

**UNITED NATIONS ENVIRONMENT PROGRAMME**  
**PROJECT DOCUMENT**  
**SECTION 1: PROJECT IDENTIFICATION**

1.1	<b>Title of Sub-Programme:</b>	Land Degradation - Sustainable Land Management	
1.2	<b>Title of Project:</b>	Sustainable Land Management in the High Pamir and Pamir-Alai Mountains - an Integrated and Trans-boundary Initiative in Central Asia	
		Phase I: Strengthening of the enabling environment for SLM in the High Pamir and Pamir-Alai region and pilot demonstration of the benefits of community-based land use planning and implementation	
1.3	<b>Project Number:</b>	IMIS: GFL-2328-2770-4xxx PMS: GF-1030-07-xx	
1.4	<b>Geographical Scope:</b>	Regional: Tajikistan and Kyrgyzstan	
1.5	<b>Implementation:</b>	United Nations Environment Programme (UNEP)	
	<b>GEF Implementing Agency:</b>	Tajikistan: The Ministry of Environment and Nature Protection	
	<b>Project Executing Agency:</b>	Kyrgyzstan: National Center for Mountain Regions Development in collaboration with <b>United Nations University (UNU)</b>	
1.6	<b>Duration:</b>	48 Months Commencing: August 2007 Completion: July 2011	
1.7	<b>Cost of the Project (US\$):</b>		
	<b>GEF:</b>	Project (phase 1):	3,000,000
		<b>Subtotal GEF:</b>	<b>3,000,000</b>
	<b>Co-financing:</b>	<b>(in-cash)</b>	<b>(in-Kind)</b>
	Tajik National Park	600,000	
	Kyrgyz National Center for Mountains Regions Development		400,000
	Osh University		75,000
	Tajik Agricultural Academy		50,000
	UNU(ESD, P&G, EHS)	200,000	1,659,300
	IAEA	270,000	30,000
	ICARDA		280,000
	UNESCO	20,000	50,000
	AKF/MSDSP	1,640,000	
	The Mountain Institute		85,000
	Hokkaido University/Japan	70,000	330,000
	Nihon University	44,400	75,600
	CDE, University of Bern		100,000
	University of New England	232,000	18,000
	CAIAG		418,080
	IDG-Russian Academy of Sciences		50,000
	<b>Sub-total Co-financing:</b>	<b>3,076,400</b>	<b>3,620,980</b>
	<b>Total Co-financing</b>		<b><u>6,697,380</u></b>
	<b>Total cost of Project Phase 1 excluding PDF-B</b>		<b>9,697,380</b>

## 1.8 Project Summary:

The project on *Sustainable Land Management in the High Pamir and Pamir-Alai Mountains - an Integrated and Trans-boundary Initiative in Central Asia*, aims to address the interlinked problems of land degradation and poverty within one of Central Asia's critical mountain 'water towers' and biodiversity hotspots. This will be achieved through a trans-boundary approach that will seek to improve the technological, institutional, policy and legislative environment required for enabling mountain communities to take primary responsibility for the productive and sustainable management of their local ecosystem resources. In the course of the project a regional strategy and action plan for sustainable development of the High Pamir and Pamir Alai mountains will be developed through participatory multi-level and multi-sectoral stakeholder consultations. To stimulate and ensure the effective and efficient implementation of the regional strategy, participatory community-based resource assessment, land use planning and micro-project implementation will be undertaken at selected hot spots in the context of the trans-boundary framework. The bottom-up approach and mainstreaming SLM concepts and practices in the High Pamir and Pamir-Alai region and the mechanisms for linking local, national and regional concerns and objectives is expected to ensure the sustainability of the integrated trans-boundary framework for human development and conservation of the structural integrity and multiple functions of unique mountain ecosystems of the High Pamir and Pamir Alai Mountains. The demonstration effect of the community-based SLM system and projects is expected to help mobilize the additional resources for up-scaling the initiative in the Pamir Alai region and in other trans-boundary mountain environments in Central Asia. In addition to direct global environmental benefits that will be accrued in the Pamir-Alai mountains, the development of replicable generic guidelines that can be used to address the problems of land degradation in similar mountain environments will be an added benefit of the project.

**Signature**  
**For the United Nations University (UNU)**

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Francois d' Artagnan  
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## SECTION II: BACKGROUND AND PROJECT CONTRIBUTION TO OVERALL SUBPROGRAMME IMPLEMENTATION

### 1. BACKGROUND & CONTEXT (BASELINE COURSE OF ACTION)

#### 1.1 GEF Operational Program Context

1. The project, *Sustainable Land Management in the High Pamir and Pamir-Alai Mountains - an Integrated and Trans-boundary Initiative in Central Asia*, has been designed to make a contribution to the overall operational goal of the GEF focal area on land degradation, by catalyzing partnerships between concerned institutions, land users, and other stakeholders, at the community, local government, national and trans-boundary regional levels, with the aim of addressing the interlinked problems of land degradation and poverty within one of Central Asia's 'water towers' and mountain biodiversity hotspots. It likewise conforms to the objective of the Operational Program on Sustainable Land Management (OP#15) in that its component activities are designed to mitigate the causes and negative impacts of land degradation on the structure and functional integrity of the ecosystems of the High Pamir and Pamir Alai Mountains. The project will address the GEF Sustainable Land Management Strategic Priority on *Targeted Capacity Building* (SLM-1) by contributing to the improvement of the enabling technological, institutional, policy and legislative environment for sustainable land management within the High Pamir and Pamir Alai mountain region, at the trans-boundary, national and local levels. The project will also support the development and implementation of innovative sustainable land management practices, building where possible on indigenous ones, in line with SLM-2. Through the development of a trans-boundary strategic planning framework and action plan the project will pursue a strategic approach to identifying the region's land degradation threats, as well as determining the constraints to, and options for, overcoming them.

2. Land degradation within the High Pamir and Pamir Alai Mountains will be addressed by the project using an integrated and cross sectoral approach, within the framework of sustainable development at the community, local government, national and trans-boundary levels. Given that this mountain region is predominantly semi-arid, is a biodiversity hotspot, and is being adversely affected by climate change, GEF support for the project would be consistent with the work program priorities under the United Nations Convention to Combat desertification (UNCCD), as well as the sustainable land management priorities of the related Convention on Biological Diversity (CBD) and the UN Framework Convention on Climate Change (UNFCCC). Mountain ecosystem degradation cuts across many different sectoral concerns, thus the project will address several of the other GEF Strategic Priorities.

#### 1.2 Regional Policy Context

3. The Regional Strategy and Action Plan for Sustainable Mountain Area Development<sup>1</sup> recognised the importance of the mountain ecosystem resources of Central Asia, and noted that the costs and benefits of maintaining them were unequally distributed. The bulk of the mountain resources of Central Asia occur within Kyrgyzstan and Tajikistan, and as a result these predominantly mountainous countries are the region's primary water providers. By protecting the structure and functional integrity of these mountain ecosystems, Kyrgyzstan and Tajikistan provide crucial ecological goods and services to the neighbouring countries of Kazakhstan, Turkmenistan, Uzbekistan, and the Xinjiang Uighur Autonomous Region (XUAR) of the People's Republic of China. With large lowland areas suitable for irrigated agriculture these neighbouring countries are the primary water users, hence would be major beneficiaries from any program of sustainable land management within Central Asia's mountains, and would suffer should these mountain resources become degraded. However at the present time the inhabitants of these mountain areas have to bear all the costs for the management of the upper watershed areas that are the source of the lowland water supplies, as they receive no financial or technical support from the downstream beneficiaries.

4. The High Pamir and Pamir Alai Mountains of Kyrgyzstan and Tajikistan represent a significant proportion of the mountains of Central Asia. Implementation of the project's component activities within this area, will make a major contribution to realising the objectives of this regional strategy and action plan, which has yet to be operationalised at the regional, national or local levels.

5. The Regional Environmental Action Plan (REAP) for Central Asia<sup>2</sup>, prepared at the official request of the Ministers of Environment of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, has identified five priority issues: (i) mountain eco-systems degradation; (ii) air pollution; (iii) land degradation; (iv) water pollution; and (v) waste management. These were selected as regional priorities on the basis that they were: (i) national priorities for two or more countries; or (ii) have a trans-boundary character which could not be solved by the efforts of only one country. The REAP recognizes that there are a number of barriers that need to be removed so that Central Asia can address regional and trans-boundary environmental problems and embark on a path of sustainable

<sup>1</sup> Prepared in 2001 with the support of ADB Project RETA #5878-REG "Regional Cooperation for Sustainable Mountain Development in Central Asia".

<sup>2</sup> The REAP was presented in September 2001 at the Environment Ministerial Conference in Almaty, Kazakhstan when it was approved by the Interstate Sustainable Development Commission (ISDC) of Central Asia.

environmental management. Implementation of the project's component activities will make a significant contribution to the REAP's efforts to remove the following:

- (i) Barrier 1: Lack of sufficient and adequate regional institutional, political, regulatory and financial mechanism for sustainable environmental management;
- (ii) Barrier 2: Lack of harmonized and unified data, as well as an efficient mechanism for data management and exchange;
- (iii) Barrier 3: Insufficient public participation at all political levels in environmental management;
- (iv) Barrier 4: Insufficient capacity for project development, implementation and resource mobilization.

6. The Subregional Action Programme for the Central Asian Countries on Combating Desertification within the UNCCD Context (SRAP/CD)<sup>3</sup> identified the following priority areas for regional cooperation where immediate action is required: (i) monitoring and evaluation of desertification processes and establishment of an early warning system for drought and drought mitigation; (ii) improvement of water use in agriculture, and combating erosion, salinization, and swamp formation; (iii) agroforestry and management of forest resources and watersheds; (iv) pasture management; (v) conservation of biodiversity and nature protection, and development of eco- and ethno-tourism; and (vi) economic capacity building of local communities. Activities under these six priority areas will be complemented by further activities on crosscutting issues notably: (i) the legal aspects of resources management; (ii) monitoring, evaluation and reporting based on a system of benchmarks and indicators; (iii) participation of civil society and the private sector; and (iv) coordination with other important programmes and initiatives. Under the SRAP/CD the principal instruments for solving the identified sub-regional problems will include pilot national and subregional projects, training courses, scientific cooperation and information exchange. The project's component activities within the High Pamir and Pamir Alai Mountains are in line with the SRAP/CD priority concerns. Hence the project with its specific geographic area focus will serve as one of the instruments for operationalising the SRAP/CD.

7. The geopolitical location of the High Pamir and Pamir-Alai Mountains at the meeting point of seven countries (Afghanistan, China, India, Kyrgyzstan, Pakistan, Tajikistan and Uzbekistan), however, makes promoting sustainable development in these mountains particularly challenging from a strategic, political, economic, social and ecological point of view. This is why the United Nations University's Global Mountain Partnership Programme (UNU GMPP) selected the Pamir-Alai Mountains as an area of particular concern. During the Bishkek Global Mountain Summit in 2002, the UNU delegation to the summit used this opportunity to discuss the support and cooperation for the Pamir-Alai transboundary project idea with the representatives of several institutions. The Rector of UNU, held several official meetings with the Minister of Emergency Situations and Environment, the Minister of Labour and Social Protection, Rectors of several universities in Kyrgyzstan, as well as with the UNDP Resident Representative. The project-type cooperation was also discussed with the Swiss delegation representatives – the Deputy Director General of the Swiss Agency for Development and Cooperation and the Director of Centre Development and Environment, University of Berne.

### 1.3 National Policy Context

8. The project's component activities have been designed to support the national as well as the broader regional environmental and development strategies of Tajikistan and the Kyrgyzstan, with regard to the sustainable management of the natural resources of their mountainous regions. As part of their obligations, as signatories to the UNCCD in 2000, both countries have prepared comprehensive national action plans (NAP) to combat desertification.

9. The principal aims of the Kyrgyzstan NAP are to: (i) increase the role and potential of local communities in combating desertification and poverty alleviation; (ii) conserve mountain ecosystems and biodiversity; develop ecotourism; (iii) optimize irrigated agriculture including control over erosion processes, salinization and water logging; (iv) increase forest areas as a prerequisite for water resources conservation and the prevention of processes of erosion and landslides; (v) integrated natural resources management in watershed areas; and (vi) rangeland management.

10. While the principal aims of the Tajikistan NAP are to: (i) improve ecological conditions in the irrigated area in order to raise the people's standard of living; (ii) preserve biodiversity of mountain ecosystems; (iii) create year-round pastures; (iv) use alternative energy sources; (v) preserve and expand areas of mountain forests; (vi) introduce traditional (local) methods of agriculture in the dry-farming agriculture zone; (vii) protect topsoil

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<sup>3</sup> The text of which was agreed to, in Havana Cuba 3<sup>rd</sup> September 2003, by the countries of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

productivity; (viii) raise awareness at the level of local communities with regard to the rational use of natural resources through the mass media and wide involvement of civil society into implementation of the NAP's principal aims; and (ix) build capacity for combating desertification at the level of local communities.

11. The Kyrgyzstan National Environmental Action Plan (NEAP) was launched in May 1995 focusing on the following priority areas: (i) inefficient water resource management; (ii) land degradation, mainly due to overgrazing; (iii) overexploitation of fragile forest resources; (iv) threat of irreversible loss of biodiversity; and (v) inefficient mining and refining practices. The Tajikistan NEAP has yet to be finalised and is currently being developed with financial assistance from the World Bank.

12. In their various environmental strategies and action plans both Tajikistan and Kyrgyzstan recognize the need for integrated management of natural resources for sustainable mountain development, and advocate regional cooperation in managing trans-boundary mountain ecosystems. However progress towards developing and implementing concrete mechanisms for integrated land and water management, in particular of trans-boundary mountain resources, has been very limited. Thus implementation of the project's component activities will make a direct and substantial contribution to the on-going national efforts to develop effective trans-boundary mechanisms that would address many of the concerns raised in the NAPs.

