, focusing initially on the pasture and forest land-use in the Greater Caucasus mountains of Azerbaijan. The AFLD will be a transparent, interactive web-based platform for sharing information relevant to LD, including the revised NAPCD, and the rayon-level pasture and forest land use plans (Output 2.2), and the individual pasture-level pasture management plans (Output 2.3). The web host for the AFLD will be determined between two options after assessing the most promising options that offer sustainability and low-cost maintenance: (i) a special section within the MoENR's website or, (ii) a part of the web page of the Faculty of Ecology and Soil Science within Baku State University. This activity will utilize and support UNDP's existing web portal coordinator to maintain and update the site. The new website could be designed to be interactive, with a much-needed web-based library of LD, SLM and SFM related studies, reports, data and information on best practices and lessons learned. A volunteer content committee comprised of Azeri experts and policy makers will be formed to advise on the website's design and content and user interface. The AFLD will be promoted to targeted groups initially, particularly the PUA and FUA established under Outcome 2. The AFLD will disseminate all SLM/SFM lessons nationally. For example, the Interstate Sustainable Development Commission meets every year. This web-based platform will contain a SLM/SFM registry where all LD-related projects and projects with related components can be registered. This will enable stakeholders to assess what is being implemented in Azerbaijan, and how best to partner with other organisations and projects.

68. *Improved networks and access to information at local levels in pilot rayons.* New partnership platforms will be formed for capacity building at the rayon and community levels. These efforts will use traditional "low-tech" methods as well as cutting edge, high tech tools to the extent possible. Low tech methods will include local pasture users associations (PUA) and forest user associations (FUA) meetings that enable resource users to hear more about the advantages of forming associations and "communities" of resource users to facilitate learning and the advancement of their own interests in modern Azerbaijan. These meetings will involve not only local resource users but also local resource managers from the MoENR's Department of Forest Development (DFD), existing extension service professionals (i.e. veterinarians) from the Rayon Executive Authority (REA). Such meetings will also serve as peer-to-peer learning events. Once enough PUA and FUA have sufficient experience to share with others, the project will facilitate this through rayon and local municipal level meetings. The project will support local REA to utilize innovative mobile-based communication tools to reach stakeholders who do not own a computer and have either no access or limited access to the web. This will include the nearly 200 pasture leaseholders in the project's two pilot rayons, the newly created PUA and FUA, rayon and municipal-level officials and other stakeholders. In piloting such an innovative approach, the project will facilitate the provision of practical information first, such as weather forecasts. This will involve working with one or more mobile phone operators in Azerbaijan on what type of information to make available and how.

OUTCOME 2: DEMONSTRATED FOREST RECOVERY AND REDUCTION OF DEGRADATION FROM GRAZING AND BROWSING PRESSURES BY LIVESTOCK.

69. This outcome will result in the: (i) Maintenance or increase in the vegetative cover across 12,500 ha of pastures under improved land use management; (ii) 20,000 ha of forestlands under improved multifunctional forest management; (iii) avoiding emissions from forest degradation of: 245,667 t CO₂ eq/year; and (iv) SLM/SFM knowledge effectively transferred (working groups tackle multi sectoral issues). The project will establish pilot rayon-level inter-sectoral committees for cooperation on land management in two rayons and will support the development of rayon territorial plans that will integrate SLM and SFM priorities. Cross-sectoral expert groups will be fully capacitated to develop plans jointly with each rayon-level committee consisting of representatives from: MoENR, REA, and Office of the Municipality (OM), and rayon-level grazers association. A GIS database and maps will be developed for each pilot rayon, listing priority areas of critical natural forest and pastures with healthy plant communities; areas under moderate pressure, areas vulnerable to permanent degradation, extensively used for grazing or suffering high rates of erosion. Field demonstrations will implement key elements of the pilot rayon plans. The piloting of agro-environmental incentives will be incorporated into at least one of the two pilot demonstrations linked to specific indicators

of forest and pastureland health for farmers to reduce over-grazing in sensitive areas such as natural forestlands and alpine meadows.

Output 2.1: Pilot rayon-and local-level stakeholder cooperation mechanisms for cooperation on land management and established in two rayons in the GC.

70. The project will introduce participatory approaches to pasture and forest management, linking the rayon and local level authorities and resource users with government entities responsible for pasture and forest management. The Project, will establish and operationalize three important stakeholder engagement and cooperation mechanisms at the rayon and local level: (i) Rayon multi-Stakeholder Committees (RSC); (ii) pasture user associations (PUA); and (iii) forest user associations (FUA). All three will be critical to the project's work in helping to catalyze new SLM and SFM practices.

71. Rayon multi-Stakeholder Committees in each of the two pilot rayons of Ismayilli and Shamakhi will link the ground-level, community-level, resource user stakeholders (PUA and FUA) with the government/rayon/municipal level organizations responsible for the various aspects of pasture and forest management. The Rayon executive authority or REA is the main rayon level counterpart for the project's work. Chaired by the REA, each RSC will include representatives for the regional offices from key national agencies, including MoENR/DFD, MoA, State Land and Cartography Committee, Municipality and one PUA and one FUA representative. Women's empowerment NGOs will be asked to provide inputs and guidance to ensure a gender balance is achieved. Through the project, the RSC will undertake several community based initiatives to test and introduce participatory and consensus-based inputs into integrated pasture and forest planning to: (i) link community and rayon-level authorities and pasture and forest management practitioners and other relevant stakeholders to develop a collaborative approach to decision making in pasture and forest management; and (ii) serve as the cross-sectoral entity that will provide the mechanism for conducting the pilot pasture and forest management planning developed under Output 2.2, and implemented under Output 2.3. Activities under this output will coordinate with those under Output 1.1 to determine if there are elements in law that will require modification in order to make RSCs permanent bodies for management activities.

72. Pasture Users Associations (PUA) & Forest User Associations (FUA): will be developed for pasture leaseholders and forest resource users respectively within Ismayilli and Shamakhi. The project's Technical Advisor (TA) for SLM and SFM will advise the local rayon authorities in the process of establishing these PUA and FUA. Seven local PUAs will be established and strengthened within the two pilot rayons to create the first of its kind local mechanism through which to build capacity for SLM and to enable meaningful participatory pasture management planning. Three PUAs will be established in Ismayilli rayon, and 4 PUAs established in Shamakhi Rayon. Because the concept of leaseholders for forest resource use is less well developed than it is for pastures, three FUA will be piloted initially: one in Shamakhi and two in Ismayilli. Membership in each PUA and FUA will be necessary for any leaseholder involved in the PES mechanism or any pasture or forest improvement mechanism in order to facilitate training and communication associated with improved management of pastures or forests.

73. Resource user associations of any sort are new in Azerbaijan. Some water user associations (WUA) have been established in the GC region to assist in the management of large-scale irrigation. However, since there is no communal management system associated with pastures or forest resources, work under this output will pilot the expansion of the WUA concept into pasture and forest management. The project will ensure that the PUA and FUA will have an appropriate gender representation. The new NLA to be elaborated under Output 1.1 (e.g. Land Code NLA #1) will provide regulatory support on improved participatory pasture and forest management. The project will support consultations to ensure consensus and to reinforce the purpose of creating and engaging PUA and FUA. The precedent for it comes from the water user associations mentioned above, but it will be necessary to bring the MoENR and REA together to finalize a description of the types of roles and responsibilities or the types of collaborative actions that the two could engage in with the PUA/FUA.

74. Some of the primary functions envisioned for PUA/FUA include: (i) to provide a mechanism for communication among pasture and forest users and different government entities dealing with land use (REA and 6 Ministries); (ii) to serve as the local pasture user/forest resource user coordination mechanism for the

development of pasture and grazing/forest management plans, and to assist the REA/MoENR in the implementation of pasture/forest improvement and restoration pilots (e.g. restoration, rotational grazing); and (iii) pilot sustainable pasture/forest management implementation. The PUA-FUA will be mostly used to communicate current conditions and needs to government agencies and to participate in pasture restoration initiatives. In the future, the PUA-FUA could function as extension services and support to pasture and forest users and as the basis for developing solutions to animal production problems (e.g. diseases and parasites)/forest resource harvest problems. Pasture leaseholder participation in PES under Outcome 2.4 will also require engagement through the PUA.

75. The PUA members will be trained using the Greater Caucasus Pastureland Curriculum developed under Output 1.2. As part of this training exercise, PUA/FUA will develop draft participatory forest and pasture management plans, which will prepare PUA & FUA to finalize these and implement them under Output 2.3. The objective is to make the PUAs ready to work with the regional professionals in the RSC on preparing integrated pasture and forest management plans; piloting improved SLM and SFM practices across the two pilot rayons; and implement improved land condition measures and avoided emissions.

Output 2.2: Integrated rayon-level pasture and forest management plans (IPFMP) accommodating SLM and SFM concerns designed and applied by resource users in 2 rayons to meet the SLM and SFM standards and avoid GHG emissions caused by unsustainable land-use practices.

76. The integrated pasture and forest management planning process will be a participatory, hands-on learning exercise, and the deliverable will be two rayon-level plans that for the first time will consider pastures and forests together as key integrated components of land-use in each rayon. In each pilot rayon, the respective RSC will be the primary coordinating body in the drafting of these plans, with inputs from critical resource user representatives (PUA and FUA) when appropriate. Two cross-sectoral expert working groups will be fully capacitated to develop plans jointly with each RSC, one working on forest and one on pastures, meeting frequently to cross-fertilize each-other's work. The project will support:

(i) a rapid field survey of forest and pasturelands in each rayon using the latest GPS mapping tools. This will be facilitated by the national SLM Pasture and SFM Forest experts working with the MoENR, DFD, and the Rayon Authority. MoENR will co-fund this activity through the support of their GIS facilities. Work will be supported by a GEF financed GIS/GPS expert and overall strategic guidance provided by a forest and pastureland mapping expert. Satellite image based maps of the two rayons with current land types use marked on it will be the first deliverable. A digital data base will developed from the information gathered through the survey, forming the base information for the IPMFP planning work. This will be completed by the middle of year 2;

(ii) a GIS database and maps based upon the digital base map for each pilot rayon, identifying: priority areas of critical natural forest and pastures with healthy plant communities; areas under moderate pressure; areas vulnerable to permanent degradation, extensively used for grazing, forest resource use or suffering high rates of erosion; new opportunities for SLM and SFM, including improved forest condition and cover (areas of good potential for natural forest regeneration; previously forested areas of good potential for reforestation) and improved pasture land condition (areas in need of wind breaks; degraded/plowed pastures in need of re-seeding, etc.); Areas of overlap or joint use such as transhumance corridors used for moving animals between winter and summer pasture; Areas that may be sensitive to livestock use, for example, newly seeded forested areas, areas with special values or special reserve areas; particularly vulnerable areas; State and municipal forestlands; State, rayon and municipal pasture lands. This effort will for the first time, identify and demarcate all winter and summer pasturelands, state forest lands, municipal forest and pasture lands together using modern digital mapping technology. The IPFMP will be based on a combination of modern mapping, using satellite imagery and GIS technology and community participation in the mapping process. The mapping will require considerable fieldwork to identify and understand the impacts of poor land use choices, and to develop an understanding of the impact

of actions to mitigate climate change caused by LULUCF. The RSC will take the lead on this, but many members of the communities involved will participate, including but not limited to the PUA/FUA. Participation will be expanded to include representatives from each rayon's municipalities. Some decisions in the pasture and forest management planning process are contentious, for example, some land currently in use may be need to be rested. The IPFMP's geographical scope will identify problem areas, areas where interventions would take place and zones at risk of high degradation delineated and highlighted. It will also be oriented thematically to support the priorities identified in the updated NAPCD under Outcome 1.

(iii) Connect pasture and forest use within each rayon to impacts on vegetation cover and land condition. Special attention will be given to erosion prone areas, indicating where land use influences erosion and impacts other problems such as flooding. The focus will be upon how different pasture and forest resource uses impact land condition, especially wind and water erosion and degradation of forest and grassland ecosystem complexity. It is expected that 50-75 people will participate in this "training while doing" for IPFMP in each of the two rayons.

(iv) an annotated map for each rayon showing pasture and forest management action priorities that address the priority areas of land degradation across each rayon. The map-based plan will indicate areas of particular concern, determining what may be done for risk mitigation in those areas, and other aspects that will be clarified through the process. The result will be two full, community driven macro rayon-level pasture and forest management plans for the pilot rayons that will initially form the strategic basis for initiating the site-level pasture and forest management improvements under Output 2.3 and become the reference for land use decision making going forward. This will be completed by the end of Year 2. Work under Output 2.2 will also inform the recommendations for modifications to the law, regulations and policy in Outputs 1.1 and 1.2. The IPFMP will also cross-fertilize the NAPCD work under Output 1.1 and provide a well developed basis for the work under Output 3.1 to elaborate a National REDD+ and LULUCF action plan.

Output 2.3: Improved SLM and SFM compatible land-use in pilot communities:

77. Pasture User Associations, working with Rayon Executive Authorities, and MoENR maintain and/or increase the vegetation cover across 12,500 ha of pastures through improved pasture management: Following the newly revised pasture leasing rules under Outcome 1, PUA members will develop site-based grazing management plans for their leased pasture plots. At least four PUAs will be selected in summer pastures of Ismayilli rayon located in the catchments of the Pirsaat, Aghsu and Goy rivers. Each PUA will have approximately 7 members with leases over 2,000-5,000 hectares cumulatively for each PUA, enabling the project to improve pasture land management over at least 12,500 hectares. The expert working group that developed the IPFMP will conduct at least two series of 4 workshops (one for each PUA) to develop customized management plans with each pasture leaseholder which are short, succinct and simple so they can be understood and implemented by pasture leaseholders themselves, but also by Rayon authorities, and Ministry staff. Each participating leaseholder's individual plot will be analyzed for erosion risk (slope) and productivity (vegetation cover and soil type). Each pasture management plan will support the objectives of the rayon-level IPFMP and will be customized per area to:

- (i) Protect and enhance the soil and vegetation by identifying the primary local and specific causes of land degradation on each leased pasture (i.e. overgrazing => reduced vegetation cover => water or wind-based erosion; degradation of pasture by inappropriate cultivation in the past);
- (ii) Specific prescribed grazing/rotational grazing regime, as per the grazing management plans adopted by each pasture lease holder. These will control the harvest of plants to improve or maintain ecosystem functions and provide for the livelihoods of pastoralists utilizing the pastures, and will maintain soil productivity by improving vegetation cover, soil biota, and long-term productivity as well as other ecosystem services.

Prescribed grazing standards will modify grazing practices in the following ways:

- Reduce grazing on steep slopes that are prone to erosion, which releases carbon and increases sedimentation and the frequency of flooding downstream;
- Promote health and vigor of primary forage plants and maintain a stable and desired plant community;
- Improve and maintain the health and productivity of livestock and wildlife by providing sufficient food, water, shelter, and cover;
- Improve the quality of water by improving vegetation cover, soil organic matter, and reduction of use of steep slopes to reduce runoff and contamination from sediments and animal fecal matter;
- Promote economic stability based on sustainable use of grazing resources;
- Rotating grazing to allow plants time to set seed on a different sections of each pasture each year, thereby improving vegetation cover. After seed set of important perennial forage species these areas will then be grazed to allow other areas of the pasture to recover. This will ensure that "better" forage species remain as part of the vegetation cover.

(iii) GEF financing, together with MoENR co-financing, will support the implementation of the specific clear and simple actions listed in table below at the level of each participating PUA, which will agree on the top 2-3 list of the priority actions among its members for support by GEF and MoENR resources. This will comprise the incentive for pastoralists to participate.

Re-planting of degraded formerly plowed winter pastures and controlled responsible cultivation of no more than 3% of winter pasture areas	Restoration of highly degraded summer and/or winter pastures (rest and/or replanting);	Improved animal health through better disease management on winter pastures.
Azeri law allows for 3% of winter pastures to be cultivated to provide fodder for new-born lambs, the primary "product" of the whole grazing enterprise. This regulation has been disregarded in the past, resulting in large areas of winter pasture degraded from cultivation. GEF and MoENR resources will support modest cultivation efforts in PUA areas where it is a priority, to generate fodder for lambs, which in turn reduces pressure on the pastures themselves.	Restoration/replanting: GEF resources will support pilot efforts to replant/restore priority degraded areas on the basis of an approved grazing management plan, up to a maximum of 100 ha, with MoENR co-funding upscaling and replicating these efforts.	Pasture management plan will incorporate specific practical steps to improve animal health and nutrition as recommended by each Rayon's veterinary services. This can be as simple as very modest improvements to winter pasture infrastructure (a shed or corral for administering veterinary medicine and for isolating treated animals until the risk of re-infection is past). Improved animal health will improve net income of herders and decrease the number of animals necessary for pastoralists to generate a reasonable cash-flow from their operations.

78. Participatory, user-based implementation of prescribed grazing and monitoring of pasture condition and impact on land degradation of implemented measures: Project resources, along with co-funding from MoENR, will support the work of local "sustainable pasture advisors" or SPA who will organize regular field workshops on the site of the actual pasture areas. A key part of this technical support will include a robust peer-to-peer training and outreach effort, drawing upon stand-out leaseholders and slowly expanding to include all leaseholders with lessons to teach. These field workshops and meetings will be organized quarterly around the pastoralist's transhumance schedule, with meetings held in the early spring in the winter pasture prior to their going to summer pasture; two meetings held in the summer pasture during the June-Sept period of their stay, and one meeting in Nov back in the winter pasture. The meetings will be used to review each pasture management plan, answer questions, learn about successes and/or failures. The meetings will also be used to strengthen the elements so important to the growth of new "social capital" such as trust, an expectation of reciprocity, and communication. These meetings will also serve as training workshops on the participatory monitoring methods and indicators described below. This will implemented in close cooperation

with the MoENR/GIZ project, "Sustainable Management of Biodiversity in the South Caucasus (SMB) and project team.

