PROJECT IDENTIFICATION FORM (PIF)
PROJECT TYPE: Full-size Project
TYPE OF TRUST FUND: GEF trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	**Sustainable land management and ecosystem-based climate change mitigation in the Altai-Sayan Ecoregion**		
Country(ies):	Russian Federation	GEF Project ID:	5104
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4430
Other Executing Partner(s):	Ministry of Natural Resources and Environment	Submission Date: Resubmission Date:	27 August 2012 6 November 2012
GEF Focal Area (s):	MULTI-FOCAL AREA (CC, LD, SFM / REDD)	Project Duration(Months)	60 months
Name of parent program (if applicable): SFM	SFM/REDD	Agency Fee ($):	776,150

A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Indicative funding from GEF ($)	Indicative co-financing ($)
LD-3	Outcome 3.1: Enhanced enabling environment between sectors in support of SLM	Government agencies collaborating on SLM initiatives across sectors and at multiple scales	500,000	500,000
	Outcome 3.2: Good management practices in the wider landscape demonstrated	Information on SLM (wider landscape) technology and good practices disseminated	135,000	1,000,000
		Number and types of investment sources in SLM from successfully tested sustainable finance reflow schemes	1,900,000	3,000,000
LD-1	Outcome 1.3: Functionality and cover of agro-ecosystems maintained	Land area under effective management in production systems with improved vegetative cover	600,000	3,100,000
CCM-5	Outcome 5.1: Good management practices in LULUCF adopted both within the forest land and in the wider landscape	Output 5.1: Carbon stock monitoring systems established	1,000,000	7,000,000
	Outcome 5.2: Restoration and enhancement of carbon stocks in forest and non-forests lands, including peatlands	Output 5.2: Forest and non-forest lands under good management practices	900,000	4,000,000
	Outcome 5.3: GHG emissions avoided and carbon sequestrated		1,444,000	7,000,000
SFM-1	Outcome 1.1: Enhanced enabling environment within the forest sector and across sectors.	Output 1.3 Forest area (hectares) under sustainable management, separated by forest type	192,500	1,000,000
	Outcome 1.2: Good management practices developed and applied in existing forests.		1,090,000	1,300,000
Sub-total			7,761,500	27,900,000
Project management cost			408,500	1,600,000
Total project costs			**8,170,000**	**29,500,000**

B. PROJECT FRAMEWORK

Project Objective: Promote sustainable integrated land and forest management in Altai-Sayan Ecoregion (ASE) in Russia to reduce pressures on natural resources from competing land uses and to secure conservation and enhancement of carbon stocks

Project Component	Type	Expected Outcomes	Expected Outputs	Indicative GEF financing ($)	Indic. co-financing ($)
Enabling policy environment and strengthened enforcement capacities for	TA	Reduced land and forest degradation over *5 million ha* of agricultural land and *6 million ha*[1] of forest land resulting in unthreatened provision of such ecosystem services as water supply,	1.1 **Integrated Land and Forest Use Plans** (ILFUP) enables SLM and SFM uptake in 4 pilot municipal districts[3]. Under the business-as-usual scenario, municipal territorial planning will not take into account ecosystem values and services. ILFUPs will optimize land use matrix in each municipality so that economic activities do not threaten ecosystem integrity and ensure maximum productivity in the long term. Will be	827,500	5,600,000

[1] These figures represent the total area of agricultural and forest lands in the ASE landscape which are (1) on the one hand important for provision of multiple environmental and economic services, while (2) on the other hand, experience various forms of degradation. Details on degradation are provided further in the PIF.
[3] Proposed pilot municipalities are: Kosh-Agachsky, Krasnoshekovsky, Belovo/Azkis, and Tandinsky. Please see map in the text. Final decision to be made during PPG.

Project Component	Type	Expected Outcomes	Expected Outputs	Indicative GEF financing ($)	Indic. co-financing ($)
integrated land management and sustainable forest management sustainable		flooding control, forage production, and carbon sequestration as a transformative result of improved land-use planning, evidenced by 15-20% increases in the LD-PMAT and SFM Tracking Tools[2] Enhanced local capacities for enforcement of sustainable forest and land management in the Altai-Sayan Ecoregion, evidenced by a 25% increase in the UNDP-GEF Capacity Development Scorecard	adopted by municipal governments (*ref. to main text for further details*). 1.2 **Policies and regulations** on sustainable land and forest management adopted paving the way for a transformative change in land-use practice in Altay Sayan and beyond, including: (i) regulatory framework that adopts the avoid-reduce-offset principle in municipal territorial planning; (ii) Amendments to Forestry Plans in order to protect High Conservation Value Forests (HCVF); (iii) Resolution of regional governments to adopt methodologies and criteria for assessing forest and agricultural land condition[4] for the purposes of subsequent land use decision making. 1.3 **System for effective monitoring and enforcement** of the ILFUPs, including clear delineation of roles and responsibilities among key Government actors. Municipal inspectors will be capacitated to enforce the new land use regulations, and manage the participatory process of development of ILFUPs (*refer to main text for details*).		
Investment in demonstrating improved sustainable land and forest management in the Altai-Sayan Ecoregion	Inv.	Demonstrated improved land and forest management preventing ecosystem degradation over an area of 1.25 million hectares, evidenced by: - Decreased soil erosion and increase in the fodder production across 600,000 ha of steppe pastures under improved land-use management[5]. - Increase of water provision (dry season base flow and water quality) and habitat support services across 650,000 ha of forest lands under improved multifunctional forest management.. - Conservation (non-depletion) of 34.77 MtC stored in productive forestland and 61.08 MtC in pastureland in targeted areas (*ref. Annex A*). - Avoiding emissions of 0.48 MtCO2-eq/y from unsustainable logging and 2.69 MtCO2-eq/y from pasture degradation (*ref. Annex A*) - Avoiding emissions from anthropogenic fires of app. 0.697 million tCO2-eq/y[6] Full ecosystem carbon monitoring integrated in the	2.1 Improved management of 600,000 ha of production **steppe pasture-lands**: technologies developed, tested and appropriate infrastructure established at targeted pilot sites (tentatively 12 sites) to demonstrate SLM approaches in line with developed ILFUPs, namely[7]: (i) seasonal rotational grazing to maintain pasture quality covering all kinds of rangelands; (ii) decrease stocking rate in moderately degraded pastures; (iii) repair and maintenance of key pasture use infrastructure (wells and barns) and optimized stocking pressure in remote rangelands; (iv) increased stocking rate in formerly un-grazed pastures to optimize steppe ecosystem state and functioning; **2.1.a Financial incentive scheme** to support environmentally non-harmful transhumance and alternative livelihoods for local communities in steppe areas in partnership with co-funding from Municipal/Regional Governments on the basis of the existing subsidy schemes[8], supports sustainable livelihoods of over 700 households (GEF LD Funding 1,900,000; Municipal subsidy pool(s) – 3.6M) (*refer to main text for details*); 2.2 **Restoration of app. 40,000 hectares of degraded forest and pasture land** adjacent to productive forest and farmland: restoration of vegetation cover in steppe, assisted natural regeneration and reforestation in forests, to counteract on-going and past land degradation (e.g. burnt forests, past clear-cut felling sites; ploughed pastures; abandoned pastures); 2.3 **Sustainable Forest Management** demonstrated in pilot productive forest areas, namely through set aside areas within it (300,000 ha) for non-exhaustive forest use (tourism, sustainable hunting) allotted for management in cooperation with local communities and private sector at High Conservation Value Forests; 2.4 **Reduced annual burning (**40,000 ha of steppe and 20,000 ha of forests (by project completion) reduces c**arbon emissions from anthropogenic fires** through: 1) supporting municipal voluntary fire prevention brigades; 2) reducing the risk of anthropogenic fires in agriculture (*refer to main text for further details*) 2.5 **Full ecosystem carbon monitoring system** established on	6,934,000	22,300,000

[2] A precise baseline score will be defined at the PPG stage. A range of 15-20% increase is an average increase committed in other similar GEF projects. A precise target, fine-tuned to the project site context will be defined at the PPG stage.
[4] Condition of land will be assessed based on criteria determining its resilience, provisioning of ecosystems services and economic value of land.
[5] The baseline and targets for LD indicators such as erosion and fodder production will be defined in precision at the PPG stage.
[6] Ref. Annex A. All calculations are tentative, to be confirmed at the PPG.
[7] The list of examples of investment activities here is non-exhaustive, it may include other approaches as they would be defined in ILUMPs designed in Component 1.
[8] Subject to PPG feasibility analysis.

Project Component	Type	Expected Outcomes	Expected Outputs	Indicative GEF financing ($)	Indic. co-financing ($)
		national forest inventory maintained by State Forest Agency Rosleskhoz, applicable to monitor carbon in all forests throughout the country, representing a powerful tool for UNFCCC LULUCF reporting and land-use decision making.	the basis of the national forest inventory system and tested in Altay-Sayan. Missing carbon conversion coefficients will be defined, enabling full ecosystem carbon reporting. The system will be linked to remote sensing to enable tracking of stock changes, per different forest types and land uses, and will be maintained by Government beyond the project (*refer to main text for further details*).		
Project management cost				408,500	1,600,000
Total project costs				**8,170,000**	**29,500,000**

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, ($)

Sources of Co-financing for baseline project	Name of Co-financier	Type of Co-financing	Amount ($)
National Government	Ministry of Natural Resources and Environment	In-kind	200,000
National Government	Ministry of Natural Resources and Environment	Grant	1,800,000
National Government	Ministry of Agriculture	In-kind	700,000
National Government	Ministry of Agriculture	Grant	6,300,000
National Government	Federal Forestry Service	In-kind	100,000
National Government	Federal Forestry Service	Grant	6,400,000
Regional Government	Governments of Altay, Tyva and Khakassia Republics, Government of Altay Kray and Kemerova oblast	In-kind	1,200,000
Regional Government	Governments of Altay, Tyva and Khakassia Republics, Government of Altay Kray and Kemerova oblast	Grant	10,800,000
Private Sector	Farmers and Forestry Companies	Grant	1,000,000
GEF Agency	UNDP	Grant	370,000
NGO	WWF	Grant	630,000
Total Co-financing			**29,500,000**

D. GEF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF AGENCY	TYPE OF TRUST FUND	FOCAL AREA	Country name/Global	Grant amount (a)	Agency Fee (b)	Total c=a+b
UNDP	GEF	Climate Change	Russia	3,520,000	334,400	3,854,400
UNDP	GEF	Land Degradation	Russia	3,300,000	313,500	3,613,500
UNDP	GEF	SFM/REDD	Russia	1,350,000	128,250	1,478,250
Total GEF Resources				**8,170,000**	**776,150**	**8,946,150**

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1. THE GEF FOCAL AREA STRATEGIES:

The project focuses on ecosystem management in a critical ecological landscape, the Altai Sayan Ecoregion in Russia, and will implement activities that synergistically contribute to the climate change mitigation, land degradation and SFM focal areas. The project addresses CCM-5 *Promoting conservation and enhancement of carbon stocks* by enabling relevant Government and non-government stakeholders and economic actors to build capacities, and adopt good management practices in LULUCF leading to enhancement and restoration of carbon stocks in forests and pasturelands, and preventing emissions from anthropogenic fires in steppe and forest ecosystems, which is in line with GEF CCM-5 Outcomes 5.2 *Restoration and enhancement of carbon sinks* and 5.3 *GHG emissions avoided and carbon sequestered*. The project adds to the existing national forest inventory network a system and capacities for monitoring, reporting and verification of ecosystems carbon, testing it in ASE, which addresses GEF CCM-5 Output 5.1 *Carbon stock monitoring systems* established. The project addresses LD-3 *Reducing pressures on natural resources from competing land uses in the wider landscape*, by promoting integrated territorial planning at the municipal level, engineering a shift from unsustainable land practices to sustainable forest and land management. The project introduces the concept of Integrated Land and Forest Use Planning and implements investments to demonstrate its viability. These activities are in conformity with Outputs 3.1 and 3.2 of the GEF LD-3. Output 2.1 of the project involves investment in grassland ecosystems resulting in restoration of vegetation cover and reducing degradation at 600,000 ha of important agro-ecosystems, and this it is in line with LD-1 Outcome 1.3 of the GEF (Functionality and cover of agro-ecosystems maintained). Through these LD-focused activities, the project helps to prevent soil erosion, loss of productivity and other ecosystem services in ASE, but also contributes to carbon sequestration and avoidance of emissions. The project operationalizes the concept of High Conservation Value Forests (HCVF), which is in line with

SFM/REDD Outcome 1 *Enhanced enabling environment within the forest sector and across sector*: working in the ASE landscape; the project will help to embed the concept of HCVF into regional policies in ASE and it will introduce SFM into the Integrated Land and Forest Use Plans in Component I. Furthermore, the project will serve as an incentives investment in sustainale forest practices under Component II (Outputs 2.2.-2.4), which speaks to Indicator 1 of Outcome 1.2 of SFM-REDD Strategy: *Good management practices developed and applied in existing forests*. *Indicator 2: Enhanced carbon sinks from reduced forest degradation.* With respect to overall cost-effectiveness, the feasibility of implementing the indicated outputs within the requested budget has been assessed carefully, and it has been confirmed that the quantity and quality of the outputs as indicated in the Project Framework would realistically fit in the budget (GEF + Co-financing) and able to deliver the stated benefits leading to a transformative change. The specific global benefits under each focal area are enumerated further in the text. From the climate change mitigation cost-effectiveness perspective, the total investment in the project's Component II (investments leading to direct life time emissions avoided or carbon sequestered) of US$29,500,000 (GEF plus co-financing) will conservatively generate total carbon benefits (emissions avoided plus carbon sequestered, ref. to *Annex A*) amounting to 39,991,890 tCO2-eq over a 10-year time horizon. The unit cost of mitigation is therefore US$0.74/tCO2, which is far below the cost of most of the presently known climate change mitigation approaches.