13. Tajikistan and Kyrgyzstan are the poorest countries of Central Asia and poverty increased in both following the collapse of the Soviet system. Despite efforts to promote economic growth poverty rates have continued to increase. In Kyrgyzstan between 1996 and 2000, while GDP grew annually by more than 5%, the total population falling below the poverty line increased from 43.5% to 55%<sup>4</sup>. In 2001 Tajikistan's GDP grew at a rate of 10.2% while 83% of the population lived below the poverty line<sup>5</sup>. Both countries have developed National Poverty Reduction Strategies (NPRS), with the aim of reducing and ultimately eliminating poverty, recognising that high poverty levels are "*obstacles to human development*". The Kyrgyzstan NPRS states that "ensuring long-term ecological sustainability is a factor of special importance directly influencing the achievements of steady results in poverty reduction." While "*environmental protection, production of sustainable energy and disaster prevention are an integral part*" of the Tajikistan NPRS. Both strategies attach great importance to reducing rural poverty through restoring, sustaining and enhancing the productivity of the agricultural sector. In particular raising yields on the private farms that have replaced the former state owned cooperative farms. The 'unique' ecological and cultural resources of both countries are recognised in each NPRS as offering opportunities for eco- and ethno-tourism development, contributing to poverty reduction through related income and job creation. The project's development objective, and related component activities, are therefore consistent with each country's NPRS and can be expected to contribute to reducing poverty levels within the High Pamir and Pamir Alai mountain region, one of the poorest parts of Central Asia.

#### 1.4 Characteristics of the Project Area

14. The GEF project area focuses on the High Pamir and Pamir Alai Mountains of Tajikistan and Kyrgyzstan. This mountain region is highly diverse, containing within its borders a great variety of climatic, topographic and ecological conditions, leading to different forms of land use and natural resource based livelihood systems. The area can be divided into three broad sub-regions differentiated on the basis of topographic and climatic differences, as well as socio-cultural and land use differences (see also map 1):

- **The Western Pamir Mountains** – covering an area of approximately 25,700 km<sup>2</sup> is characterized by deeply incised valleys separated by high glaciated mountain ranges with peaks rising to an altitude of over 7,000m. Annual precipitation drops steeply from about 500mm in the northwest to less than 100mm in the southeast. The bulk of the sub-regions water supplies come from melting snow and glaciers, with maximum discharges from June to August. Arable land comprises only 240 km<sup>2</sup> less than 1% of the total land area, and is located in pockets in the valley bottoms (on alluvial fans and river terraces) at altitudes of 1,200-3,500m. Much of the rest of the sub-region comprises barren rocky land, snow and ice. Vegetation cover is mostly sparse scrub or meadow plant communities on mountain slopes, and patches of mesophyllic riparian forests in the valley bottoms. The sub-region is inhabited by mostly Tajik Ishmaeli people in permanent valley floor settlements. Their livelihoods are predominantly based on mixed mountain agriculture involving subsistence-oriented irrigated crop cultivation and livestock husbandry.
- **The Eastern Pamirs** – covering an area of 38,000 km<sup>2</sup> is characterized by a series of arid high gently sloping plateaus, at an average altitude of 3,500-4,500m, from which rise a number of rocky, and in places snow capped, ridges and mountain peaks, rising to a little over 5,500m. Annual precipitation is very low averaging only 70mm, falling as light winter snow, while the annual potential evaporation exceeds 1,000mm. The predominant vegetation consists of dwarf shrubs, with areas of richer alpine meadow vegetation and willow trees along the meandering rivers. High altitudes, low temperatures, and minimal precipitation, severely limit plant growth and make the area unsuitable for crop production. The Eastern

<sup>4</sup> Source the Kyrgyzstan *National Poverty Reduction Strategy* (date unknown).

<sup>5</sup> Source the *Poverty Reduction Strategy Paper* of the Government of the Republic of Tajikistan, Dushanbe June 2002.

Pamirs are very thinly populated by traditionally semi-nomadic people of Kyrgyz origin who primarily depend on livestock farming. Land use is characterized by transhumance with the migration of people and animals between summer, autumn and winter pastures.

- **The Alai Mountain Ranges** – covering an area of approximately 35,000 km<sup>2</sup> in the south of Kyrgyzstan and northern parts of central Tajikistan. The sub-region comprises three principal geological formations: (i) the Alai mountain range with a maximum elevation of 5,500m; (ii) the Trans-Alai mountain range with glaciated peaks rising to over 7,000m; and (iii) the Alai Valley, a plateau at an altitude of around 2,800m, lying between the Alai and Trans-Alai mountain ranges. Annual precipitation amounts to some 300-550 mm (mostly falling between autumn and spring). Summers are dry with water supplies coming from melting snow and glaciers. The predominant vegetation is high mountain meadow steppe and mountain forest meadow steppe. Remote valleys still have areas of Juniper forest growing at altitudes of 3,000m. Crop land amounts to only 0.5-1.1% of the total land area, while mountain slopes with scrub and meadow plant communities suitable for pasturing cover between 35-55%. The sub-region is inhabited by both Kyrgyz and Tajik people living in permanent settlements at altitudes between 1,200-3,300m. Land use is dominated by subsistence-oriented agriculture, and animal herding. In the Tajik Alai, irrigated crop production and livestock breeding with transhumance pasturing defines the typical land use system, whereas in the Kyrgyz Alai, people are mainly engaged in transhumance livestock raising, combined with rain-fed forage and crop cultivation, with only minor irrigated areas.

15. The Western Pamir mountains correspond to the territory covered by the seven western districts of Gorno Badakshan Autonomous Oblast (GBAO), namely: Darvaz, Vanchi Rushan, Shugnan, Khorog, Roshtkala and Ishkashim. The population of this sub-region is approximately 196,000. Although population density is low (7.6 per km<sup>2</sup>), there is high pressure on the very limited land resources in the area suitable for crop and livestock production. The Eastern Pamir Mountains fall within the Murgab district of GBAO with a population of just over 14,000. Due to the harsh nature of the environment population density is very low (0.37 per km<sup>2</sup>). The Alai mountains straddle the border between southern Kyrgyzstan and northern Tajikistan. In southern Kyrgyzstan the Alai mountains fall within the districts of Chun Alai, Alai, Kara Kula and Nookat in Osh Oblast and the Batken district of Batken Oblast. While in northern Tajikistan it covers the districts of Tavildara, Jirgatal, Tojikobod, and Rasht. The total population of this sub-region is 218,000 with most living in Tajikistan (150,000). Population density varies between different oblasts and districts from 2.9 to 22.4 per km<sup>2</sup>.

## 1.5 Mountain Ecosystems

16. There is very little area specific information available on the ecosystems and their biodiversity within the High Pamir and Pamir Alai Mountains. While some surveys were undertaken during the former Soviet era, no recent detailed studies of the indigenous fauna and flora have been conducted. However it is clear that biodiversity degradation within the project area has global significance as the mountains of Central Asia<sup>6</sup> are considered to be one of the world's major biodiversity hotspots<sup>7</sup>. As shown in the following table the biodiversity of the mountains of Central Asia is characterised by considerable diversity and endemism.

**Table 1. Diversity and Endemism Within the Mountains of Central Asia**

Taxonomic Group	Species	Endemic Species	Percent Endemism
Plants	5,500	1,500	27.3
Mammals	143	6	4.2
Birds	489	0	0.0
Reptiles	59	1	1.7
Amphibians	7	4	57.1
Freshwater Fishes	27	5	18.5

Source: [http://www.biodiversityhotspots.org/xp/Hotspots/central\\_asia/](http://www.biodiversityhotspots.org/xp/Hotspots/central_asia/).

17. Because of their geographic location in Central Asia the flora of the mountain ranges contains a unique mix of Boreal, Siberian, Mongolian, Indo-Himalayan and Iranian elements. There are more than 5,500 known species of vascular plants in the hotspot, about 1,500 of which are endemic. There are also 64 endemic genera, including 21 from the family Umbelliferae and 12 from the family Compositae. The endemic flora includes several species of trees, grasses (such as *Atraphaxis muschketovii* and *Stipa karatavica*), wild onions, and numerous herbs.

18. A type of walnut-fruit forest unique to Central Asia can be found above the steppe zone in warm sheltered coves in the western Pamir-Alai and Tien Shan. The fruit and nut trees in these diverse forests include walnut (*Juglans regia*), almonds (*Amygdalus communis* and *A. bucharensis*), pears (*Pyrus korshinskyi* and *P. regelii*), plums (*Prunus sogdiana* and *P. ferganica*), and cherry (*Cerasus mahaleb*), along with maples (*Acer turkestanicum*

<sup>6</sup> Comprising the High Pamirs, Pamir Alai and Tien Shan mountain ranges and the intervening Fergana Valley.

<sup>7</sup> See the Conservation International website [http://www.biodiversityhotspots.org/xp/Hotspots/central\\_asia/](http://www.biodiversityhotspots.org/xp/Hotspots/central_asia/).

and *A. semenovii*). This ancient forest type contains ancestors of domestic fruit varieties and is an important storehouse of wild genetic diversity. About 90 percent of this habitat has been lost in the last 50 years.

19. Dwarf *teresken* shrub communities (mainly *Ceratoides papposa* and *Artemisia rhodantha*) cover many of the mountain slopes and arid high plains. The roots of these shrubs (up to 80cms in length) play a crucial soil protection role in a fragile environment. The stems, that can take up to 30 years to reach a height of 20-30 cms, are important nutrient rich forage for the region's ungulates (particularly the Marco Polo Sheep). They are also an important feed resource for domestic livestock. The main threat to the *teresken* however comes from their woody stems and roots having become the main source of fuel for cooking and heating for the majority of the population within the region. In the thinly populated Eastern Pamirs it has been estimated that an area of some 350 km<sup>2</sup> of *teresken* vegetation is being cleared annually as a result of the collection of these shrubs for fuel purposes. It has also been reported that *teresken* can no longer be found within a radius of 80 kms around the district centre of Murgab in the Eastern Pamirs.

20. Although nearly 500 bird species occur regularly in the Mountains of Central Asia, none are endemic to the region. However the region (and especially the project area) is an important stronghold for birds of prey, with important breeding populations of several globally threatened species, including the golden eagle (*Aquila chrysaetos*), the imperial eagle (*A. heliaca*), steppe eagle (*A. rapax*), booted eagle (*Hieraaetus pennatus*), lammergeier (*Gypaetus barbatus*), black vulture (*Aegypius monachus*), Eurasian griffon (*Gyps fulvus*), Himalayan griffon (*G. himalayensis*), peregrine falcon (*Falco peregrinus*) and saker falcon (*F. cherrug*). The project area also contains breeding populations of several other globally vulnerable bird species, including the bar-headed goose (*Anser indicus*), Himalayan snowcock (*Tetraogallus himalayensis*), Tibetan snowcock (*T. tibetanus*), as well as the critically endangered Tibetan sandgrouse (*Syrrhaptes tibetanus*).

21. Six of the 143 mammals occurring within the region are endemic. While two of these<sup>8</sup> are confined to parts of the Tien Shan, the other four<sup>9</sup> are thought to occur within the project area, with one found nowhere else. The hotspot also holds a variety of mountain ungulates, including three endemic subspecies of the argali wild sheep (*Ovis ammon*), among them the Marco Polo sheep (*O. a. polii*), whose magnificent curling horns have made it a favoured target of trophy hunters. The Siberian ibex (*Capra ibex sibirica*) is the most numerous and most widespread species, occurring in all parts of the area above the treeline.

22. Because of their location in the central part of the Asian continent, these mountain ranges play an important connecting role in the distribution of many montane Asian species. The best-known of these being the snow leopard (*Uncia uncia*), a species found in the alpine and subalpine zones of the project area. The population has declined here, as elsewhere, as a result of poaching for its valued fur, and depletion of its prey base through illegal hunting. Over grazing and poaching within the project area is also a threat to several other globally vulnerable, or endangered, mammals, including, the Tien Shan brown bear (*Ursus arctos isabellinus*), Turkestan Lynx (*Lynx lynx isabellinus*), Pamir Fox (*Vulpes vulpes pamirensis*), Wolf (*Canis lupus desertorum*), and Tolai hare (*Lepus tolai pamirensis*).

23. Although a full inventory of invertebrates for the hotspot is lacking, there is a rich insect diversity within the alpine meadows. Eleven of the 26 species of apollo butterflies known to occur in this hotspot are endemic. While there are a few endemic reptiles and amphibians within the Central Asian mountains as a whole, these are mostly confined to the lower warmer altitudes and therefore not thought to be at risk within the project area<sup>10</sup>. (See annex 3 for a list of the fauna and flora species listed in the red data books for both countries)

## 1.6 Current Protection Measures

24. Both Tajikistan and Kyrgyzstan recognise the need to protect the unique and fragile environment within their parts of the High Pamir and Pamir Alai mountains. Each country has sought to protect parts of the mountain ranges within a legal and institutional framework of national protected area management schemes. In Tajikistan the Tajik National Park, the largest in Central Asia, covering 2,6 million ha or 18% of the territory of the country (60% of GBAO), was formally established in 1992 and is still in the process of becoming fully operational. In Kyrgyzstan, parts of the Pamir-Alai were included in the nationwide protected areas network<sup>11</sup> covering 777,000 hectares or nearly 4% of the country's land area. The establishment of these protected areas within the Pamir mountain region constitute the main existing national level structures, in both countries, for dealing with the dramatic and rapidly increasing pressure on these fragile mountain ecosystems. While these provide a framework for limiting environmental pressures in the protected areas, their effectiveness as a basis for the sustainable environmental management and development of the High Pamirs and Pamir-Alai area is questionable in view of their: (i) very

<sup>8</sup> Menzibier's marmot (*Marmota menzbieri*) and Ili pika (*Ochotona iliensis*).

<sup>9</sup> Two susliks or ground squirrels (*Spermophilus ralli* and *S. relictus*), the Pamir shrew (*Sorex bucharensis*), and the Alai mole vole (*Ellobius alaicus*), the latter known only from the Alai Mountains in southern Kyrgyzstan.

<sup>10</sup> Except possibly for one recently described species of frog (*Rana terentievi*) known only from southern Tajikistan.

<sup>11</sup> Additionally six strict nature reserves (zapovedniks), one national park, five natural parks, and 71 protected zones (zakazniks).



limited scope; (ii) inadequate legal, policy and institutional environment; (iii) insufficient funding; and (iv) politically fragmented nature.

### **1.7 The Origin and Nature of Current Mountain Ecosystem Degradation Threats**

25. During the Soviet era settlement and population growth was actively promoted within the High Pamir and Pamir Alai mountains mainly for geostrategic reasons (border security). To sustain the increased population (roughly quadrupled since 1925), the region was heavily subsidized from Moscow with all the goods and services required by the inhabitants (particularly fuel) provided at minimal prices. Such subsidies supported the development of an entire economic and natural resource management system that was unrelated to the very limited natural carrying capacity of the region's ecosystem resources.