79. **Monitoring:** Pasture degradation is a gradual process. Conducting a baseline assessment and subsequent regular monitoring of pasture condition is indispensable to observing degradation (or lack thereof) and to guiding adaptive sustainable pasture management. Participatory monitoring will be an important part of this SLM demonstration. It will be integrated into the management planning above and will draw upon the previous developed monitoring methodology developed with GIZ in the GC region of Azerbaijan. This monitoring will be done primarily by the pastoralists themselves as a pilot to assess abilities and to modify participatory monitoring during the project in order to design the most appropriate and effective approach possible. The aim of participatory monitoring will be to identify trends, be they positive (an increase in quality of quantity of vegetation cover/plant cover/fodder) or negative (a decrease in the same) or that there is no change (stable state). A well-structured, simplified monitoring program identifies clear and practical indicators of pasture health that will be monitored. These indicators also help to ensure that everyone is "on the same page" with respect to what the improved grazing management practices hope to achieve. Such indicators will be designed to "indicate" successful achievement of the objective: to improve vegetation cover to protect and maintain soil productivity and enhanced carbon sequestration. Examples of specific areas or indicators to be monitored include: (i) Soil and vegetation cover (percent); (ii) Plant composition associated (better forage species versus weedy species or functional groups); (iii) Plant mortality; (iv) Litter amounts; (v) Weeds or invasive plants; (vi) Perennial plant (better forage species) reproductive capability; (vii) Rills or water flow patterns; (viii) Pedestals, Terrecettes or litter movement (evidence of soil loss from water erosion).

80. In addition to improved data on pasture condition and management practice, one of the primary outputs of the monitoring program will be the elaboration of a set of standards and best management practices (BMP) for pasture management. Herders interviewed during the project preparation process expressed an interest in working with the project to improve the condition of their pastures. The benefit of this to them was immediately apparent. The guidance under the newly elaborated NLA (Outcome 1), will require specific steps be taken to restore or maintain land fertility. Herders will be incentivized to take part in these activities through the project's collaborative efforts with each Rayon Executive Authority in Ismayilli and Shamakhi rayon, where participating herders will receive modest but impactful incremental assistance from each Rayon to better control parasites and other diseases within their flock. This will take the form of additional veterinary care above what the rayon already extends to herders. This monitoring program will also be linked to the work to elaborate carbon flow monitoring protocols under Output 3.2.

To assess the "sustainability" of pasture management, stakeholders may decide to employ the concepts of Site Conservation Rating (SCR) and Site Conservation Threshold (SCT).

SCT is "the kind, amount, and/or pattern of vegetation needed as a minimum on a given site to prevent accelerated erosion." The "threshold" in this case is in the rate of soil erosion. Vegetation that provides protection equal to or in excess of that necessary to prevent accelerated erosion would be above the threshold and would be rated as "sustainable." Vegetation that does not provide adequate protection will be rated "unsustainable." Figure 1 illustrates the concept of the SCT. The x axis indicates the degree of soil protection afforded on the site. Above some point the erosion rate is relatively constant. The rate of erosion above this point is considered to approximate "natural" erosion or a tolerable rate of erosion determined by climatic, soil, and topographic factors. As soil protection decreases, erosion rate will increase. The point where erosion rate increases significantly is considered the Site Conservation Threshold (SCT). The SCT is shown as a shaded zone to indicate that the exact point may not be definable. A level of soil protection below the SCT will result in a rate of soil erosion that will eventually result in soil loss sufficient to reduce the productive potential of the site. The shape of the curve shown in Figure 1 is for illustration purposes. The "threshold" may not be as distinct as shown.⁶

⁶ Society for Rangeland Management. <http://www.rangelands.org/ram/evaluating.shtml>.

SCR is "an assessment of the protection afforded a site by current vegetation against loss of potential." SCR will be assessment of attribute(s) of vegetation, or perhaps soil surface which can be directly observed in the field and which are indicators of the degree of protection from erosion. What attributes should be observed is not specified because these vary in different ecological regions and from site to site within. On many ecological sites, basal cover of perennial vegetation good indicator of degree of erosion protection. For example, cover of perennial vegetation in terms of a certain percentage (7%) has been found to be required to prevent accelerated basal cover could be the basis for the SCR and a cover of 7% constitute the SCT. In other situations, attributes such as community structure, plant spacing, plant biomass, or other characteristics of vegetation and/or surface soil may be appropriate. For example other approaches use multiple factors of vegetation and surface soil characteristics to rate "soil condition." This approach may have merit, especially where perennial vegetation is scant. These criteria for SCR and SCT will be elaborated jointly by the SPA and the pastoralist for each site and will then be incorporated into the management and monitoring plan. Criteria selected will be objective and quantitative enough to serve as a basis for monitoring so that trends in the SCR can be established as a measure of management effectiveness.

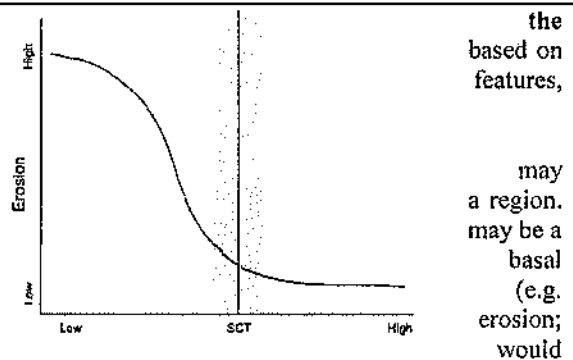


Figure 1 Site Conservation

The Forest Development Department of MoENR, working with Forest User Associations and the REA improve sustainable and multi-functional forest management across 20,000 ha of forestlands.

81. The project will strengthen multi-functional forest management across 20,000 ha of forestlands in the two pilot rayons by introducing new, multi-functional ecosystem-based forest management and by strengthening the participatory nature of forest planning and management. Project resources will support a two-step process to introduce improved multi-functional management in the two pilot rayons:

New, ecosystem-oriented targeted forest survey/inventory of priority forests to inform improved management planning and implementation;

This will be closely tied to the carbon monitoring work under Output 3.2. The project will train foresters within the Department of Forest Development (DFD) and respective rayon-level Forest Enterprises (FE) in forest survey methodology, stressing forest ecosystem data points that are new to forest management in Azerbaijan and critical to monitoring and measuring success of LULUCF work. Standard data points for measuring forest/tree growth will be utilized (tree heights, diameter (dbh), and age) as this information has been used in Azerbaijan in the past to classify forest condition and type by way of bonitet classes which provides growth and size index. New ecosystem-based data points or indicators will also be measured such as:

- (i) Amount of standing and fallen deadwood
- (ii) Tree age/size class shifts more towards that of undisturbed natural forest
- (iii) Erosion and other forms of soil degradation as visually apparent in sampling sites
- (iv) Increased density of forest understory
- (v) Number of layers of forest understory visible

The forest inventory will be conducted by the DFD and its rayon level FEs with guidance from an international forestry expert with proven experience in rapid forest inventory work. A workshop, with both classroom and field exercises, designed by an international expert in coordination with MoNER, will be held in year 1. The inventory will utilize and build upon the GIS maps of forest areas elaborated under Output 2.2.

Knowledge sharing and trust building. In the past forest inventories in Azerbaijan have not been done with participation of communities. Much of the knowledge about any forest area will be in the form of the tacit knowledge of local people. Under this planning approach, this knowledge will be given as much value as the explicit knowledge from modern science such as remote sensing or field inventories. This will be done through participatory mapping and resource identification exercises that are open to options that local people might seek to emphasize. Transparency and a level playing field for all interested parties will be an important element to this participatory planning and management effort. Geographic information systems (GIS) tools will help to make all information spatially explicit to facilitate discussions. Spatial models can allow the identification of those areas that would provide the largest incremental benefits for carbon sequestration, watershed protection and ecosystem services maintenance.

Extending multi-functional forest management (MFM) across 20,000 ha of forest

Under the new ecosystem-based management approach, forest management objectives seek to restore and maintain native forest ecosystems in good health. An over grazed forest at first glance can look fine; upon closer inspection, an over-grazed forest is a damaged forest ecosystem, with little to no understory with its multiple shrub and tree layers, little-to-no natural tree regeneration, no organic litter on the forest floor or standing or fallen dead trees. Impacts from the over-use of non-timber forest products (NTFP) can also degrade a forest ecosystem through the over-harvest of deadfall, of the understory and shrub-layer, and of flowers or fruits. All of these elements enable a healthy forest ecosystem to provide multiple benefits that society wants a forest to generate and that Azerbaijan's forest code calls for the forests to generate for the Azeri people. Work to elaborate and implement this multi-functional forest management (MFM) plan for the mountain forest landscape of Ismayilli and Shamakhi rayons will build upon the IPFMP work done under Output 2.1, using the maps and data generated therein as a cost-effective and efficient means of moving quickly through the necessary planning process to the actual implementation of improved multi-functional forest management.

MoNER's Department Forest Development (DFD), together with its FE in each pilot rayon will lead this planning process, utilizing the same working group that contributed to the IPMFP under Output 2.2. Guidance on how to structure the process will be provided by an international MFM expert. The planning process will consist of at least 3 workshops at the rayon level and 5 municipal level community consultations. At the end of this planning process, 20,000 ha of forest will be under a MFM plan adopted by the MoENR. Co-funded demonstrations of multi-functional management prescriptions will be implemented to catalyze the implementation of this plan.

Forest managers worldwide allocate forests to categories, such as: "production forests", "protection forests", "forest reserves" and other categories. Under this output, such a normative approach to forests will be balanced by a critical examination of the question, "What are the real outcomes desired for forestlands in Ismayilli and Shamakhi?", while also addressing fundamental questions such as: "How much forest do we need?" and "What sort of forest should it be?" The answers to these questions are essential if Azerbaijan is to invest efficiently in forest management in the 21st century. The answers will have to be negotiated among key stakeholders (forest managers and user groups) in order to improve multi-functional forest management across this Greater Caucasus landscape.

Building upon the ecosystem-based forest inventory conducted under Step 1, stakeholders will embark on a participatory MFM planning process to elaborate and implement a multi-functional forest management plan (MFMP) for the State Forest Fund lands across the two pilot rayons, covering at least 20,000 hectares. Seven different rivers and their watersheds encompass the mountains of the two pilot rayons. Two of the seven watersheds (the Aghsu and the Pirsaat rivers) are shared by the two rayons. In addition, Ismayilli Rayon is home to the Goy and the Giridman rivers; and Shamakhi is home to the Gozlu, Aji and Chigil rivers. The watersheds of the seven different rivers comprise the forest landscape of the two pilot rayons, and each watershed will have slightly different forest types or forest condition and classification, requiring different kinds of multi-functional forest management prescriptions. Combined, they form a landscape mosaic for this MFM planning process. The approach to be taken under this management planning effort will focus first upon defining the outcomes and values stakeholders want from the forest landscape mosaic in the two pilot rayons (see Table - below). Second stakeholders will identify the factors that undermine or hamper the forests ability to generate these values and serve these functions. Third, stakeholders will identify priority actions to be taken to re-inforce the values and functions. And finally, the MFM plan will establish a participatory implementation mechanism.

Table -: Existing forest categories/values vs. examples of new values under MFM.

Categories of use of the forest fund as declared in forest regulations (CoM #45; 2000)	Examples of new values envisioned under multi-functional forest management
Firewood production	Optimized fuel wood production or nut or fruit production
Secondary forest resources (stumps, fiber, leaves)	Optimized forest ecosystem health and complexity and associated biodiversity values
Supplementary use of forests (grass cuttings, bee-keeping, wild fruits, mushrooms, oak cones, medicinal plants, technical raw materials, moss, forest covering, fallen leaves, reeds, rushes)	Conditions for optimized production and sustainable use of non-timber forest products
Scientific-research	Watershed protection/erosion control
Culture, health treatment, tourism and sport	Aesthetic – beauty
Needs of hunting industry	Optimized tourism/recreation that respects other values above
No consideration of carbon sequestration values	Enhancing climate change mitigation/carbon

Under this MFM planning approach, the focus will be upon how to optimize the full range of goods and services that stakeholders require from forests and to ensure that the different elements of the forest landscape mosaic are complementary. Under this approach, stakeholders may decide that some areas may require special management emphasizing different values, such as:

- (i) watershed protection forests located parallel to the contours so as to intercept linear flows of water and soil
- (ii) intensively managed plantations located so as to minimize opportunity costs for agriculture and/or to produce priority forest products in the most efficient way
- (iii) management of non-timber forest products (including exclusion zones associated with erosion control, understory restoration, and natural seedling regeneration)
- (iv) carbon sequestration (Output 3.3)
- (v) ecosystem health and biological diversity
- (vi) non-timber forest product production and harvest management. This may include exclusion zones to ensure recovery of problem areas, timing of use, community of use, and requirements for use. Requirements for future forest use permitting may be that the community agrees to monitor changes in areas of primary collection
- (vii) to improve understanding of the role of forests in soil protection and carbon sequestration through education and outreach
- (viii) a habitat corridor must be continuous between core areas and must provide the ecological conditions needed for species' movements.

All of these components must combine to provide an environment in which people can enjoy the benefits of employment, recreation, carbon sequestration, and reduced erosion and flooding intensity.

Output 2.4: Payment for ecosystem services (PES) mechanism piloted to reduce over-grazing and restore critical ecosystem services generated by healthy summer pastures in the upper catchments of the Girdiman River, Ismayilli Rayon, in the Greater Caucasus mountains.

82. This project's PPG process conducted a feasibility study (see separate document entitled "Payment for Ecosystem Services: Feasibility study of piloting PES under the sustainable land and forest management in the Greater Caucasus landscape project") for piloting a PES scheme to reduce overgrazing and restore critical ecosystem services generated by healthy summer pastures. Please see this study for details. The summer pastures of the Greater Caucasus provide three critical ecosystem services that are the focus of this feasibility study: (i) flood regulation through soil conservation and erosion control; (ii) animal health and meat production; and (iii) watershed protection and water quality. The undermining of these ecosystem services by over-grazing results in: increased frequency of flooding and mudslides; reduced animal health (sheep) and meat production per animal; and water pollution. The study concluded that the value of such ecosystem services exceeds the opportunity costs that the pastoralists would incur in reducing stocking rates to restore the ability of summer pastures to provide such ecosystem services. Under this output, activities will be carried out to pilot this PES scheme. The Ministry of Environment and Natural Resources will be the "buyer" of the ecosystem services; the participating pasture user association, representing the pastoralists with legal leases to the pastures in the pilot area, will be the seller of ecosystem services.

PES Start-up:

83. Establish PES management plans with PUA members/leaseholders in the pilot summer pasture area. This work mirrors the pasture management planning that is described under Output 2.3 and in fact will be a natural extension of this work, focusing on the seven pastoralists participating in the PES pilot. It will consist of a two-day management planning workshop to elaborate seven management plans (1 for each pasture plot) and will involve 15 people. Costs will be born by the GEF project as part of its incremental support to the PES pilot. Each brief, succinct management plan will detail specific actions to be taken, the number of animals allowed to graze on each plot and will draw upon the indicators to be monitored. These indicators are specified in the feasibility study in Table 23. Each PES plan will also specify priority pasture improvement actions needed, which will be discussed among the PUA members and a short list of priority activities submitted for funding by the project.

84. Revise pasture lease agreements. This is a short step involving the incorporation of the priorities and commitments in the PES management plans developed under Step 1 into the pasture leases. Amendments to existing pasture lease agreements will be prepared as a first step and as pasture leases come up for renewal, incorporating PES changes into the lease agreement itself.

85. The PES pilot will be formally launched with a PES inception workshop bringing together decisions makers from MoENR, REA, PUA and other organizations such as MoA. The inception workshop will provide the crucial official starting point for the PES work and will reinforce the primary elements of the buyer and seller relationship central to the PES, specify actions to be taken by main parties, including monitoring and payment schedules.

86. PES Pilot Operations. A PES Working Group, comprised of 9 people (MoENR, REA-Ismayilli, 7 PUA members) will meet twice a year. The REA-Ismayilli will serve as the intermediary body between the buyer (MoENR) and the seller (the PUA) as part of the REA's ongoing responsibility to administer pasture lands and pasture leases to those lands. These working group meetings and in fact nearly every activity under the PES pilot will be used also as an opportunity to enhance the capacity of existing institutions to support PES through training in collaborative resource management skills, and establishing cost-effective monitoring and verification activities. Capacity building will also focus on the PUA members, with activities designed to strengthen the social capital within the group of pasture leaseholders. Ensuring that PES recipients comply with their contracts requires appropriate monitoring. Evaluation and monitoring will be done semi-annually. Monitoring of summer pastures enrolled in PES will be conducted by a 3 member working group comprised of an expert from Baku State University, State Committee on Land and Cartography, MoENR, REA. Monitoring will determine changes in management (rotational grazing, reduced animal numbers, etc.) and changes in pasture condition near the end of the grazing season (productivity, cover, erosion, etc.). Surprise or unscheduled monitoring visits will also be conducted to reduce the incentive for cheating during the in-between times.

87. The emphasis on monitoring will be on cost-effectiveness, using easily measured indicators in order to hold down PES transaction costs and increase stakeholder ownership and ability to monitor over the long-term. Questions such as "Are new rotational grazing, other LM good practices being applied by pastoralists in agreed areas?" will be asked and answered during monitoring visits, per the indicators in Table 23 in the Feasibility Study. The results of this monitoring activity should be largely shared with buyers, intermediary institutions (Ministries, and local authorities), beneficiaries and the public at large to disseminate. Over time this information will be used to inform extension activities and illustrate the benefits of improved management so that the improved management is adopted over the majority of summer pastures. The administration of this PES pilot will be undertaken by a sub-committee to the Project Board. The Board will oversee the implementation of the pilot. Membership of this sub-committee will include the MoENR, the REA of Ismayilli Rayon, and a representative of the PUA for the PES pilot.