A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NAPS, NBSAPS, NATIONAL COMMUNICATIONS, TNAS, NIPS, PRSPS, NPFE, ETC.:

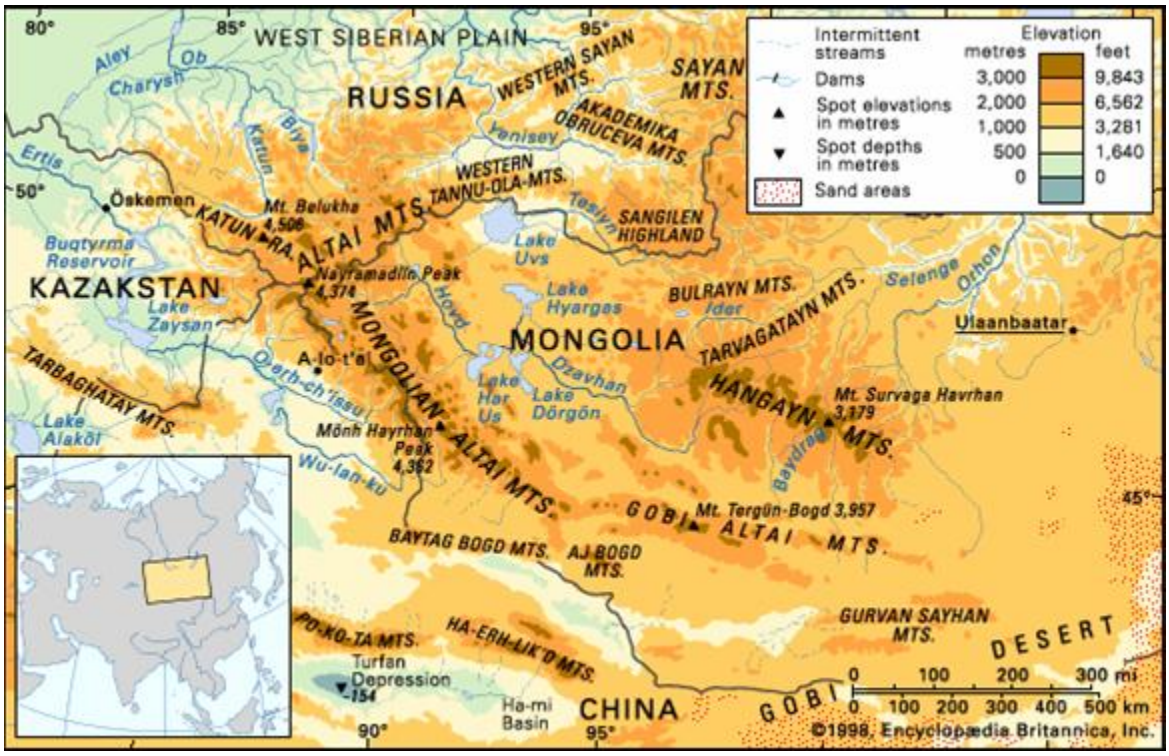
The project is directly supportive of the Russian Federation's national priorities and policies under relevant global environmental conventions. The project is informed by priorities stipulated in **Russia's V National Communications to UNFCCC**, which stipulates that in Russia, given its large territory, forests play a critical role as a carbon pool; it stresses the need for forest restoration as well as improved monitoring based on remote sensing, given the fact that high releases of CO2 stem from fires, and defines the need for ecosystem monitoring among priorities. The project is in line with the **Climate Doctrine** of the Russian Federation (approved by Presidential Order N861 17 December 2009), which is the main policy instrument supporting UNFCCC implementation, defining the national policy of the Russian federation related to climate change mitigation and adaptation. It calls for the implementation of climate policy through the development of federal, regional and sectoral programmes and action plans. Sustainable use of forests and agricultural lands (which is the focus of this project) is included in the range of climate change mitigation measures of the doctrine. A priority articulated in the climate science and research section of the doctrine is the development of methods to carry out the inventory of GHG emission sources and sinks on agricultural and forest lands. The project further aligns itself with the **Basis of State Policy for the Land Use** in the Russian Federation for 2012 – 2017, which serves as Russia's action plan to implement the UNCCD. The goals of the policy are: i) improved efficiency of land use; (ii) protection of land resources as the key component of the environment and the main source of agricultural production thus securing national food security. The main objectives of the policy include: (i) creating conditions for rational and effective use of land; (ii) securing protection of environment and natural resources, including protection of lands and preservation of cultural heritage; and (iii) preservation and improving the quality of lands. By introducing and testing integrated territorial planning, this project advances implementation of all 3 of these goals. Territorial development and territorial planning in Russia (which is the entry point of the project's Output 1.3 *Integrated Land use Management Planning)* are regulated by the **Town Planning Code of Russia** (adopted in 3 March 2012). Sustainable development of territories is defined in the Code as securing the safety and favorable conditions for human wellbeing, limiting negative impacts on environment and ensuring protection and rational use of natural resources in the interests of current and future generations. It further defines that territorial planning must be carried out on the basis of development strategies/programmes for various sectors of the economy, national priority programmes, intergovernmental programmes, social and economic development policies of the Russian regions, plans and programmes of integrated social and economic development of municipal districts (part 5, article 9). The sustainable development of rural territories, as supported by the project, is a key principle underpinning the State Agricultural policy (as formulated in Federal Law "On the Development of Agriculture" – adopted 29 December 2006) and the Concept of long-term socio-economic development of Russia for the period to 2020 (adopted by the Russia's Government Resolution #1662-p dated 17 November 2008).

B. PROJECT OVERVIEW:

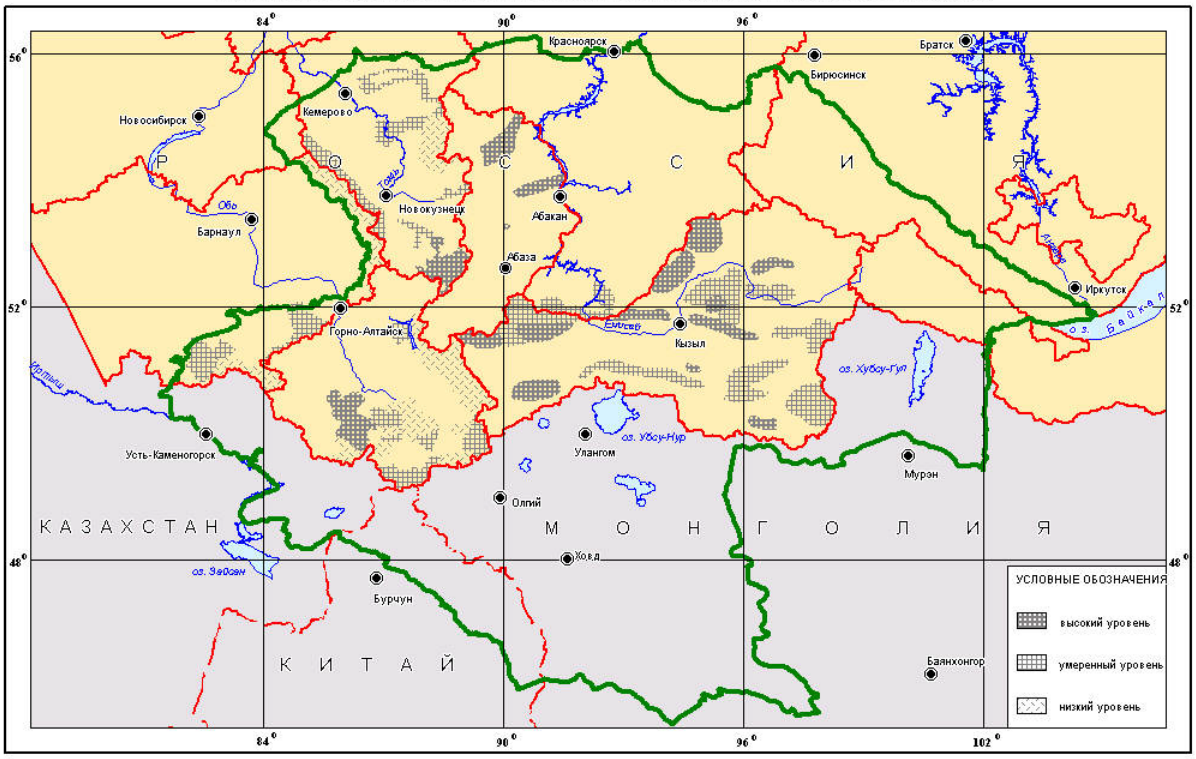
B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

The Altai-Sayan Ecoregion (ASE) is an enormous area (1,065,000 km^2). The ASE is transboundary, with 62% of its area situated in Russia.

The Russian Altai-Sayan Ecoregion, which is the target area of this project, is situated in the center of continental Eurasia. Russian Altai Sayan borders on Mongolia, Kazakhstan, and China. Altai Sayan has no access to sea. The Altai Mountains extend through the Russia-Kazakhstan border in the northwest to the Chinese-Mongolian border in the southwest. The Western and Eastern Sayan Mountains extend toward the east from the Altai Mountains nearly to the southern tip of Lake Baikal. The geographic coordinates of the Russian Altai Sayan Ecoregion (coordinates of Mount Belukha) are 49° 48′ 25″ N, 86° 35′ 23″ E. Please see the geographic map of Altai and Sayan Mts. followed by a map of hotspots of overexploitation of forest and pasture resources (second map, grey-shaded areas), relevant to issues discussed in the project.



АЛТАЙ-САЯНСКИЙ ЭКОРЕГИОН : Чрезмерное изъятие ресурсов местным населением



Масштаб 1 : 7 500 000

ASE is characterized by a mix of ecosystems, including alpine tundra, forest, and steppe. The ASE is unique in that it remains one of the least disturbed forest and steppe areas in the world. The global significance has been recognized through the designation of two UNESCO World Heritage Sites. The ASE is also one of the world's 200 priority ecoregions included in the WWF Living Planet list. The Russian portion of the ASE encompasses an area of 65 million hectares and straddles either fully or partly the territories of 8 administrative regions (Republics of Altai, Buryatia, Khakassia and Tyva and the Altai, Irkutsk, Kemerovo and Krasnoyarsk Territories). The key land-uses in ASE include timber harvesting, cattle management, as well as arable farming, mining, and tourism. Under business-as-usual, these land-use practices result in the following forms of ecosystem degradation:

- **Forest overexploitation** (legal and illegal) of forests in the Ecoregion leads to degradation. Approximately 5,000 hectares of forest is felled each year. These areas, due to an underdeveloped transport infrastructure are concentrated to areas of convenient access, leading to deforestation in areas closer to settlements. Reforestation projects are undertaken but the off-take at the local level remains unsustainable. A less extensive but no less powerful factor contributing to forest degradation is the development and expansion of the mining industry in the Altai-Sayan Ecoregion. Forests are mainly affected by placer mining on the banks of beds of rivers. The total area of placer mining pits in the region is estimated at 2,500 hectares. After mining operations are completed the pit areas are revegetated, but not rehabilitated in order to fulfill its previous ecosystem services. Another factor contributing to the degradation of the forest which has emerged in recent years is damage caused by the recreational activities. Damage is caused in the form of cutting for the purposes of constructing tourist facilities and firewood for camp fires, and indirectly via the damage caused to root systems on road and track networks which results in reduced tree growth and gradual shrinkage.
- **Over-exploitation of steppe:** The steppe region is the mainstay of the region's livestock industry. Steppe ecosystems formed under the influence of constant but low-impact grazing, which, at low levels not only did not harm, but may have enhanced the natural succession of these areas. In recent years, however, **overgrazing** has led to pasture transformation, significantly changing the appearance and constitution of the steppes of Altai-Sayan. This overgrazing is mainly due to the breakdown of semi-nomadic farming whereby livestock was grazed at higher altitudes in the Summer than in the Winter. During the Soviet period, semi-nomadic pastoralism adjusted to the collective farm system. With the breakdown of the Socialist State system in Russia in 1991, when collective farms were split up, individual cattle owners could no longer sustain the traditional nomadic system. This resulted in the lost of the pasture rotation system used by collective and state farms, and in time, to the loss of supportive infrastructure associated with summer grazing (e.g. farming huts, cattle pens, electricity, etc.). Progressive abandonment of the transhumance system has led to the concentration of livestock year round in what were originally winter pastures near human settlements. Large areas of grassland have been degraded (some 1 million hectares), bringing about soil compaction, erosion, loss of vegetation cover, and a drop in net primary production. The carbon sequestration function (for natural steppe pastures around 5.5 tCO2-eq./y) is being undermined and the degraded areas risk becoming an emissions source because of excessive soil respiration in areas with bare soil. The release of carbon through excessive soil respiration (oxidation of organic carbon) is assessed to be around 2-5 tCO2-eq./ha/y. Another threat to ecosystem services provision in the steppe ecosystem is mining. Although not as extensive as the afore-mentioned threats, the impact is much more radical. Coal mining is widespread, with an increase in multi-metallic ore mining as well. The area of land that is affected by coal mining in the region is approximately 12,000 hectares. After open-pit operations are complete technical re-cultivation is carried out. The slopes of the site are flattened and terraced. Phyto-sanitary and afforestation re-cultivation measures are optional and as are often not carried out or conducted over small areas only. These methods of remediation have not yet contributed to the restoration of affected steppe
- **Anthropogenic fires**. This is one of the most significant threat to the forest ecosystems of the Altai-Sayan Ecoregion, and the services they provide. It is estimated that fire destroys 50,000 hectares of forest every year in the Ecoregion, and that has been an increasing trend over the recent past years. It was found by a research project of UNDP and ICI[9] that in the period of 2000-2009 17,700 of fires occurred in the Russian portion of the Altai-Sayan Ecoregion. 36% of natural fires took place in forests, while the rest of them damaged open areas, mostly steppes and grasslands. **60-90% (depending on the locality) of fires have anthropogenic origin**. While in natural state in the past fires used to have a cyclic distribution from year to year, they were much less frequent, and in recent years they show a clear tendency to increase within the last decade from 750 in 2000 to 2,500 in 2009 with a correspondent increase of damaged biomass-rich territory from 2,500 km² in 2000 to 11,150 km² in 2009. The report confirmed that the amount of biomass destroyed by fires far exceeds that amount of biomass that has been destroyed in the past under natural fire occurrence, and justified a need to contain the anthropogenic factor which is the key driver of the increased fire frequency. This equates to the release of additional (anthropogenic in origin) 1 mln tCO2-eq/y. In the ASE, aerial forest protection is only undertaken to protect settlement and infrastructure, forest fires in remote low populated areas are mostly left uncontrolled. The impact of fires is particularly devastating in arid areas where natural post-fire recovery is either unlikely or impossible. From a land degradation perspective, forest fires not only damage forests by directly burning trees but also by unleashing a chain of negative effects: forests dry out over the course of one or two years after having suffered a fire; the groundwater level falls, and this again expedites the desiccation process. As forests dry out, they become more favorable breeding grounds for harmful insect pests that then spread to healthy untouched neighboring forests. The surface temperature of the blackened soil rises, the layer of humus burns, and a mixed stratum of earth and ash creates unfavorable conditions for seed to sprout. The root-causes of fires stem from lack of proper land use regimes for most fire-prone areas. This leads to uncontrolled presence of more people in the forests in the fire-risky season, purposeful burning in order to obtain a license for "salvage" cutting, and the spread of fire when burning is conducted to clear the remaining straw or other remains at agricultural land. The largest number of fires in the region is also recorded in the steppe ecoregion, at least 90% of which are caused by anthropogenic factors. One of the main reasons for this is the common practice of burning vegetation as a means of

[9] Fire Danger Mitigation Strategy report (2012) was developed in the context of UNDP/BMU Project "Expansion of the Protected Areas Network for the conservation of the Altai-Sayan Region" funded by German Government under International Climate Initiative.

maintaining the quality of hay and pastureland and of clearing crop residues on fields. The annual area of steppe burned over the past ten years have increased tenfold and is estimated to cover an area of 770,000 ha, resulting in annual carbon emissions of 5,717,250 tCO2-eq/y[10]. The increase in the frequency of fires (in places almost annual) particularly out of season wildfires (during the period from May to August) is a key factor leading to the degradation of natural steppe and associated succession of grasslands by shrubs.

In order to reduce pressures on natural resources from unsustainable land uses and to secure conservation and enhancement of carbon stocks there need to be a shift from the current unsustainable territorial planning policies and land use practices to sustainable land and forest management that can be enforced overtime and adopted at a landscape level. This approach is impeded by a number of problems and barriers that are described below grouped into two main categories:

Inadequate enabling framework for SLM and SFM uptake:

1. Under the current territorial planning practice, allocation of lands for economic users and the regimes of use do not take into account the ecosystem values and ecosystem carrying capacity. Decisions on land allocation and land use regimes take into account only immediate health risks, while the long term consequences of land erosion, loss in soil productivity, or loss of forest ecosystem services, are left outside the territorial planning process due to lack of capacities and knowledge on how to fully integrate them. No assessment of the current state of soil, vegetation, wildlife is taken into account, and no ecozone mapping is done on that basis. Areas are not classified according to the degree of degradation, nor are there any regimes for land use on ecosystems under various forms of degradation. HCVF cannot be effectively protected in commercial forests (e.g. by an applicant for FSC certificate) unless HCVF are included in territorial development plans and regional forests plans. At the moment, territorial plans in ASE do not distinguish between commercial forests and HCVF. As a result, the territorial plans as they are currently developed continue to be driven in most cases by short-term economic goals and give little consideration for the ecological integrity of natural resources.
2. Important gaps in the policy and regulatory framework stand in the way of a transformative change from a short-term economy-focused to a long-term integrated terrotorial planning. As the experience of the developed countries in the areas of environmental enforcement has demonstrated (e.g. the wetland banking in the US, the agroenvironmental schemes in EU), that unless the requirement to account for natural resource values and functions in terrotorial planning is fixed in policies and regulations and land users are made to comply, there will unlikely be a transformation change from baseline to integrated land use. A set of new or amended regulations is required at the municipal level in order to incorporate the definition of the high value of ecosystem services of steppe and forest ecosystems, prescribe the need to identify and describe the procedure and standards for identification and designation of High Conservation Value Forests, and prescribe the priority for avoiding to ecosystem integrity when planning any economic activities at the time of territorial planning. Currently, neither the federal level, nor regions recognize “high conservation value forests” in their legislation or set procedures for how exactly to incorporate them in the territorial plans. The legal process for mapping, setting aside and designating HCVF at the level of a forestry district is not defined either. A number of existing “SFM recommendations” are contradictory: e.g. while the Harvest Rules allow leaving of deadwood, the Sanitary Rules in Forest or Safety Rules in Forestry would consider that as mal-management. This leads to a a situation where a forest user cannot undertake conservation measures (such as leaving more residual trees or untouched forest patch) without risk of being charged by authorities. A lot of existing guidance on SFM is often too generic or incomplete. Thus, list of legal conservation measures and key habitats is incomplete; there is obvious lack of guidance / characteristics to implement conservation measures on the ground (when to do what and how, what and how to identify, how much to leave etc.).
3. The third problem is weak enforcement capacities of local land use and environmental inspectors. Land conversion often takes place illegally (with no application being submitted to the authorities, or with proponents not abiding by all the necessary permitting conditions). Without proper monitoring and enforcement, the offenders are not penalized, regulatory processes are undermined, and land and forest continue to be degraded and natural ecosystem functioning lost. Very few municipalities in AS have dedicated environmental officials and this function is often diluted and combined with other roles, or not addressed at all. Monitoring and enforcement of the integrated territorial plans will require closer dialogue between staff from various Government institutions involved in land use planning, permitting and environmental inspections.

Missing know-how on key aspects of sustainable land and forest ecosystem management:

4. An important barrier, related to transhumance, is lack of knowledge on how to organize cattle management in a way that would ensure maximum productivity of grassland and avoid its degradation. This depends on careful planning of parameters such as rotation, stocking density, correct choice and placement of infrastructure for cattle maintenance. Non-application of sustainable land use practices is the driven by limited ‘knowhow’ and technical capabilities to do so. This knowledge is critical for long-term maintenance of carbon and above-ground carbon pools and avoidance of over-grazing or under-grazing. Yet, herders have not been trained to define the carrying capacity of pastures, nor to integrate this knowledge further into their decision making in livestock management. There is a need to demonstrate how this can be done in practice, covering a diversity of farms (large and

[10] Ref. to Annex A for coefficients.

small, uphill and downhill, small cattle / large cattle / mixture, etc.). Such demonstration has not been yet available in the ASE region.

5. It is critical to address the problem of loss of transhumance in a systemic way: while the above barriers describe legislative, methodological and know-how gaps, one of the key factors defining the loss and the possibility of a reversal of a transhumance system is the micro-economic factor: the financial motive through which farmers decide to adopt one way of livestock management or another. It has been demonstrated by international experience (e.g. GEF projects such as those in Morocco http://www.undp.org/content/dam/aplaws/publication/en/publications/environment-energy/www-ee-library/biodiversity/morocco-transhumance-for-biodiversity-conservation-in-the-southern-high-atlas/Case_Study_Morocco_Transhumance_for_BC.pdf, that the standards, regulations, and land use planning alone do not address the micro-economic / market drivers of transhumance loss; financial incentives are needed for local residents. Currently, under the baseline subsidy and micro-crediting programs, herders can benefit from incentives for arable agriculture and limited alternative generation opportunities (such as tourism, as mentioned in the description of the baseline), but there are no incentives for herders for transhumance systems.
6. There is no experience in the ASE for certain types of ecosystem restoration. Restoration of steppe and grassland ecosystems has not been tried?at all. For forest ecosystems, the reforestation followed by the Government is handicapped, in that it is a uniform reforestation practice ill-adapted to the diversity of forest types found in ASE. Restoration of dry fine forests on mineral sandy soils destroyed either by fires or quarries, has been unsuccessfully attempted so far in Tyva and several other municipalities: all the new forest they have planted died out due to fires and droughts. The other examples are mono-planting of pine forests in degraded semi-dry forest-steppe areas; reforesting through pine forests here (baseline practice) has turned out to end up with stands with extremely low resilience to threats. There is a need to adapt the baseline reforestation practices by testing new solutions (e.g. mixing coniferous with native deciduous species (birch or aspen) combined with a more advanced terrestrial fire prevention scheme, etc.). The capacity for this is not available yet, and without GEF support, this will not happen.
7. The ASE region possesses unique forests, yet none of these have been designated as HCVFs. Use of forests in ASE so far has been purely driven by timber production. The rate of harvesting is not sustainable under the current silvicultural model: predominant use of clear cuts is combined with slow natural forest regeneration and lack of thinning. In order to maintain harvest levels, timber companies are forced to move into intact forests in remote areas. Clear cuts in high conservation value forests (HCVF), are the most destructive for forest ecosystems. A common problem is the use of clear cuts in protective forests where they are legally prohibited. Illegal logging is estimated to be 15-20% of all harvested timber. Despite the efforts of some NGOs (see description of WWF efforts under relevant projects), for ASE there is lack of consistent data on the distribution and values of HCVF which prevents form their incorporation in territorial planning. Just few HCVF subtypes (HCV 1.1., 1.2 and 1.4., HCV 2) have been mapped in certain regions, although even these maps need refinement and update. In very few cases the maps have been accompanied by precise description of particular values of HCVF areas. Some categories (most of HCV 5 and 6) can be effectively mapped only on a local level or at best on the regional level. Some researchers have done significant work on identification of rare forest types, but the criteria and methods applied were all different, and hence the data produced were incompatible. Very often HCVF can be identified and mapped only when conservation NGOs or timber businesses start to negotiate over a particular area, and if by that time the territorial plan has not been modified accordingly, it is extremely difficult to negotiate a HCVF set-aside, given the procedural difficulties and lack of motivation / incentives for timber companies, regional forestry authorities or regional environmental protection authorities to protect HCVF. In the baseline scenario, in 10 years, over a million ha of unique forests in ASE that have important conservation functions, would end up in logging plans. The Federal Forest Agency does not see conservation of forests as its mandate, but rather as the ‘manager/overseer’ of harvesting of the forests. The long-term viability and resilience of the forests and their ability to provide the important ecosystem services relies on certain areas being conserved rather than logged and that connectivity is maintained between these conserved areas.
8. With respect to the increased frequency of anthropogenic fires, the baseline projects described further in the PIF, which relate to fire management, are focused largely on the reactive management, that is, they primarily represent the allocations of the Governments for fire-fighting operations. The prevention activities are limited only to production of posters for display in key towns and villages and sand ditches in forests, which have limited effect in dry years. Limited air patrolling in most dry years is financed by the Government. The baseline programs are not sufficient to: (1) support land-based patrolling (which is key for anthropogenic fire prevention), (3) promotion rationalization of fire management in agricultural steppe areas, which are the key contributors. At the same time, these two points have been listed by the above mentioned UNDP Report on Fires in AS among the key tools for curb the anthropogenic fire frequency. Since Government funding is not available for them, under the business-as-usual scenario fire frequency in AS will not be curbed, but will rather be expected to grow.
9. Although Russia has been an important part of the first Kyoto phase and post-Kyoto negotiations, there are no regulatory and methodological instruments for integration of ecosystem carbon balances information into UNFCCC reporting or the land use decision-making. There is no state monitoring system for ecosystem carbon sinks and emissions. In particular, there is no official data on the carbon sequestration potential and functions of carbon rich ecosystems, such as forests, peatlands and steppe. Lack of data impedes the development of a sequestration baseline for undisturbed ecosystems, and does not enable