26. Central planning resulted in traditional land use systems being replaced by collective farms, often assigned solely to livestock breeding serving distant markets in the Soviet empire. At the same time large numbers of pastoralists of Kyrgyz ethnic descent, living in the High Pamirs, were forced to abandon their traditional transhumance herding life style and made to take up permanent residence in newly constructed small towns located at altitudes of 3,400 to 3,600 meters.

27. With the collapse of the Soviet Union all subsidies ceased virtually from one day to another, leaving behind an isolated region with a lopsided economy deprived of its markets and exchange relations. Unemployment increased dramatically with the closure of inefficient state industries and government retrenchment. The effect was to leave some 80% of the population either unemployed or underemployed, with little or no income earning opportunities. Poverty increased as former paid employment opportunities ceased, and subsidized food and fuel disappeared.

28. The sudden collapse of the previous economic system caused considerable rural hardship, with a humanitarian catastrophe having to be averted through food aid and other relief programs administered by the Aga Khan Development Network (AKDN), the World Food Programme (WFP) and others. Today the region's economy is characterised by the dominance of a subsistence-oriented agricultural sector, exchanging many goods and services through barter trade. Although agricultural production has increased since 1996, the limited land area suitable for agriculture, and the harsh nature of the physical environment, means that the region may never be food self sufficient. Insufficient food production and lack of alternative income earning opportunities, means that a large number of the rural population are still dependent for their survival on food aid. Meeting immediate short term welfare needs (for food, fuel and shelter) has therefore taken precedence over long term ecosystem resource sustainability.

29. The reforms begun in the early 1990s led to the partitioning of the former Kolkhozes and Sovkhozes (collective farms), creating a large number of livestock owning households with a few animals each, but with only limited grazing resources and animal husbandry knowledge. The collapse of previously organized collective grazing arrangements and the high transport costs for accessing distant summer pastures have dramatically increased pressure on pastoral resources around villages and settlements. Overgrazing of pastures close to the settlement areas, especially during the extended non-vegetative winter period is threatening scarce riverine vegetation, hampering natural regeneration processes in forest areas, and reducing their water storage capacity, and thus negatively affecting agriculture. At the same time, remote pastoral areas have remained underutilized, and the quality and health of the livestock breeds genetically adapted to mountain conditions, has decreased due to the cessation of selective breeding practices as a result of the disintegration of the previous animal husbandry systems, and the loss of central government supported veterinary services.

30. The disintegration of the Soviet agricultural cooperatives has forced a large number of specialized cooperative workers to turn to farming without the required agricultural knowledge and support services, and a lack of funds for investments. This has led to inappropriate and often destructive use of agricultural lands. Forced reduction of crop rotation, inadequate farming techniques on steep slopes, excessive irrigation, and reduced availability of dung as fertilizer (as it is increasingly used as a fuel substitute) resulted in declining soil fertility, thereby ultimately resulting in reduced productivity.

31. Disintegration of the Soviet system resulted in the loss of subsidised coal for domestic heating, and diesel for electricity generation. None of the numerous diesel power plants, that supplied the various small rural electricity grids during the Soviet era are still running today. While the region has considerable untapped potential for hydro-electric power generation, many of the plants built during the Soviet era have ceased to operate, or run below capacity, due to poor maintenance and lack of spare parts. Limited electricity supplies are available to rural communities in parts of the western Pamirs, and within the Kyrgyzstan portion of the Alai Mountains, however the supply is unreliable, especially in the winter months, and is used mainly for domestic lighting, as households find it too expensive as an energy source for heating and cooking. Although much of the electricity grid infrastructure still exists in the eastern Pamirs the majority of the rural inhabitants have been without electricity for at least 15 years,

and while the urban centre of Murgab still has a limited supply of electricity it falls far short of what is needed, even to meet the town's needs for domestic lighting, let alone for other purposes. The lack of a reliable and affordable supply of electricity, and the expense of imported fossil fuels (coal, paraffin and diesel) for cooking and heating, has forced people to turn to the exploitation of locally available biomass resources (firewood, shrubs, dung and peat) and is the principle cause of the current severe land degradation within the region.

32. While in the last decade 40 mini hydro power plants have been built in the Tajik Pamirs, they have only been able to supply a minuscule amount of the region's energy needs. The area's considerable solar and wind power generation potential has been largely untapped. Shortage of alternative energy supplies has not only contributed to severe natural resource degradation, but has hindered the economic recovery and development of the region.

33. The limited livelihood opportunities available to the inhabitants of the region since 1991, due to the deteriorating economic situation, has led out of economic necessity to a greater reliance on exploiting the local wildlife resources for food and income. Increased hunting by local people and border patrol forces for meat, and the intensification of trophy hunting, has led to a substantial decrease in the population of wild ungulates. Of particular concern is the dramatic decline in the population of the Marco Polo Sheep since the 1970s, which may now only number between 3,000 to 5,000 animals within its former stronghold of the Tajik Pamirs. This species has potentially very high economic value with foreign trophy hunters prepared to pay up to US\$35,000 for a hunting licence and conducted tour. There is currently insufficient data on animal numbers, and the impact of legal and illegal hunting, to be able to determine whether the species can be exploited in this way on a sustainable basis. While hunting is a major threat to the region's wild ungulates, loss of habitat and disturbance through livestock grazing and other human activities has had negative impacts on their spatial and social behaviour affecting herd size and breeding success. Both are threats to the ability of the region to restore, sustain and enhance the overall wild ungulate populations.

34. The endemic flora of the region also faces a number of different threats. Some ornamental species have declined due to excessive collection for horticulture and decoration purposes. The ancestors of several domestic fruit trees occur within the region, and this wild genetic diversity is at risk of being lost through deforestation for fuelwood, clearing for agriculture and overgrazing.

## **1.8 Current Land Degradation Status Within the High Pamirs and Pamir Alai Mountains**

35. The 1994 Global Assessment of Soil Degradation (GLASOD) found that much of Central Asia was already adversely affected by land degradation, in particular by water erosion<sup>12</sup>. A 1998 UNCCD report identified Central Asia as the region of Asia worst affected by desertification (with more than 60% of the region's drylands affected)<sup>13</sup>. Over the last 10 years the situation is believed to have deteriorated further in parallel with the decline in the economic conditions of the rural population following the collapse of the Soviet Union. Both Tajikistan and Kyrgyzstan, being predominantly mountainous countries<sup>14</sup>, are subject to a range of natural degradation processes, and are particularly vulnerable to human accelerated degradation of their mountain ecosystem resources. Land suitable for crop production is limited in extent in both countries and has been adversely affected by a variety of degradation processes, in Kyrgyzstan over 88% of the arable lands suffer from erosion, while in Tajikistan the figure is close to 98%<sup>15</sup>. The critical issue of land degradation in Central Asia highlighted in the Desertification Synthesis report in Ecosystem and Human Well-Being, Millennium Ecosystem Assessment – UNEP/GEF, which presents the findings of the four Millennium Assessment Groups in the area (Adeel, Z. et al.).

36. It has been estimated that some 84 giga tonnes of carbon (Gt C) are stored in rangeland vegetation with a further 750 Gt C in rangeland soils<sup>16</sup>. The rangelands of Central Asia, including the pastures of the High Pamir and Pamir Alai mountains, therefore have global significance as carbon sinks, and current rates of rangeland degradation constitute a significant additional loading of CO<sub>2</sub> to the atmosphere.

37. There is growing concern over the effects of climate change in the High Pamir and Pamir Alai mountains. In the Tajik Pamirs between 1961 and 1990 average temperatures have increased by 0.5°C and if present trends continue by 2050 it is estimated that air temperatures will rise by a further 2-3 °C<sup>17</sup>. Rising temperatures have increased the melt rate of the region's glaciers, which are believed to have lost over 25% of their ice reserves during

<sup>12</sup> Oldeman L.R. 1994. *The Global Extent of Soil Degradation*. In Greenland D.J. and Szaboles T (eds) *Soil Resilience and Sustainable Land Use*. Wallingford Commonwealth Agricultural Bureau International.

<sup>13</sup> UNCCD 1998. *The Social and Economic Impact of Desertification in Several Asian Countries: Inventory Study*. Geneva Interim Secretariat of the Convention to Combat Desertification.

<sup>14</sup> Mountains occupy 93% of the land area of Tajikistan and 94% of Kyrgyzstan.

<sup>15</sup> UNCCD Discussion Paper presented at the *Subregional Partnership Building Forum for the Central Asian Republics: Confronting Land degradation and Poverty through Enhanced UNCCD Implementation* held in Tashkent, Uzbekistan, 30 June – 4 July 2003.

<sup>16</sup> IPCC 2001. *Climate Change 2001: Impacts, Adaptation and Vulnerability*.

<sup>17</sup> Novikov, V. and Safarov, N 2002 *State of the Environment Report of the Republic of Tajikistan*.

the period from 1957 – 2000<sup>18</sup>. The Fedechenko Glacier alone, with a current length of 70 km, has shrunk by almost 1 km, losing 11 km<sup>2</sup> of its area and 2 km<sup>3</sup> of its ice volume in the second half of the 20<sup>th</sup> century. If these trends continue many of the numerous smaller glaciers at lower altitudes will disappear completely and the total ice volume will decline by a further 25-30%. This is cause for concern as the High Pamir and Pamir Alai mountains provide approximately 65% of the freshwater reserves of Central Asia<sup>19</sup>, provided almost exclusively through the Amu Darya river to the lowlands of Tajikistan, Afghanistan, Turkmenistan and Uzbekistan. The melt-water peak during summer coincides with the growing period of cotton in the Tajik and Uzbek lowlands, and with the driest season in this region. Thus storage capacity and seasonal regulation of streamflow in the High Pamir and Pamir Alai mountains are vital, not only for local land use systems, but also for the ecological and socio-economic welfare of downstream users.

38. While initially the increase in glacier melt rates will increase stream flow in some rivers and partially compensate for the decrease of stream flow in other rivers. In the mid- and long-term, a significant reduction of water flow in many rivers must be anticipated. The uplands are probably affected by more frequently changing flow regimes, which can have negative impacts on irrigation and hydropower infrastructure and on the different ecosystems types of the region. Natural disasters such as floods, mudflows, landslides, glacial lake outbursts and rock fall can be expected to increase in scale and frequency, while increased flooding, waterlogging and salinisation will impact negatively on fragile mountain ecosystems.

39. No comprehensive studies have been undertaken into the current degradation status of the ecosystem resources of the High Pamir and Pamir Alai Mountains. As a result there is no base-line quantitative information on the areal extent or severity of the different types of land degradation that are believed to have occurred in the past, or are currently occurring. However interviews conducted during the PDF-B phase studies, with local land users and other key informants, provide strong anecdotal evidence that degradation is occurring and has got considerably worse in the last 10 or so years. The following table is derived from such sources, and serves as a qualitative estimate of the current nature and severity of land degradation within the three sub-regions of the High Pamir and Pamir Alai Mountains of Tajikistan and Kyrgyzstan.

**Table 2 Land Degradation within the High Pamir and Pamir Alai Mountains**

Degradation Type	Degradation Processes	Severity		
		Western Pamirs	Eastern Pamirs	Alai Mountains
Soil degradation	Water erosion	Moderate	Moderate	Moderate
	Wind erosion	Low	Moderate	Low
	Mass wasting	Moderate	Low	Locally High
	Fertility decline	Moderate	Moderate	Moderate
	Salinisation	Low	Locally high	Low
Vegetation degradation	Deforestation (reduction in area of forest and decline in number of tree species)	High	Low (trees never significant part of the area's natural vegetation)	High
	Reduction in vegetative cover provided by shrubs (teresken & other species)	High	High	Moderate
	Reduction in vegetative cover in the pastures	Low for distant pastures, High for pastures close to settlements	Low for distant pastures, High for pastures close to settlements	Low for distant pastures, High for pastures close to settlements
	Decline in pasture quality with increase in proportion of non-palatable species	Low for distant pastures, High for pastures close to settlements	Low for distant pastures, High for pastures close to settlements	Low for distant pastures, High for pastures close to settlements
Bio-diversity degradation	Decline in wildlife diversity	Moderate	Moderate	Moderate
	Decline in the population of individual wildlife species	High	High	High
	Decline in plant diversity	Moderate	Moderate	Moderate
	Decline in the population of individual plant species	High	High	High
	Decline in habitat quality	High	High	High
Water degradation	Decline in seasonal availability	Low	Low	Low
	Decline in water quality	Low	Low	Moderate
	Increased flood frequency and severity	Moderate	Moderate	Moderate

<sup>18</sup> UNCCD Discussion Paper presented at the *Subregional Partnership Building Forum for the Central Asian Republics: Confronting Land degradation and Poverty through Enhanced UNCCD Implementation* held in Tashkent, Uzbekistan, 30 June – 4 July 2003.

<sup>19</sup> The 9,000 glaciers of the High Pamirs and Pamir Alai Mountains contain some 580 km<sup>3</sup> of water reserves compared to only 74 km<sup>3</sup> in the glaciers of Switzerland.

Climate deterioration	Increased risk of glacial lake outbursts, avalanches and rockfalls	High	Low	Moderate
	Increased glacial melting	Moderate overall but locally high	Moderate	Moderate
	Rising permafrost boundary	Moderate	Moderate	Moderate

40. The synthesis report prepared by CDE for the PDF-B phase broadly summarizes the status of the region's land resources as follows:

- (i) Vegetation is the land resource most affected by degradation. Particularly forest and pasture land as well as dwarf-shrub plant communities, suffer badly from high pressure and unsustainable land use, and show signs of severe degradation.
- (ii) Areas of agricultural soils are very scarce and although they form an essential resource for sustaining rural livelihoods have experienced high use intensity, unadapted land use practices and a moderate degree of degradation.
- (iii) Although concrete figures on wildlife are unavailable, continuous hunting activities and habitat destruction is believed to have caused a considerable decrease in animal populations.
- (iv) It is changes in the seasonal availability and distribution of water within the region, rather than its quality which is a major concern, although there are local exceptions.