OUTCOME 3: OBJECTIVES AND METHODS TO ENHANCE CARBON STORAGE POTENTIAL OF FORESTS AND PASTURES INTEGRATED IN FORESTRY AND PASTURE LAND-USE PLANNING AND DECISION-MAKING.

88. Outcome 3 will demonstrate the enhancement of carbon storage potential in GC region. The project will support: (i) the development and operationalization of a national LULUCF and REDD Action Plan in order to integrate carbon sequestration into forestry and pasture land-use planning and decision-making; (ii) the design of Carbon flow monitoring protocols and their integration into the national forest monitoring system, including refined methodological approaches for carbon stock field assessment. Data processing and analysis will be done through a GIS based software module to enable reporting to UNFCCC on the potential for carbon sequestration at LULUCF forest and non-forest ecosystems and emission removals and reductions from REDD activities; (iii) the implementation of REDD+ pilots across 14,000 ha focusing on enhancing carbon storage potential of forests and pasturelands in the GC. Carbon enhancement actions will be planned and implemented accordingly to achieve emission reductions, and to measure and verify the carbon storage. Carbon flow monitoring protocols developed under this same component will be field-tested for accuracy and practicality.

Output 3.1: National LULUCF and REDD+ Action Plan developed and adopted and national and sub-national forest sector reference emissions levels set and communicated to UNFCCC.

89. The project will: (i) develop and adopt a national REDD+ Action Plan; and (ii) elaborate sub-national forest sector reference emissions levels and communicate them to the UNFCCC. LULUCF-REDD+ Action Plan: a capacitated working group of 3-5 experts in the forestry, land-use and climate and legal sectors will be created within the MoENR's DFD. This activity will be complete when the Ministry of Ecology and Natural Resources officially adopts the Action Plan.

REDD Action Plan will address, *inter alia*:

- Land use and forest policy to date, identifying the drivers of deforestation and forest degradation;
- Activities to reduce emissions and increase removals;
- Strategic options to address these drivers and assess these options from the point of view of cost-effectiveness, fairness and sustainability;
- Legal and institutional arrangements needed to implement the REDD strategy, including the body or bodies to be responsible for coordinating REDD at the national level, promoting REDD and raising funds; appropriate benefit sharing mechanisms for the financial flows expected from REDD (i.e. PES); and a national carbon registry to manage REDD activities (both emission reductions generated and the corresponding revenue flows);
- Investment and capacity building needed to implement the strategy and would assess the environmental and social impacts of the various strategy and implementation options (the benefits, risks, and risk-mitigation measures);
- Full participation of local communities in REDD projects;
- A set of standards to strengthen the role of forest in climate change mitigation;
- Robust & transparent forest monitoring system (see Output 3.2) to monitor and report on:
 - REDD activities, resulting emission removal and reductions,
 - Reversal risks [control of permanence, e.g. setting up permanent protected areas].
 - Natural forest conversion and loss of biodiversity and carbon.
 - Displacement of emissions and actions to reduce displacement.

90. Guidance on setting the level of national forest reference GHG emissions: The REDD/LULUCF working group will: (i) assess/confirm forest emissions using IPCC guidance; (ii) Calculate a recent historical average of emissions and, in a forward looking component; (iii) Forecast future emissions based on economic growth trends and national development plans, and emerging forest management lessons from this project itself; and (iv) Other actions recommended by the evolving REDD+ guidance from the UNFCCC. The project will involve experts from Universities, the Academy of Sciences, the State Committee on Land and Cartography and other relevant entities.

Output 3.2: Carbon flow monitoring protocols integrated in the national forest monitoring system based on refined methodological approaches for carbon stock field assessment.

91. The protocols will describe monitoring, reporting, and methods of accuracy assessment for carbon measurements. Effective development, adoption, and utilization of such monitoring protocols will require seamless cooperation across departmental boundaries within the MoENR, particularly between the Forest Development Department (FDD) and the Environmental Monitoring Department (EMD). The project will conduct capacity needs assessment to clarify and define the specific training needs of the MoENR, DFD, FE and EMD, for carbon monitoring, which will be completed by middle of Year 1 and will inform the development of the training program. The training will focus upon introducing modern forest inventory methods together with carbon measurement protocols to be used during the next national forest inventory scheduled for 2014. GEF resources will complement those of the MoENR to develop and adopt a systematic long-term approach to capacity building for SFM/SLM as part of MoENR's in-house "Expertise Enhancement Training Center" program. Likely components of the training program will include: (i) specialized instruction on the importance of forest carbon in emissions and sequestration of carbon; (ii) the importance of SFM in maintaining and improving forest carbon; (iii); the sources and sinks of carbon in forests (aboveground biomass, belowground biomass, litter, dead wood, and soil carbon); and (iv) relevant policies, conventions and programs (REDD+, LULUCF, UNFCCC, etc) associated with control of GHG. The training will demonstrate methods used for monitoring forest carbon, reporting methods, as well as improved methods of forest inventory using new equipment. In addition, the training will provide instruction on the value of community or user participation in monitoring, especially of their municipal forests or other

forests with significant use by local communities. Some of the trained MoENR directly involved in forest carbon inventory and monitoring will be assigned to develop community skills in monitoring forest carbon. For example, they would monitor for growth and tree volumes. Forest users will receive training in measuring tree diameters and height to measure incremental growth of the forest, and standing biomass is one of the more important carbon pools. Forest User Associations will be trained in this and the protocols designed to incorporate input from user-based monitoring.

92. The following are the main components of the field carbon assessment program: (i) field assessment of carbon methodology - will build upon, modify and be integrated into the current forest inventory methodology. The current inventory occurs at ten-year intervals, but carbon measurements will occur more often on a subset of the fixed plots used in the forest inventory. This inventory places forest types (dominant forest species) into bonitet classes based on tree volume (height and diameter (dbh)). Volume can be converted to biomass using various algorithms⁷. Other important measurements to provide a sound measure of reduced emissions from deforestation and forest degradation are not provided by the forest inventory (soil carbon, litter, down wood, below ground biomass). Using IPCC 2006 Tier 1 guidelines soil carbon and below ground biomass can be estimated, but no information is available on litter or down-wood. Because the forest inventory does provide an estimate of volume it is logical to build upon this inventory to provide additional measures of forest carbon; (ii) Carbon will be tracked using web-based carbon tracking tools currently being developed by *The Carbon Benefits Project (CBP)* (Milne et al. 2010) as the basis for measurement, reporting and verification (MRV) and monitoring of forest carbon. The CBP carbon tracking tools will produce a standardized system for Global Environmental Facility (GEF) and other sustainable land management (SLM) projects to measure, monitor and model carbon stock changes and greenhouse gas (GHG) emissions. These tracking tools will be a modular, web-based system, which will allow this project to collate, store, analyze, project and report net C stock changes for baseline and project scenarios in SLM interventions. The CBP methodology will provide a cost effective system integrating cutting edge remote sensing technology and analysis, ground based measurement, new rapid laboratory techniques for soil testing, and rigorous statistical analysis. In addition, as they follow IPCC 2006 guidelines they will meet known carbon measurement requirements of REDD+⁸. The objective of the carbon monitoring is to provide a cost-effective and sound monitoring system that allows for testing of methods to ensure currently available algorithms are accurate. The methodology will be compatible with national reporting and will use both remote sensing and ground based measurement as well as community based monitoring in several pilot forests (municipal forests, forest identified as having high local uses). The inventory information will be open to the public from a web-based server.

Output 3.3: Pilot restoration by reducing grazing and wood collecting pressure of 5,000 ha of degraded community forests and 9,000 ha of pastures.

93. The project will demonstrate restoration activities that enhance carbon storage and methods to monitor and track carbon stocks, including verification of baseline carbon estimates. The baseline carbon data measurements on these demonstration sites will be used to demonstrate improvement in carbon stocks over time and to demonstrate carbon flow methods that are reliable and verifiable associated with LULUCF and REDD+ Action plan protocols. Total area of demonstration sites is 5,000 ha of forests and 9,000 ha of pastures. For forests, the demonstration sites will enhance carbon sequestration by improved management (creating managed forests) using improved silviculture practices, reforestation, reducing grazing impacts, and controlling fuel wood collections and illegal timber harvests. Pasture restoration will occur through improved control of livestock grazing and by demonstration of restoration treatments. Carbon stocks improved by demonstration treatments will be in vegetation and soils, but the greatest improvement will likely occur in

⁷ Currently there is no information on how applicable the algorithms are to Azerbaijan forest species and for field measurements these algorithms should be tested for accuracy.

⁸ The paper *Review of Literature on Monitoring to support REDD+* by C. Hiepe and H. Kanamaru discuss many monitoring tools as does *Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report* by Angelsen, et al, 2009 available at www.unredd.net. Procedural and operational guidance of the REDD program are provided at www.unredd.net (UN-REDD Programme Rules of Procedure and Operational Guidance.pdf)

aboveground vegetation in forests; whereas, the greatest change in pastures will be from soil carbon improvement.

3.3.1. Pilot Restoration of 5,000 ha of Degraded Forests

94. The restoration of 5000 ha of degraded forest will stress assisted natural regeneration with relatively small areas replanted to speed restoration. The restoration will occur the restoration/ rehabilitation of some 3000 ha of community or municipal forests that are allocated by the rayon executive. The second demonstration forest type will initiate restoration of 500 ha of riparian forests with variable land use controls (state or municipal lands). The third will demonstrate restoration/ rehabilitation of 1500 ha of national forests managed by the MoENR's Department of Forest Development (DFD) and its rayon-level Forest Enterprises (FE), with extensive areas showing livestock grazing damage or relatively unmanaged conditions decreasing forest values. As current uses and treatments of forests are quite restrictive, these demonstration forests will be entitled *Experimental Stewardship Forests*⁹, as they will stress the development of "managed forests" for improved products and values compared to unmanaged forests. Carbon measurements will track the changes in carbon stocks over time.

95. **Restoration/rehabilitation of Municipal Forests:** The project will work in five selected municipal forests in Ivanovka, Gushinja, Diyali, and Taza Kand village municipalities. Municipal forests offer significant opportunities to demonstrate community-based management, as they are relatively small forest adjacent to agriculture operations (pastures, hay fields, etc). The DFD will lead the development of each of the *Community Managed Experimental Stewardship Forests*, with representatives of the municipality and rayon, and the local people directly using these forests (FUA) or adjacent lands. Multiple-functions of municipal forests will include soil protection, carbon sequestration, wildlife habitat, livestock grazing or hay production, fruit production, and fuel wood from the forests managed for improved growth of trees. The development of demonstration *Community Managed Experimental Stewardship Forests* will be initiated in year 2, following inventory and planning for improved monitoring (initial monitoring), elimination of free-access, and means for sustainable use of forest products. In at least two of these forests, the project will work with specialists from the Research Institute of Forage Crops, Meadow, and Pastures (MoA) to demonstrate agroforestry principles, such as the use of legumes interseeded with trees to provide forage or hay and increased nitrogen for improved tree growth and carbon sequestration. In all five municipal forests all project components will combine to illustrate improved policy, management and demonstration to enhance and demonstrate improved carbon storage as well as other forest values and products. This will include the baseline measurement of carbon associated with methods from output 3.2 to implement REDD+ actions. Forest Enterprises will participate in replanting for improved forest composition (estimated at 5% or 150 ha) of the total area. In year 3 and 4 the *Community Managed Experimental Stewardship Forests* model will be expanded to all community forests of Ismayilli rayon using peer-to-peer training directed by a working group of local experts involved in management and monitoring of municipal forests. By year 4 all 3000 ha of municipal forest will be under improved management.

96. **Reforestation/Restoration of riparian forests** will result in improved floodplain functions, increased structural diversity to improve wildlife habitat, increase carbon stocks and provide future values for landowners. The demonstration areas will be called *Riparian Experimental Stewardship Forests* to stress the participatory planning and experimental future resource use of these forests. The trained MoENR staff (Department of Forest Development) will develop recommendations for restoration of 500 ha of riparian forests. These forests will be predominately in the mid and lower watersheds of the Zaqolovanchay and Girdimanchay rivers. Riparian forest restoration will include both gallery forests (2 sites at a minimum in each rayon) and non-gallery forests at mid and upper areas of these catchments (3 sites at a minimum). Each *Riparian Experimental Stewardship Forests* will comprise a minimum of 25 ha and will consist of both fenced and unfenced demonstration areas. The fenced sites will exclude grazing on a minimum of 10 ha. These exclosures will demonstrate the impact of livestock grazing on riparian forest structure and tree regeneration. Sites requiring tree planting will utilize Forest Enterprises and the local nurseries for seedlings,

⁹ These experimental stewardship forests provide a means to demonstrate local participation in planning and uses of some resources of these forests.

drawing upon other nurseries in the region if necessary. It is estimated that 20% (100 ha) of the *Riparian Experimental Stewardship Forests* will require replanting to demonstrate activities restoration activities to enhance carbon. The remainder of the *Riparian Experimental Stewardship Forests* will continue to be grazed; however, on sites requiring reforestation a minimum of 10 ha will receive reduced grazing by allowing a rest period (no grazing for year 1 and 2) to allow for initial tree establishment. The reduction in grazing pressure will be done using temporary fences with agreements of herders to restrict livestock from these areas for the two-year period. The demonstration sites will be visited by other rayon forestry enterprises and rayon officials. Overtime these areas will be replicated in cooperation with other development organizations.

97. Restoration/rehabilitation of Forest Fund Forests: The development of *Forest Fund Demonstration Experimental Stewardship Forests* will provide the means to demonstrate the development of the monitoring and planning activities, provisions of allowable use of forest products and improved awareness of forest values and management by improved forest policy, planning and management and by demonstrating improved management (silviculture practices, community participation, etc.) and the influence of current practices on forest regeneration, social benefits and changes in carbon stocks. The demonstration forests will be in the Girdimanchay and Qizlchay watersheds in close proximity of summer pastures of both Ismayilli and Shamakh rayons. Restoration or forest rehabilitation treatments will be applied to improve forest stand structure, regeneration and other forest values on 1500 ha to demonstrate improved carbon stock potential on managed forests¹⁰. The *Forest Fund Restoration/Demonstration Experimental Stewardship Forests* will be "managed" forests by improving silviculture practices on degraded forest, reforestation of sites with poor regeneration because of overgrazing or other land uses, and by controlling livestock grazing to document changes in carbon stocks as well as other forest products and values. These experimental stewardship forests will be located adjacent to summer pastures of Ismayilli and Shamakhi rayons. The two demonstration forests will experimentally illustrate the effects of heavy grazing by reduction/elimination of grazing pressure on six, 10 ha exclosures. The elimination of grazing pressure will demonstrate how overgrazing reduces regeneration and alters forest structure and values, including carbon stocks. The exclosures will be established during year 2 of the project (following planning and workshop activities). On these fenced sites there will be degraded forests associated with past uses in regards to overgrazing and poor regeneration associated with past forestry practices. Drift fences, to keep livestock from "drifting" back into the forests will reduce livestock grazing in major areas. A total of 20 km "drift" fences will be used to protect these forests from heavy livestock grazing. Carbon stock changes will be monitored on sites with heavy livestock grazing and areas with reduced livestock grazing to track carbon stocks. It is estimated that the need for replanting of forests in areas adjacent to summer pasture areas is limited to 50 ha of very degraded conditions. Sites for planting will determined following inventory and planning exercises. The need to demonstrate the carbon gains in these areas (upper forests near summer pastures), associated with regeneration and increased tree growth, as well as increases in other woody shrubs and understory plants, is critical in demonstrating the ability of forests to expand into the heavily grazed upper elevation areas with current global climate change predictions¹¹.

98. The 5000 ha of reforestation occurs on several different forest types and specific methods of forest restoration will depend on site characteristics. Generally, assisted natural regeneration will play the dominant role in restoring forests; planting of trees will be a minor component of the forest restoration: assessment is that 95% of restoration will be through assisted natural regeneration, and 5% replanting. Assisted natural regeneration will be associated with improved grazing management (restriction of grazing, fencing, reducing grazing pressure) and silviculture practices (such as pruning) to improve seed production of species in lower densities than desired for forest structure and conditions. Planting of trees to increase diversity if seed sources are depleted will also be used where needed. In order to ensure compliance with international conservation requirements, the process of restoration and the subsequent management regimes for the targeted forests will closely follow the FSC guidelines for High-Conservation-Value forests (HCVF)¹²

¹⁰ Ragim Ibragimov (Azerbaijani forest expert) stresses low average increment and wood reserves in the national forests related to low-density forests, thin areas, proliferation of poor species mixtures, and increased anthropogenic impacts.

¹¹ The current climate prediction is that forests will "move-up" in elevation in Azerbaijan associated with warming conditions and increased rainfall, but only if livestock grazing will allow. Current heavy livestock grazing eliminates much of regeneration in areas adjacent to summer pastures).

¹² High conservation value forests (HCVF) are defined by the Forest Stewardship Council: http://en.wikipedia.org/wiki/High_conservation_value_forest

Forest Carbon Stock Measurements.

99. Measuring of forest carbon is generally described in Output 3.2. Forest carbon measurements on demonstration forests will be directed at community participation in the measurement process, but will also provide some more intensive sampling to test the precision and accuracy of carbon stock measurements to verify methodology. The community participation in monitoring will be based on the publication *Forest Carbon Stock Measurement: Guidelines for measuring carbon stocks in community-managed forests*¹³ with final development of community based measurements developed by an international consultant in coordination with Azerbaijani foresters (MoENR). Forest User Associations training is designed to incorporate input from user-based monitoring in carbon monitoring and potential use of forest products for communities. All carbon stock measurements will at a minimum achieve Tier I measurement guidelines of IPCC (2006) and will be appropriate for REDD+ and LULUCF in tracking carbon and impacts on other uses and values and peoples using the forest resources. Mitigation activities associated with REDD+ will include changes in forest area, reducing degradation of forests (reducing or elimination grazing/fuel wood harvests), increasing carbon density of forests by improving understory and stand structure (demonstration of improved silviculture practices such as thinning to improve species composition to increase carbon storage, pruning to modify carbon allocation), and reforestation of highly degraded sites. Carbon measures prescribed are presented in Attachment 3.