consideration of carbon benefits when planning land or forest use activities. As can be deduced from Annex A, which lays out the carbon benefit calculation for this project, relevant data that would enable IPCC Tier 2 or Tier 3 reporting is practically absent for steppe and many forest ecosystems. While for Russian forests, as discussed in the baseline program on forest inventory, there is some baseline data on carbon stocks of some carbon pools, for a number of forest pools and non-forest ecosystems this data is lacking in spite of the fact that in the framework of post-Kyoto process it is recommended to take into account the carbon sequestration potential of various regions and potential positive effects of sustainable land use practices into decision-making process regarding the choice of competing land uses.

The baseline activities / programs and scenario without GEF. A number of baseline programs are addressing the threats and barriers described above, and hence serve as a foundation for the GEF project. However under the business-as-usual scenario they will not be sufficient to enable a shift towards integrated territorial planning and more sustainable management of land and forests on the ground. These are briefly described below, alongside with the business-as-usual scenarios they entail.

Land Use Planning and Regulation: In the next 7 years, the targeted municipalities in Altay Sayan will be revising their territorial plans. Local territorial planning in the target municipalities will be undertaken by regional and municipal authorities and funding for this is secured through regional and municipal budgets. At least US$ 4 mln will be spent on this over the next five years. At the provincial level, provincial governments will provide approximately US$2 mln for their land use regulatory role[11]. The deficiencies of the baseline terrotorial planning practices have been discussed in Barrier 1. As a result, under a scenario without a GEF project, the territorial plans as they will be developed, will be driven by short-term economic goals and give little consideration for the ecological integrity of natural resources. There will be no policies and regulations to support a transfer to integrated sustainable land and forest management, discussed in Barrier 2. The capacities of land-use and environment inspectors to enforce a more sustainable use of land and forest resources (discussed in Barrier 3) will remain weak. Without this, land uses in Altay Sayan will continue to render threats to ecosystems as described above.

Steppe Land Management: The baseline investments in steppe land management in ASE are estimated to amount to at least USD 46 mln over the course of the next five years. There is a series of municipal programs relevant here, the largest being:

- the *Altai Republic: Regional target program on Agriculture Development (2011-2017*, Ministry of Agriculture of Altai Republic and the Ministry of Regional Development of Altai Republic; *USD 28 million)*
- The *Tyva: Regional target program "Protection and reproduction of animals in Tyva Republic for 2013-2015" (*the State Committee on Game and Fishery of Tyva Republic; *USD 1.84 million)*
- The *Kemerovo: Regional target program "Environmental issues and natural resources of Kemerovo Region for 2008-2013" (*Administration of Kemerovo Region; *$ 1.2 mln)*,

The menu of the key service lines of these baseline programs includes: crop production, water supply in agricultural areas, reconstruction of irrigation systems, support to livestock breeding, soil fertilization, green tourism. These programs are relevant for the project geographically and demographically because they work in the same areas as the proposed project and target local agricultural land users. Yet, as can be induced from the service line menu, none of the baseline programs supports sustainable transhumance. This problem has been discussed above in Barrier 4. Under a scenario without a GEF project, this programs will continue, but there will be no change in the landscape towards more sustainable transhumance, since herders will be missing capacities to define the carrying capacity of their pastures and surrounding steppe areas and will keep implementing their cattle management in a way that would continue to threaten the grassland ecosystems of the region.

Baseline financial incentives for communities and small and medium-enterprises in the area of agriculture. There is a number of federal and provincial investment programmes that provide subsidies and soft credit to communities, small and medium enterprises, the key ones being *"Governmental support and development of small and medium-scale business in Altai Krai for 2011-2013"* (will establish microcredit schemes for farmers -$ 5.648 mln for 2013) and *"Small and medium-scale business development" in Altai Republic for 2011 – 2014"* (includes financial mechanisms such as governmental subsidies to promote microcredit schemes for small businesses - $ 90,23 mln planned for 2013-2014). These programs currently support extensive agriculture and provide limited support to sustainable tourism. None of these programs is providing incentives to sustainable transhumance. The need for this was discussed in Barrier 5. Under the business-as-usual scenario, there will be no financial incentives for herders to adopt sustainable transhumance, contributing to its continued degradation in Altai Sayan.

Forest management / annual reforestation in Altai Sayan. The baseline investments in sustainable forest management in ASE amount to approximately USD 20 mln in the course of the next five years. These are provided under the *Action Plan to Support the Implementation of the Strategy for Forestry Development* led by the Federal Forestry Agency. The funding is allocated towards forest restoration using traditional methods, which leads to problems described in Barrier 6 above. No funding has been allocated for identification, classification, mapping of HCVF, nor their management (this is further discussed in Barrier 7). Since HCVF cannot be identified and mapped, they cannot be properly managed; this is corroborated by the absence of any requirements for leaseholders to set aside and manage HCVF. Some of the recent discussions on HCVF have focused on the need for leaseholders to

[11] Note: all estimates are tentative, subject to a more detailed review at the PPG stage.

be compensated for the loss of income in case they set areas aside as HCVF, withholding from logging activities there. Yet, these discussions have not completed to-date due to multiple opposing interests in the forest sector and difficulties to engage government in recognizing the need for these incentives. Under the scenario without GEF, there will be no practical experience and no capacities to implement restoration of grassland and some forest ecosystems in a scientifically justified way. High conservation value forests will not be designated and with most likelihood will end up on logging plans in the next 10 years.

Integrated Fire Management: The total baseline investment in fire management in ASE in the course of 2012 – 2017 are estimated to amount to at least USD 22 mln, provided through a number of regional programs: *Altai Krai: Regional target program "Reduction of risks and mitigation of impacts from natural and technogenic emergencies in Altay Kray" for 2011-2013 (*Administration of Altay Kray; *$ 0.329 mln)* includes a component on forest fire prevention and mitigation of catastrophic land degradation (massive water and wind erosion) after fire events. The *Tyva:Regional (Republican) target program "Protection of Forests in Tyva Republic from Fires for 2012 – 2015" (*State Committee on Forestry of Tyva Republic; *$ 11.531 mln.)* targets prevention and fighting of forest fires in Tyva and thus mitigates carbon emission. In the territory of federal protected areas the responsibility for fire prevention and control lies with the protected areas management and is financed through the Ministry of Natural Resources and Environment (estimated contribution of at least USD 10 mln). The focus of the programs is on fire fighting, rather than prevention of anthropogenic fires based on science. Further gaps of the baseline activities in fire management have been described in Barrier 8. Under the baseline scenario, the focus will remain on fire-fighting, and the anthropogenic fire frequency in AS will not be curbed (is projected to increase); the rate of anthropogenic fires will remain as high as 90%. This will result in rise of carbon emissions and new waves of ecosystem degradation, both in forests and grasslands.

State Program on Forest Inventory. The State Forest Agency Rosleskhoz implements the State Program on Forest Inventory. Under this baseline program funding is allocated to implement instrumental measurements of aboveground biomass at representative sample plots and extrapolate data onto wider forests, per forest types. The program started two years ago and will continue in the next 10 years, inventorying the country's forests step-by-step. Under this program every year, 42 mln ha of forests are inventoried in Russia. The annual budget of the program is approximately 25 mln USD (approved by Government on annual basis). The program cannot realistically cover all important forest regions in the next 10 years (i.e. during and after the GEF project); under the baseline scenario, only 30% of forests in Altai Sayan can realistically be covered by current expert assessments. Furthermore, the system is focused primarily on informing the timber industry on the round-wood economic potential rather than accurately reporting on full system carbon stocks and changes, which is why the system allows reporting only on trunk biomass and deadwood. Reporting on the crown, litter, soil and below-ground biomass is not done. For conversion of biomass data to carbon IPCC 2006 coefficients are used as well as national coefficients, where available. For Altay Sayan such coefficients are not available. For ASE, as is also the case for many other forest regions, the current IPCC 2006 coefficients are either missing for many forest types and ages or have high error. Furthermore, the system does not report on soil carbon and below-ground biomass, which are key carbon pools in Russia's forests. The field and desk data is not linked to remote sensing, which does not allow to track carbon changes or a regular basis. Although this system has technical potential to grow into a national forest carbon system helping country to report its carbon stocks and changes to UNFCCC and inform decision on land use, without GEF support, under the baseline scenario, therefore, in the next 10 years, this is not likely to happen. Under the baseline scenario, the forests will keep to be inventoried only for their economic potential; most forests ecosystems of Altai Sayan Ecoregion are unlikely to be inventoried; no carbon monitoring systems that would include full ecosystem carbon would be available.

B. 2. INCREMENTAL /ADDITIONAL COST REASONING: DESCRIBE THE INCREMENTAL (GEF TRUST FUND) ACTIVITIES REQUESTED FOR GEF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS (GEF) TO BE DELIVERED BY THE PROJECT:

The **long-term solution sought** is to change the trajectory of the baseline approaches in order to facilitate a transformative shift from unsustainable to integrated sustainable land and forest management. The project strategy is to address the barriers described through a coherent combination of corresponding incremental outputs organized into two components: the first one focusing on developing an enabling policy and capacity environment, the second one helping to implement innovative investment in sustainable pasture and forest management. In doing so it will influence the production practices employed by economic sectors and will support measures to avoid GHG emissions from illegal logging and unsustainable grazing and fires, and demonstrate approaches to increase sequestration through renaturalization of native steppe and forest vegetation. This would result in global benefits in the land degradation and climate change focal areas, both in the short and long term, as further described in the Benefits table.

Component 1: Enabling policy environment and strengthened enforcement capacities for integrated land management and sustainable forest management sustainable. This component focuses on addressing the barriers related to deficiencies in the current territorial planning, regulatory and policy environment and enforcement capacity gaps (Barriers 1-3). Under Output 1.1, the project's incremental value lies with demonstrating, using the case of AS target municipalities, how the territorial plans can be made sustainable (truly integrate economy and environment) through adding the layer of ecosystem values and services during the process of revising the plans. A GIS database and maps will be developed for each municipality district, listing priority areas of HCVFs 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. These layers will be overlaid onto the economic use layers, and it will allow for

defining which economic activities, in what regime, with what loads on ecosystems can be conducted where in order to retain ecosystem integrity and ensure maximum productivity of municipal lands in the long term. The four districts represent diverse land use, socio-economic and geo-climatic characteristics. Therefore, the project will be able to develop and demonstrate a matrix of SLM/SFM solutions for further replication outside of the pilot territories. The final municipal Territorial Plans will be approved by regional Governments. The experience will be shared and replicated beyond project boundaries through a serious of publications and workshops. Under Output 1.2, the project will develop a framework to integrate sustainable forest and land management into broader landscape planning: the project will support the elaboration of important regulations, principles and methodologies that would legally stipulate the application of SLM / SFM in territorial planning, as well as in planning sectoral baseline programs in the future. It will accommodate sustainable land and forest management in ecological sensitive areas (such as HCVF); develop regulations on identification of ecosystem goods and services that will be mandatory to be addressed in the territorial planning. Output 1.3 will establish a monitoring and enforcement system for the improved territorial plans. Methodological recommendations will be developed on regular monitoring of compliance with ILFUPs. The new recommendations will define the requirements for monitoring and supervision of the implementation of ILFUPs, sequential steps for their implementation, required modifications to the documentation, and also, where necessary, the definition of "compulsory" actions that need to be implemented by land users. The roles and responsibilities of organizations involved in supervision and enforcement of ILFUPs will be clearly defined; the output will ensure that the monitoring and enforcement system draws on the expertise of all relevant actors and clearly allocates roles and responsibilities based on comparative advantage. Sanctions will be imposed in accordance with the national legislation, in cases where land use plans are not being complied with. This enforcement system will be integrated within the overall administrative compliance mechanisms in the target municipalities. To minimize the non-compliance on the side of the land-users, the project's Component II will be dedicated to investing in particular SLM and SFM measures. Government officers at municipal, provincial and federal level will be trained to understand the SLM/SFM principles, and to enforce the regulations and organize the participatory process of integrated land-use planning.