### 1.9 Causes of Land Degradation within the High Pamirs and Pamir Alai Mountains<sup>20</sup>

41. There are a variety of natural factors, related to the harsh bio-physical environment within the High Pamir and Pamir Alai mountains, that increase the risk of human induced land degradation occurring, and reduce the potential for recovery through natural processes. Steep slopes, shallow soils, and large areas of bare rock, increase the risk of water erosion during seasonal rain storm events of high intensity. Strong winds combined with a semi-arid to arid climate increase the risk of wind erosion when dry soil is exposed. Geological instability, periodic intensive seismic activity and unconsolidated materials on steep valley sides, all increase the risk of erosion by mass wasting (land slides, mud and debris flows). Low and erratically distributed seasonal precipitation, and cold temperatures, makes the vegetation of the mountain ecosystems particularly susceptible to degradation and slow to recover from improper land use interventions. High rates of natural 'geologic' erosion is a major contributory factor to the high sediment loads in many of the regions rivers.

42. Various types of human activity can be identified as the direct causes of land degradation within the High Pamir and Pamir Alai Mountains, the most important are believed to be:

- (i) over reliance on fuelwood, shrubs, dung and peat to meet household energy needs;
- (ii) poor pasture management, in particular the overgrazing of pasture areas close to the village;
- (iii) poor soil and water management in plots used for irrigated and rainfed crop production;
- (iv) poor construction and maintenance of irrigation systems, especially distribution canals located on steep, and unstable slopes; and
- (v) poorly regulated hunting, combined with grazing competition and habitat destruction impacting negatively on wildlife numbers.

43. The regional root causes of land degradation, or the underlying reasons for the above direct causes, can be found within the wider social, cultural, economic, policy and legislative environment in which the farmers, herders and forest users operate. Tackling the direct causes requires an understanding of the root causes, as the project will need to address these through appropriate corrective and mitigating measures, before improved land management practices can be adopted at the field level, and degraded ecosystems recover. The following are believed to be some of the key root causes:

- (i) active promotion of settlement and population growth in the Soviet era (beyond the carrying capacity of the natural resources) to increase the human presence in a strategically important border area;

<sup>20</sup> For a detailed review of the nature and causes of land degradation within the High Pamir and Pamir Alai Mountains see annex 4.

- (ii) lack of adequate and affordable alternative energy supplies has forced people to rely on locally available biomass fuels (firewood, shrubs, peat and dung) for cooking and heating leading to over harvesting of woody plants, 'mining' of valley floor marshes for peat, and insufficient manure for fertilising the crop lands;
- (iii) collectivisation of agriculture during the Soviet era, when rural people employed as workers on state farms, lost their previous indigenous knowledge on how to manage mountain ecosystems as part of traditional natural resource based livelihood strategies;
- (iv) loss of state subsidised goods and services, and increased unemployment, following the change from a centrally planned economy to a market economy, causing a sharp decline in people's standard of living and a return to subsistence-oriented agriculture with the emphasis on maximising short term returns at the expense of long-term sustainability;
- (v) poor communications infrastructure (roads, phone network etc) increases the costs of external farm inputs, makes marketing surplus produce expensive, limits the scope for cash crop production to non-perishable products, and lack of phones hinders access to market information;
- (vi) civil war in Tajikistan, from 1992 to the signing of the peace treaty in June 1997, led to increasing pressure on the region's natural resources as refugees, fleeing from the fighting in adjacent areas of the country, moved into the relative safety of the Tajik Pamirs;
- (vii) central and local (Oblast) level government technical agencies have limited financial and trained manpower capacity, which restricts their ability to provide effective advisory support services (research, extension and training) to rural land users, particularly with regard to the control and management of land degradation, and protection of ecosystem resources;
- (viii) conflicting mandates and contradictory policies amongst the institutional support services have led to gaps and contradictions in field level efforts to combat land degradation and sustainably manage ecosystem resources;
- (ix) inadequate policies and legislation for the sustainable management of mountain ecosystems with extensive gaps, an absence of key elements required to address the specific ecological and land management problems of mountain ecosystems, and an inability to enforce existing laws and regulations;
- (x) undervaluing of the region's natural resources, notably water, pasture, forest and wildlife products, has failed to encourage sustainable land management;
- (xi) trans-boundary trade, market opportunities and information exchange, have been hindered by customs and military regulations, in part a legacy of the former geo-strategic importance of the region to the USSR, and part due to more recent political sensitivities;
- (xii) given that all land resources are legally the property of the state, unclear private user rights for individual farm plots, and de facto common property resources (eg. pastures, wildlife, woodlands), encourages short term resource exploitation rather than long term conservation.

#### **1.10 Current Environmental Policy, Regulatory and Institutional Framework**

44. The existing environmental laws and policies of Kyrgyzstan and Tajikistan cover a wide range of environmental interests relevant to sustainable land management within the High Pamir and Pamir-Alai Mountains. However limited attention has been given to the development of a specific legal and policy framework for the sustainable utilisation of mountain natural resources and ecosystems, and particularly protecting them from the effects of land degradation. A review conducted under the PDF-B noted that:

- (i) important natural resource management activities, such as equitable resource utilization, environmental protection, sustainable ecosystem management, and land degradation prevention are poorly recognised and inadequately dealt with in current national policies and legislative frameworks;
- (ii) while both countries have a body of relevant national level legislation (eg. laws for nature protection, water, soil and forest management), at the regional (trans-boundary) and local levels, existing land management regulations are inadequate and poorly enforced;
- (iii) national policies and legislation do not adequately address each country's regional obligations as signatories (accession rights) to the UNCCD, CBD and FCCC;

- (iv) while there are national policies for the development of the agriculture, water and forest sectors, and for environmental management, their implementation and effectiveness is limited by poorly defined, and overlapping, institutional responsibilities, and the inadequate skilled manpower and financial resources within individual agencies;
- (v) uncertainties over land tenure in the High Pamir and Pamir-Alai mountains, and particularly concerning individual land use rights and status of rural communities in relation to land ownership, mean that farmers, herders and forest users feel legally insecure as to their long term resource user rights, hence have little private incentive to assume stewardship responsibilities for protecting and conserving their local mountain ecosystem resources;
- (vi) as land use decision-making, and rural land management activities, for the High Pamir and Pamir-Alai mountains are not effectively linked to the national environmental legislative and policy systems, they operate largely outside any statutory and regulatory control and direction;
- (vii) the institutional capacity (ie. trained manpower with the required legal and natural resource management skills, inter-agency coordination mechanisms etc) to review and revise the legal, policy and regulatory framework required for sustainable land management within mountain ecosystems is very limited, particularly for the management of trans-boundary ecosystems;
- (viii) there are very few effective administrative mechanisms at the central or regional levels within Kyrgyzstan and Tajikistan to coordinate the efforts of the various institutes and sector agencies involved in sustainable mountain area development;
- (ix) there are no 'common' trans-boundary rules to ensure uniformity in approach in both countries for the management of the High Pamir and Pamir-Alai (particularly for the protection of globally threatened fauna and flora) as a distinct biogeographical and ecological unit;
- (x) the current national-based law and policy regulatory framework provides inadequate support for integrated trans-boundary ecosystem management, which hinders the effective promotion of sustainable land management practices within the region as a whole;
- (xi) in both countries there has been very limited development of local level legislative instruments, which are generally weak and lacking in the land use standards, targets and priorities contained in central level legislation, and there is little flexibility under current national legal and policy systems to allow for local modifications to meet area specific ecosystem resource needs and circumstances.

45. In both countries responsibility for overseeing the management and utilisation of the natural resources of the High Pamir and Pamir Alai Mountains rests with a number of different ministerial agencies operating at the central and/or local government levels. Each institution has its own (often narrowly defined) mandate according to its specific sectoral economic and ecological concerns. There are often overlapping, and at times conflicting, sectoral development policies, roles and responsibilities, so issues related to agriculture, forestry, and environment may be dealt with by separate ministries and departments with little or no inter-agency coordination. While Kyrgyzstan has a specific Mountain Development Institute, established under the country's Mountain Territories Law, it operates separately from the sectoral technical line agencies<sup>21</sup>. The end result is that crop and livestock production, soil and water conservation, forest management, ecology and wildlife protection, are dealt with separately rather than as inter-linked components of integrated sustainable mountain ecosystem management. It is rare for the respective policies and programmes of the different departments to complement each other, leading to gaps and contradictions in field level efforts to combat land degradation and sustainably manage ecosystem resources.

### **1.11 Current Development Interventions**

46. The collapse of the previous Soviet backed economic system caused considerable rural hardship within the High Pamir and Pamir Alai mountains. In both countries there was a need for emergency food aid and other relief programs in order to prevent a humanitarian catastrophe within the region. This has had to be continued to the present day, as the region is still far from being food self sufficient from its own production, and many vulnerable households within the region do not yet have the financial means (due to limited rural employment and income generating opportunities) to purchase their additional food requirements from imports on the local market. While the overall need has declined in recent years, a proportion of current development interventions within the region are still directed at basic survival, with food aid and other humanitarian relief continuing to be provided by the Aga Khan Development Network, the World Food Program and others.

<sup>21</sup> There is currently no equivalent institution or mountain law within Tajikistan.

47. In order to try and reduce dependence on food aid and other humanitarian relief, a variety of international donors<sup>22</sup> and NGOs<sup>23</sup> are supporting community-based development projects aimed at improving rural household social welfare, livelihoods and food security. In the agriculture sector these have largely focused on the construction and rehabilitation of irrigation schemes, provision of agricultural inputs (seeds, fertiliser, equipment, machinery spare parts, fuel and cash credit), improved livestock husbandry (feed, vaccines, training, improved animals). To date activities directly related to combating land degradation have principally been through small-scale food for work projects involving: (i) reclaiming agricultural lands covered by mud slides and debris flows; (ii) tree planting for soil conservation and erosion control on valley sides; and (iii) restoring permanent vegetation cover (shrubs and grasses) for soil protection.

48. The GEF small grants programme of Kyrgyzstan<sup>24</sup> has supported several community-based micro projects directly related to the GEF focal areas of: (i) bio-diversity conservation; (ii) climate change mitigation; (iii) protection of international waters; (iv) elimination of persistent organic pollutants; and (v) prevention of land degradation. A small number of these have been undertaken within the Kyrgyzstan portion of the Pamir Alai mountains involving such activities as: (i) ecosystem rehabilitation and protection through tree planting (relict nut trees and fast growing trees for fuel and timber); (ii) conservation, reproduction and rational use of native medicinal plants; (iii) rehabilitation and regulation of pasture management in alpine meadow ecosystems; and (iv) development of renewable energy sources (mini hydro stations, biogas and solar installations).

49. The Swiss funded Central Asian Mountain Partnership (CAMP) operates in Kyrgyzstan, Kazakhstan and Tajikistan with the goal of contributing to sustainable mountain development by encouraging a more economically, ecologically and socially sustainable use of resources. Work is focused on four tightly inter-connected fields, namely: (i) resource use; (ii) product development and marketing; (iii) village development; and (iv) policy dialogue. While the development thrusts of CAMP's activities are concerned with: (i) research and development; (ii) capacity building; and (iii) networking and communication. While CAMP has undertaken a range of studies, community assessments, awareness raising and training, it has not had the resources and mandate to provide micro-project investment support for the implementation of sustainable land management practices at the field level. It has though produced a white book with 22 case studies documenting successful local initiatives that have contributed to the general improvement of life for the inhabitants of specific Central Asian mountain communities.

50. The GTZ UNCCD project of Kyrgyzstan has focused on furthering NGO's and local participation in the implementation of the UNCCD through the provision of small grants for activities related to desertification control. The energy saving and soil and water conservation technologies developed, applied, and disseminated in different areas in Kyrgyzstan through the support of the project constitute a solid collection of "best practices" of promising short- to medium-term sustainable land management measures, and implementation approaches. Some potentially useful training materials (e.g. a manual on setting up tree nurseries) and monitoring and evaluation methods and indicators have also been developed in the framework of the project.

51. The Pamiri High Mountains Integrated Project (PHIP), funded by UNESCO and the Swiss and implemented by ACTED (a French NGO), is seeking to improve economic conditions and alleviate poverty in the remote and very poor Murgab District of GBAO. Its interventions include the provision of micro-finance to groups (primarily for livestock breeding), support for micro-enterprises (eg. greenhouses, irrigated pastures, handicrafts), development of community-based ecotourism, promotion of energy conservation measures (solar cookers, building insulation), as well as providing the most vulnerable households with flour and coal at heavily subsidised prices.

52. The starting point for all of the current development interventions is a desire to improve the social welfare of the rural communities. Addressing ecosystem resource degradation is largely of secondary concern, if considered at all, and with the exception of the above projects none have addressed the global environmental concerns of ecosystem degradation in a critical Central Asian Mountain 'water tower and biodiversity hotspot'. At the community level each development project tends to be a stand alone intervention rather than part of a more comprehensive community-based and integrated land use plan. As yet none of the past and current development projects have helped rural communities to assess the current status of their ecosystem resources, and prepare their own sustainable land management strategies and action plans, for addressing local land degradation and ecosystem management problems in ways that will provide members of the community with sustainable and productive natural resource based livelihoods.

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<sup>22</sup> Notably multilateral donors and development agencies such as the World Bank, Asian Development Bank, United Nations Development Programme, Food and Agriculture Organisation, World Food Programme, European Commission, as well as a number of bilateral donor agencies supported by the Governments of Canada Germany, Japan, the Netherlands, Sweden, Switzerland, United Kingdom and the United States of America.

<sup>23</sup> By far the largest being the Mountain Societies Development Support Programme (MSDSP) of the Aga Khan Development Foundation.

<sup>24</sup> There is currently no equivalent GEF small grants programme in Tajikistan.

## 2. RATIONALE AND OBJECTIVE (ALTERNATIVE)

### 2.1 Justification for GEF Funding

53. Land degradation will have a strong negative impact on the structure and functional integrity of the High Pamir and Pamir-Alai mountain ecosystems. In particular the region's increasing ecological vulnerability threatens the High Pamir and Pamir-Alai mountains crucial ecological function as the 'water towers' of Central Asia. In recent years the ecosystem resources of the region have come under increasingly severe pressure with the rise in poverty and economic vulnerability of its population, following the enforced transformation to a market economy. Degradation within this trans-boundary region will negatively affect agricultural productivity and rural livelihoods in the adjacent downstream lowlands, stretching down to the endangered Aral Sea. The greater part of the water required, in these semi-arid to arid lowland areas, for irrigating crops, watering livestock, and to meet domestic and industrial water needs, is supplied by melt water from the winter snow and glaciers located in the High Pamir and Pamir-Alai mountain region. Protection of the region's scarce and vulnerable water supplies is therefore critical for maintaining social, economic and political stability within the countries of the Central Asia. Failure risks political instability and increases the potential for trans-boundary conflicts between countries and neighbouring communities as each struggles to secure access to increasingly limited water supplies. Given that the water resources of the region are expected to decrease as a result of global climate change it is vital that efforts are made to ensure that land degradation does not further reduce the quality and quantity of the region's water resources.