100. To ensure accurate, reliable, and verifiable carbon stocking training programs will be critical in building capacity. Training will consist of both theoretical and practical aspects regarding carbon measurements. Major activities will include introduction to forest carbon measurement, importance of forest carbon measurement, forest carbon measurement procedures, demonstration and use of equipment and materials, and field demonstration. The *Community Managed Experimental Stewardship Forests* will serve as the model or demonstration forests for all of these major activities again initially led by an international forestry expert and staff of the DFD. Following training DFD and FE staff and FUA (local resource persons) will serve as peer trainers for other monitoring carbon stocks on other forest sites. Carbon tracking associated with the CBP will also be introduced in the workshop; and an additional workshop will stress the use of these carbon tracking tools for use by monitoring specialists.

101. Included in carbon stock measurements will be clearly defined spatial boundaries using GPS technology and GIS mapping and delineation on high-resolution satellite imagery (IKONOS or similar imagery). The project area will then be stratified into homogeneous units if needed. Potential stratification will be associated with differences in forest type and dominant tree species, stand age/structure, topography, slope, and site quality. The calculation of optimal sampling intensity and number of permanent sample plots will be determined by identifying required precision level¹⁴. Permanent plots will then be established randomly across each stratum (GIS coordinates recorded) and plots located with a GPS unit. The center of each plot will be marked with a permanent marker (angle iron, rebar, or other device). The radius of each plot will be dependent of the density of the forest, the default being 8.92 m in moderately dense forest. Within each of these plots several subplots are used for different carbon pools. For example, the entire plot will be used for trees greater or equal to 5 cm DBH; 5.64 m radius for established saplings (1-5 cm DBH), 1m radius for regeneration (< 1 cm DBH) count; and 0.5 m radius plots for leaf litter, herbs, grass, and soil. Carbon pools measured (also see output 3.2) will be above-ground tree biomass, above-ground sapling biomass, below ground biomass (on sub-sample and estimated on all plots), soil organic carbon (sub-sample and estimated on all plots), leaf litter, herbs, and dead wood. Soil organic carbon measurements are discussed in Attachment #3.

3.3.2. Pilot Restoration of 9,000 hectares of Pastures and Carbon Emission Reductions, Biodiversity and Social Benefits Measurements

¹³ Subedim B. P. and various contributors published by Asia Network for Sustainable Agriculture and Bioresources (ANSAB). <http://www.forestrynepal.org/publications/book/4772>

¹⁴ For measuring carbon stocks the publication *Forest Carbon Stock Measurement: Guidelines for measurement carbon stocks in community-managed forests* provides a step-by-step explanation that will be taught to MoENR staff.

102. This output is directly tied to the Amendment to State Programme on Pasture Management to enable piloting of SLM practices, capacity building, and development of community-level stakeholders (PUAs will be involved in planning and monitoring restored pastures). The project will: (i) conduct an Inventory and Monitoring of Summer Pastures on 9,000 ha (the first inventory since the 1947-1951 inventory); (ii) set "Carbon Enhancement Demonstration Areas" including pasture restoration treatments to monitor and track carbon; and (iii) establish *Carbon Tracking Methods and Procedures* - carbon stock measurements to verify the ability to enhance carbon pools. Providing pasture restoration treatments designed to enhance carbon is critical as soil carbon of these mountain pastures has decreased¹⁵ and is continually threatened by unsustainable grazing that has resulted in significant soil loss and changes in productivity of these pastures. The purpose of increasing carbon stocks is not only important from a climate change perspective, but is critical on these sites to increase ecological resilience. Plant resilience will improve with better energy reserves and improved root production. Soil resilience is associated with soil structure, organic matter and humus. As such, resilience of both forage plants and soils are related to carbon issues. Therefore, there is a need to provide efficient transport of carbon from plant leaves, to plant roots, and from plants to soil. Carbon is naturally sequestered in soil via biological processes surrounding actively growing roots. Encouraging these processes is cheap, efficient, and ecologically beneficial. Soil carbon will be increased (farmed) with improved grazing management. Likewise, sustainable grazing management will provide social values associated with multiple values and products from these pasturelands as well as ecosystem services.

103. **Pasture Inventory.** As this output is tied directly to development of verifiable carbon measurements and tracking, the 9000 ha will be inventoried using high-resolution satellite images as base-maps to determine current vegetation conditions and to allow for stratification of carbon measurements. The pasture inventory will consist of stratification of pasture area by soils, slope class, vegetation type, and ecological condition. The inventory will be completed in year 1 by a trained team of MoA staff (Department of Pastures), MoENR staff (Department of Environmental Protection) and several institutes of the NAS. The development of the pasture inventory with both personnel from MoA and MoENR is designed to allow both groups to meet their prescribed mandates of determining pasture productivity and uses (MoA) and to monitor environmental conditions (MoENR). The NAS institutes involved will include Institute of Botany, Institute of Land use and Institute of Soil Science and Agricultural Chemistry. The Institute of Soil Science and Agricultural Chemistry will complete soil classification and mapping. The State Land and Cartography will participate to develop map sheets for fieldwork and to develop final maps of the pasture inventory. Carbon monitoring will be based on stratification of pastures and carbon methods will be described in the section *Pasture Carbon Monitoring*. An international expert will direct pasture inventory and analysis through training programs, by directing the development of field mapping sheets and final maps for the pasture inventory, and supervising some of the pasture inventories. A value or ecosystem service stressed in the training will be carbon sequestration as the purpose of the pasture restoration is to increase carbon stocks. Field training will occur in July and will initiate the inventory of summer pastures. Field training period will be for 14 days. Following the training period the international expert will supervise the field inventory for an additional 10 days. The activity will be co-funded by the EU Clima East Programme and the Government of Azerbaijan.¹⁶

104. **Pilot Pasture Restoration Demonstration Sites (12,000 ha).** Pasture restoration of degraded pasture conditions will occur through directed programs with PUA and enforcement of pasture stocking rates to improve vegetation cover and sustainable livelihoods. PUAs with approved resource management plans and monitoring plans coordinate with other activities (for example, PES and demonstration of improved management) to reduce livestock numbers and/or to develop pasture rotations systems). The improved regulations, cooperation between pastures users and local and national entities concerned with pasture management, and regulations covering penalties for poor practices and incentives for good practices will improve pasture conditions. As pasture regulations prohibit cattle grazing on summer pastures because of the fragile conditions (steep slopes, fragile soils) it is logical to enforce the prohibition of cattle grazing. An integration of winter and summer pasture will be part of the process. Poor conditions of winter pastures may result in few options for pastoralists to improve livelihood opportunities even if summer pastures improve.

¹⁵ There are currently no estimates of soil carbon, but there is little doubt that the degraded conditions, poor vegetation cover, and high erosion seen on summer pastures has significantly decreased carbon stocks in soil, litter, and vegetation.

¹⁶ The budget breakdown of the EU Clima East programme is attached as Annex 0

The project will demonstrate several experimental restoration treatments to enhance carbon pools. These treatments will include the following: reseeding of extremely degraded pastures; interseeding and improved management of pasture legumes (sainfoin or *Onobrychis* sp.)¹⁷; removal of livestock grazing on steep slopes (> 60%), rest of eroded areas or sites of low plant cover or poor ecological condition (heavily compacted sites, weedy sites) for a minimum of 4 years; and rotation grazing or controlled grazing to farm carbon by allowing plants to "get ahead of grazing" pressure. This will include both cross fencing and herding to control grazing intensity to improve vegetation cover and monitor for changes in carbon pools. Interseeding or improved management of pasture legumes (*Onobrychis* sp.) will occur on 10 sites. Each site will be a minimum of 4 ha. The Research Institute of Forage Crops, Meadow, and Pastures (MoA) will work with PUAs and pastoralists to determine the specific sites of the summer pasture of Ismayilli to apply the treatments. Previous to applying treatments carbon stocks (soils, vegetation, and litter) will be inventoried on these 10 sites and on similar sites outside these areas not receiving these treatments. See *Pasture Carbon Pool Methods*. All sites will be rested from grazing. For 1/2 of sites the treatment areas will receive rest from grazing for one year and for one month (July) in the 2nd year. The other treatment sites will be rested for 2 years and for one month (July) in the third year then grazed at conservative stocking levels during the remainder of the demonstration. The recovery of pasture conditions and improvement of legumes will be compared. Loss of grazing to pastoralists for this carbon enhancement experiment/demonstration is estimated at 160 sheep units. The project will facilitate the carbon stock measurements and pasture monitoring on restored areas. Pasture monitoring manuals of GIZ will be used to conduct the monitoring of soil and vegetation conditions in the target zones. Trainings and study tours will be organized to ensure the sustainability of the effective pasture management. This activity will be co-funded by GEF and EU Climate East Programme's resources. **Restoration of additional 3,000 ha (total of 12,000) will be carried out through EU Climate East Programme's resources. Action Fiche approved by UNDP and EC in the framework of the Contribution Agreement for the multi-country Action Climate East Pilot projects on ecosystem-based approaches to climate change is enclosed as Attachment O.**

105. Removal of livestock grazing from steep slopes (> 50%) will be based on agreement with PUA and self-policing by PUA members as well as monitors from MoENR staff (Department of Environmental Protection). Area of steep slopes determined during the inventory. Compensation for grazing loss of this resource will be very low as these areas should have not been included in past grazing capacity estimates; although, under Soviet methodology they probably were allocated for grazing use. Protection of these sites to reduce sedimentation, improve plant vigor, seed production and allow seed to move to down slope areas will be explained to PUA. Carbon stocks (soils, vegetation, and litter) will be inventoried on 5 representative sites to track carbon (see *Pasture Carbon Pool Methods*). Grazing loss to pastoralists for removing grazing from steep slopes is considered a minor loss and a treatment that will have no negative long-term impact on pastoralists.

106. Total rest from grazing of eroded areas and sites in poor condition (heavily compacted sites, weedy sites, sites with low plant cover) will occur for a minimum of 4 years on 15 sites (minimum of 4 ha/site). These 15 sites will include 5 sites with significant soil erosion, 5 sites that are producing much below their potential, and 5 sites where weeds are lowering forage production significantly. These sites will be identified in the pasture inventory and treatments applied following agreement with pastoralists grazing the specific area. Carbon stock measurement will occur on treatments and outside treatment areas where grazing is still occurring to track carbon changes. Grazing loss to pastoralists is estimated at 960 sheep units for the 4 year period.

107. Rotation grazing or controlled grazing to farm carbon by allowing plants to "get ahead of grazing" pressure and using conservative stocking rates will be demonstrated on 5 sites (minimum 20 ha/site). This will include both cross fencing and herding to control grazing intensity to improve vegetation cover and monitor for changes in carbon pools. The controlled grazing will include a reduction in grazing pressure (from current levels) and modification of timing of grazing to enhance carbon and soil and plant community resilience. It is known that after rains plants grow rapidly on these summer pastures and it is important to provide that opportunity for the plants (reduce grazing pressure to allow the leaf growth to "get ahead of

¹⁷ Sainfoin (*Onobrychis viciifolia* or *O. sp.*) is an important native legume that was observed in summer pastures. Improved pasture species composition, especially legumes, could dramatically improve carbon sequestration and pasture productivity.

grazing"). This demonstration treatment will provide areas where grazing is less intense and adjust timing of grazing to reduce pressure when plants in pastures are more actively growing. Carbon will be tracked in areas receiving the "carbon farming" treatment and similar areas only managed with rotation grazing to determine changes in plant productivity and coverage. Loss of grazing for this carbon enhancement treatment is estimated at 120 sheep units.

108. Restoration treatments resulting in a loss of grazing will require that pastoralists receive just compensation. This will be achieved through PES (Output 2.4) or in-kind commitments to improve the ability of the herder to maintain net income of their present herd. MoENR and the rayon authority will work to improve winter pastures and/or winter livestock facilities (sheds, corrals, water), purchase of feed or hay to reduce total time in summer pastures, or providing other grazing areas (for example, municipal forests demonstrating agroforestry). As stated previously, this output is designed to show methods of enhancing carbon (and tracking carbon) on summer pastures and over time it is hypothesized that herders will see increased productivity of restored sites¹⁸ and better understand the role of proper livestock grazing to maintain sustainable use.

109. Loss of summer grazing during the experimental carbon enhancement treatments are estimated at 1240 sheep units. This will require commitment of resources to improve winter pasture, to provide hay/feed, or provide improved winter facilities for pastoralists. Improved forage production of winter pastures will include rehabilitation of winter pastures by reseeding perennial grasses resistant to drought, salinity and heat or other species to meet feed demands. Winter barley, rye, kochia (*Kochia prostrata*), and wheat grasses (for example, *Agropyron cristatum*) will be planted to improve winter pastures. The winter pasture forage improvement demonstrations will be directed by the Research Institute of Forage Crops, Meadow, and Pastures (MoA) following approved grazing management plans of affected lease holders.

Socio-Economic Benefits including Gender Dimensions:

110. The primary socioeconomic benefits to be delivered by this project derive from enabling stakeholders to improve the productivity of pasture and forestlands by reducing land degradation. This will yield national benefits in the form of reduced costs associated with erosion and increased flooding in the Greater Caucasus mountains regions. This will yield local benefits in the form of improved land productivity, which translates into improved animal (sheep) health and increased incomes for pastoralists selling healthier animals, while also reducing erosion and destructive mud-slides and other costly natural disasters.

111. The project region as a whole covers over 22,000 km² in 11 rayons (administrative regions) of the Greater Caucasus Region. About 70% of the total population of approximately 1 million lives in rural, agrarian villages, but there are also several larger towns with populations in greater than 50,000 people.

112. The project region is an area populated mainly by poor and lower income people with an average per capita income of less than \$180/month. Land degradation of forest and pasturelands worsens and aggravates natural disasters already experienced in the GC region, including flooding and mud-flows. These natural disasters generate much economic damage and undo years of economic development gains. The experts estimate degraded pastures reduce the productivity of sheep and other animals dependent upon the pastures by at least 15%, which when translated to weight and ultimate price at market is a significant drag on local economies. Total losses from land

¹⁸ PPG team's mission to Ismayilli summer pastures the team observed a fenced plot with amazingly more vegetation and vegetation cover. Maintaining this type of productivity with conservative grazing will demonstrate these sites' potential.

degradation and related impacts such as increased frequencies of flooding include physical damage to people and property, loss of or damage to agricultural land and other income generating lands such as managed forests and the loss of income earning opportunities. The project will improve socioeconomic conditions of the region by reversing land degradation through new sustainable land and forest management practices.

113. The most immediate socioeconomic benefits will be felt in the rayons selected for the project, Ismayilli and Shamakhi Rayons. Stakeholders in these rayons will benefit from improved forest and pastureland condition, with such practices then replicated to other rayons across the GC. Shamakhi rayon is located southeast of the Greater Caucasus. The rayon encompasses 166,710 ha with a total population of 92,500, of which 53% is rural. The economy of the Shamakhi relies on agriculture, which was valued at approximately \$39 million in 2009 of which \$20 million was generated by the livestock sector. Tourism is a growing industry in Shamakhi. The rivers Garachay, Velvelichay and Girdimanchay originate in the area. The ground water mostly takes its source from Ismayilli Rayon, emphasizing the importance of this ecosystem service. The Pirgulu State Reserve was created in 1968 for the protection of more than 50 types of medicinal plants, which points to the significance of non-timber forest products in these mountain forests. Ismayilli rayon encompasses 207,372 ha. Its population is 77,511 people with a density of 37 persons/km and a population that is 78% rural. The economy is based upon manufacturing and agriculture. Livestock breeding generated USD 27 million in 2010.

114. Healthy pasturelands are critical to sustainable meat production in Azerbaijan, where naturally raised mutton and lamb is highly valued. Pasturelands in the pilot rayons support an annual production of livestock worth roughly \$45 million in 2009-2010. Although commercial logging is banned, forests generate significant fuel wood benefits for local communities as well as significant non-timber forest products that also are not measured in value.

115. The socio-economic benefits of improved pastureland protection are also calculated as part of this project's PES feasibility study. See the discussion below on cost effectiveness for details. There are additional, indirect socioeconomic benefits. The project will develop participatory planning and management methods which are new to Azerbaijan and that will develop collaboration between community members and practitioners from regional administrations. The new approach will lead to an increase in forest and pasture productivity, which has far reaching socioeconomic benefits and opportunities for improving livelihoods.

116. The project is working at several levels simultaneously – community, regional and national. The project draws lessons from its activities at the community and regional administration levels and uses them to modify the governing legislative and policy base at the national level. Changes to policy and law in turn will result in improved SLM/SFM practices in sustainable land and forest management not just in the project area, but across the country, and with them, the socioeconomic benefits of improved land condition and improved animal health.

117. The replication potential of the project's practices amplifies these benefits. The project's work of developing new normative legal acts (regulations) specifically for SLM and SFM will provide guidance for replication and serve as a model for developing or improving enabling legal environment in other countries. PES is a new concept worldwide. With old methods of resource management failing to produce results, new methods such as PES will become increasingly necessary, customized to fit each particular situation. The PES model developed in this project can serve as model in many parts of the broader region with the comparable conditions. The project introduces participatory preparation of integrated forest and pasture maps by directly involving community members in the process. This is a rare feature of pasture management measures. The

participatory forest and pasture mapping can be replicated to any area which is affected by increasing land degradation due to inappropriate practices aggravated by climate change.