Map 1. Altay-Sayan Eco-Region and proposed demonstration municipal districts

1 – South-Eastern Altai Region - Kosh-Agach District
2 – Western Altai foothills Region - Krasnoschekovo District
3 – Kuznetsk Alatau Mts. Region - Belovo or Askiz District
4 – Sayan / Tannu-Ola Mts. Region - Tandinsky district

Component 2: Investment in demonstrating improved sustainable land and forest management in the Altai-Sayan Ecoregion. This component will demonstrate on-the-ground approaches to improving land and forest management within a production landscape covering an area of 1.25 million hectares, including app. 600,000 ha of steppe pastures and 650,000 ha of forest lands. It will target the same demonstration municipalities as in Component I. The outputs under this component will put to test the SLM and SFM instruments expected to emerge in ILFUPs under Component 1, and which had not been applied in ASE before, as discussed in Barriers and Baseline sections. Thus, for steppe pasture lands, under Output 2.1, the approaches to be tested include transfer of unused croplands into pasturelands, revival of traditional or implementation of new optimal pasture rotation systems, extension of current grazing areas by creating conditions to include areas currently unused (especially use of remote pastures), restoration of water supply systems and equipping infrastructure to support seasonal cattle grazing. Special attention will be devoted to cattle stocking rates to ensure that they are optimized within acceptable carrying capacities. The overall idea is to demonstrate how, by wisely planning and implementing various land-uses within pasture lands, it would be possible to achieve income while retaining an intact carbon pool and ecosystem functionality.

The provision of the funding to communities, small and medium enterprises for steppe pasture land management will be done through the financial incentive mechanism under Output 2.1a. As is the case with approved UNDP-GEF LD/SFM projects on desert ecosystems Kazakhstan, Tien Shan forests in Kyrgyzstan and pastures and forests in Azerbaijan, the most successful model for administration of the incentive scheme is not to set up a new stand-alone fund, but rather to incrementally add the funding options promoted by GEF to the most reliable local subsidy or micro-credit program. Under the project, therefore the financial incentive scheme will be set up in partnership and with co-funding from Municipal/Regional Governments on the basis of their existing subsidy schemes, such as micro-crediting scheme implemented by the Municipal Government of Altai *"Small and medium-scale business development" in Altai Republic for 2011 – 2014"* (mentioned in the baseline section. The project will partner with the

operator of one of the relevant programs to introduce new incentives for sustainable pasture management in the targeted municipalities. The institutional arrangements, disbursement and collection system will be defined during the PPG stage. Full capitalization of the incentive scheme will be rendered by municipalities, out of their baseline programs and from GEF funds (1:3 co-financing). Municipal governments have initially shown interest in allocating funds as co-financing for the GEF project. In addition to triggering the capitalization, the incremental value of the GEF rests with support to the deployment of the scheme through providing: (i) initial establishment of the mechanism: the micro-crediting product will be defined and launched in targeted steppe ecosystems: activities eligible for subsidy support selected (sustainable pasture management/sheep breeding, horse breeding, rural tourism, etc.) and launched as a modified budget line of existing financial support programs in the targeted municipalities, (ii) assistance in marketing of the scheme to local communities; (iii) assistance to villagers in feasibility assessments and application process; (vi) guidance on implementation of specific activities; and (v) monitoring of contractual arrangements. One of the criteria for selecting the host operator of the scheme is assurance that the scheme will be continued without GEF support after project end.

The improved sustainable forest management practices will be piloted in several forest areas under Output 2.3, and focus on implementation of HCVF principles, namely reduction of wood harvesting volumes in forests important for the delivery of critical ecosystem services, moving high-value forests from the “logged” to “protected” category and implementing non-exhaustive forest use in cooperation with local communities. About 300,000 ha are expected to be designated as protective forests (защитные леса) as defined by Russian Forest and protective forest habitat, as defined by the federal forest legislation. These are forests whose primary designation will be ecosystem function protection and not production. Clear cut felling will be banned in these forests; other forms of logging will be restricted.

Under Output 2.2, the project will address the need for new approaches to rehabilitate degraded (and hence economically unproductive) pasture and forest ecosystems. In pine forests affected by wild-fires and mining, forest reclamation measures will be implemented and creation of forest plantations using native seed material, to demonstrate approaches for assisted natural regeneration where conditions inhibit natural re-growth. The baseline reforestation practices will be adapted by testing new solutions (e.g. mixing coniferous with native deciduous species (birch or aspen) combined with a more advanced terrestrial fire prevention scheme. Where possible, steppe ecosystems with a predominance of native (non-weed) grassy vegetation will be restored on former plowed parcels and abandoned production lands based on detailed botanic, soil and hydrological studies. By triggering the return of degraded pastures and forests to their natural condition, the project will restore their ecosystem functions, including carbon sequestration.

Under Output 2.4 the project will address the gaps in the anthropogenic fire management; the project will put in place voluntary fire patrolling and fire fighting teams at key areas in the landscape, most prone to fires caused by humans. These will be constituted of local population (well acquainted with the local district), mixed with professionals from forestry service, or emergency service or patrolling units of protected areas. They will be constituted for that part of the year which is the most fire-prone. The teams will be regularly patrolling on land the high risk sites most visited by local land users (such as herders or hunters), tourists, natural resource pickers, etc. The brigades will help to prevent fires, but also be equipped with means for fast extinguishing of the most recently started fires. Each team will be equipped with connectivity to a central fire fighting unit in the forest administration or protected area. The brigades will also monitor the fuel build up and signal a need for a liberation thinning or a similar remedy. Such brigades a phenomenon has been recently adopted in Russia’s federal legislation, however, only very few such brigades have emerged so far across the country, due to difficulties in setting them up, licensing, training, capacitating. Such teams in AS will be set up with the assistance from the GEF project, yet from year 4, once proved effective and fully capacitated, they will be affiliated to the corresponding local branch of the Forest Administration, Avialesokhrana (Air Forest Protection Service), Ministry of Emergencies, or Protected Area, on a sub-contractual basis (depending on the most appropriate way of subordination in each case), which will ensure their sustainability in the long-run.

Under the same output, agricultural fire prevention through controlled burning will be tested. Controlled burning will be organized in pre-selected sites along the periphery of the most fire-prone portion of a steppe or pasture-land, which is normally a parcel which has reached or exceeded the natural fire cycle year range. At the first stage, the project will enable training of local specialists by setting an experience exchange with international specialists. The burning exercises will be attended by fully equipped fire containment teams and will be implemented during wet weather conditions (e.g. when there is yet snow available in spring or shortly after the first snowfalls in the fall). The exercises will take into account wind speed and humidity and other factors. The exercise will be preempted by careful planning, and involve advanced consultations with relevant land users, Government authorities. The burns will be repeated as necessary to achieve maximum effectiveness. The project experience will be document and is believed to be highly important for vast steppe areas in Russia which suffer from excessive fires every year. If conducted effectively, the most fire-risky areas of steppe will be protected from fire in the long run. In addition to controlled burning, the project will, as the PPG stage also test the feasibility of other means to reduce the frequency of fires in grassland ecosystems, such straw harvesting for briquettes or construction materials instead of burning. The project experience will be replicated through (1) parliamentary hearings (local parliament), (2) specialized publications, (3) a series of local workshop, and (4) web-site. Through this, the capacities for controlled burning will be retained by the Russian specialists who will be able to become capable to replicate the experience in the rest of the country. The above activities will further be topped up with rising of the public awareness through spectrum of vehicles such as advertisement through mass media, internet, as well as work with school children.

Under Output 2.5 the project will set up a full ecosystem carbon monitoring system. The GEF Scenario would enable setting up a network of a minimum number of representative sample sites in project target areas in the region that will be subject to a series of aboveground and below-ground biomass measurements, per different biotopes and land uses. This will enable to obtain IPCC Tier 2-level coefficients for various pools (including soil and below ground biomass) which are currently unavailable, as discussed in the problem statement. The sample site measurement data will be extrapolated onto broader forest landscape using remote sensing. For that a methodology for transferring field data on carbon to RS system of Rosleskhoz will be developed, together with extrapolation techniques, data protocols and other RS parameters. Once the initial instrumental measurements are fed into it and extrapolated properly, the Remote System will produce relatively high-precision knowledge of the ecosystem carbon contained in AS forests. Further, due to incorporation of remote sensing, the system will enable tracking of carbon stock changes on annual basis or any other frequency. The remote sensing technique will enable to trace removal of biomass due to logging, and natural threats, such as fires. The PPG will analyze which software is currently used under the Forest Inventory of Rosleskhoz and recommend a software solution that will be implemented in the full GEF project, with the purpose for it to be applied to maintain the forest inventory and carbon monitoring system of AS, so that reports generated by this system are available for decision makers and reporting to UNFCCC. The sustainability of this work will be ensured by the fact that Rosleskhoz and local Institute of Forests will commit to maintain the system after project end. If successful this work will be replicated in other regions of the country by Rosloshoz, and this the GEF project can create a powerful instrument and capacities that could be utilized effectively well beyond the scope of the project. Further specifics of the system will be designed further at the PPG stage.

The project plans to monitor the ecosystem carbon in steppe and grassland ecosystems using the Carbon Benefits Project of STAP and UNEP - http://www.unep.org/ClimateChange/carbon-benefits/cbp_pim/# or a similar tool, as defined at the PPG stage. Because there is complete vacuum of knowledge on the carbon stock coefficients for the steppe and grasslands of AS (under various land uses), the project will establish a set of minimal sites for instrumental measurements. It is especially critical to measure soil carbon, since there are assumptions that under natural conditions the steppes soil of AS contain large amounts of carbon. Field measurements for various land users will allow obtaining reliable coefficients and running the CBP software in the Detailed Assessment Mode (which is the prototype of IPCC Tier-2). Once the measurements are fed into the CBP, changes in the carbon stocks can be traced with assistance of remote sensing, on annual basis or more frequently. In terms of sustainability, the system will be maintained after the project by the Institute of Forests. As such, it will be the first system in Russia for tracing carbon in the steppe ecosystem on a large scale, and the experience of the project can be applied further to all steppe ecosystems in AS region and beyond, and enable Russia to accurately report carbon stock changes and emissions from this type of ecosystems. Further details here will, as requested by the GEF Secretariat review, be developed at the CEO Endorsement Request stage.