54. The High Pamir and Pamir Alai mountains are renowned for their spectacular mountain landscapes, specialised mountain ecosystems and cultural diversity. The project area contains many endemic plants, and is home to a number of globally threatened mammals and birds (see section 1.5). Some of the region's unique wildlife habitats and plant communities are the result of past human interventions, being linked to the cultural land-use patterns, and traditional land management practices, of particular ethnic groups. Maintaining and/or restoring these may require specialised habitat management involving the reintroduction of traditional farming and/or pasture management practices. Conservation bodies in Europe and North America have long recognised the need for such proactive landscape management within their nature reserves and national parks. The project would act as a channel for introducing such landscape management concepts and practices to the region.

55. The project area lies at the centre of one of the world's biodiversity hotspots and its ecosystem resources constitute an important gene pool of outstanding global and Central Asian importance. In particular it contains the wild relatives of many commercially important species of fruits (eg. pear, plum, cherry), nuts (eg. walnut, almond, pistachio), vegetables (eg. onion, brassicas, herbs) and ornamental flowering plants (eg. tulip, *ribes*, *rosa*). This diverse resource may contain genetic properties (disease resistance, flavour, longevity etc) of future economic value in the development of improved cultivars for commercial growers and gardeners. There are thus local and global economic, as well as ecological, benefits from preventing the degradation of this gene pool.

56. Habitat preservation is critical to the conservation of the various globally threatened mammals and birds found within the project area. However many of these critical wildlife habitats are subject to manifold pressures, driven by both illegal and legal land management practices, related to a severe lack of affordable renewable energy supplies<sup>25</sup>, limited alternative livelihood opportunities, and competition from different, and sometimes conflicting, land uses. Habitat degradation, disturbance, and over hunting have had a negative impact on many of the native wildlife species found within the project area. The population levels of some of these have suffered a severe decrease in numbers in recent years, and unless the present degradation is reversed several species, that are already endangered, are at serious risk of imminent local extinction. While they may still be present in neighbouring mountain areas, their disappearance from the High Pamir and Pamir Alai mountains would have implications for their ultimate global survival.

57. At the moment development efforts within the region are largely piecemeal with the governments, NGOs and donor agencies funding a limited number of micro-level interventions based on a community's project wish list. The emphasis is usually on the physical construction of social welfare facilities (eg. health clinics, primary schools, access roads, potable water supplies), or promoting conventional agricultural improvements (eg. improved crop varieties/livestock breeds, fertiliser, mechanisation, credit). The environmental dimension to the local problems is largely overlooked or dealt with by means of stand alone conservation interventions (eg. planting trees, constructing terraces, check dams and other erosion control structures). There is no overall strategic land use and ecosystem management approach, at either the regional or community level, that starts with an assessment of the current status of the available natural resources as the basis for identifying area specific priority interventions that will address the interrelated problems of land degradation and rural poverty. The project will seek to change this at both the regional and local (community) levels through: (i) the formulation of an overall strategy and action plan for the High Pamir and Pamir Alai Mountain region as a whole; and (ii) assisting individual communities to assess the current status of

<sup>25</sup> The destructive gathering of the natural woody shrubs (teresken in particular) to meet local demands for fuel, for cooking and heating, is by far and away the primary cause of habitat destruction within the project area.



their local natural resources, and prepare their own priority micro-projects portfolio within the framework of a community-based land use plan. The prospect of GEF funding will provide the catalyst for the adoption of such a strategic planning approach.

58. The project will play a major role in mainstreaming sustainable land management concerns within the national environmental law, policy and institutional systems of both Kyrgyzstan and Tajikistan. It will also focus on regional level harmonisation of the respective legislative and policy systems with the aim to create an effective enabling environment for the improved management of trans-boundary mountain ecosystem resources. While globally there is a growing body of experience with the formulation and implementation of laws for a wide range of environmental issues, as yet no integrated legislative framework has been developed for the conservation and management of mountain environments according to the concepts and principles of sustainable land management. Likewise there is little, or no, experience with the development of regional level laws, policies and other institutional instruments for the management of trans-boundary mountain ecosystem resources. GEF support for improving the enabling legal, policy and institutional environment for sustainable land management within the High Pamir and Pamir Alai Mountain region will have global benefits through using the project's experience to prepare generic guidelines for the formulation of enabling legal and institutional frameworks for the protection and sustainable management of the ecosystem resources of other high altitude mountain regions in Asia and elsewhere.

## 2.2 Global Environmental and Development Objectives

59. The overall long term environmental and development objective (goal) of the project is:

*to restore, sustain, and enhance, the productive and protective functions of the trans-boundary ecosystems of the High Pamir and Pamir-Alai Mountains, of Tajikistan and Kyrgyzstan, so as to improve the social and economic well-being of the rural communities and households utilizing the region's ecosystem resources to meet their livelihood needs, while preserving its unique landscape and globally important biodiversity.*

60. The immediate development objective (purpose) is:

*to address the link between poverty, vulnerability and land degradation at the community level, through the promotion of sustainable land management practices that contribute to improving the livelihoods and economic well-being of the inhabitants of the High Pamir and Pamir-Alai Mountains.*

61. The immediate environmental objective (purpose) is:

*to mitigate the causes and negative impacts of land degradation on the structure and functional integrity of the ecosystems of the High Pamir and Pamir-Alai Mountains through mainstreaming sustainable land management tools and practices from household, community, local government, national and regional levels.*

## 2.3 Expected Outcomes

62. In realising the above development and environmental objectives the project is expected to achieve the following four outcomes:

**Outcome 1:** Enhanced regional cooperation between Tajikistan and Kyrgyzstan creating the enabling regional strategic planning, and national legislative, policy, institutional, technical, and economic incentive, environment, for the sustainable management of the High Pamir and Pamir-Alai mountain ecosystems.

**Outcome 2:** Improved capacity of Tajikistan's and Kyrgyzstan's public and private sector agency research and advisory support service providers to promote sustainable land management within the High Pamir and Pamir-Alai Mountains.

**Outcome 3:** Reduction in rural poverty and economic vulnerability through restoration and enhancement of the productive and protective functions (ecological goods and services) of the High Pamir and Pamir-Alai mountain ecosystems.

**Outcome 4:** Generic guidelines for up-scaling and replication of the lessons learnt, from the project's experience with sustainable land management, within comparable trans-boundary mountain regions within Asia and elsewhere.

## 2.4 GEF Supported Alternative

63. Studies conducted during the PDF-B phase have shown that a variety of base-line social development and environmental management activities are being undertaken on a largely ad-hoc basis within the High Pamir and Pamir Alai Mountain region. The GEF supported alternative project will focus on addressing the gaps and constraints within the enabling legal, policy, and institutional environment at the regional, national and local government levels, through the development of an integrated trans-boundary strategic planning and regulatory framework. At the field level, within a representative selection of the region's sub district units (SDU)<sup>26</sup>, the project will address the interlinked problems of land degradation and poverty through promoting innovative sustainable land management practices in the context of area specific community-based participatory plans, for improved land use and ecosystem resource management. The GEF alternative scenario will also utilise the lessons learnt from the implementation of project activities to develop: (i) a generic guidelines framework for the design and implementation of sustainable land management activities in comparable trans-boundary mountain regions within Asia and elsewhere; and (ii) generic guidelines for the formulation of enabling legal and institutional frameworks for the protection and sustainable management of the ecosystem resources of similar high altitude mountain regions.

## 3. PROJECT ACTIVITIES/COMPONENTS AND EXPECTED RESULTS

64. The proposed project activities and tasks have been grouped into the following four broad project components:

**Component 1:** Improving the enabling legal, policy, institutional, and strategic planning, environment for sustainable land management.

**Component 2:** Capacity building for sustainable land management.

**Component 3:** Poverty alleviation through community-based sustainable land management.

**Component 4:** Evaluating the impact and lessons for replicating project experience.

**Component 5:** Project management.

### 3.1 Component 1 Improving the Enabling Legal, Policy, Institutional, And Strategic Planning, Environment For Sustainable Land Management

65. The proposed tasks and activities for Component 1 will focus on improving the enabling legal, policy, institutional, and strategic planning, environment for sustainable land management at the regional (trans-boundary), national and local government<sup>27</sup> levels within the High Pamir and Pamir Alai Mountain region.

#### *Sub-Component 1.1 Formulation of a Trans-boundary Strategy and Action Plan*

66. A team of national and international experts, under the overall guidance and supervision of the internationally recruited regional project manager/technical adviser (see component 5), will undertake the formulation of a trans-boundary sustainable land management strategy and action plan for the entire High Pamir and Pamir-Alai Mountains region. The formulation process will begin with a review of existing related central Asian, national and local environmental management, and economic development, strategies and action plans. The aim is being to build on, rather than duplicate, existing work. The team will also undertake a comprehensive review of the secondary data, including that gathered during the PDF-B phase, in order to determine what further gap filling studies and field surveys will need to be undertaken by the team.

67. As part of the formulation process a series of stakeholder consultation workshops will be held in both countries, to reach consensus agreement on the guiding principles, and core elements, of a trans-boundary strategy and action plan for restoring, sustaining, and enhancing, the productive capacity of the ecosystem resources of the entire High Pamir and Pamir-Alai Mountains region. In addition to consulting with representatives from the concerned technical and administrative central and local government institutions, consultations would be held with other stakeholders such as international donor/development agencies, international and domestic NGOs, private sector bodies, as well, as representatives of the rural communities directly involved in using the soil, water and vegetation resources of the region for crop and livestock production.

<sup>26</sup> Jamoats in Tajikistan and Aiyl Okmets in Kyrgyzstan, are the lowest level of local government and form distinct administrative, legal and political entities. Each of these sub district units contain between 2-6 settlements which while forming separate communities will usually have some common social ties based on ethnicity, geographic location and ecosystem resource use. Confusingly the term Jamoat is used in Kyrgyzstan to refer to a common interest group of households with potentially one or more Jamoats within an individual settlement. Hence the term sub district unit (SDU) will be used throughout the project brief to refer to the local level units with which the project will work.

<sup>27</sup> Specifically at the oblast, district and sub-district (Jamoats in Tajikistan and Aiyl Okmets in Kyrgyzstan) levels.

68. During the strategy formulation process the team will be expected to:

- update and refine the baseline data collected during the PDF B on the major ecosystems, and hydrological sub-basins of the High Pamir and Pamir-Alai Mountains region, to determine the location, nature, extent and severity of the existing degradation of the region's soil, water, vegetation and wildlife resources;
- estimate the current economic and financial losses, social welfare and poverty consequences, and the ecological impact (at the local, national, regional and global levels), associated with the present degradation of the forest, shrub, pasture, croplands, water and biodiversity resources and determine future alternative scenarios for different sustainable land management strategies within the region;
- identify those sustainable land management concerns which require, or would benefit from, a trans-boundary approach;
- review, and as appropriate propose amendments to, the policy and legislative environment governing sustainable land management and ecosystem protection within the region, and develop the basis of a suitable trans-boundary agreement<sup>28</sup>;
- review current protected area management arrangements within the High Pamir and Pamir Alai mountain region, and identify the options for improving these with particular reference to extending and linking the Tajik National Park, through trans-boundary management agreements, with comparable protected areas in the Trans Alai and Alai mountains of Kyrgyzstan;
- assess the current energy supply and demand situation within the region, determine the potential of different sub-regions and districts, for the generation of energy from renewable sources (hydro-power, solar, wind, biogas, fuelwood plantations etc), and identify technical and policy options for providing the rural and urban population of the region with affordable alternatives to the destructive harvesting of local biomass (eg. teresken and other shrubs);
- identify the potential for introducing new and innovative technologies (eg. fish ponds, intensive fodder production, bee keeping, medicinal herbs) within specific ecosystems, that would enable rural communities to increase the economic returns from improved management of their existing land and water resources;
- identify potential geo-hazards (land slides, rock falls, flash floods, avalanches, glacial lake outbursts etc) to which the inhabitants of the region might be exposed, and determine:(i) their location (within and outside the boundaries of individual SDUs); (ii) the nature of the hazard; (iii) the risk of occurrence; and (iv) the boundaries of high risk areas;
- assess, and recommend ways to improve, the capacity of the central and local government and NGO extension, research and development agencies to meet the needs of the region's rural communities for advice and support in the formulation and implementation of community-based sustainable land management plans;
- review and advise on improving the existing marketing infrastructure with a specific focus on identifying the likely future market opportunities for increased production and sale of those commodities for which the region has a comparative advantage;
- assess the commercial value of conserving the region's unique landscape and biodiversity resources, through identifying the potential of the different sub-regions and districts to develop environmentally sensitive tourism based enterprises;
- define the guiding principles and conceptual basis for the trans-boundary strategy and action plan; and
- formulate a trans-boundary strategic planning framework and action plan covering the required: (i) policies and strategic development priorities; (ii) legislation; (iii) institutional support services; (iv) energy generation options; (v) field level sustainable land management technologies; (vi) geo-hazard/natural disaster mitigation measures; (vii) linking and improving the management of protected areas; (viii) market opportunities; (ix) participatory development processes, approaches and methods; (x) equitable sharing of the costs and benefits; (xi) monitoring and evaluation indicators of success; (xii) funding (needs and source); (xiii) prioritisation of the SDUs, ecosystems and sub-basins with regard to the order in which their problems need to be addressed; (xiv) a specific SDU and ecosystem intervention schedule for GEF support over phases 1 and 2 of the project; and (xv) the additional project and programme support requirements, and how this might be scheduled, to cover the sustainable land management needs of the entire region.

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<sup>28</sup> This to be done in association with the legal task forces working on the component 1.2 activities and tasks.

69. The strategy formulation team will also need to reach agreement with the concerned authorities, in both countries, on a joint trans-boundary institutional mechanism for overseeing and regularly reviewing the implementation of the strategy and action plan.