118. **Cost-effectiveness:** This project has cost-effectiveness built into its design. With respect to the methods it will use to implement SLM and SFM, the project will apply cost-effective approaches to strengthening the legal enabling environment by focusing on elaborating new normative legal acts, which require less time and less effort to promulgate than do revisions to whole laws. The project will introduce new tools and methods that will enable stakeholders to monitor and identify trends towards or away from degradation. This ability will be introduced by the project and will enable stakeholders to address land degradation proactively and avoid the costly and destructive descent past the “site conservation threshold” or the point where erosion rates increase significantly (See Output – for an example). If one considers that it takes (on average) about 100 years to generate one millimeter of soil, the cost effectiveness of preserving that soil before it is lost becomes very apparent.

119. Perhaps the most striking example of new, cost-effective tools being introduced by the project is the “payment for ecosystem services” or PES tool introduced as a pilot under Output 2.4. Pasture and forest ecosystems in Azerbaijan’s Greater Caucasus (GC) mountains provide critical ecosystem services such as: flood regulation, erosion control and provision of clean water as well as numerous other ecosystem services listed in the table below. Local rayon centres and society throughout much of the country benefit from these services emanating from these forests and pastures of GC region.

Ecosystem Services provided by healthy forest and pastures in Azerbaijan's GC

Ecosystems:		Forests	Summer and Winter Pastures
Ecosystem Services:			
Environmental Goods	<ul style="list-style-type: none"> ▪ Food (domestic animals browse) ▪ Fresh water/reduced sedimentation ▪ Fuel ▪ Lumber ▪ NTFP 	<ul style="list-style-type: none"> ▪ Food (grazing) ▪ Fresh water/reduced sedimentation 	
Regulating Services	<ul style="list-style-type: none"> ▪ Flood regulation ▪ Erosion control ▪ Water purification ▪ Climate regulation 	<ul style="list-style-type: none"> ▪ Flood regulation ▪ Erosion control ▪ Water purification ▪ Climate regulation 	
Supporting Services	<ul style="list-style-type: none"> ▪ Nutrient cycling ▪ Soil formation ▪ Carbon sequestration 	<ul style="list-style-type: none"> ▪ Nutrient cycling ▪ Soil formation ▪ Carbon sequestration 	
Cultural Services	<ul style="list-style-type: none"> ▪ Aesthetic ▪ Spiritual ▪ Educational 	<ul style="list-style-type: none"> ▪ Aesthetic ▪ Spiritual ▪ Educational 	

120. This valuation of the priority ecosystem services was necessary to determine the economic costs of overgrazing to society at large in the GC. The PES valuation (see PES Feasibility Study for details) of US\$10.5 million/year in the table below, when compared to the GEF investment of \$0.55 million/year (or \$2.7 million over five years) clearly demonstrates the cost-effectiveness of the project as well as the environmental and economic relevance of the project’s PES scheme. To be sure, healthy pastures do not alone prevent erosion or maintain water quality or support animal health and meat production. But the summary values for one rayon in the table below demonstrate that these ecosystem services do have significant value for society.

Cost of Azerbaijani society of degraded ecosystem services

Ecosystem service of healthy summer pasture in Ismayilli Rayon / Impact of degraded ecosystem service	Cost/year
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Erosion and flood mitigation / Increased flooding (current)	4,868,960
Loss associated with reduced animal health and productivity (current)	391,829
Clean water requiring minimal treatment/Increased levels of water pollution requiring more treatment - projected	3,084,934
Total valuation for ES (USD/year)	10,599,068

121. The project will make available non-structural, lower-cost methods and tools to aid in SLM and SFM, freeing up public resources to be spent on other priorities. Improved pasture health and ability of livestock producers to make a living is dependent on proper management of pastures, proper health and nutrition management of flocks (diseases, parasites, feeding as supplements or trace elements lacking in forage and genetics. Although, all are important the proper management of pastures is critical as this is the least expensive feed source for animals, if the animals are on properly managed pastures their body condition and health will be better (not as stressed so not as susceptible to sickness/disease). This will reduce the cost to the State of State-supported veterinary care for domestic animals. In addition, the impact of this work will grow over time, as these approaches will be developed and tested in the project pilot rayons before disseminating to other participating rayons of the project area and eventually adopted nation-wide. The environmental benefits of the project's proposed alternative also contribute to the cost-effectiveness, sustainability and feasibility of the low cost project alternative. These benefits include a maintenance and enhancement of natural pasture and forest ecosystem functioning through better grazing and reforestation measures reliant upon natural regeneration and re-forestation of forests in areas where forests were before as opposed to afforestation in areas that are not naturally fit for forests to grow. Finally an important measure of cost-effectiveness is GEF funding per ton of CO2 benefit. In this project, that number is $\$6,248,000/4,016,506 \text{ t CO}_2 \text{ eq} = \$1.55/\text{ton CO}_2 \text{ benefits}$.

122. Gender dimensions: The project is designed to recognize important gender dimensions of its work both at the national policy level and at the local community level. At the national level, project resources will mainstream a gender perspective into the policy development process under Outcome 1. For example, regulatory improvements will offer clear guidance on how to recognize gender-specific roles in forest and pasture management and integrate such understanding into SLM and SFM measures such as improved forest resource use and prescribed grazing regimes. At the local level, the project will use participatory approaches to involve all members of the community in planning. The project's stakeholder engagement work will further clarify gender roles, including the different types of gender specific roles in natural resource-dependent communities. Men and women have distinct roles and responsibilities, which give rise to differences in vulnerability. In mountain communities of the Greater Caucasus, women and girls are adversely affected by land degradation and its impacts on water availability and/or domestic animal health and thus income to the family. If a family's income is reduced due to lower animal health and nutrition and thus value, girls are the first likely to be removed from school. Other gender specific activities that will be integrated into the project's work, include:

- (i) Women will also become part of the decision making process through the establishment of the Rayon Stakeholder Committees, forest user associations and pasture user associations. Participation in decision making and politics, and access to decision makers is not always equal for men and women and this may affect their participation and the representation of their ideas in short and long-term decision making on SLM and SFM. Gender mainstreaming will ensure that women are properly and effectively represented in these new community organizations.
- (ii) Capacity building for women's leadership in SFM and SLM will be supported through the project's capacity needs assessment and training program development and implementation under Outcome 1.

(iii) Gender mainstreaming skills and expertise are lacking within most forest related institutions, including Baku State, DFD and MoENR. These skills will be strengthened also through the training program.

123. Gender analysis will seek to understand further women's and men's different activities and responsibilities, and their access to resources and decision-making. This approach will be taken in the project's work to demonstrate new tools and approaches under Outcomes 2 and 3. In addition, the project's M&E includes gender disaggregated indicators for improved SLM and SFM. The project recognizes that the failure to consider these differences between men and women reduces the relevance and efficiency of project activities.

Stakeholder Analysis:

Primary Relevant Institutions	Envisioned roles and responsibilities in the project.
National level	
Ministry of Ecology and Natural Resources (MoENR)	Project Director will come from MoENR Will be member of Project Board Responsible for the protection and restoration of forests and pasturelands in Azerbaijan. Key participants in Outputs 1.1 -1.3, Outputs 2.1 – 2.6, and Outputs 3.2 – 3.5. Regional centers #9 and 11 will play an important role in replication (Output 3.4) Staff at rayon level will be key participants in project inspired local stakeholder committees (LSC) to be formed.
<i>Department of Ecology and Nature Protection Policy</i>	Will be leading, key actors under Outcome 1, with all outputs related to law and policy and under Outcome 3, with the drafting of the LULUCF and REDD+ Action Plan.
<i>Department of Forest Development (DFD)</i>	Located in every rayon, including Ismayilli and Shamakhi, DFD and its Forest Enterprise (FE) offices will be key actors under Outputs 2.1- 2.3 and Outputs 3.1-3.3. Will be key members of the Rayon multi-stakeholder committees.
<i>Department of Environmental Protection</i>	Home to staff within MoENR with pasture experience and expertise. Will be key participant in nearly every pasture related activity across all three components.
<i>Regional Office on Environment and Natural Resources.</i>	Key offices to facilitate replication of improved vulnerability reduction practices across the GC region (Output 3.4)
Parliamentary Commission on Energy and the Environment.	Will play a central role in all outputs under Outcome 1 as the key consultative body and venue for many round table expert working group discussions as part of the work to draft new normative legal acts to enable SLM and SFM.
The State Committee on Land and Cartography (SCLC)	Prepares maps, tracks the ownership and condition of the land, and oversees the delineation process of how land is delimited and categorized. Will be a key player in the Rayon multi-stakeholder committees and their work on IFPMP development (Output 2.2 and 2.-).
Ministry of Agriculture (MoA)	Manages data on livestock type and number in each rayon as well as the quality and condition of agricultural and pasture lands. Working through each REA at the rayon level, sets grazing quotas for each summer and winter pasture. Staff at rayon level will be key participants in project inspired local stakeholder committees (LSC) to be formed.
National Academy of Sciences	Through its Institute of Botany and Institute of Land-use NAS has vital

Primary Relevant Institutions	Envisioned roles and responsibilities in the project.
(NAS) and Regional office of NAS (Ismayilli)	expertise needed to support any pasture and forest land inventory work. Members will play an important role in expert working groups that are formed to produce key outputs, including the PES pilot under Output 2.4.
Local level/regional level	
Rayon Executive Authority	Reports to the Presidential branch of government. Key stakeholder under Outcomes 2 and 3, particularly the demonstrating and adoption of new tools and planning approaches. Primary host/chair of each respective LSC. REA is responsible for managing the leasing of state-owned pasturelands in each rayon. As such, each REA will be integral to the pasture management planning and implementation work under Outcomes 2 and 3. The REA in Ismayilli will be the 'buyer' of ecosystem services under the PES pilot, Output 2.4.
Office of the Municipality(ies)	Elected locally and runs most local affairs at the local level in each rayon. Owns and manages grazing lands in close proximity to each town or village. Key stakeholder under Component 3, with the reforestation/aforestation pilot work.
Baku State University (BSU)	Faculty of Ecology and Soil Science (FESS) will likely play an important role in PES monitoring as well as elaborating the carbon flow monitoring protocols under Output 3.2.
Pasture User Associations/ Forest User Associations	Key local level stakeholder entities with which the project will interact on critical work to achieve SLM and SFM in pasture and forestlands. Will play key roles in the demonstrating and piloting of new tools and planning approaches. Will be an important target for training and capacity building under Output 1.1. Central to the project's SLM and SFM planning and implementation work under Components 2 and 3.
Local NGOs	Local NGO, such as Shamakhi Resource Center in Shamakhi Rayon and Assistance to Social Development in Ismayilli Rayon will play an important role in Rayon stakeholder committees under Output 2.1, 2.2, 2.3.
Lahiji and unorthodox Russian community group (5,000 people in total)	Some of the members of these two groups practice pasture management for livelihoods. The project will ensure that members of these two groups are represented in the Pasture and Forest User Associations, and will be inducted into the PES scheme.

Coordination with Other Initiatives:

124. The project will cooperate and coordinate with the following projects:

(i) UNDP-GEF Water and Flood Management Project. This climate change adaptation project will be working in the GC region albeit in different rayons than this project. Although the two projects are working with different lead Ministries, UNDP will ensure that the two projects capitalize upon synergies where appropriate. For example, both projects will be establishing local stakeholder cooperation mechanisms (water user associations under the water and flood management project and pasture user and forest user associations under this project). This work will be coordinated to ensure the same regulatory support for such mechanisms and to maximize the attention paid by government to these kinds of new mechanisms.

(ii) GIZ/MoENR project, “Sustainable Management of Biodiversity, South Caucasus”, which addresses grazing and forest management issues as they relate to biodiversity conservation within and outside of protected areas. Some relevant areas of focus include: (i) basic legal framework for sustainable natural resource management; (ii) organizational development and human resource development within and beyond the environment ministries; (iii) environmental communication adapted to different population groups and decision makers at all administrative levels; and (iv) rehabilitation of degraded areas through reforestation and sustainable land use systems. A letter of Intent to Cooperate with the GIZ project has been signed between GIZ and UNDP. Cooperation will be mainly implemented in the direction of working to support stakeholder initiatives to: 1) monitor pasture condition under Output 2.3 and 3.3 and sustainable forest management under Outcome 3. Joint efforts with GIZ will specifically focus on: (development and application of the systematic monitoring of the condition of summer pastures; and (ii) development and implementation of integrated management plans for selected sites (pastures, forest, wild plants). Other areas of cooperation will likely include improving governance with a focus of developing a coordinated methodology and on greater cooperation between the state administration and non-governmental organizations (PUA and FUA) developed to improve planning and monitoring to promote sustainable natural resource use.

(iii) Government of Azerbaijan/FAO project, “Sustainable Management of Pastures” project, which builds upon a recent UNDP project on pasture land restoration and will conduct training in sustainable grazing practices. Cooperation with FAO will be mainly in the area of joint efforts in preparation and testing of different techniques in more robust local community involvement in more effective pasture management and rehabilitation (output 2) with following specific activities: (a) restoration of grass cover of pastures and improvement of their productivity on 150 ha and establishment of one protected site in each zone, to maintain biodiversity, enhance water retention capacity and soil fertility of native grasslands; (b) capacity enhancement of provincial/local authorities and farmers and pastoralists through training and awareness programs; and (c) development of community based grassland management plans for the protection of rehabilitated areas and preparation of policy recommendations of sustainable use and management of winter and summer pastures.

125. UNDP coordinated closely with FAO and GIZ during the PPG phase and both agreed to be associated with this project as co-financing partners. Following UNDP procedures, FAO and GIZ will be invited to meet as part of regular Project Board meetings to review work plans and coordinate work.

126. The project will also cooperate with the EC funded WB and IUCN implemented ENPI/FLEG programme in Azerbaijan through joint work in developing model forest concept and its implementation in the pilot regions. The two projects will also cooperate on legal issues related to forest management and improvement of the legal basis.

127. In 2007, UNDP supported the finalization of the First National Communication (FNC) of AZ to UNFCCC. Several projects were developed with UNDP technical assistance as a follow up to the FNC. The “Capacity Building for Clean Development Mechanism (CDM) in AZ” project prepared the Government to access carbon investment financing by building national capacity to participate in the CDM. The project also generated: the institutional framework for implementation of CDM, a draft medium-term CDM strategy, and the legal and technical framework for voluntary carbon market projects. The project builds upon the work done under the UNDP-MoENR-Norway Project entitled “Capacity Building and On-the-Ground Investments for Integrated and Sustainable Land Management.” The project also builds upon key elements in the draft National Action Plan for Sustainable Land Management elaborated under this project. The project was designed to

complement and benefit from the adaptation and capacity building work of the UNDP-GEF SCCF project in AZ.

PROJECT RESULTS FRAMEWORK:

<p>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:</p> <p>CPD Outcome 1.3. Relevant national strategies, policies, and capacities strengthened to address environmental degradation, promote a green economy, reduce vulnerability to climate change</p>	
<p>Country Programme Outcome Indicators: 1) Carbon intensity of economy (green house gas emissions per unit of output); 2) Percentage of total country area covered by Protected Area network</p>	
<p>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 2. Catalyzing environmental finance</p>	
<p>Applicable GEF Strategic Objective and Program: SFM-REDD-1 SFM-REDD-2 LD-3 CCM-5</p>	
<p>Applicable GEF Expected Outcomes:</p> <p>SFM-REDD-1:</p> <ul style="list-style-type: none"> - Outcome 1.1: Enhanced enabling environment within the forest sector and across sectors. - Outcome 1.2 Good management practices applied in existing forests. <p>SFM-REDD-2</p> <ul style="list-style-type: none"> - Outcome 2.1: Enhanced capacity to account for GHG emission reduction and increase in Carbon stocks <p>LD-3</p> <ul style="list-style-type: none"> - Outcome 3.1: Enhanced, cross-sectoral enabling environment for integrated landscape scale management - Outcome 3.2: Integrated landscape management practices adopted by local communities. <p>CCM-5</p> <ul style="list-style-type: none"> - Outcome 5.1: Good management practices in LULUCF adopted in the forest land and in the wider landscape. - Outcome 5.2: Restoration and enhancement of Carbon stocks in forest and non-forest lands. 	
<p>Applicable GEF Outcome Indicators:</p> <p>SFM-REDD-1:</p> <p>Outcome 1.1 Indicator: <i>Effectiveness of policy, legal and regulatory frameworks that integrate SFM principles (score as recorded by tracking tool).</i></p> <p>Outcome 1.2 Indicator: <i>Enhanced carbon sinks from reduced forest degradation.</i></p> <p>SFM-REDD-2</p> <ul style="list-style-type: none"> - Outcome 2.1 Indicator: <i>National institutions certifying carbon credits.</i> <p>LD-3</p> <ul style="list-style-type: none"> - Outcome 3.1 Indicator: <i>Demonstration results strengthening enabling environment between sectors (incl. agriculture, forestry)</i> - Outcome 3.2 Indicator: <i>Area under effective land use management with vegetative cover maintained or increased</i> <p>Outcome 5.1 Indicator: <i>Number of countries adopting good management practices in LULUCF</i></p> <p>Outcome 5.2 Indicator: <i>Hectares restored</i></p>	