Table 1. Summary of long term environmental benefits:

State of ecosystems under baseline	Summary of GEF incremental intervention	Benefits
Land Use Planning and Regulation		
Land use planning does not account for ecosystem values, leading to ecosystem degradation	Integration of SLM and SFM principles into municipal territorial planning, compliance monitoring and enforcement: - Forests, pastures and arable land incorporated as active components in Integrated Land and Forest Use Plans, - Steppe and Forests of High Nature Value (high biodiversity, high economic value in terms of ecosystem goods and services) are identified and appropriate land use applied to these areas, - All land in target districts are classified as per mitigation hierarchy – avoid, reduce, offset as well as degraded land to be rehabilitated and the compliance is monitored and enforced	Competitive pressures between land uses in steppe and forest landscapes reduced. - Decrease in grazing pressure in forestry territories and improved condition of steppe ecosystems, - Well-functioning ecosystem services (such as water supply at forests and forage productivity at steppe pastures), - Reduced illegal cutting and fuel-wood collecting pressure in forest and pasture resulting in prevention of loss of carbon.
Steppe and pastures		
Overgrazing: - Carrying capacity exceeded by a factor of 2 resulting in increased erosion,	Improved pasture management: - Rotational grazing to maintain pasture quality; - Transfer unused cropland into pasturelands - Increased fodder production allows	LD benefits (at an area of 600,000 ha, direct impact[12]): • Avoided soil erosion and compaction, • Restored and well-maintained vegetation cover, • Avoided drop in the ground water table • Improved water quality CC benefits:

[12] Baseline and target levels will be defined at the PPG stage.

loss of vegetation cover, soil compaction; - Formation of moving sands and dust storms in steppe ecosystem; topsoil loss and mudslides in mountains	reduced use of winter and autumn pastures - Increased investment in repair and maintenance of key pasture use infrastructure (wells) allows greater flock mobility	- Steppe pasture carbon pool of the target area maintained at 61.0 MtC and not depleting - Avoided emissions 2,687,520 tCO2-eq/y as a result of introduction of sustainable pasture management practices - Pasture restoration (over 20,000 ha): restored carbon sequestration capacity of steppe: 38,500 tCO2/y.
Abandonment of land leading to invasion of woody plants	Improved pasture management: - Rotational grazing to maintain pasture quality - Increased investment in repair and maintenance of key pasture use infrastructure (wells) allows greater flock mobility - Proactive steppe fire management	LD benefits: - prevention of negative vegetation succession and restoration of original vegetation compositions. CC benefits: - reducing the frequency and severity of fires, - reducing release of GHG from steppe fires by 297,000 tCO2/y
Forests		
Illegal logging in forests, grazing in forests, focus on plantations and not rehabilitation of natural forest; anthropogenic fires (with increasing occurrence); no rehabilitation of degraded areas.	Sustainable forest management practices: - Forest exclusion zones and set aside of 300,000 ha as Hich Conservation Value Forests, replacement of productive logging by conservation forestry with engagement of communities, - Reducing wood collecting pressures; - Restoration of degraded forests - Proactive forest fire management	LD / SFM benefits: - increase in forest cover by at least 20,000 ha in degraded areas, - reduction of forest dry out - prevention of the loss of ground water-table in forest and adjacent lands; - restoration of sequestration and other ecosystem functions of forests. CC / SFM benefits: - forest carbon pool of the target area maintained at 34.78 MtC and not depleting - avoided emissions of 400,000 tCO2/y from forest fires - avoided emissions of 480,769 CO2-eq/y as a result of introduction of designation of High Conservation Value Forests at 300,000 ha - assisted natural regeneration and native species reforestation (at 20,000 ha): restored carbon sequestration capacity of forests: 95,400 tCO2/y.

B.3. DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS:

The main livelihood options of local communities in ASE are related to livestock husbandry, forestry, and hunting. The project will enhance the resilience of the resource base on which people depend, in the case of the no-project scenario the resilience of the ecosystems to withstand threats would keep declining. Specifically, under the business as usual scenario, the territorial planning does not consider the long-term resilience of the resource base on which communities rely. Under the GEF project, local communities in 4 municipalities covering over 4 mln ha of agricultural land, will – through the ILFUPs (activities described under output 1.1) receive assurance that the resource base on which they depend in agriculture (e.g. forage productivity) will be more productive in the long term, that stable water quality and supply will be guaranteed. Through Output 2.1, the project will arm the local herders in 600,000 ha with knowledge, and skills on improving cattle management, which ultimately will translate into higher productivity. As discussed in the description of the baseline projects, this would not be available under the business as usual scenario. The diminished fire frequency is believed to have a positive impact on the health condition of local communities and on the condition of their resource base: the anthropogenic fires, which under the baseline scenario will increase in frequency, are in many cases occurring on a scale that destroys the household and economic infrastructure of local farmers; this trend will be curbed under the GEF scenario. By rough assessments, some 400,000 people living in semi-arid and mountain landscapes of ASE would benefit from the project. In addition, the project will set up a fund that would incentivize local communities to receive low-interest or zero-interest rate credit assistance for grassland-friendly activities and sustainable transhumance: 700 families are expected to benefit, leading to at least a 10% rise in the yearly family income after year 4 from the start of business activity (conservative assessment based on UNDP analysis of similar community support systems in transhumance in Kyrgyzstan. Provisional estimates for Russia suggest that improved grazing practices tested could increase the income per head of livestock by about 32%). In the cultural context of ASE, such service lines of the Financial Incentive Scheme, as local crafts, ecotourism, sheep-breeding are traditionally expected to be targeting women. Hence, the project can expect that at least 30% of the recipients will be women. The project will further seek to involve women as community leaders/representatives in the discussion of ILUFPs. Targeting

communities as primary recipients of capacity building and incentives is justified not only from the micro-economic reality, but also from the global Land Degradation benefit perspective. Since communities is the key category of land users, a transformative change to a more sustainable land use ultimately depends on them, and the achievement of the global land degradation benefits (such as rise in productivity, retention of ecosystem services such as water supply) depends on the adoption of the SLM practices primarily by communities. As can be seen from the overall project design, the project addresses this through a systemic approach – targeting policy, land-use planning, capacity, know-how, and micro-economic aspects of land use decision making at the local level. Further details on the community involvement, gender planning and benefits, are going to be developed at the PPG stage as the detail of the project activities are being clarified.

B.4 INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS TO BE FURTHER DEVELOPED DURING PROJECT DESIGN:

Risk	Level	Management Strategy
Proposed enabling legal and institutional framework is not modified/adopted or adoption is not timely.	M	The project is led by the government agencies responsible for setting up environmental policies in Russia; the local ownership of the project is high. The Russian Government has initiated the reform of its environmental policies. Inevitably, the fundamental changes in the roles of the state under a reformed land management and forest management system will be difficult unless there is clear political understanding of the need to make such changes, and full commitment to making them. To some extent this understanding and commitment already has been built. However, in order to mitigate this risk, UNDP will maintain a watching brief over commitment and work with the federal and regional authorities to expedite legal and policy reforms.
Failure to engage local stakeholders in the context of existing centralised approaches to governance	L	The project is building upon almost a decade of cooperation with local and regional authorities under a UNDP/GEF/MNRE biodiversity conservation project. This work proved that a high level of engagement and local ownership among local stakeholders can be obtained in ASE, given careful attention to stakeholder participation, conflict identification and mitigation. The project will seek to actively cooperate with local municipalities – that are composed of community representatives – and are responsible for important aspects of land management. The project also will focus on capacity building and awareness raising among local and municipal stakeholders. A full stakeholder participation plan will be prepared as the project is further developed
Conflicts over suggested land use options and benefit access among user groups and the main beneficiaries of current resource of current resource user system	M	Clearly, the establishment of new pasture, forestry and biodiversity user rights will inevitably cause some initial misunderstandings and potential disagreements. Communities and individual land users lack experience of collaboration both with and with each other. The project is designed with the view to mitigate this risk through a participatory approach to INRM, a strong focus on local capacity building and awareness raising. The project will help developing regulatory incentives for land users exercising sustainable and climate resilient land management. UNDP and MNRE have a long term experience in successfully implementing community work in the ASE.
Low buy-in from communities to the Financial Incentive Scheme	M	The experience of UNDP-GEF projects in the region pointed that the way to mitigate this risk lies in professional reach out and marketing of the incentives product, as well as with careful selection of the host institution, and negotiations on scheme management and communication with residents. This is why, in addition to triggering the capitalization, the incremental value of the GEF rests with support to the deployment of the scheme through providing: (i) initial establishment of the mechanism, (ii) assistance in marketing of the scheme to local communities; (iii) assistance to villagers in feasibility assessments and application process; (vi) guidance on implementation of specific activities. Focusing GEF resources incrementally on mitigating the risk of non-marketing of the incentive products, has shown to play a critical role in defining the success of the similar schemes in the region: in Croatia COAST project, where the UNDP-GEF project has set a model of integrating green business budget lines into municipal credit schemes; in Russia Komi and Kamtchatka projects, where UNDP-GEF projects set up financial partnerships to support green businesses, and more recently, in the UNDP-GEF Kazakhstan wetlands project which supported local residents in alternative livelihoods at steppe and wetland ecosystems. We have included this risk and the corresponding mitigation strategy into the risk table in the PIF. A detailed feasibility analysis for the financial incentive scheme will be confirmed at the PPG.
Risk of fuel build-up from anthropogenic fire management activities	L	As indicated by UNDP ICI Fire Strategy Report for ASE, excessive fuel build up under fire mitigation might happen in a few locations with young and middle age forest stands, where fire suppression can result in unnatural control of the expanding biomass. Indeed, fire avoidance activities in such forests can be combined with activities to control the most flammable biomass fuel (e.g. through liberation thinning). However, such forests are few in AS, and most of the forests targeted by the project are high nature value old forests, these are coniferous mature and over-mature forests, where the rate of natural build up of biomass is extremely small. Besides, many of these forests are over-mature forests located in high altitudes which receive double the standard precipitation norm (1,600-1,800 mm compared to 600-800 mm per year standard for the

Risk	Level	Management Strategy
		region). The build-up of biomass under natural conditions is slow and deadwood there remains wet most of the season and the natural fire occurrence here is extremely low. The project will monitor this at the time of land-based patrolling on ad hoc basis (focusing on most fire-prone areas), and in the unlikely case of a problem with exceeding the natural fire cycle, it will consider liberation thinning as a means to contain the fuel build up.
Climate change and climate vulnerability risks, such as seasonal drought in semi-desert areas. New threats could emerge (such as insect infestations, disease caused by climate change, reduced water availability, etc.), or existing threats could increase beyond the projected levels	M	UNDP is finalizing implementation of a project, financed by the International Climate Initiative (Germany) which has conducted an analysis of climate change risks in ASE and developed a climate change adaptation strategy for the ecoregion focusing on the most valuable ecosystems and communities. The project will build upon this knowledge base and recommendations. The project will set up a monitoring system to obtain information on CC risks and carbon balances in ASE ecosystems. This new system will inform the project strategy and adaptive management will be implemented to respond to the existing and emerging climate change induced risks.

B.5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:

The key project stakeholders are the administrative authorities of the administrative regions within the Altay-Sayan Ecoregion, federal and regional sectoral ministries in the field of relevance, communities, NGOs and indigenous peoples groups, as well as academic institutions such as the Russian Academy of Science. The roles of key project stakeholders are outlined in the table below:

Project partner/stakeholder group and mandate	Role in the project
Federal governments	
Ministry of Natural Resources and Environment of Russia (MNRE). Develops policy on conservation, forestry, wildlife game, and subsoil management. Prepares and issues regulations, coordinates all governmental conservation issues.	MNRE is the project National Implementing Partner (Executing Agency), chairs Steering Committee (SC). Supports INRM and SFM policy and regulatory activities, outreach to federal protected areas, coordination with other federal and regional agencies and replication of project lessons.
Federal Forestry Agency (Rosleskhoz, under MNRE). Government forestland management, forest use management. Coordinates policies in forest use, forest management, forest restoration. Consideration of applications on transfer of forest lands to other categories.	SC member; supports policy making on HNVF and application of sustainable forest management approaches at the federal level.
Federal Service for Natural Resource Management (Rosprirodnadzor, under MNRE). Responsible for control of regional activities in environment protection, conservation, and use of natural resources.	SC member. Ensures project coordination between federal and regional level and supervises activities at the regional level; support ecosystem restoration activities in degraded areas.
Ministry of Agriculture (MoA). Develops agricultural policy, policy on agricultural lands management and social-economic development in rural areas	Approves farming (including HNVF) rules which strongly influence ecosystems. Responsible for enforcing agricultural laws in all lands categorized under different forms of agricultural use. Will be a key stakeholder in components 1 and 2; SC member.
Ministry of Economic Development. Land ownership issues, social-economic development. State cadastre oversight, state monitoring of lands (excluding agricultural lands), state registration of rights for real estate.	Engaged in decision making for special land use regimes (land use restrictions); consideration of ILUMP formats and INRM principles. General coordination of the issues of land inventory/cadastre.
Ministry of Regional Development. Oversees all governmental issues of territorial planning and development (policy, management, coordination, control).	Support in development of INRM principles, development of municipal territorial plans.
Regional and local level governments and resource users	
Regional Administrations/ Governments of the 4 regions (see map above). Oversees resource management and use on local and regional levels. Prepares and issues regional regulations. Establish and manage conservation areas in forests at the local level, design and regulate specific territorial zones. They have environmental ministries or directorates with staff and budget. Coordinators of regional-level baseline programs which serve as a foundation of the project.	Will be key stakeholders for the development of legal framework for all kinds of regional and local planning documents envisaged under Outputs 1.1.-1.3. Will provide co-financing from regional programs to the implementation of investment in their respective municipalities and ensure coordination with local actors (economic actors, communities).
The four target municipalities (administrations) within the 4	Will be key stakeholders in all field projects. Owner of ILUMPs.

wider regions. Making endorsement in any process concerning land property in the municipality, INRM and natural resource use.	Assistance in implementation of investment under Component 1, and provider of co-financing for it. Assistance in interaction with land users, local communities, local business, and other local stakeholders. PR and logistics support.
Local communities, land users and owners, forest leaseholders in the targeted municipalities.	The local communities are the key beneficiaries of the new approaches to pasture and forest land management to be tested in Component 2. The INRM and ILUMPs will be designed with their direct engagement, as well as the engineering plans for innovative grazing.
NGOs	
WWF Russia. WWF-Russia for many years has been active in promoting sound ecosystem management in Russia in cooperation with UNDP.	Support in the design of HNVF and HCVF policies and assistance in their implementation.
Oxfam Russian office. Oxfam is working with national partners to raise awareness about the challenges involved in food production and climate change.	Cooperation in climate change monitoring and carbon sequestration projects.
NGO Siberian Environmental Center (Sibecocenter). Siberian Environmental Center is a regional charitable non-governmental organization operating in the Novosibirsk region, the Altaisky Kray and the Republic of Altai. Focuses on projects that are directly related to the conservation of nature, and projects with a social approach that aim to inform and educate the public about current environmental concerns.	Cooperation in conservation and territorial planning projects, development of ILUMPs, specifically on steppe.
NGO Altai – XXI century. A local NGO operating in the Altay Republic and promoting local sustainable development and Capacity 21 principles	Cooperation in sustainable development projects targeting local communities, assistance in local communities contacts in Altai Republic
Foundation for Sustainable Development of Altai. A local NGO operating in the Altay Republic, support local economic and social development and local entrepreneurship development	Assistance in engagement of indigenous local communities contacts in Altai Republic
Academic institutions and Universities	
Altai State University, Gorno-Altaisk State University, Tuva State University, Institute for Water and Environmental Problems, SB RAS, Barnaul, Institute for Water and Environmental Problems, SB RAS, Barnaul, Institute for Water and Environmental Problems, SB RAS. Each of these institutions have a mandate for scientific research in their respective area.	Key knowledge-holder and scientific assistants in the development of HNVF principles, and investment projects envisaged in Component 2.