70. Implementation of this set of component activities and tasks will be expected to result in the following component 1 outputs:

**Output 1.1:** *A trans-boundary sustainable land management strategy and action plan prepared for the entire High Pamir and Pamir-Alai Mountains region outlining: (i) a common set of principles, technical standards and management requirements for sustainable, profitable, and equitable use of the region's mountain ecosystem resources; and (ii) an intervention schedule detailing the order of priority for addressing the degradation problems on an ecosystem and SDU basis.*

### **Sub-Component 1.2 Development of an improved enabling legal and regulatory framework**

71. Inter-agency legal task forces will be established in both countries to: (i) review existing national laws and regulations against the requirements for sustainable land management and ecosystem protection within the High Pamirs and Pamir Alai Mountains; (ii) identify gaps, conflicts and overlaps in existing legislation; (iii) formulate an improved enabling legal and regulatory framework at the trans-boundary, national and local levels; and (iv) as required draft new laws, implementing rules, regulations and legislative guidelines for the trans-boundary, national and local levels. The key findings and recommendations from these activities will be incorporated into the legal and policy aspects of the trans-boundary strategy and action plan (component 1.1).

72. Each task force will comprise a core group of national experts seconded from a representative selection of the key stakeholder institutions. Each expert will be selected as a representative of his/her institution, as well as for their personal expertise and experience in one, or more, of the following disciplinary fields: (i) environmental law; (ii) environmental and economic development policy; (iii) institutional analysis; (iv) sustainable land management; and (v) mountain ecosystem management. It is anticipated that those who participated in the PDF-B legal, policy and institutional training workshop will form the initial core members of each task force. The two task forces will meet at regular intervals to review their respective national progress and to determine the trans-boundary issues and approaches requiring joint action and agreement.

73. The project will support the drafting of a set of methodological guidelines for use by the task forces as they undertake the review and formulation of the required enabling legal, policy and institutional frameworks. The task force members will receive further formal and on-the-job training as they undertake their tasks. Given the limited expertise in this critical area currently available in the region GEF funds will be used to recruit a short term international expert to take the lead in the preparation of the guidelines and the task force training. Subsequently the task force members will be expected to brief and where needed train key target groups, including legal officers, judicial officials, policy makers, government officials and individuals from relevant bodies, at the regional, national and local government levels.

74. Implementation of this set of component activities and tasks will be expected to result in the following component 1 output:

**Output 1.2:** *An improved enabling legal and regulatory framework in place for the sustainable and equitable management, and utilisation, of the ecosystem resources of the High Pamir and Pamir-Alai mountain region.*

### **Sub-Component 1.3 Mainstreaming of Sustainable Land Management Concepts and Principles**

75. The project will support a number of awareness raising/sensitisation activities aimed at increasing the knowledge and understanding of the concepts and principles of sustainable land management amongst central and local government planners, policy makers and other officials with administrative and technical responsibility for economic development, environmental preservation, and land use, within the High Pamir and Pamir-Alai Mountains. These activities will include: (i) the preparation of briefing materials and other multi-media materials on the concepts and principles of sustainable land management; (ii) half to one day consultations/briefing seminars for senior officials; (iii) 1-3 day training workshops for planners and other technical specialists; (iv) field visits/open days to inspect local examples of the problems and the implementation of promising solutions; (v) national and trans-boundary study tours to exchange ideas and experiences within the High Pamir and Pamir Alai Mountains region; and (vi) international study tours to see examples of sustainable land management in similar high mountain environments in other countries.

76. The project will also develop a set of guidelines on how to mainstream sustainable land management concepts and principles, and related technical standards, into regional, national and local environmental management, and economic development, plans and policies for the High Pamir and Pamir Alai Mountains. These guidelines will be promoted through a series of meetings and consultations with the concerned stakeholder institutions, during which their related plans and policies will be reviewed to determine whether they require modification to conform to the requirements for sustainable land management.

77. Implementation of this set of component activities and tasks will be expected to result in the following component 1 output:

**Output 1.3:** *Sustainable land management concepts and principles mainstreamed within the environmental management, and economic development, plans and policies of those institutions with administrative and technical responsibility for economic development, environmental preservation, and land use, within the High Pamir and Pamir-Alai Mountains.*

### **3.2 Component 2 Capacity Building For Sustainable Land Management.**

78. The proposed tasks and activities for Component 2 will focus on building the capacity of the public and private sector agencies to provide research, advisory and planning support services for sustainable land management activities within the High Pamir and Pamir Alai Mountain region.

#### ***Sub-Component 2.1 Building the Capacity of Public and Private Sector Advisory Support Service Providers***

79. The initial activity under this subcomponent will be the identification, and assessment, of the capacity (skilled manpower, facilities and other resources) of the public and private sector agencies that are currently, or could potentially, provide sustainable land management related participatory planning and advisory support services to farmers, herders, forest and wildlife resource users within the High Pamir and Pamir Alai Mountain region. This assessment exercise will be used as the basis for the development of a program of institutional capacity building activities tailored to the objectives and outcomes of the project. The project will provide financial and technical support for: (i) training workshops; (ii) on-the-job practical training; and (iii) study tours/exchange visits. Where required the project management office will assist individual agencies to identify other sources of funding (government and donor) to upgrade its physical capacity to provide the support service (eg. improved offices, training facilities, equipment, transport etc).

80. The project will also support the work of the service provider agencies through providing financial and technical assistance in the development of the required technical information, participatory planning guidelines, extension literature, and other multi-media materials, required for promoting sustainable land management practices in conformity with the bio-physical and socio-economic characteristics of the High Pamir and Pamir-Alai Mountains region.

81. Implementation of this set of component activities and tasks will be expected to result in the following component 2 output:

**Output 2.1:** *A core group of public and private sector agencies, in both Tajikistan and Kyrgyzstan, providing improved participatory planning, and advisory support services on sustainable land management practices, to farmers, herders forest, and wildlife resource users within the High Pamir and Pamir-Alai Mountains.*

#### ***Sub-Component 2.2 Building the Capacity for Adaptive Research on the Problems of Sustainable Land Management in High Mountain Regions***

82. While both countries have a number of government and academic research institutes, with mandates to investigate a range of crop, livestock, forestry, and soil management related problems, they are currently under resourced, having money to cover salaries but little to cover field research activities. There is currently little, or no, research being conducted into the location specific problems that mountain communities face when seeking to improve their crop and livestock production. What research work is being done is generally focused on addressing the problems of the high potential lowland agricultural areas, including the identification and introduction of new varieties of potatoes, wheat, and barley suited to the soils and climate of the lowlands. There has been no similar effort to find varieties suited to the higher altitudes and poorer soils found in the mountain regions of both countries. Hence currently the only new varieties available to farmers in the western Pamirs and Alai sub-regions are lowland ones which are poorly adapted to local growing conditions. For instance in the Kash Kasun sub-district of Osh Oblast, Kyrgyzstan, in only two of the last 15 years have the conditions been optimum for the growing of improved varieties sourced from the lowland Fergana valley. In this area farmers are growing crops at altitudes of over 2,500

metres, where frost is an ever present risk during the growing season. Non of these lowland varieties are frost resistant and this is a major reason why in most years crop yields are low, and on occasion may fail completely. Likewise little recent research and development work has been done to improve the quality of mountain livestock breeds, or to address the problems of improved mountain pasture management.

83. There is thus a need to build, amongst the existing research institutes, the capacity to work with mountain communities to investigate innovative crop, livestock and sustainable land management practices, better suited to their specific ecosystem conditions. To this end the project will make funds available for undertaking research aimed at the identification, refinement, validation, and adoption of innovative sustainable land management practices and technologies with the potential to improve and sustain the preservation/restoration of mountain ecosystem stability, functions and services while addressing the economic well-being and livelihood needs of the inhabitants of the High Pamir and Pamir Alai Mountains. Existing government and academic research institutes will be encouraged to bid for project provided research grants, to be used to undertake adaptive research, using participatory technology development methods, into locally identified land degradation and mountain ecosystem management problems. To get access to such grant funds, each institution will be required to prepare a research proposal that would address one or more problems identified through consultation with local technical experts and land user groups. The project management<sup>29</sup> will screen these proposals, and provide grant funding for a minimum of 10 adaptive research/participatory technology development projects (5 per country) involving: (i) participatory identification of local crop, livestock, forestry and/or ecosystem resource management problems, and solutions, for research investigation; (ii) participatory design, implementation, and review of researcher managed and ‘farmer’ managed trials; and (iii) dissemination of validated technologies.

84. Implementation of this set of component activities and tasks will be expected to result in the following component 2 output:

***Output 2.2:** An enhanced capacity amongst government and academic research institutes to work with mountain communities, leading to the validation and adoption of a number of innovative and sustainable agronomic, animal husbandry and mountain ecosystem resource management practices with the potential to address mountain specific ecological and economic concerns.*

### **3.3 Component 3 Poverty Alleviation Through Community-Based Sustainable Land Management.**

85. The proposed tasks and activities for Component 3 will focus on the development and implementation of innovative approaches to sustainable land management, involving community-based land use planning. Field level activities will be directed at assessing the degradation status of the ecosystem resources of individual sub-district units (SDUs)<sup>30</sup>, and then assisting each one to plan and implement a series of sustainable land management micro-projects with the potential to not only combat land degradation but also raise rural household incomes and alleviate poverty.

86. The project will provide direct technical and financial support to each SDU for a maximum period of three years. This will cover the participatory planning process in year 1 (component 3.1) and the implementation of some of the key micro-projects and other components of the plan in years 2&3 (component 3.2). Thereafter the communities will have been sufficiently empowered to enable them to seek further technical and financial support from other local, national and international level sources. After the three year active involvement period, continuing project support will primarily be in the form of technical advice, and if required acting as a facilitator to help link communities with other sources of support.

87. In the first year of project implementation participatory land use planning will be undertaken in the eight ‘pilot’ sites identified and studied during the PDF-B phase<sup>31</sup>. In the second year the project will begin scaling up activities by replicating the participatory land use planning and micro-project formulation process in a further eight SDUs. An additional eight SDUs will be added in each subsequent year, in line with the agreed prioritisation schedule set out in the regional trans-boundary strategy and action plan (component 1.1). In order to ensure that each participating SDU receives three years of project support the final set of land use planning exercises will be initiated in year six.

<sup>29</sup> Screening will initially be undertaken nationally by the members of the National Project Steering Committee prior to being sent to the International Project Steering Committee for final screening and authorisation.

<sup>30</sup> Jamoats in Tajikistan, Aiyl Okmets in Kyrgyzstan.

<sup>31</sup> Specifically: (i) in the Western Pamirs of Tajikistan – Shitkhav and Jelondi; (ii) in the Eastern Pamirs of Tajikistan – Alichur; (iii) in the Alai Mountains of Tajikistan – Yar-Mazar; and (iv) in the Alai Mountains of Kyrgyzstan – Lenin, Josholu, Kashka-Suu and Alaiku (see map 1 use map 2 in the CDE Synthesis Report)

### ***Sub-Component 3.1 Community-based ecosystem resource assessment and land use planning***

88. In the first year of working with individual sub-district units (SDUs) the project will assist them to undertake the assessment of the current status of the ecosystem resources (soils, water, vegetation, biodiversity etc) that fall within the entire geographic area of the SDU (including any remote pasture areas located in other parts of the region that the SDU has rights to use). The assessment will focus on raising the knowledge and understanding of the SDU's farmers, herders, forest and wildlife resource users as to the: (i) current status of their local ecosystem resources; (ii) the various degradation processes affecting those resources; and (iii) the site specific causes of the degradation of their ecosystem resources. This assessment will serve as the basis for the preparation of a SDU land use plan for the improved management of its local ecosystem resources.

89. Within an individual SDU the participatory planning process will involve a series of SDU and community level briefing meetings, participatory planning workshops, and discovery-based field learning exercises. Using a variety of Participatory Rural Assessment (PRA) tools a project trained facilitator will assist representative members of the SDU and its constituent communities to; (i) assess the ecosystem resources available and their current degradation status and dynamics; (ii) identify, prioritise and analyse their ecosystem resource management problems, needs and opportunities; (iii) develop possible solutions based on locally appropriate and innovative sustainable land management technologies; (iv) negotiate and formulate plans for putting these solutions into operation; and (v) reach agreement with other stakeholders<sup>32</sup> for the joint management of shared ecosystem resources that provide common ecological goods and services. While in each SDU an overall land use/ecosystem resource management plan will be prepared for the entire land area, the plan will be derived from the various participatory ecosystem resource assessment and land use planning exercises undertaken within each of the constituent communities/villages.

90. As needed, technical experts from the regional and national project management offices, as well as other experts from central and local government level support service providers will act as consultants to the SDU to advise on, and assist with, the design of technical solutions to local soil, water, vegetation and wildlife resource management problems. The community-based planning process will also seek to bring neighbouring communities together where there is a need for inter-community plans and agreements related to the improved and equitable management of key shared resources (particularly pastures, water and wildlife). As part of the SDU participatory planning process individual communities will be assisted to: (i) determine their annual energy needs and identify their options for meeting these through a combination of energy saving/conservation measures<sup>33</sup> and exploitation of local renewable energy sources<sup>34</sup>; (ii) identify options for adding value to agricultural products through the development of local processing and refining enterprises; and (iii) investigate the feasibility of alternative mountain ecosystem resource based livelihoods.

91. As part of this component activity the project will, where needed, provide training to civil society organisations within the SDU (existing or specially created) so as to equip them with the organisational and technical skills required to plan, implement and monitor field level sustainable land management activities. The project will initially identify and assess the capacity of existing community-based organizations (CBOs)<sup>35</sup>, and use this assessment to develop a capacity building program tailored to the specific needs of the SDU. Only where suitable CBOs do not already exist will the project assist in setting up and training new ones.

92. Training will be directed at improving the leadership, organisational, and project design, monitoring and management skills of the elected officials of individual SDUs and CBOs. With a specific emphasis on the skills and knowledge they require to formulate and implement community-based improved land use and ecosystem management plans. Training will also be provided to the general membership of the CBOs so that they can participate in assessing the status of their ecosystem resources and planning for their improved management. During the implementation of the plan further specialised training will be given as required, related to the adoption of innovative land management practices and/or new livelihood enterprises.

93. Implementation of this set of component activities and tasks will be expected to result in the following component 3 output:

***Output 3.1: A minimum of 48 SDUs with their own land use plan for the improved management of their local ecosystem resources on an estimated 1.6 million ha of land, and functioning***

<sup>32</sup> Such as neighbouring communities, jamoats/aiyl okmets, as well as different levels of local government concerned with the management of 'state' owned land resources.