Project Strategy	Indicator	Baseline value	Target by end of Project	Sources of verification	Risks and Assumptions												
<p>Objective: Sustainable land and forest management in the Greater Caucasus Landscape secures the flow of multiple ecosystem services, including carbon storage and sequestration, while ensuring ecosystem resilience to climate change.</p>	<p># of hectares of forest and pasture lands with improved management.</p>	<p>Zero</p>	<p>483,800 ha forest 591,100 ha pasturelands in Greater Caucasus over long-term</p>	<p>Periodic Surveys; Grant reports; Field Visits.</p>	<p>Opening up to management engage local stakeholders more robustly contains risk in Azerbaijan, where centralized approaches are still the norm.</p>												
<p>Outcome 1: Enabling policy and institutional environment for integrating SLM and SFM principles within the State programs and rayon level land use and forest management frameworks</p>	<p># of hectares and % of pastures (summer and winter) and forestlands in two pilot rayons under improved SLM and SFM.</p>	<p>Zero</p>	<p>20,000 ha forest under SFM 12,500 ha pastures under SLM</p>	<p>Integrated Pasture Forest Management Plans; Multi-functional forest management plans; Pastoralists pasture management plans; Field visits; maps.</p>	<p>Climate change impacts may increase to the extent that even if the project implements activities to improve land condition in pasture and forest lands it may not be enough to make a difference.</p>												
	<p>% Improvement in capacity development indicators as per UNDP Capacity Development Scorecard</p>	<table border="1"> <tr><td>Systemic Institutional</td><td>43%</td></tr> <tr><td>Individual</td><td>40%</td></tr> <tr><td>Overall</td><td>42%</td></tr> </table>	Systemic Institutional	43%	Individual	40%	Overall	42%	<table border="1"> <tr><td>Systemic Institutional</td><td>63%</td></tr> <tr><td>Individual</td><td>60%</td></tr> <tr><td>Overall</td><td>62%</td></tr> </table>	Systemic Institutional	63%	Individual	60%	Overall	62%	<p>The UNDP Capacity Scorecard</p>	<p>Staff turnover may hamper improvement in capacity scores.</p> <p>Modifying law can be a lengthy and unpredictable process that may extend beyond the life of the project itself.</p>
Systemic Institutional	43%																
Individual	40%																
Overall	42%																
Systemic Institutional	63%																
Individual	60%																
Overall	62%																
	<p>Enhanced social capital defined as trust, norms of reciprocity and networks. # of new mechanisms in place</p>	<p>Zero stakeholder collaboration mechanisms or SLM/SFM-related websites in place</p>	<p>3 new mechanisms in place – Rayon stakeholder committees (RSC), pasture user associations (PUA) and Forest users associations (FUA). 1 new open access website/platform for engagement.</p>	<p>Field visits; APR reports; stakeholder interviews; website itself.</p>	<p>Pastoralists may be wary of forming associations because of unpleasant memories of Soviet times. This may hamper participation in the PUA and FUA mechanisms.</p>												

Project Strategy		Indicator	Baseline value	Target by end of Project	Sources of verification	Risks and Assumptions																								
Outcome 2: Demonstrated forest recovery and reduction of degradation from grazing and browsing pressures by livestock.	Number of hectares of pasturelands for which vegetative cover is increased or maintained under improved land use management.	0	0	12,500 ha of pastures have maintained or increased vegetative cover as a result of improved land use management.	Pasture Management Plans	PES is a new concept in Azerbaijan, which may hamper or slow down the adoption of PES as a valid tool.																								
		71.1 tC/ha	0	75.1 tC/ha or 183,337.5 tCO ₂ e over five years.	Carbon monitoring program of project																									
		0	0	20,000 ha of forestlands under improved multifunctional forest management.	Multi-functional forest management plan.	Government priorities may change from forest protection to industrial use.																								
Outcome 3: Objectives and methods to enhance carbon storage potential of forests and pastures integrated in forestry and pasture land-use planning and decision-making.	Number of additional tons of CO ₂ e stored in pasturelands and in forests as a result of SLM and SFM practices.	99 tC/ha	99 tC/ha	102.5 tC/ha or 256,666 t CO ₂ over 5 years avoided emissions as a result of improved forest management practices.	Carbon monitoring program of project																									
		71.1 t C/ha pasture 99 t C/ha forest	71.1 t C/ha pasture 99 t C/ha forest	Improved SLM and SFM practices and restoration on 14,000 ha contribute to carbon storage of - 311,022 t CO ₂ eq (9,000 ha in pastureland – an increase of 9.425 t C/ha) - 253,100 tCO ₂ eq (in 5000 ha) in forests associated with 13.8 t C/ha increase.	Carbon monitoring program.	Improved pasture and forest management will require overcoming entrenched barriers between environment and agriculture and between national and rayon level stakeholders.																								
		<table border="1"> <thead> <tr> <th>Rayon/Tre e species</th> <th>Bonitet Class Averages</th> <th>Target value (-10%)</th> </tr> </thead> <tbody> <tr> <td>Ismayilli</td> <td></td> <td></td> </tr> <tr> <td>Beech</td> <td>3.2</td> <td>2.9</td> </tr> <tr> <td>Oak</td> <td>3.9</td> <td>3.5</td> </tr> <tr> <td>Hornbeam</td> <td>3.6</td> <td>3.2</td> </tr> <tr> <td>Shamakhi</td> <td></td> <td></td> </tr> <tr> <td>Beech</td> <td>3.0</td> <td>2.7</td> </tr> <tr> <td>Oak</td> <td>4.2</td> <td>3.8</td> </tr> <tr> <td>Hornbeam</td> <td>3.7</td> <td>3.3</td> </tr> </tbody> </table>		Rayon/Tre e species	Bonitet Class Averages	Target value (-10%)	Ismayilli			Beech	3.2	2.9	Oak	3.9	3.5	Hornbeam	3.6	3.2	Shamakhi			Beech	3.0	2.7	Oak	4.2	3.8	Hornbeam	3.7	3.3
Rayon/Tre e species	Bonitet Class Averages	Target value (-10%)																												
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Area of activity (ha) resulting from					Field surveys;	MoENR may be																								

Project Strategy	Indicator	Baseline value	Target by end of Project	Sources of verification	Risks and Assumptions
	project:				
	Conservation and enhancement of car forest lands, including peat land	0	21,400.00	Interviews; APR	unable to finance improvements to pasture and forest lands.
	Avoided deforestation and forest Degradation	0	20,000.00		
	Aforestation/reforestation	0	5,000.00		
	Lifetime direct GHG emission avoided (tonnes CO2e)	0	256,666	Carbon monitoring program.	New threats could emerge that could hamper results, such as insect infestations or disease caused by climate change.
	Lifetime indirect GHG emission avoided (tonnes CO2e)	0	1,026,668		
	Lifetime direct carbon sequestration(tonnes CO2e)	0	747,459.5		
	Lifetime indirect carbon sequestration(tonnes CO2e)	0	2,989,838		

TOTAL BUDGET AND WORKPLAN

Award ID:	00063140	Project ID(s):	00080444
Award Title:	4418 Pasture and Forest Management		
Business Unit:	AZE10		
Project Title:	Azerbaijan: Sustainable Land and Forest Management in the Greater Caucasus Landscape.		
PIMS no.	4418		
Implementing Partner (Executing Agency)	Ministry of Ecology and Natural Resources		

GEF Outcome / Atlas Activity	Responsible Party / Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
Outcome 1: Enabling policy and institutional environment for integrating SLM and SFM principles within the State programs.	MoENR	62000	GEF	71200	Int'l Consultants	24,000	21,000	9,000	0	0	54,000
				71300	Local Consultants	36,960	64,960	30,960	28,960	32,960	194,800
				71600	Travel	19,750	10,000	8,250	6,500	0	44,500
				72100	Contractual Services	295,133	53,000	0	0	0	348,133
				72200	Equipment	0	0	0	0	0	0
				74200	Publications	0	8,000	0	4,000	0	12,000
				75700	Training	18,000	25,000	25,000	29,000	17,000	114,000
				74500	Misc - Services	1,800	1,600	1,700	1,700	1,700	8,500
Total Outcome 1:					395,643	183,560	74,910	70,160	51,660	775,993	
Outcome 2: Demonstrated Forest Recover and Reduction of Degradation from Grazing and Browsing Pressure by Livestock	MoENR	62000	GEF	71200	Int'l Consultants	30,000	30,000	27,000	0	0	87,000
				71300	Local Consultants	36,000	50,400	180,000	37,600	14,400	318,400
				71600	Travel	10,500	12,000	11,750	3,500	9,800	47,550
				72100	Contractual Services	312,725	277,725	322,725	283,725	297,725	1,494,625
				72200	Equipment	10,000	10,000	0	0	0	20,000
				74200	Publications	5,800	26,000	5,000	5,000	5,000	46,800
Total Outcome 2:					116,425	60,000	54,000	58,000	60,000	348,425	

			72400	Communications	700	700	700	700	0	2,800
			72500	Supplies	600	600	600	600	0	2,400
			74100	Professional Services	6,000	36,000	6,000	6,000	51,000	105,000
			74200	Publications	5,800	34,000	25,000	17,000	15,000	96,800
			75700	Training	185,425	193,000	127,000	147,000	90,133	742,558
			74500	Misc - Services	6,234	5,900	6,000	6,200	5,125	29,459
			Total Project		1,401,777	1,213,185	1,295,685	935,585	833,768	5,680,000

Summary of Funds:¹⁹

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Total
GEF	1,401,777	1,213,185	1,295,685	935,585	833,768	5,680,000
Donor 2 (e.g. UNDP)	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000	230,000
MOENR	2,134,000	2134000	2134000	2134000	2134000	10,670,000
FAO	100000	100000	100000	100000	100000	500,000
TOTAL	3,677,247	3,493,755	3,576,255	3,216,155	3,116,588	17,080,000

Budget Notes

1	Int'l NAPCD Facilitation expert (8 wks, 24k); Int'l Env. Law Expert (7 wks, 21k); Int'l Pasture & Forest Ecology Expert (3 wks, 9k);
2	Rayon Field Director (208 weeks @ 600 week); Working Group for NAPCD; (3 experts @ 10 wks @ 400/wk = 12,000); Legal Working Group (5 members @ 400/week, 20 wks ea. = 40,000); National legal/legislative expert leader supporting LWG (15 weeks = 6000); Nat'l agro-environmental incentive/State Programme on pasture management expert -Sub-output iii and iv- (10 wks @400/wk = 4000); Local consultant time - 20 weeks 8K
3	Travel costs for three int'l experts, total 8 air fares, plus DSA
4	Targeted training program design and delivery (295,133); Design and launch of web-based platform for improved access to knowledge and data and strengthen social networks for SLM/SFM and REDD (53,000)
5	NA
6	Translation, publication, etc. of recommended modifications to law in year 2 and final documentation in year 4. Publication of new normative legal acts; field reference booklets/handouts. Translation and publication of findings of institutional capacity assessment.
7	Three round table discussions/workshops on NAPCD (18k); Training of national LWG on Law and Policy on international best practice in SLM/SFM law and policy best practice (6k); Training workshops held at MoENR's facility at least 2/year (40k); and at least 10 training workshops

¹⁹ Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...

	held in pilot rayons under the Greater Caucasus Pastureland Curriculum (50k).
8	Workshop and associated costs for participatory activities on law and policy.
9	Forest and Pasture GIS/GPS field mapping expert (12 wks, 36k); Int'l Forest Inventory Expert (9 wks, 27k); Multi-functional forest management expert (8 weeks; 24k)
10	SLM Pasture Expert (60 wks, \$24,000). SFM Forest Expert (60 wks, \$24K); Website designer/programmer (24 wks, 9.6k) Nat'l GIS expert to support various mapping activities, (48 wks, \$19200) (Output 2.2); 6 sustainable pasture advisors (100 weeks ea. \$180,000) (Output 2.3); Two cross-sectoral working groups for iPFMP for pasture and for forests of 3 members each for 20 weeks each = 120 weeks @ 400/wk = 48k - Output 2.2); PES monitoring experts (24 wks, \$7200); Nat'l Stakeholder/Gender Participation expert to support participatory activities, (16 wks, \$6400);
11	Travel costs for 3 int'l experts, total 8 air fares, plus DSA. PES monitoring (4800) (Output 2.4
12	Contracts for: 1) iPFMP development (290k with training built in; 2) Procurement of SPOT satellite imagery, initial development of maps, and training workshops and webinars working with in-country GIS specialists 175k ; 3) results-based contract for lamb fodder planting done in professional manner that pays for results (Demonstration: proper cultivation of winter pasture for lamb fodder (230K); results-based contract for re-seeding of degraded pastures (new growth in degraded pastures); (260k), results-based contract for basic infrastructure to inhibit re-infection of treated animals in winter pastures (176,133k); 4) PES Support Activities as specified in the PES feasibility study- \$363,625.
13	Hand held GPS devices for participatory forest and pastureland mapping; Forest inventory equipment (dbh tapes, clinometers, meter tapes);
14	Maps for pasture and forest management action priorities and the integrated forest and pasture management plans printed in Azeri and English (\$1.8k (Output 2.2); Pasture management plans for each PUA printed, distributed, made available online. All publications made available online (15k).
15	Cost of organizing training/grazing management planning sessions for Pasture User Association (80k); Meetings, field trips; workshops to elaborate the iPFMP under Output 2.2 (48k); Cost of organizing training/grazing management planning sessions of Forest User Associations in each pilot rayon (80k, 16k/year five years) (Output 2.3); Quarterly field workshops for monitoring of pasture condition among participating PUA (12K/year, 5 yrs 60k (Output 2.3). Forest inventory training for DFD/FE -- 50k); PES workshops (10,425)
16	Meeting logistics costs associated with pilot activities, community working groups, etc.
17	Int'l REDD+LULUCF Action Planning expert (10 wks,30k); Int'l Capacity/Training Needs Assessment Expert (with some background in carbon monitoring) (12wks, 36k); Expert in Community-based Carbon Stock Measurements in Forests (10 weeks, 30k); Int'l expert in pasture/rangeland inventory and analysis guides pilot pasture restoration (3.3) (9 weeks).
18	REDD/LULUCF Working Group (5 experts 20 weeks ea. 100 wks = 40000) Nat'l Stakeholder/Gender Participation expert to support participatory activities, (92 wks, \$36,800); Nat'l GIS expert to carbon monitoring activities, (76 wks, \$30400); Carbon monitoring working group (3 members @ 20 wks = \$24000); Working group of local experts (5) to be trained to train others on good management practices in LUUCF and restoration and enhancement of carbon stocks (125 wks, \$50000); Nat'l Expert Working Group on Pasture Inventory and Restoration Output 3.3(3 members (12 wks ea or 36 weeks, \$14.4k); Local rotational grazing experts 8 @250/week x 48 weeks = 96k; Local consultant time discretionary 25 weeks 10k.
19	Travel costs for 4 int'l experts, total 7 air fares, plus DSA.
20	Contracts for: 1) Elaboration and implementation of carbon monitoring training program (168K) 2) Carbon monitoring expertise and support (100k); 3) GIS development and satellite imagery, for carbon monitoring and training workshops and webinars working with in-country specialists - 100k ; 4) Municipal forest restoration and inventory training and support (60k); 5) Training of trainers in forest measurement/inventory with carbon restoration focus (95k); 6) Training in good management practices in LUUCF for forest and wider landscape and restoration and enhancement of carbon stocks - 3 sessions of 4 day workshops, preparation, implementation and follow-up recommendations (95k). 7) Community managed experimental stewardship forests: Replanting for improved forest composition on 150 ha (210k); Riparian forest restoration demonstration (190k); Development of digital baseline pasture maps in collaboration with the SCLC and training workshops and webinars working with SCLC and MoENR specialists (100k); Pasture restoration: 40 hectares of re-seeding/inter-seeding (\$250/ha = 10,000); Fencing for resting degraded pastures 4.5 km = 28,575.

21	Basic, practical equipment for carbon monitoring/measurement.
22	Audit (30k); Mid-Term Evaluation (30k) and Terminal Evaluation (45k)
23	REDD/LULUCF printing -- draft/Final and translation into Azeri/Russian (20K); Guidelines on participatory pasture and forest management in Output 3.3, materials for awareness raising for field use across the rayons.
24	Four large round table discussions/workshops on REDD/LULUCF Action Plan (51k) (Output 3.1) 7 training workshops on carbon monitoring for DFD/FE, other stakeholders (84k); Carbon Benefits Project (UNEP/GEF) Lessons learned/cross fertilization workshop (32K); (Output 3.3) Riparian restoration workshops 48k; several aspects of training for government and other stakeholder staff under the replication process in Output 3.5. Community-based forest carbon stock measurements workshops for FUA and FE at rayon levels (5 workshops or 65k)
25	Project Manager, Assistant for Finance and Administration
26	Management-related domestic travel and some travel for REDD and carbon monitoring sharing of lessons.