B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

The project is complementary to a number of programmes and initiatives carried out by the Government, UNDP and NGOs. In particular the GEF project will coordination planned activities with the following complementary programmes and projects:

- UNDP/GEF/MNRE project "Conservation of biodiversity in the Russian portion of Altay-Sayan Ecoregion" implemented from 2003 through 2012. That project focused solely on biodiversity conservation and establishment of protected areas and did not deal with SLM and SFM, nor did it deal with ecosystem-based climate change mitigation. The project is going to be completed by late 2012, i.e. before the new project will start. Nonetheless, it created important political foundations and awareness on the local level, among governments and communities, whereby the ASE has now become one of the most receptive regions in Russia to promote innovative environmental management approaches. This new project does not deal with biodiversity directly, rather approaches the ecosystem resilience work from climate change and land degradation point of view. It works through Integrated Land and Forest Use planning approach, which has not been tested in any projects in the region before, and carries out restoration and set aside at areas that have not been targeted so far.
- UNDP/GEF/MNRE project *Improving the coverage and management efficiency of protected areas in the steppe biome of Russia* (2010-2015). The project has been addressing threats to steppe ecosystems from agricultural activities, fires and climate change and developing recommendations for improving land management and ecosystem conservation. However, that project does not cover mountainous steppe and is not covering ASE, and does not deal with steppe pasture management. It will be producing relevant recommendations on steppe management; these will be adjusted to inform management of mountain steppe.
- UNDP/GEF/MNRE project *Strengthening Protected Area System of the Komi Republic to Conserve Virgin Forest Biodiversity in the Pechora River* (2008 - 2013). The project covers boreal forest ecosystems in the Republic of Komi (European part of Russian), expanding a protected area system and creating business models engaging local communities in protected area

management. The two projects do not overlap neither geographically, nor thematically. This project will use the experience of the business support models, considering it for application in the Altai Sayan context.

- UNDP/GEF/MNRE project *Mainstreaming biodiversity in Russia's energy sector* (2011 – 2017). This is a new project that has just recently started, which aims at incorporating biodiversity risk avoidance and mitigation principles into Russia's energy sectors (hydropower, oil and coal sectors). The project has demonstration sites in several republics and municipalities in Russia, whereby it will demonstrate technological approaches to avoid or minimize risks to species and habitats. The two projects do not overlap either geographically, or thematically.
- UNDP/BMU/ICI project *Improved ecosystem resilience to climate change, climate change adaptation and protection of carbon pools* was implemented by UNDP in the eco-region in the period 2010-2012. The project focused only on protected areas and conservation of forest carbon pools within them. It has created initial knowledge of the climate change impacts and ecosystem mitigation opportunities in forests, which has become the basis for this proposal, in terms of the SFM interventions. The building block for this project's activities on anthropogenic fires is the report Strategy for Decreasing Wildfire Hazards in Protected Areas in the Altai-Sayan Ecoregion developed by this UNDP project. This document combines scientific research on fires in AS with practical recommendations (dated 2011, 283 pages, available in Russian http://www.altai-sayan.com/about/publ/Strateg_rus.pdf). It was prepared by Institute of Forests under a UNDP project 2003-2011 in cooperation with a number of leading Russian scientists in this field. In the report, natural and actual wildfire occurrences and their causes have been analyzed, and fire impact on the main ecosystems evaluated. The activities of the GEF project are based solely on the scientific research as documented in this report. The report does not propose full suppression to achieve zero fire occurrences. Rather, it concludes that measures to limit the anthropogenic factor are critical. Quote: "*Excluding the presence of fires in forest ecosystems of AS is out of the question. Suppression of fires to zero would result in a disruption of natural vegetation successions and ecosystem resilience and disappearance of pyrogenic species of flora and fauna. Full suppression halts the ecosystem at a close-to-final development stage, which, as would be the case in AS would be less rich and less productive. The fire management strategy for AS ecosystems should be based on clear knowledge of the natural fire loads surmountable by ecosystems, as per various landscape types and vegetation associations. The fire cycle should be recognized as natural when it does not cause critical (irreversible) destruction of the concrete biogeocenosis*". The report further establishes the natural fire loads for different landscapes and vegetation associations: "*In spruce, pine and cedar forests located along river valleys, fires should preferably be completely excluded. This is because the natural cycle of fires in these ecosystems should not be more frequent than once in 70-120 years, while the acceptable multi-year average areas burnt should not exceed 0.01% of these vegetation types. For associations which combine pine and deciduous forests, the cycle should not be more frequent than 20-40 years (the area should not exceed 0.1%), forest steppe: 2-5 years and up to 0.15% by area; open areas and steppe can have shorter cycles: up to 1-2 years and up to 10% percent by area burnt*". The report also discusses other factors, such as the timing of fires, the maximum admissible area of one fire, etc. While UNDP/ICI project developed the report, it did not have funding to implement the recommendations in practice, which is what this GEF project would strive to achieve.
- *WWF Activities*: Over 15 timber companies in Russia are members of the WWF's *Association of Environmentally Responsible Timber Producers* – the Russian branch of the *Global Forest and Trade Network*, which also promotes FSC certification. FSC and PEFC developed special forest management standards for Russia. Biodiversity conservational requirements in the standards are much stronger than those of national legislation. These documents provide guidance on practical conservation of rare, threatened and endangered species and their habitats, other key habitats and high conservation value forests (HCVF) (as well as provide national interpretation of HCVF types and correspondence between HCVF and official categories of forests with restricted management regimes. In 2010, WWF published an official university textbook on sustainable forest management for forestry students. WWF publish a regular magazine "Sustainable Forestry", whose list of recipients grew from 250 (in 2003) to 790 (in 2009). A couple years ago the National FSC Office and WWF launched a consumer awareness campaign on FSC certification in Russia. In Altay Sayan the *Altay-Sayan biodiversity conservation program* of WWF-Russia is focusing on species conservation and developing/strengthening eco-network (regional protected areas network). Although WWF has so far focused on forest biodiversity, its knowledge will be used in designing the HCVF concept for ASE. There is no duplication as neither WWF nor any other partner in the region has so far implemented the HCVF concept in practice, which is what the GEF project will strive to do. A detailed coordination plan with WWF Russia for this project will be developed at the PPG stage.
- *Millennium Ecosystem Assessment.* This project is echoing many conclusions of this remarkable study, in many areas. The project works in the steppe ecosystems, which according to MEA are among the most fragile ecosystems under the pending climate change (that is they can disappear under aggravated climate-induced threats. Full list of quotes of areas where this project addresses the conclusions of the MEA would take several pages. Summarizing the key correspondence, this GEF project strives to promote the recognition of ecosystem goods and services, incorporating them in Russia's land-use decision making through the model of ILFUPs. This addresses the universal distortion of the values, noted in the MEA as one of the main problems of humanity, whereby "the economic wealth may be judged to be growing according to conventional indicators, while it actually becomes poorer due to the loss of natural resources".

The project developers recognize existence of a wealth of literature in Russia and internationally on subjects relevant to the scope of the project. This PIF was prepared using the latest available data and most reliable reports relevant to the subject matter. In line with established practice, a full list of relevant literature will be analyzed at that project preparatory stage, which will enable more precise and well informed development of project justification and activities.

C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:

C.1 INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:

UNDP will provide US$370,000 in direct co-financing to this project in the form of a grant. In addition, UNDP has worked to mobilize USD 23.6 million in co-financing from Government and non-government stakeholders.

C.2 HOW DOES THE PROJECT FIT INTO THE GEF AGENCY'S PROGRAM (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:

Russia is a non-UNDAF country. The United Nations Development Programme (UNDP) runs its activities in Russia on the basis of the Regional Programme for the Europe and CIS, a country-specific Action Plan – a successor of the Country Programme, and a Standard Basic Agreement between UNDP and the Government of Russia. Environment is a key focus of the Action Plan for Russia. The UNDP Environmental Programme in Russia has been developing and expanding since 1998 and now includes over 20 projects for over USD 60 million financed by the GEF and bilateral donors. The Programme covers the following thematic areas: conservation of biological diversity and mainstreaming biodiversity conservation into productive sectors, integrated natural resources management, integrated water resource management and integrated coastal management, climate change mitigation and energy efficiency, climate change adaptation and protection of natural carbon pools, sustainable development and corporate social and environmental responsibility. UNDP in Russia has specific experience working in the field of sustainable agriculture and pasture management, SLM, ecosystem-based climate change programming. UNDP has been present in the ASE region with its multilateral environment programme for over 10 years. Since 2011 UNDP is represented in Russia by a Programme Support Office. This office also provides administrative and logistical support for the entire UN programme in Russia, including for non-resident agencies.

The management of the proposed GEF project will be shared between the Russian Programme Support Office and the Bratislava Regional Centre (BRC) in Slovakia. The Moscow-based Programme Support office is staffed with 5 employees including 3 full-time employees managing and advising the Environment programme. These are highly-skilled staff successfully managing a portfolio of technical assistance and capacity building initiatives in the areas of natural resources, international waters, and climate change The BRC will support the project implementation and oversight, rendering the services of 3 Regional Technical Advisors in the focal areas of climate change, land degradation, and sustainable forest management. The BRC has a strong technical team supporting programmes on SLM, SFM and ecosystem-resilience to CC in the whole Europe and CIS region.