<sup>33</sup> For instance use of fuel efficient stoves, reduction in heat losses through use of better insulation materials in houses, schools and other community buildings.

<sup>34</sup> Notably local electricity generation using small-scale hydro-power stations, windmills, solar panels, as well as solar cookers and heaters, biogas generation, and planting of fast growing fuelwood plantations.

<sup>35</sup> In particular the project will seek to build on, rather than duplicate, the civil society organisational capacity building work of other agencies, notably the MSDSP Village Organisation Programme.

### ***Sub-Component 3.2 Poverty Alleviation through Sustainable Land Management Interventions***

94. It is envisaged that by the end of the first year of the planning process (component 3.1) the final community based SDU land use/ecosystem resource management plan will have identified a number of sustainable land management activities that individual communities and/or households can implement themselves, using their own resources of land, labour and cash, with any external support being limited to the provision of information and technical guidance by the project management and/or other advisory support service providers. Such activities will be included as part of the SDU's component 3.2 activities for implementation in the second and third years of project support.

95. It is expected that in most cases the planning process will identify a need for a number of other community level interventions that the SDU cannot implement without external investment financial support. Therefore each SDU plan will include a portfolio of micro-project proposals for an agreed set of priority component activities that require external investment funding. One micro-project portfolio will be prepared per SDU, and will be required to show an equitable sharing of the costs and benefits of the proposed micro-projects amongst all of the SDU's constituent communities/villages. To be eligible for financial support from the project, each micro-project within the portfolio must be one whose need has been identified through the SDU community-based land use planning process. It will also have to be one whose implementation would be expected to make a positive contribution to reducing poverty while restoring, sustaining and enhancing the productive capacity, and protective functions, of the ecosystem resources of the High Pamir and Pamir Alai Mountains. While a balanced mix of short-, medium and long term oriented interventions will be pursued, due attention will be given to micro-projects aimed at arresting the degradation of land and other natural resources in the vicinity of settlement areas, where baseline studies indicate the problem is most severe and the need for interventions urgent.

96. Grants of up to 70% of the external investment requirements will be available for eligible micro-projects from two sources, namely: (i) from the GEF budget component; and (ii) the co-financing budget component. To be eligible for GEF grant a micro-project would have to offer potential global environmental benefits. While a micro-project that will lead primarily to improving people's livelihoods and economic well being, through sustainable management of their local ecosystem resources, will be eligible for a co-financing grant. However micro-projects with no direct environmental benefits, even if they have clear social benefits for the community (schools, health clinics etc) will not be eligible for project financial support<sup>36</sup>. The eligibility criteria and examples of eligible micro-projects are outlined in annex 5. Each community will be expected to share in the costs, either by raising a proportion of the funds required within the community, or by members of the community making in-kind contributions of labour and materials, equivalent to a minimum of 30% of the overall cost.

97. The project will develop a transparent process for the screening and approval of project grants for each micro-project. This will be modelled on the tried and tested approval process used by the GEF Small Grants Programme in Kyrgyzstan.

98. Implementation of this set of component activities and tasks will be expected to result in the following component 3 output:

***Output 3.2: A minimum of 48 SDUs addressing ecosystem degradation and rural poverty through implementing innovative field level sustainable land management practices, and related micro-projects.***

### ***Sub-Component 3.3 Commercialisation of the Mountain landscapes and biodiversity resources through the development of environmentally sensitive tourism***

99. The project will fund a study<sup>37</sup> into the constraints, opportunities and mechanisms for environmentally sensitive tourism within the High Pamir and Pamir Alai mountains. The study will seek to identify what there is within the region that would appeal to both domestic and international tourists, in particular the: (i) scenic landscapes and cultural traditions that would attract the general tourist; (ii) trails and mountain passes suitable for trekking tours; (iii) the wildlife and botanical resources that would attract specialist eco-tourists; and (iv) the game animals trophy hunters would pay to hunt. The study will seek to assess the extent to which these forms of tourism could be undertaken without having a negative impact on the region's ecology and culture, and how the benefits can

<sup>36</sup> However as appropriate the project will assist the proponents of such micro-projects to identify alternative sources of funding from government and/or donor sources.

<sup>37</sup> The starting point for the study will be the work already undertaken by ACTED, with UNESCO and SDC funding, related to the development of eco-tourism in the Murghab district of the Eastern Pamirs. The study will expand this work to look at the options for the rest of the High Pamir and Pamir Alai Mountain region, as well as looking at the wider policy and institutional constraints at the national and regional levels to the realisation of the commercial potential of the region's mountain ecosystem resources to support environmentally sensitive tourism.



be equitably shared between the different stakeholders<sup>38</sup>. A certain amount of trophy hunting is already undertaken within the region, however the impact this is having on the population dynamics of the target species (eg. the Marco Polo Sheep) is currently unknown<sup>39</sup> and will need to be determined before such an activity could be advocated as a sustainable use of this wildlife resource.

100. The study will consider the various factors that currently limit the scope for tourism development, such as: (i) lack of basic tourism infrastructure within the region (accommodation, transportation, tour companies, local guides etc); (ii) difficulties in obtaining visas and permits to enter the region; (iii) difficulties in booking flights to, and within, this part of Central Asia; and (iv) lack of all weather roads and trails that severely limit when it is possible to travel to many parts of the region. It will then set out a series of recommendations detailing what needs to be done to develop the region's potential for environmentally sensitive tourism. The project will then use the study's findings as the basis for encouraging private sector investment in: (i) the development of the required tourism infrastructure; (ii) restoring, sustaining, and enhancing, the natural landscapes and biodiversity resources on which such tourism will depend; and (iii) marketing the region as a tourist destination within and outside Central Asia.

101. Where ecologically suitable and commercially viable, the project will assist individual SDUs, as part of their community-based land use plan (component 3.1), to prepare a tourism 'master plan' for their area. The focus will be primarily on developing local community-based livelihood enterprises involving environmentally sensitive trekking, ecotourism (wildlife watching and botanical tours) and/or limited trophy hunting. Each master plan will not just focus on the physical infrastructure requirements, but will also outline where there is a need to restore areas of degraded habitats, detail plans for the recovery and improved management of critical habitats (and individual endangered species of fauna and flora), and cover the requirements for training local guides, and educating local communities in eco-tourism management. The emphasis will be on ensuring that the costs and benefits of protecting the environment, and restoring degraded habitats, are shared equitably within the concerned communities.

102. Implementation of this set of component activities and tasks will be expected to result in the following component 3 output:

**Output 3.3:** *The commercial value of conserving the unique landscape and biodiversity resources of the High Pamir and Pamir-Alai Mountains realised through development of the area's potential for environmentally sensitive tourism, with the costs and benefits shared equitably with the local communities.*

### **3.4 Component 4 Evaluating the Impact, and Determining the Lessons for Replicating Project Experience.**

103. Institutions in Tajikistan and Kyrgyzstan with the research and technical support and backstopping from the United Nations University as regional executing agency will use Component 4 to undertake research aimed at providing information, knowledge and tools that can be used to: (i) improve the quality and effectiveness of the project's activities; and (ii) provide guidelines for replicating project experience in comparable trans-boundary mountain regions within Asia and elsewhere. UNU is well-suited to provide the necessary scientific and technical support in this area as it has been involved in mountain-related issues over the past two decades since the launch of its project on "Highland-Lowland Interactive Systems" in 1978, later renamed "The Mountain Ecology and Sustainable Development Programme". The research contributions of the programme have in part driven the inclusion of Chapter 13 on Managing Fragile Ecosystems: Sustainable Mountain Development in Agenda 21, and the establishment of the International Mountain Society (IMS), currently based at the Center for Development and Environment (CDE), University of Berne. Drawing upon its research and network capacities, UNU has fostered the development of replicable models for the application of scientific knowledge for conservation and sustainable use of biodiversity in managed ecosystems in mountainous regions in developing countries in Asia and Africa through the GEF/UNEP project on People, Land Management and Environmental Change (PLEC). Most recently, UNU has joint its efforts with ICARDA and other partner institutions in developing integrated frameworks for land management in dry areas, including selected mountain ecosystems.

#### ***Sub-Component 4.1 Development of a conceptual vulnerability and impact assessment framework***

104. UNU-EHS will develop, and test, a conceptual framework for evaluating the impact of the project's approach to sustainable land management in the High Pamir and Pamir Alai mountain region. The vulnerability analysis framework, developed by UNU-EHS<sup>40</sup>, will be applied, and tested, to validate its suitability as a tool for assessing the vulnerability of rural mountain communities to land degradation, and determining the impact of

<sup>38</sup> In particular how can any benefits be shared with the local communities, and individual rural households, responsible for maintaining the ecosystem resources that would attract tourists to visit the region.

<sup>39</sup> However there is some anecdotal evidence, based on the observations of local residents, that the detrimental impact may be significant.

<sup>40</sup> Bogardi, J.J. and Birkman, J. 2004. *Vulnerability assessment: the first step towards sustainable risk reduction*. In Disasters and society – from hazard assessment to risk reduction (D. Malzahn and T. Plapp, eds) Logos Verlag Berlin, Berlin, pp 75-82.

improved ecosystem management in reducing vulnerability and improving economic well being. The conceptual framework will be used to explore the following key issues:

- the link between mountain ecosystem degradation and community vulnerability;
- the degree to which different mountain communities (and especially different social groups within those communities) are vulnerable to environmental degradation;
- the similarities and differences in the coping strategies used by different communities (and by different social groups within those communities) in the Western Pamirs, Eastern Pamirs and Alai sub-regions;
- the impact of these coping strategies on mountain ecosystem degradation processes; and
- the impact of improved ecosystem resource management on reducing rural household vulnerability, and improving economic well being.

105. As part of the conceptual framework development process, UNU-EHS will identify and field test a set of objectively verifiable environmental, and socio-economic, indicators that can be used to: (i) assess the vulnerability of mountain communities to land degradation; and (ii) measure the impact of changes in ecosystem resource management on the local environment and socio-economic well being of different social groups within individual communities.

106. An initial set of vulnerability assessment studies will be undertaken at project inception to provide baseline data. The results of follow up studies, undertaken midway, and towards the end of the project, will be compared with the baseline to determine the extent to which the project's sustainable land management interventions have changed the vulnerability of the project beneficiaries to mountain ecosystem degradation.

107. Implementation of this set of component activities and tasks will be expected to result in the following component 4 output:

***Output 4.1:** A validated conceptual framework being used to evaluate the impact of sustainable land management on reducing the vulnerability of rural livelihoods to land degradation, improving economic well being, and restoring the protective and productive functions of the High Pamir and Pamir-Alai Mountain ecosystems.*

#### **Sub-Component 4.2 In-depth Case Studies**

108. A minimum of three of the participating SDUs (one per sub-region) will be selected for special in-depth case studies with the aim of:

- determining the pre-project causes and (ecological and socio-economic) consequences of ecosystem resource degradation within the SDU, and the impact of such degradation on the livelihoods and economic well being of the different social groups within the SDUs rural communities;
- assessing the participation of the different social groups in the SDU ecosystem resource assessment and land use planning process, to determine whether the opinions and concerns of all such groups were taken into consideration in the preparation and implementation of the final SDU land use plan and micro-project portfolio;
- determining whether the costs and benefits of implementing the SDU land use plan, and micro-project portfolio, have been shared equitably between the different social groups;
- assessing the impact of the project supported sustainable land management interventions with regard to the extent to which they contributed to a reduction in poverty and ecosystem degradation within the SDU;
- determining the reasons why particular social groups may have adopted, and/or benefited from, particular sustainable land management interventions, while others failed to adopt them and/or did not get the expected benefits;
- evaluating project experience, within representative SDUs, so as to identify generic lessons for improved implementation of sustainable land management in the High Pamir and Pamir Alai Mountain region, or elsewhere in similar trans-boundary high altitude mountain regions.

109. International and local academic institutions will be invited to submit proposals for conducting such in-depth case studies. These will be reviewed by the International Project Steering Committee to ascertain the extent to

which the proposal meets the GEF requirements. A prerequisite for approval is that the institution should have secured its own co-financing to support its field investigations. The role of the GEF project will be to facilitate, but not fund, the work and to disseminate the key findings.

110. Implementation of this set of component activities and tasks will be expected to result in the following component 4 output:

**Output 4.2:** *A set of generic lessons learnt for the improved implementation of sustainable land management interventions in Central Asian trans-boundary high altitude mountain regions.*

**Sub-Component 4.3 Development of generic guidelines for the design and implementation of sustainable land management in trans-boundary mountain regions**

111. In the fourth year of project implementation the project management will undertake the: (i) identification and review of project impact (environmental and socio-economic); and (ii) evaluation of the efficiency and effectiveness of project design and implementation. This will then be used to develop a generic guidelines framework for: (i) scaling-up sustainable land management activities within the High Pamir and Pamir-Alai region; and (ii) replicating project interventions in comparable trans-boundary mountain regions within Asia and elsewhere.

112. On the completion of the work of the legal task forces (component 1.2) a review of the process used to formulate the enabling legal and institutional framework for the protection and sustainable management of the ecosystem resources of the High Pamir and Pamir Alai mountain region will also be undertaken. This review will be used to refine the methodology, and prepare a set of generic guidelines for the formulation of enabling legal and institutional frameworks for the protection and sustainable management of the ecosystem resources of high altitude mountain regions.

113. Once drafted both sets of guidelines will be presented for review and dissemination at an international workshop/expert consultation to be convened at a suitable location within the region.

114. Implementation of this set of component activities and tasks will be expected to result in the following component 4 output:

**Output 4.3:** *Experience gained from project implementation used to develop generic guidelines that can be used for the design and implementation of sustainable land management interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions within Asia and elsewhere.*

**Sub-Component 4.4 Recommendations for Up-scaling and Replication**

115. The outputs from components 4.1-4.3 will serve as the basis for the project to develop a set of recommendations for: (i) up-scaling activities to cover the rest of the High Pamir and Pamir Alai Mountain region; and (ii) replicating the project approach in comparable trans-boundary mountain regions within Asia and elsewhere. It is also anticipated that the lessons learnt from project implementation will contribute to the further development and refinement of GEF strategic priorities for sustainable management of mountain ecosystem resources.