THE BUDGET FOR THE EU FUNDED COMPONENT

Award ID:	00072191	Project ID(s):	00085357
Award Title:	4418 Pasture and Forest Management		
Business Unit:	AZE10		
Project Title:	Azerbaijan: Sustainable Land and Forest Management in the Greater Caucasus Landscape.		
PIMS no.	4418		
Implementing Partner (Executing Agency)	Ministry of Ecology and Natural Resources		

Proposed Outcome	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	EC component total budget in Euros				Amount Year 4 (EUR)	Total (EUR)	Site No	EC component total budget in US dollars, converted with the rate 1€ = 1.2987 US\$				Total USD
				Amount Year 1 (EUR)	Amount Year 2 (EUR)	Amount Year 3 (EUR)	Amount Year 4 (EUR)				Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	
Outcome 1: Pasture Inventory	EC	71200	Int'l Consultants	18,000	16,500	0	0	34,500	1	\$23,377	\$21,429	\$0	\$0	\$44,805	
	EC	71300	Local Consultants	24,000	15,000	0	0	39,000	2	\$31,169	\$19,481	\$0	\$0	\$50,649	
	EC	71600	Travel	13,000	15,000	0	0	28,000	3	\$16,883	\$19,481	\$0	\$0	\$36,364	
	EC	72100	Contractual Services	10,000	30,000	0	0	40,000	4	\$12,987	\$38,961	\$0	\$0	\$51,948	
	EC	72200	Equipment	20,000	10,000	0	0	30,000	5	\$25,974	\$12,987	\$0	\$0	\$38,961	
	EC	74200	Audio visual costs	5,000	12,000	2,000	0	19,000	6	\$6,494	\$15,584	\$2,597	\$0	\$24,675	
	EC	75700	Training	10,000	8,000	0	0	18,000	7	\$12,987	\$10,390	\$0	\$0	\$23,377	
	EC	74500	Misc - Services	1,000	1,000	0	0	2,000	8	\$1,299	\$1,299	\$0	\$0	\$2,597	
		Total Outcome 1:		101,000	107,500	2,000	0	210,500		\$131,169	\$139,610	\$2,597	\$0	\$273,376	
Outcome 2: Pasture recovery in 3,000 ha	EC	71200	Int'l Consultants	0	24,000	24,000	0	48,000	9	\$0	\$31,169	\$31,169	\$0	\$62,338	
	EC	71300	Local Consultants	0	20,000	20,000	20,000	60,000	10	\$0	\$25,974	\$25,974	\$25,974	\$77,922	
	EC	71600	Travel	0	12,000	18,000	0	30,000	11	\$0	\$15,584	\$23,377	\$0	\$38,961	

EC	72100	Contractual Services	0	120,000	123,000	123,000	123,000	366,000	12	\$0	\$155,844	\$159,740	\$159,740	\$159,740	\$475,324
EC	74200	Audio visual costs	0	0	0	28,500	28,500	28,500	13	\$0	\$0	\$0	\$37,013	\$37,013	\$37,013
EC	75700	Training	0	8,000	15,000	5,000	28,000	28,000	14	\$0	\$10,390	\$19,481	\$6,494	\$6,494	\$36,364
EC	74500	Misc - Services	0	1,400	1,400	900	3,700	3,700	15	\$0	\$1,818	\$1,818	\$1,169	\$1,169	\$4,805
		Total Outcome 2:	0	185,400	201,400	177,400	564,200			\$0	\$240,779	\$261,558	\$230,389	\$230,389	\$732,727
EC	71200	Int'l Consultants	0	0	6,500	13,000	19,500	19,500	16	\$0	\$0	\$8,442	\$16,883	\$16,883	\$25,325
EC	71300	Local Consultants	0	0	20,000	20,000	40,000	40,000	17	\$0	\$0	\$25,974	\$25,974	\$25,974	\$51,948
EC	71600	Travel	0	0	5,000	8,000	13,000	13,000	18	\$0	\$0	\$6,494	\$10,390	\$10,390	\$16,883
EC	72100	Contractual Services	0	0	40,000	30,000	70,000	70,000	19	\$0	\$0	\$51,948	\$38,961	\$38,961	\$90,909
EC	74100	Professional Services	0	0	0	15,000	15,000	15,000	20	\$0	\$0	\$0	\$19,481	\$19,481	\$19,481
EC	75700	Training	0	0	35,000	8,000	43,000	43,000	21	\$0	\$0	\$45,455	\$10,390	\$10,390	\$55,844
EC	74500	Misc - Services	0	0	600	1,000	1,600	1,600	22	\$0	\$0	\$779	\$1,299	\$1,299	\$2,078
		Total Outcome 3:	0	0	107,100	95,000	202,100			\$0	\$0	\$139,091	\$123,377	\$123,377	\$262,467
UNDP	71400	Project Personnel	19,000	19,000	19,000	13,500	70,500	70,500	23	\$24,675	\$24,675	\$24,675	\$17,532	\$17,532	\$91,558
EC	71600	Travel	2,000	2,000	1,500	1,000	6,500	6,500	24	\$2,597	\$2,597	\$1,948	\$1,299	\$1,299	\$8,442
EC	72200	Equipment	8,000	0	2,000	0	10,000	10,000	25	\$10,390	\$0	\$2,597	\$0	\$0	\$12,987
EC	72400	Communication	500	400	400	400	1,700	1,700	26	\$649	\$519	\$519	\$519	\$519	\$2,208
EC	72500	Supplies	800	700	700	700	2,900	2,900	27	\$1,039	\$909	\$909	\$909	\$909	\$3,766
UNDP	73100	Rent-Premises	12,000	12,000	12,000	12,000	48,000	48,000	28	\$15,584	\$15,584	\$15,584	\$15,584	\$15,584	\$62,338
EC	74500	Misc - Services	600	500	500	500	2,100	2,100	29	\$779	\$649	\$649	\$649	\$649	\$2,727
		Total Management	42,900	34,600	28,100	141,700				\$55,714	\$44,935	\$46,883	\$36,493	\$36,493	\$184,026
		TOTAL PROJECT COST				1,118,500				\$186,883	\$425,324	\$450,129	\$390,259	\$390,259	\$1,452,596
		TOTAL UNDP				118,500				\$40,260	\$40,260	\$40,260	\$33,117	\$33,117	\$153,896
		TOTAL EC				1,000,000				\$146,623	\$385,065	\$409,870	\$357,143	\$357,143	\$1,298,700

Budget notes

1	<p>Intl consultant on preparation pasture inventory tool and guidelines 30 days@600 (18K) Intl consultant on pasture inventory process supervision 20 days@500 (10K) Intl soil carbon monitoring consultant 10 days@650 (6.5K)</p>
2	<p>Local Lead Pasture Inventory Specialist 12 months@1500 (18K) Local Pasture GIS/GPS Expert 30 days@200 (6K) Local soil botanist 60 days@150 (9 K) Local agriculture/cattle economist for grazing pressure/stock analysis 30 days@200 (6K)</p>
3	<p>Total of 4 round-trip airfares, 60 days of per diems for 3 international consultants + trips, per diems of local consultants and government officials</p>
4	<p>Conduction of pasture inventory survey among local pasture users in the target zone (10K) Purchase of territory maps, satellite images for the target zone (30K)</p>
5	<p>Purchase of handheld GPS devices, dbh tapes, clinometers, tapes etc. (30K)</p>
6	<p>Publication of pasture inventory guidelines, reports, maps and translation and visibility costs (19K)</p>
7	<p>Trainings for local executive authority office associates, ministry experts and local resources users on simplified pasture monitoring and inventory techniques (Year 1) Roundtable discussions with the local authorities and communities on the topics of pasture management, monitoring and inventory (Year 1&2) Presentation of the new pasture inventory results at the national and local level and possibilities for replication of results across the country (Year 2)</p>
8	<p>Bank charges, sundry, miscellaneous expenses</p>
9	<p>Intl consultant on multi-functional pasture management and restoration total of 80 days@600 (48K) (Year 2&3)</p>
10	<p>Local Lead Sustainable Pasture Management Expert 30 months@1200 (36K) 2 Sustainable Pasture Advisors from Local communities 2x30 months@400 (24K)</p>
11	<p>Total of 3 round-trip airfares for intl consultant on MF Pasture management, 80 days of per diems, per diem for local consultants and government officials</p>
12	<p>Results based contract for lamb fodder planting (120K) Results based contract for re-seeding degraded pastures (123+123K)</p>
13	<p>Preparation of video presentation and publications on the pasture restoration process for awareness raising and visibility (10k)</p>

14	Trainings for local executive authority office associates, ministry experts and local resources users on sustainable pasture management and restoration techniques (Year 2) Study tour for the local ministry/rayon executive respective staff to benefit from international best practices on sustainable pasture management (6 people x 5 days + roundtrip tickets @15K) Workshop on demonstration of the impact of the pilot restoration works in target pastures (Year 4)
15	Bank charges, sundry, miscellaneous expenses
16	Intl consultant soil carbon monitoring consultant to develop carbon indicators and assess carbon storage, sequestration 30 days @ 650 (19.5K)
17	2 Local experts on soil carbon monitoring 2x20 months @ 1000 (40K)
18	Total of 2 round-trip airfares for intl consult on soil carbon monitoring, 30 days of per diems, per diem for local consultants and government officials
19	Contract for soil/carbon laboratory analysis and carbon mapping (70 K)
20	Evaluation of project/Audit (Year 4)
21	Trainings at local and central level for local experts on soil carbon measurement, monitoring and reporting on carbon flow monitoring guidelines developed by UNDP/GEF Project (20 K) Study tour for the local experts to benefit from international best practices on soil carbon (6 people x 5 days + roundtrip tickets @ 15K) Training on measuring long term measurement of carbon sequestration and storage in healthy soil/pastures (8K)
22	Bank charges, sundry, miscellaneous expenses
23	Project Expert (hybrid of manager and assistant for 4 years)
24	travel expenses for project management
25	Office equipment and furniture
26	Internet connectivity, mobile expenses
27	stationary and supplies
28	office rent 48 months @ 1000 (48K)
29	Bank charges, sundry, medical insurance, miscellaneous expenses

*The total EC funded budget that is a subject of approval for this project amounts 1,000,000 EUR. As per UNDP financial management rules, the budget will be maintained through UNDP financial system "Atlas" in US dollars. The final amount of the EC component budget in US dollars will depend on actual exchange rates at the time of allocation of further installments from EU to UN.

MANAGEMENT ARRANGEMENTS

128. **National Execution (NEX):** The project will be nationally executed by the Ministry of Ecology and Natural Resources (MoENR) that will act both as the Implementing Partner and the Beneficiary of the project. Implementation support will be provided by the UNDP Country Office (see Project Governance Arrangements below). In its capacity of Executing Entity the MoENR will be responsible for overall project management. Besides, the MoENR will be responsible for the facilitation of all project activities such as international consultant missions, trainings for respective staff, ensuring appropriate access to project sites, relevant data, records, agencies and authorities. UNDP will provide support services including procurement and contracting, human resources management, financial services in accordance with the relevant UNDP Rules and Procedures and Results-Based Management guidelines.

129. **Project governance** structure will be aligned with UNDP’s new rules for Results Based Management and will be composed of: (i) Project Executive Group – Project Board; (ii) Project Management; (iii) Project Assurance; and (iv) Project Support. The governance structure is described below:

130. **Project Executive Group:** The Project Board will be the executive decision making body for the project, providing guidance based upon project progress assessments and related recommendations from the Project Manager. The PB will review and approve annual project reviews and workplans, technical documents, budgets and financial reports. The PB will provide general strategic and implementation guidance to the PM. It will meet annually, and make decisions by consensus. The specific rules and procedures of the PB will be decided upon at the project inception meeting. The Project Board is responsible for making management decisions for a project in particular when guidance is required by the Project Manager. The Project Board plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan, the Project Board can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans. In order to ensure UNDP’s ultimate accountability for the project results, Project Board decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the Board, the final decision shall rest with the UNDP Project Manager. The success of the project implementation is dependent upon strong project guidance, coordination and advocacy from the Project Board. The PMU which will be responsible for arranging SC meetings, providing materials to members prior to the meeting, and delineating a clear set of meeting objectives and sub-objectives to be met.

Functions of the Project Board	Representation
Executive: individual representing the project ownership to chair the group.	MoENR, Deputy-head of the MoENR will convene the Project Board’s meetings.
Senior Supplier: individual or group representing the interests of the parties concerned, which provide funding for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier’s primary function within the Board is to provide guidance regarding the technical feasibility of the project.	UNDP DRR, or a designated UNDP Development Advisor
Senior Beneficiary: individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary’s primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries.	The relevant department of the MoENR that directly benefits from the project.

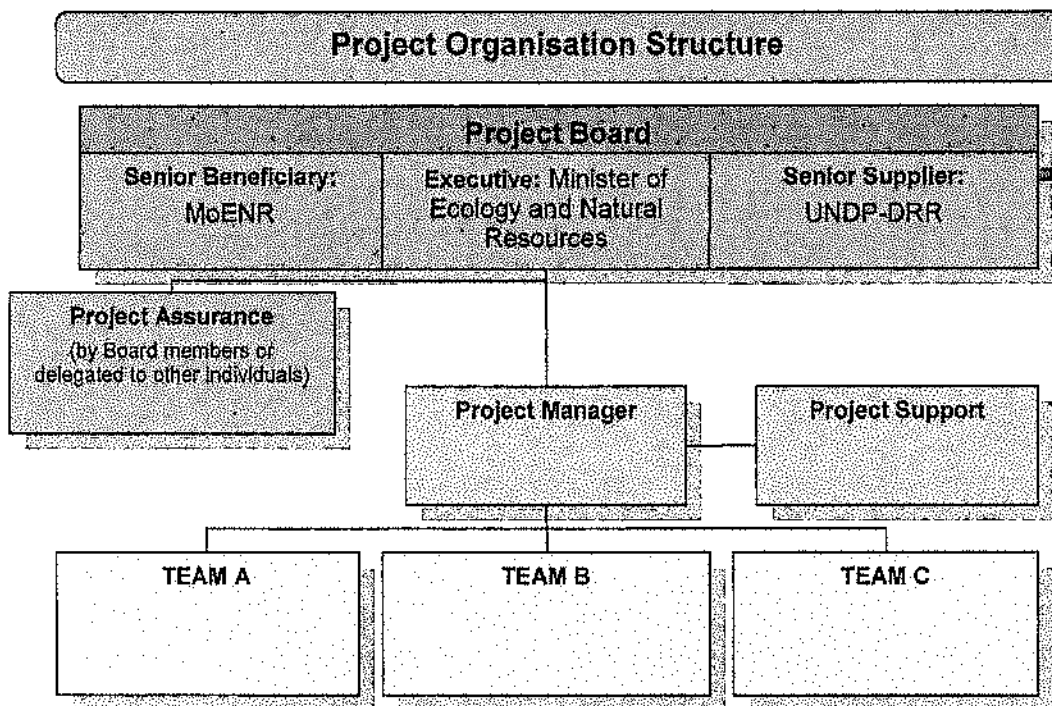
Functions of the Project Board	Representation
Project Assurance: supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Manager and Project Assurance roles should never be held by the same individual for the same project.	UNDP Staff member

131. Project Management. The National Project Manager will be tasked with the day-to-day management of project activities, as well as with financial and administrative reporting. The Project Manager will be responsible for project implementation and will be guided by Annual Work Plans and follow the RBM standards. The Project Manager will prepare Annual Work plans in advance of each successive year and submit them to the Project Executive Group for approval. The National Project Manager will be supported by the Admin/Finance Assistant and by one rayon field director, one at the pilot rayon level. *The National Project Manager* will have the authority to run the project on a **daily basis** on behalf of the Implementing Partner within the constraints laid down by the Group. PM's prime responsibility is to ensure that the project produces the planned outputs and achieves the planned indicators by undertaking necessary activities specified in the project document to the required standard of quality and within the specified constraints of time and cost. This will require linking the indicators to the work plan to ensure RBM.

132. Project Assurance. UNDP will designate a Development Advisor to provide independent project oversight and monitoring functions, to ensure that project activities are managed and milestones accomplished. The UNDP Development Advisor will be responsible for reviewing Risk, Issues and Lessons Learned logs, and ensuring compliance with the Monitoring and Communications Plan. The UNDP-GEF Regional Technical Advisor located in Bratislava will also play an important project assurance role by supporting the annual APR/PIR process.

133. Project Support. UNDP will provide financial and administrative support to the project including procurement, contracting, travel and payments.

In order to accord proper acknowledgement to GEF for providing funding, a GEF logo should appear on all relevant GEF project publications, including among others, project hardware and vehicles purchased with GEF funds. Any citation on publications regarding projects funded by GEF will also accord proper acknowledgment to GEF.



MONITORING FRAMEWORK AND EVALUATION

The project will be monitored through the following M& E activities. The M& E budget is provided in the table below.

Project start:

A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

The Inception Workshop should address a number of key issues including:

- (i) Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- (ii) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- (iii) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- (iv) Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- (v) Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

Quarterly:

- (i) Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- (ii) Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).
- (iii) Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
- (iv) Other ATLAS logs can be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually:

- (i) Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Periodic Monitoring through site visits:

UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

Mid-term of project cycle:

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

For activities funded by EC, in line with EC requirements, the narrative and financial report, will be prepared by the country office in collaboration and with assistance from the UNDP BRC every 12 months. The report of the country office will cover calendar years, will be submitted to UNDP BRC at least 2 months after the end of previous calendar year and will include at least the following information:

- i. Brief summary and context of the EC project in the country;
- ii. Activities carried out during the reporting period;
- iii. Difficulties encountered and measures taken to overcome problems;
- iv. Changes introduced in implementation;
- v. Achievements/results by reporting against the indicators listed in the logical framework table in Annex N;
- vi. Work plan for the following 12 months period of the project, including activities foreseen for EC funded part of the project, forecasted progress in the achievement objective(s) and indicators, as well as financial plan (budget for next 12 months in USD).

To cover direct costs for the project staff who, while working for this project at the same time are working for other project(s) managed by the CO, only a part of their time devoted to this project will be reclaimed. This will be confirmed by timesheets for use of EC in case of verification.