The project will be executed by UNDP as a GEF agency in line with standard National Implementation Modality (NIM) mode. The Government of Russia (GOR) represented by the Ministry of Natural Resources and Environment (MNRE – National Implementing Partner) will execute the project according to UNDP NIM modality. As a standard practice, in order to facilitate participatory decision-making, a Project Board (Steering Committee) will be formed to provide overall guidance and support for project implementation activities. The Project Board will monitor project implementation to ensure timely progress in attaining the desired results, and efficient coordination with other projects. The UNDP Country Office (and where necessary the UNDP Regional Support Center for ECIS) will support the project's implementation by maintaining the project budget and project expenditures, contracting project personnel, experts and subcontractors, carrying out procurement, and providing other assistance upon request of the National Implementing Partner. UNDP will be responsible for: (i) financial management; and (ii) the final approval of payments to vendors, the procurement of goods, the approval of Terms of Reference, recruitment of consulting services, and sub-contracting upon request of the National Implementing Partner. The UNDP Country Office will also monitor the project's implementation and achievement of the project outputs and ensure the proper use of UNDP/GEF funds. Financial transactions, reporting and auditing will be carried out in compliance with the national regulations and UNDP rules and procedures for national execution. The UNDP Country Office will ensure the implementation of the day-to-day management and monitoring of the project operations through the appointed official in the UNDP Environment Unit and Project Officer based in Moscow. The implementation arrangements for the project have been designed to maximize transparency and accountability. Disbursement figures will be made publicly available. These arrangements have been accepted by all stakeholders. Further details are to be specified in the CEO Endorsement Request.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(Month, day, year)*
Mr. Rinat Gizatulin	Deputy Minister, GEF OFP	Ministry of Natural	August 08, 2012

		Resources and Environment	

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**Date**	**Project Contact Person**	**Telephone**	**Email Address**
Yannick Glemarec, Executive Coordinator, UNDP/GEF		6 November 2012	Maxim Vergeichik	+ 421905633 046	maxim.vergeichik@undp.org

Annex A. Clarification on the initial calculation of carbon benefits of the project

Outputs 2.3: As mentioned in the PIF, under Output 2.3., the project will work in economically productive forests landscapes. Within this total forest landscape, the project will change the forest use so that at least 300,000 ha could be moved from logging to protective forests. This will help protect and ensure non-depletion of this carbon stocks. In order to estimate the current carbon pool of that area, at the PIF stage a mix of IPCC tier 1 and tier 2 methods was used. From the IPCC Tier 2 perspective, the most appropriate data found was that recorded by Alexeyev & Birdesey (1998) in an overview of carbon storage in the forests of Altai Sayan in Russia[13]. Most of the 450,000 ha of forest lands targeted by the project fall in what Alexeyev *et al.* 1998 would define as Ecoregions 28 and 29[14]. For these, Alexeyev et al estimate the above-ground carbon stock to be between 36 – 50 tC/ha, or 43 tC/ha (157.67 tCO2-eq/ha) on average (aboveground). The estimates provided by Alexeyev *et al.* (1998) correlate well with the aboveground carbon stock estimates for boreal broad- and needle-leaf forests provided in IPCC (2006) guidance documentation. The carbon stock estimates reported by Alexeyev *et al.* (1998) however, only pertain to the carbon located in the aboveground biomass pool. The reported figures do not include belowground root or soil carbon as well as the carbon stored in the litter layer. The IPCC Tier 1 estimates were therefore used for the root, soil and litter carbon pools. To calculate the size of the root carbon pool, a root to shoot ratio of 0.3 was used based on the IPCC (2006) default root/shoot values for cold and dry boreal broad- and needle-leafed forests. This gives 43*0.3=12.9 tC/ha (belowground biomass). Likewise, Tier 1 IPCC values where used to calculate the litter (10 tC/ha) and soil (50 tC/ha = 183.33 tCO2-eq/ha) carbon pools. The carbon contained in larger deadwood has not been included as there is no readily available local data available or IPCC Tier 1 guidance factors. The carbon storage for all pool types per ha is therefore 43+12.9+10+50=115.9 tC/ha. The total carbon stored in all pools by the 300,000 ha of forests, is 300,000*115.9=34,770,000 tons of carbon. Under the baseline scenario, without the project, conservatively on the basis of the current logging plans, at least 15% of these forests (45,000 ha) would be felled in the next 10 years. This will mean a 100% loss of above-ground biomass (157.67 tCO2-eq/ha) and app. 25% of the soil carbon (0.25*183.33 = 45.83 tCO2-eq/ha). (Impact on litter and root biomass is neglected to remain on the conservative side). So for 45,000 ha this is 45,000*(157.67+45.83) = 9,157,500 tCO2-eq/10ys. Adjustment for Harvested Wood Products: While it is difficult to forecast this with precision, we have adjusted the calculations assuming this percent to be 25%. The assumption is based on the analysis by *Stephanie Searle, Chris Malins: Estimates of carbon storage in wood products following land clearing* **(http://www.theicct.org/sites/default/files/publications/ICCT_carbon_storage_in_wood_products_August_2011.pdf)** The paper "recommends that modelers either adopt the 10% assumption or perform their own in-depth analysis". However, we acknowledge that a range of other authors believe this percent to be 25%, and hence for the PIF purposes we are relying on the more conservative estimate: 9157500 tCO2-eq/10ys * 0.75 = 6868125 tCO2-eq/10ys. A further 30% discount is provided for leakage and permanence (these will be dealt with in-depth during project preparation phase), thus the most conservative estimate of avoided emissions is: 6,868,125*0.70= 4,807,688 tCO2-eq/10ys or 480,769 tCO2-eq per year. With respect to different in sequestration under different scenarios, while IPCC Tier 2 coefficients are lacking, and it is difficulties to construct proper scenarios at this stage, using IPCC Tier 1 coefficients (IPCC 2006 Table 3A1.5 *Average annual increment in aboveground biomass in natural regeneration by broad category relates these forests broadly to Eurasia, Boreal Broad-leaf and Coniferous forests*), gives the following result: under the baseline scenario (logging, areas left for natural regeneration), the biomass in the area will be falling under the "<20 years" age class, while under the project scenario the trees will remain in the ">20 years" class. The annual increment values given by IPCC are 1.0 "<20 years" and 1.5 for">20 years" in t/dry matter/ha/year. This means in fact, that unlike tropical and subtropical forests, the boreal forests of Eurasia sequester more at mature ages, then when young. Therefore, the project scenario, in addition to avoiding the emissions from potential logging, will mostly likely, also result in higher sequestration rates than in the baseline/logging scenario. However, for conservatism, we have excluded this benefit for now, from the PIF, and will do a more technical study at the PPG stage.

Output 2.1: Here the project works on 600,000 ha of steppe pasture lands, aiming to put in place such integrated land-use management hich will not deplete their carbon pools. The estimates for steppe carbon pools that would be relevant to ASE, are scarce. We used the conclusions of (Mikhailova, Post, 2006)[15], which stated that in the Kursk steppe in the Russian plain the amount of soil carbon is assessed to be 462 t/ha (soil depth of 2 m), but for more arid steppe areas (which ASE steppe belong to) this figure can 3-5 times smaller. We diminished this figure 3 times, given that ASE steppe are forest steppe which, while been not the most productive, are still not as poor as semi-desert steppe. Therefore, the assumption is that the average hectare of the ASE steppe pasture lands targeted by the project contains 462/3=154 tonnes of soil carbon for undisturbed steppe. The above-ground biomass for undisturbed steppe was assessed to be 2.025 tC/ha (based on Тишков, 2005[16]). The below-ground biomass was conservatively assessed to be 0.3 of the above ground biomass, namely 2.025*0.3=0.60 tC/ha. Thus for all three pools, undisturbed steppes in ASE (that is for an approximate area of 300,000 ha) are believed to contain 154+2.03+0.60=156.63 tC/ha. It is assumed by national experts that unlike natural steppe areas, the steppe pastures would currently contain app. 65% of the natural steppe carbon pool (=101.8 tC/ha). The total carbon storage for all types of pools in the steppe pasture lands for each category of degradation is therefore = 101.8*600,000 = 61,080,000 tonnes of carbon. Under the baseline scenario, the assumption (corroborated by evidence from other steppe areas in Russia, e.g. reported by Mikhailova et al., 2000; Mikhailova, Post, 2006; Wang et al., 2009) is that 24% of this carbon pool might be lost to plowing, unsustainable grazing or other threats, in the course of

[13] Alexeyev, V.A., Stakanov, V.D., Korotkov, I.A. and R.A. Birdsey. 1998. Storage and Territorial Distribution of Carbon, in Vegetation of Russian Forests in Carbon storage in forests and peatlands of Russia, Alexeyev, V. A., and R. A. Birdsey (Eds.). Gen. Tech. Rep. NE-244. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. p38-50.

[14] Ecoregion 28: Central-Altai forest province (forest steppe and subtaiga with larch and Siberian pine and subscree-subalpine belt with larch and Siberian pine) and Ecoregion 29: Western-Altai Forest Province (forest-steppe, subtaiga with larch, mountain taiga with fir and Siberian pine, subalpine belt with Siberian pine).

[15] Mikhailova E.A., Bryant R.B., Vassenev I.I., Schwager S. J., Post, C.J. 2000. Cultivation effects on soil carbon and nitrogen contents at depth in the Russian Chernozem // Soil Science Society of America Journal, 64, 738–745.

[16] Тишков А.А. 2005. Биосферные функции природных экосистем России. М.: Наука. 309 с

the next 20 years. Thus, the project helps to avoid the emission of 61,080,000*0.24 = 14,659,200 tC or 732,960 tC/y which is equivalent to 732,960*44/12= 2,687,520 tCO2-eq/y

Output 2.4: Steppe fires: According to Тишков, 2005[17], the amount of biomass lost to fires in the steppe zone corresponds to 3.8-12.4 tonnes of dry biomass per ha, or 8.1 on average. According to the same source, app. 25% of this is dry carbon, i.e. 8.1*0.25= 2.025 tC/ha equivalent to 2.025*44/12=7.425 tCO2-eq/ha. As described in the PIF, under the baseline scenario total area of steppe burnt annually is 770,000 ha. The project will aim to reduce this figure by at least 40,000 ha. This means an annual reduction of CO2 emissions (starting from year 5 and onwards beyond the project boundary) equal to 40,000*7.425 = 297,000 tCO2/y.

Forest fires. As described in the PIF, about 50,000 ha of forests burn annually in ASE. According to the Russian statistics for the region, the release of carbon from forest fires (70% ground fires and 30% crown fires frequency on average, based on historical record) is 10-30 tCO2-eq/ha, i.e. 20 on average. The project will aim to reduce this figure by at least 20,000 ha. This means an annual reduction of CO2 emissions (starting from year 5 and onwards beyond the project boundary) equal to 20,000*20 = 400,000 tCO2/y. With respect to the fire fuel build-up in forests, this risk is discussed in the risk table.

Output 2.2: There are app. 40,000 ha of degraded ecosystems adjacent to the productive landscapes, which the project will aim to restore. Approximately 20,000 ha of these include areas that can be restored into steppe or steppe pastures, and 20,000 ha of area that can be restored into forest through assisted natural regeneration and targeted reforestation with native species. Because of many uncertainties about the total size of the areas targeted in this activities, as well as about their current degradation status, as well as ways of restoration, it is close to impossible to predict to what extent the carbon sequestration capacities of these areas will be restored, so only very initial estimates can be provided at this stage. For the 20,000 ha of areas that can be restored to steppe, the experts are based on the available literature that under natural conditions, steppe of southern mid-Siberian region (where ASE belongs to) are believed to sequester app. 1.5 tC/ha/year, which is equivalent to 5.5 tCO2-eq/ha/year[18]. Based on the few experiments in the Caucasus and elsewhere in the world with grassland ecosystem restoration, the team believes that conservatively it might possible to assume that by year 5 (from start of restoration), the sequestration capacity of the targeted areas can reach 35% of its natural capacity, that is 20,000*5.5*0.35% = 38,500 tCO2/y sequestered by the restored steppe ecosystems from year 5.

For the assisted natural regeneration and reforestation on 20,000 ha, it is understood that intact natural forest systems such as those found in ASE might be carbon neutral over time where the size of the carbon pools remains roughly constant. For deforested and degraded areas however, we tried to calculate the expected rate of carbon accumulation if the carbon pools increased in size up to an intact 'equilibrium' state. In a similar manner to the estimation of carbon stocks, little local or context specific data exists on biomass accumulation and carbon sequestration rates for the area. The Altai Mountains typically experience a cold, dry climate and therefore carbon sequestration rates are expected to be low. The IPCC (2006) biomass accumulation estimates for dry mixed broadleaf-coniferous boreal forest is 1.5 tons aboveground dry biomass per year or 0.75 tons of carbon per year. As a second estimate, the relationship between above-ground net productivity (ANPP) and annual rainfall (prec) derived by Huxman *et al.* (2004) was used to calculate an expected aboveground woody biomass annual increment (ANPP = 1011.7 X (1 - exp(-0.0006 X prec). Based on this equation, an annual rainfall range of 200-600 mm results in an aboveground carbon sequestration rate of 0.5 to 1.5 tC/ha/y. Using a root to shoot ratio of 0.3 (IPCC 2006) for cold, dry boreal broad- and needle-leafed forests, a carbon sequestration rate of 0.65-1.95 tC/ha/y is predicted for the aboveground and root carbon pools combined (the soil and litter pools were excluded from calculation at this stage). The average of this is 1.3 tC/ha/y or 4.77 tCO2-eq/ha/y. This range of values has been adopted as reasonable indicator of carbon sequestration rates, so for 15,000 ha of forests targeted by Output 2.4, starting from year 5, the annual sequestration benefit is estimated to be 4.77*20,000 = 95,400 tCO2/y. This figure is used as an initial estimate at the PIF stage, recognizing that that the sequestration progression here is non-linear; a detailed calculation will be implemented using a corresponding carbon benefits calculator (e.g. CBP tool) at the PPG stage.

The total annual carbon benefit generated by the project (emissions avoided plus carbon sequestered) is conservatively assessed at the PIF sage to be **3,999,189 tCO2-eq/y**, or 39,991,890 tCO2-eq in a 10-year perspective.

[17] Тишков А.А. 2005. Биосферные функции природных экосистем России. М.: Наука. 309 с

[18] Belelli Marchesini L., Papale D., Reichstein M., Vuichard N., Tchebakova N., Valentini R. 2007. Carbon balance assessment of a natural steppe of southern Siberia by multiple constraint approach // Biogeosciences, 4: 581–595