Final thematic report

For activities funded by EC, the final report will contain the same information as listed in the annual thematic reporting above (excluding the last indent) covering the whole Implementation Period of the country action, and information on the measures taken to make the European Union visible as the source of financing. The final report will include also details on the transfers of assets and full summary of the project's income and expenditure and payments received, in line with article 2.5 of the AnnexII (General Conditions). Final report will be submitted no later than 3 months after closure of the project

Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Communications and visibility requirements:

Full compliance is required with UNDP’s Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

Full compliance is also required with the GEF’s Communication and Visibility Guidelines (the “GEF Guidelines”). The GEF Guidelines can be accessed at: http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf. Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project staff time	Time frame
Inception Workshop & associated arrangements	Project Manager UNDP CO UNDP GEF	Indicative cost: \$10,000	Within first two months of project start up
Inception Report	Project Team UNDP CO Consultancy support if needed	Indicative cost \$5,000 (stakeholder consultations, consultancy translation)	Immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	Project Manager will oversee the hiring for specific studies and institutions, delegate responsibilities to relevant team members, and Ensure hiring outside experts if deemed necessary	To be finalized in Inception Phase and Workshop. Indicative cost \$5,000	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured annually)	Oversight by Project Manager Measurements by regional field officers and local IAs	To be determined as part of the Annual Work Plan's preparation. Indicative cost \$5,000	Annually prior to APR/PIR and to the definition of annual work plans
APR/PIR	Project Team	Indicative cost: 0	Annually

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project staff time	Time frame
	UNDP-CO UNDP-GEF		
Project Board meetings and relevant meeting proceedings (minutes)	Project Manager UNDP CO	Indicative cost: \$5,000 (travel costs for relevant project stakeholders)	Following Project IW and subsequently at least once a year
Quarterly status reports	Project team	Indicative cost: 0	To be determined by Project team, UNDP CO
Technical reports	Project team Hired consultants as needed	Indicative cost: \$5,000	To be determined by Project Team, UNDP-CO
Project Publications (e.g. technical manuals, field guides)	Project team Hired consultants as needed	Indicative cost: \$20,000	To be determined by Project Team, UNDP-CO
Mid-term External Review	Project team UNDP- CO UNDP-GEF RCU External consultants (evaluation team)	Indicative cost: \$30,000	At the mid-point of project implementation.
Final External Evaluation	Project team, UNDP-CO UNDP-GEF RCU External consultants (evaluation team)	Indicative cost: \$45,000	At the end of project implementation
Terminal Report	Project team UNDP-CO	Indicative cost: 0	At least one month before the end of the project
Audit	Project team and UNDP Country Office	(\$8,000 for each year) \$40,000	annually
Lessons learned	Project team UNDP-GEF RCU (formats for documenting best practices, etc)	Indicative cost: 0	Yearly
Visits to field sites	Government representatives UNDP CO	Indicative cost: \$5,000 (average one visit per year)	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses.		US\$ 175,000	

For activities funded by EC, UNDP will take all appropriate measures to publicise the fact that the activities have been receiving funding from the European Union. Information given to the press, the beneficiaries of the project, all related publicity material, official notices, reports and publications, will acknowledge that the project was carried out "with funding by the European Union" and will display in an appropriate way the European logo (twelve yellow stars on a blue background). In cases where equipment or vehicles and major supplies have been purchased using funds provided by the European Union, UNDP will include appropriate acknowledgement on such vehicles, equipment and major supplies (including display of the European logo (twelve yellow stars on a blue background) provided that such actions do not jeopardize UNDP privileges and immunities and the safety and security of the UNDP staff. The size and prominence of the acknowledgement and European Union logo will be clearly visible in a manner that will not create any confusion regarding the identification of the project as an activity of UNDP, the ownership of the equipment and supplies by UNDP, and the application to the project of UNDP privileges and immunities.

All publications of UNDP pertaining to the EC-funded project Action, in whatever form and whatever medium, including the internet, shall carry the following or a similar disclaimer: "This document has been produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union." Publicity pertaining to European Union contributions may quote these contributions in Euro (€ or EUR), in parenthesis if necessary.

With the aim to ensure coherence and coordination between related projects and activities under UNDP-EC Agreement – Clima East part II, the project will keep informed stakeholders on relevant to the Agreement developments and progress, inform about upcoming relevant meetings and exchange related documents, press releases, publications when these are issued, provide meeting and mission reports and share necessary links to project websites. Information will be channeled through UNDP Regional Centre to European Commission. EC will provide to UNDP information on EU policy developments, partnerships and cooperation agreements in such a way that the project outcomes are policy relevant and able to contribute to these demands.

LEGAL CONTEXT

This document together with the CPD signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA and all CPD provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

AUDIT CLAUSE:

The Audit will be conducted in accordance with UNDP Financial Regulations and Rules and applicable audit policies on UNDP projects.

ANNEXES

Annex 1: Risk Analysis.

Description	Impact & Probability	Countermeasures / Mngmnt response
Opening up management to engage local stakeholders more robustly contains some risk in Azerbaijan, where centralized approaches are still largely the norm.	Med	In seeking a collaborative management system the project is building on existing local authorities and their existing responsibilities, backed up by existing laws and policies that do open the door for more local engagement and participation. The project will actively cooperate with local municipalities- that are composed of community representatives and are responsible for some aspects of land management such as leasing pasture lands, collection of property and land related taxes and ensuring effective management of revenues. The MoENR is fully committed to engage local communities and stakeholders in forest and pasture manager and a decision was taken in this regard very recently. This is a positive development indicative of the government's opening up to new approaches involving community-based management.
Modifying law can be a lengthy and unpredictable process that may extend beyond the life of the project itself.	Low-Med	The project design under Outcome 1 intentionally emphasizes/focuses upon the elaboration of new or strengthening existing "normative legal acts" or NLA because these have an easier, faster and more direct approval process than new or revised laws themselves.
Improved pasture and forest management will require overcoming entrenched barriers between environment and agriculture and between national and rayon level stakeholders.	Med	The project increases the likelihood of finding new ways around old traditions by working at three levels: law and policy; national institutions; and demonstrating improved SLM and SFM at the rayon and local level, where barriers are lowest.
PES to reduce erosion and pollution is a new concept in Azerbaijan, which may hamper or slow down the adoption of PES as a valid tool.	Med - Low	The PPG conducted a feasibility study on PES, which concluded that: a) there is precedent in Azeri law and practice for such payments in the agricultural field and; b) there is sufficient value of said ecosystem services to more than justify a PES approach. In addition, the project's approach to piloting the PES concept is a go-slow and steady approach, focusing a relatively small number of hectares initially to prove the concept.
Market risks the relative value of land use could change (the value of livestock could go up or down).	Low	The project seeks to put into place program frameworks for integrated natural resource management that are robust and resilient enough to accommodate and adaptive response to changes in land-use values. Changes in market values will either make it easier or more difficult for example, to enforce restrictions on grazing, requiring an adaptive response. SLM and land restoration will still be necessary regardless of fluctuating values.
Climate change impacts may increase to the extent that even if the project implements activities to improve land condition in pasture and forest lands it may not be enough to make a difference. New threats could emerge, such as insect infestations or	Uncertain - Low	The project's will instill an approach to SLM and SFM that is underlain by fundamental scientific principles and participatory methods and mechanisms that will enable stakeholders to modify SLM and SFM approaches to the proper scale and scope needed. The project is not being designed to respond rigidly to one threat or another – it seeks to put in place processes and tools that will enable stakeholders to adapt SFM or SLM practice so that they translate into practical, improved management on the ground for any given context defined by any given

Description	Impact & Probability	Countermeasures / Mngmnt response
disease caused by climate change.		threat.
Stakeholders in the project region may not perceive the benefits of proposed SLM/SFM and PES measures and view them as conflicting with their own livelihood development priorities.	Low	<p>The stakeholders are aware of their vulnerability to land degradation and want to find ways of reducing it. Pilot area communities have been consulted with closely during the project preparation stage during which time the project was readily supported.</p> <p>The project emphasizes the importance of local engagement and initiative. Critical outputs and activities under each of the three Outcomes are designed to catalyze this and involve the people in the activities of the project from the outset, thereby developing an understanding and an acceptance of the various SLM and SFM measures for improving land condition and CO2 storage. Awareness raising is also a priority of the project.</p>
MoENR is unable to finance improvements to pasture and forest lands.	Low-Med	MoENR is the main co-financier of the project and, as such has committed to it and budgeted for this work. Once a program is budgeted, the funds are available.
Government priorities may change from forest protection to industrial use.	Low	The project will stress the value of critical ecosystem services provided by the forests, in addition to carbon sequestration, such as erosion control. Erosion/flooding are high profile issues in AZ and healthy forests are central to addressing this problem.
Pastoralists may be wary of "cooperatives" or forming of associations because of unpleasant memories of Soviet times. This may hamper participation in the PUA and FUA mechanisms.	Low-Med	<p>Part of training for pastoralists will emphasize the usefulness and importance of forming associations to help them further their own individual interests.</p> <p>The project will emphasize that the main function of the PUA and FUA will be for training, for capacity building, and for communication between users and different government entities dealing with land use (local rayon executive and 6 Ministries that apparently do not coordinate activities).</p> <p>The potential for financial support for improving degraded pastures and/or infrastructure aspects (sheds, corrals, fences, etc.) will ensure a relatively high participation in PUA and FUA.</p>

Annex 2: Terms of Reference:

1) National Project Manager (NPM)

Background

The National Project Manager (NPM), will be a locally recruited national selected based on an open competitive process. He/She will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors. The NPM will be tasked with the day-to-day management of project activities, as well as with financial and administrative reporting. The NPM's prime responsibility is to ensure that the project produces the planned outputs and achieves the planned indicators and indicator targets by undertaking necessary activities specified in the project document to the required standard of quality and within the specified constraints of time and cost. This will require linking the indicators to the work plan to ensure Results-Based Management.

The NPM will report to the UNDP-Azerbaijan Environment Officer (or other duly designated UN officer) for all of the project's substantive and administrative issues. The NPM will report on a quarterly basis to the Project Executive Group (PEG). The NPM will be responsible for meeting government obligations under the project and will perform a liaison role with the Government, UNDP and other UN Agencies, NGOs and other project partners.

Duties and Responsibilities

- Supervise and coordinate the production of project outputs, as per the project document;
- Liaise with UNDP, MoENR and other relevant government agencies, and all project partners, including donor organizations and NGOs for effective coordination of all project activities;
- Ensure the timely and effective implementation of all components of the project;
- Ensure a results-based approach to project management – this means the NPM *must* understand the project's results framework indicators and respective indicator targets and verify these at project inception together with UNDP and any additional expertise. These indicators must then be linked on a daily basis to the project's work, NOT simply reported on once a year for the PIR Process.
- Mobilize all project inputs in accordance with UNDP procedures for nationally executed projects;
- Coordinate the recruitment and selection of project personnel;
- Coordinate and supervise the work of all consultants and sub-contractors, ensuring the timely delivery of expected outputs, and effective synergy among the various sub-contracted activities;
- Prepare Annual Work plans in advance of each successive year and submit them to the Project Executive Group for approval.
- Prepare financial reports, as required by Project Director and UNDP;
- Work with UNDP to complete the annual project implementation review (PIR) reporting exercise.
- Facilitate administrative backstopping to subcontractors and training activities supported by the Project;
- Oversee and ensure timely submission of all project reports, including technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF, and other oversight agencies;
- Disseminate project reports and respond to queries from concerned stakeholders;
- Report progress of project to the steering committee, and ensure the fulfilment of steering committee directives.
- Carry out regular inspections of all project sites and activities.

Qualifications

- Proven management expertise – must be able to fluidly handle the political, technical, and people management challenges that will face the NPM on a daily basis. This is first and foremost the most important qualification.

- A university degree (MS or PhD) in Management or Environmental Sciences;
- At least 10 years of experience in natural resource management or project/programme management;
- At least 5 years of project/programme management experience;
- Working experience with ministries and national institutions in Azerbaijan;
- Ability to effectively coordinate a large, multi-stakeholder project;
- Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project;
- Strong drafting, presentation and reporting skills;
- Strong computer skills, in particular mastery of all applications of the MS Office package and internet search;
- Strong knowledge of forest and pasture management issues in Azerbaijan, including the political, institutional and socio-economic contexts;
- Excellent writing and communication skills in English.

2) Administrative/Finance Assistant (AFA)

Background

The Administrative and Finance Assistant (AFA), will be a locally recruited national selected based on an open competitive process. He/She will report to National Project Manager (NPM) and assist the NPM in the coordination of the UNDP-GEF project. He/She will have two roles: as an Administrative Assistant and as an Accountant.

As an Administrative Administrator, he/she will:

- Provide assistance in the operational management of the project according to the project document and the NEX procedures.
- Undertake all preparation work for procurement of office equipment, stationeries and support facilities as required;
- Provide support in preparing project events, including workshops, meetings (monthly, quarterly and annual), study tours, trainings, etc., as required.
- Take care of project telephone, fax, and email system;
- Assist with preparation of TORs and contracts for consultants for project activities.

As a Project Accountant, he/she will:

- Prepare quarterly advance requests to get advance funds from UNDP in the format applicable.
- Assist the NPM and NPD in project budget monitoring and project budget revision.
- Set up accounting system, including reporting forms and filling system for the project, in accordance with the project document and the NEX procedures;
- Maintain petty cash transactions. This includes writing of receipts, preparation of payment request form, receipt and disbursement of cash and clearance of advances;
- Prepare cheques and withdraw money from the bank;
- Prepare project financial reports and submit to NPM and NPD for clearance and furnish to UNDP as required;
- Enter financial transactions into the computerised accounting system;
- Reconcile all balance sheet accounts and keep a file of all completed reconciliation;
- Check and ensure that all expenditures of projects are in accordance with NEX procedures. This includes ensuring receipts to be obtained for all payments;
- Check budget lines to ensure that all transactions are booked to the correct budget lines;
- Ensure documentation relating to payments are duly approved by the NPD;
- Bring any actual or potential problems to the attention of the NPD;
- Follow up bank transfers. This includes preparing the bank transfer requests, submitting them to the bank and keeping track of the transfers;

- Ensure Petty Cash to be reviewed and updated ensuring that there is up-to-date records;
- To continuously improve system & procedures to enhance internal controls to satisfy audit requirements.
- Ensure that bank statements be collected from the banks at the appropriate time;
- Ensure that bank accounts are reconciled and reported in a timely manner;
- Prepare monthly bank reconciliation statement, including computation of interests gained to be included into reports.
- Maintain the inventory file to support purchases of all equipment/assets.
- Undertake other relevant matters assigned by the NPM.

Qualifications and requirements

- University degree in accounting, finance or related fields;
- Solid experience of budgeting, planning and reporting on foreign funded projects; and experience with international auditing requirements.
- Good secretarial skills and good organizational capacity;
- Knowledge in administrative and accounting procedures of the Government
- Good computer skills in common word processing (MS Word), spreadsheet (MS Excel), and accounting software.
- Appropriate English and Azeri language skills, both spoken and written.

3) Pilot Rayon Field Director (RFD) – Ismayilli & Shamakhi

Background

The RFD will be an experienced national expert recruited to provide overall technical backstopping to the Project. He/She will report to National Project Manager (NPM). The RFD be the project manager's deputy in the field at the rayon level -- managing and coordinating the project's work in the rayons. This position will not be filled until half way through the first year and it will end halfway through the last year -- four years in total.

Duties and Responsibilities

- Must be a good people person who can cultivate and maintain a good working environment for project within the Rayon Executive Authorities and other respective rayon-level and municipal level organizations.
- Oversee the rayon level experts, organizing training events at the rayon level;
- Ensure that the project inspired local stakeholder participation mechanisms are well organized and function effectively (for example: Pasture user associations, forest user associations, rayon stakeholder committees).
- Overseeing the PES feasibility study that will be operational in Ismayilli & Shamakhi;
- Provide technical and strategic assistance for project activities, including planning, monitoring and site operations, and assuming quality control of interventions;
- Assist the NPM in the preparation of project annual reviews, quarterly financial reports for submission to UNDP, the GEF, and others as required;
- Assist in mobilizing staff and consultants in the conduct of a mid-term project evaluation, and in undertaking revisions in the implementation program and strategy based on evaluation results;
- Assist the NPM in liaison work with project partners, donor organizations, NGOs and other groups to ensure effective coordination of project activities at the rayon level;
- Document lessons from project implementation and make recommendations to the NPM for more effective implementation and coordination of project activities; and
- Perform other tasks as may be requested by the NPM, Steering Committee and other project partners.

Qualifications

- University degree in relevant discipline (environmental science helpful, but not required).
- At least ten years of relevant professional experience in environmental work.

- Knowledge of pasture and forest issues in Azerbaijan and its institutions for pasture and forest management is an asset.
- Knowledge of economic, political and social situation in Azerbaijan is an asset

Competencies

- Proven management skills and expertise; must be able to manage many different activities at once.
- Strong networking skills and demonstrated ability to liaise and involve partners including government officials, scientific institutions, NGOs and private sector.
- *Familiarity with UNDP and UN systems desirable.*
- *Experience with international organizations/projects/programs.*
- *Excellent analytical skills.*
- *Capability to work under deadline pressure and to take on a range of tasks.*
- *Ability to work in a team, to motivate other team members, and to balance the inputs and work of team members.*
- *Self-motivation and ability to recommend options for resolutions of issues.*

Technical skills

- *At least some working knowledge of spoken and/or written English, including the ability to draft and edit documents.*
- Some computer skills, including some knowledge of standard word processing, spreadsheet and presentation software packages.
- *Fluency in spoken Azeri is a must.*

SIGNATURE PAGE

Country: Azerbaijan

UNDAF Outcome (s)/Indicator (s): Outcome 1: By 2015, non-oil development policies result in better economic status, decent work opportunities and a healthier environment in all regions and across all social groups

CPAP Outcome (s)/Indicator (s): N/A

CPAP Output (s)/Indicator (s): N/A

Executing Entity/Implementing Partner: Ministry of Ecology and Natural Resources

Implementing entity/Responsible Partner: Ministry of Ecology and Natural Resources

Programme Period:	2011-2015	Total allocated resources:	\$18,532,595*
Atlas Award ID:	00063140	• Regular	
GEF Project ID:	00080444	○ UNDP	\$383,895
EC component Atlas Award ID	00072191	• Other:	
EC component Project ID:	00085357	○ GEF	\$5,680,000
PIMS #	4418	○ EC	€1,000,000
Start date:	January 2013	○ Government	\$4,500,000
End Date	December 2017	• In-kind contributions	
Management Arrangements	NEX	○ FAO	\$500,000
PAC Meeting Date		○ Government	\$6,170,000

* EC contribution included in the total was converted with the rate 1.2987

Agreed by (Government):

27 March 13

NAME

SIGNATURE

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

NAME

SIGNATURE

Date/Month/Year

Agreed by (UNDP):

27 March 13

NAME

SIGNATURE

Date/Month/Year

ADDITIONAL ANNEXES:

The following Annexes are attached as a separate file.

Annex G: Carbon Calculations for the project rayon's and the Greater Caucasus

Annex H: Description of Project's Carbon Monitoring Methods

Annex I: Capacity Development Scorecard;

Annex J: CC for SO-5

Annex K: LD-PMAT

Annex L: PES Feasibility Study.

Annex M: Co-financing Letters

Annex N: Clima East pilot projects on ecosystem-based approaches to climate change

Annex O: EC ClimaEast Budget