116. Implementation of this set of component activities and tasks will be expected to result in the following component 4 output:

**Output 4.4:** *Experience gained from project implementation used to develop recommendations for up-scaling and replication of the project's approach within Central Asian trans-boundary high altitude mountain regions.*

**3.5 Component 5 Project Management and Monitoring and Evaluation**

117. The proposed tasks and activities for Component 5 will focus on creating an effective management structure for implementation and monitoring of the trans-boundary and sub-regional component activities.

**Sub-Component 5.1 Implementation Arrangements for Trans-boundary Project Management**

118. Capacity will be developed at the national and regional levels to support the implementation of the project's trans-boundary and sub-regional component activities. Logistic and technical support will be provided for the establishment and operation of:

- (i) a Tajik national project management office<sup>41</sup> – with lead responsibility for the implementation of field level sustainable land management activities within the Western Pamirs, Eastern Pamirs and Tajik portion of the Alai mountain sub-regions.
- (ii) a Kyrgyz national project management office<sup>42</sup> – with lead responsibility for the implementation of field level sustainable land management activities within the Kyrgyz portion of the Alai mountain sub-region.

119. A Regional Project Officer (RPO) will be based in the region<sup>43</sup> to facilitate and oversee the implementation of project activities, particularly trans-boundary ones. A regional expert advisory group (REAG) will be set up to support project implementation by acting in an advisory, facilitatory, and advocacy, capacity for those activities that require cooperation and collaboration between the two countries. At the international level overall project supervision and direction will be provided by an International Project Policy Steering Committee (IPPSC), with counterpart National Project Steering Committees overseeing the implementation of country specific project activities. (For further details see section 5.3 and annex 6.)

120. Implementation of this set of component activities and tasks will be expected to result in the following component 5 output:

***Output 5.1: An operational international, regional and national management structure for the effective implementation of the project's trans-boundary and sub-regional component activities.***

***Sub-Component 5.2 Development of a management decision support/monitoring and evaluation system for the High Pamir and Pamir Alai Mountain region***

121. The project will build on the GIS database developed during the PDF-B phase to develop an operational management decision support/monitoring and evaluation system for use by the RPO and both NPMOs to guide the implementation, and as needed revision, of the project's trans-boundary and sub-regional component activities. The project will support the development of:

- a computerized multi-objectives decision support system that can be used to guide technical, economic, policy, legal and institutional decisions related to sustainable land management at the trans-boundary and local levels within the High Pamir and Pamir-Alai Mountains.
- a harmonised M&E system with verifiable indicators for assessing changes in land degradation status and socio-economic well being within the region.
- a harmonised M&E system for assessing the impact of changes in the legal, regulatory, policy and institutional environment for sustainable land management at the regional and local level within the High Pamir and Pamir-Alai Mountains.

122. The necessary training and equipment will be provided by the project to enable both NPMOs to install, and operate the PDF-B developed GIS database. Each NPMO will use its GIS database to store base-line data for its portion of the High Pamir and Pamir Alai mountain region. As further data becomes available (particularly from components 3 and 4) this will be entered into the database and compared with the baseline as a means of measuring changes and assessing the environmental and socio-economic impact of the project supported interventions.

123. Implementation of this set of component activities and tasks will be expected to result in the following component 5 output:

***Output 5.2: An operational management decision support/monitoring and evaluation system providing those responsible for promoting sustainable land management within the High Pamir and Pamir-Alai Mountains with a means of storing base line information, and comparing it with subsequently recorded data to measure changes over time.***

<sup>41</sup> To be located in Khorog capital of Gorno Badakshan Autonomous Oblast and housed within the newly opened Khorog office of the Tajik National Park.

<sup>42</sup> To be located in Osh the administrative centre for Southern Kyrgyzstan. The host institution for the office to be identified once the current process of government reorganisation has been completed.

<sup>43</sup> To be based in the capital of Tajikistan (Dushanbe) or Kyrgyzstan (Bishkek) to facilitate access to senior policy makers and central government agencies. A decision on which capital city should host the RPO to be taken by the IPPSC, in consultation with both National Co-ordinators. The RPO to be housed within, and receive administrative and logistical support from the National Executing Agency of the host country.

## 4. RISKS, SUSTAINABILITY AND REPLICABILITY

### 4.1 Risks

124. The project has been designed on the assumption that there is a strong commitment in both Kyrgyzstan and Tajikistan to tackle degradation within the High Pamir and Pamir Alai Mountain region through community-based approaches that address local cultural, socio-economic and ecological concerns. It is also assumed that both governments are willing to create the enabling technical, institutional, legal and policy environment required for sustainable mountain ecosystem management. This is because the High Pamirs and Pamir Alai Mountains have been identified by both countries, in their national state-of-the-environment assessments, as areas of highest importance. Furthermore a firm request has been made by both countries for GEF support for a trans-boundary land management project for the region<sup>44</sup>. Because of this it is believed that both states are willing to enter into agreements to develop trans-boundary strategies and action plans, policies, regulatory frameworks and legal instruments for sustainable land management within, the High Pamir and Pamir-Alai Mountain region.

125. It is believed that there is a causal link between poverty and land degradation, and that it is possible to combat ecosystem degradation through the adoption of sustainable land management practices that will offer higher returns to the households that adopt them than their current ones. Because the project's community-based field level activities are directed at improving peoples' livelihoods and economic well-being, while simultaneously mitigating the causes and reducing the negative impacts of ecosystem degradation, there should be minimal risk that the selected rural communities will be unwilling to cooperate with the GEF project due to the tangible social and economic benefits they can expect to get from their participation.

126. The nature of the geology, topography and climate within the High Pamir and Pamir Alai mountains means that the communities the project will be working with are exposed to a variety of natural hazards ('acts of God') in particular:

- ! **geological hazards:** eg. earthquakes, glacial lake outbursts, landslides, mud and debris flows;
- ! **topographic hazards:** eg. flooding in valley floors following rapid melting of winter snows or heavy summer rainfall, avalanches in winter;
- ! **climatic hazards:** eg. drought, heavy snowstorms blocking access to communities unusually early or late in the season, strong winds and tornados.

127. Such natural hazards are an ever present threat and should they occur during the life of the project could result in delays to, and/or cancellation of, some community-based field level project activities. Regrettably there are no realistic short-term mitigative measures that the project can take to minimise the risks of such natural disasters, however in the long term improved ecosystem management, particularly the restoration of protective vegetative cover on vulnerable hillsides should help reduce the severity, if not the occurrence, of many of these.

### 4.2 Sustainability

#### *Institutional Sustainability*

128. The project will be working with existing institutions, at both the national and local government levels, all of which will continue to exist post project. The project's institutional capacity building activities (component 2.1) are designed to ensure that personnel in both private and public sector institutions at the national and local levels will have the skills required to enable them to continue supporting project initiated activities post project. The project will assist in the development of a trans-boundary institutional, policy and regulatory coordination mechanism for combating ecosystem degradation and promoting sustainable land management within the High Pamir and Pamir Alai Mountain region. This need will continue to be there post project, and it is anticipated that the two counties will want the necessary inter-agency coordination to continue. The modality of post-project continuity of the established coordination mechanisms at the national and regional level will be given due attention in the mid-term review when the interests and capabilities of the stakeholder institutions could be properly assessed.

#### *Financial Sustainability*

129. Financial sustainability of the project will be ensured through mainstreaming the concepts and principles of sustainable land management into the environmental management, and economic development, plans and policies of those institutions with administrative and technical responsibility for economic development, environmental preservation, and land use, within the High Pamir and Pamir-Alai Mountains. It is also anticipated that once the

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<sup>44</sup> Signed by the Minister of Environment and Nature Protection of the Republic of Tajikistan in April 2001, and the Minister of Ecology and Emergency Situations of the Republic of Kyrgyzstan, in May 2001, and re-endorsed by both in August 2003.

national and local government authorities, in both countries, see that combating ecosystem resource degradation through sustainable land management offers not only environmental benefits, but also clear economic ones, they will be prepared to allocate more of their revenue budgets to sustaining such activities. Likewise the donor community can be expected to provide additional financial support for the community-based integrated land use planning, and ecosystem resource management approach of the GEF supported improvement, when they see this as reducing the region's need for short term food aid and other social welfare support programs. Arrangements for addressing specific needs for post-project financing e.g. of the established regional coordination mechanisms, and up-scaling of project activities, will be incorporated in the regional development strategy.

### **4.3 Replicability**

130. One of the principal justifications for GEF support for this project is that the lessons learnt from implementation of the component tasks and activities will be replicable in similar high altitude mountain regions in Central Asia and elsewhere. In particular, under component 4, experience gained from project implementation will be used to develop:

- (i) a generic guidelines framework for the design and implementation of sustainable land management activities in comparable trans-boundary mountain regions within Asia and elsewhere.
- (ii) generic guidelines for the formulation of enabling legal and institutional frameworks for the protection and sustainable management of the ecosystem resources of high altitude mountain regions.

The concrete possibilities for replication of the project's experience in other trans-boundary mountain ranges in Asia, such as the Tien Shan, Altay Shan, Hindu Kush, Karakorum and Himalaya, will be explored in the course of the project in close collaboration with relevant regional networks, such as the ICIMOD coordinated PARDYP Network (including institutions from India, Pakistan, Nepal, Myanmar, Bhutan and China), as well as in the broader framework of the UNU Global Mountain Partnership Programme.

## **5. STAKEHOLDER PARTICIPATION AND IMPLEMENTATION ARRANGEMENTS<sup>45</sup>**

### **5.1 Institutional Stakeholder Consultation**

131. Two regional and two national stakeholder consultation meetings<sup>46</sup> were held during the PDF-B phase to identify and agree on the component tasks and activities for the full project brief. These meetings were attended by representatives of many of the key national level stakeholder institutions, as well as local government officials representing the concerned oblasts and jamoats/aiyl okmets. In addition a core group of legal experts and policy officials, from both countries, participated in a regional training workshop<sup>47</sup> which looked at the activities required to deal with the legal, policy and institutional aspects of a trans-boundary approach to sustainable land management within the High Pamir and Pamir Alai Mountains. During project implementation a series of institutional stakeholder consultations will be undertaken within the High Pamir and Pamir-Alai mountain region, as part of the process of developing an improved enabling legal and regulatory framework, and formulating a trans-boundary strategy and action plan, for sustainable land use and ecosystem management for the entire region

### **5.2 Community Level Stakeholder Consultation and Participation**

132. During the PDF-B phase 11 village development studies were undertaken, using a range of RRA and PRA techniques, to identify the local constraints and opportunities for sustainable land management within a sample of the region's jamoats/aiyl okmets. The findings from these studies have provided the baseline information for the development of the project's field level activities in particular the component 3.1 tasks and activities.

133. Community level stakeholder involvement will be critical to the development of the jamoat/aiyl okmet land use plans, and formulation and appraisal of the micro-project proposals, for improved ecosystem management. During these activities the project trained facilitators will use a range of participatory tools for directly involving the direct stakeholders (the land users - farmers, herders, forest and wildlife resource users) in: (i) assessing the ecosystem resources available to them, and their current degradation status; (ii) identifying, prioritising and analysing their ecosystem resource management problems; (iii) developing possible solutions based on locally appropriate and innovative sustainable land management technologies; and (iv) formulating plans for putting these

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<sup>45</sup> See annex 6 for detailed information about the different institutional and community stakeholders from each country involved in the PDF B and for the planned involvement of different stakeholder groups in the full project. See annex 7 for detailed terms of reference for the proposed steering committees, expert panel and project management personnel

<sup>46</sup> The first regional meeting was held 28-30 June 2004 in Osh Kyrgyzstan, and the second 13-15 June 2005 in Dushanbe Tajikistan. The national meetings were held in December 2004 and January 2005 in Bishkek, Kyrgyzstan and Dushanbe, Tajikistan respectively.

<sup>47</sup> Held in Bishkek Kyrgyzstan 14-21 April 2005.

solutions into operation. When it comes to the implementation of individual micro-projects participation of the direct beneficiary stakeholders will include a direct contribution to the overall costs, either in the form of cash or in-kind contributions equivalent to a minimum of 30% of the overall investment requirements.

### 5.3 Project Organisation and Management Arrangements

134. UNEP as the GEF Implementing Agency will have overall responsibility for overseeing project implementation. UNU as the regional executing agency will be responsible for supervising the execution of the project's component activities in the region. UNU will establish an International Project Steering Committee made up of: (i) representatives and senior advisers from UNEP, UNU and the principal co-financing donor agencies; and (ii) a small group of independent internationally renowned natural and social scientists with experience of sustainable land management in high altitude mountain regions (see fig.1 Project Implementation Structure and annex 6). The IPPSC's primary role will be to monitor and review project progress and financial expenditure on behalf of GEF and the co-financing agencies. At the national level each country will appoint a National Project Head (NPH), and establish a National Project Steering Committee (NPSC), to take overall responsibility for, and be accountable to, UNEP, UNU and GEF for the execution of project activities within that part of the project area that falls within the country.

135. In the absence of an existing regional body with the mandate to coordinate transboundary mountain development, UNU will appoint a regional project to be based in the region. The principal role of the RPO will be to oversee the execution of the local, national and regional (trans-boundary) component activities and facilitate the overall day to day management of the project. The RPO will provide technical, administrative and moral backstopping to the National Project Officer and support the formulation of the regional strategy and action plan (component 1.1) and the implementation of other trans-boundary project activities. Towards the end of phase I the need for continuing (full or part time) support from an international based in the region will be reviewed.

136. National project management offices (NPMO) will be created in both countries<sup>48</sup> to implement country specific activities. Each NPMO will be headed by a full time national project officer (NPO) and will have a core group of technical and administrative support staff. The NPH will identify and appoint the NPO, subject to endorsement by UNEP and UNU. The NPO will take the lead in identifying the appropriate personnel to be seconded and/or recruited to work in the NPMO and advise the NPH accordingly.

### 5.4 Intervention Strategy and Phasing

137. The expected duration of the project is eight years, with two phases of four years each. Phase 1 primarily focuses on:

- creating an improved enabling strategic planning framework, and legal, policy and institutional environment, for sustainable land management at the regional (trans-boundary) level (component 1);
- building the capacity of the public and private sector agencies to provide research, advisory and planning support services for sustainable land management activities within the High Pamir and Pamir Alai Mountain region (component 2);
- piloting community-based ecosystem resource status assessment and land use/ecosystem management planning within selected sub-district units (component 3); and
- initiating research for evaluating the impact of sustainable land management within high altitude trans-boundary mountain regions (component 4).

138. The focus for Phase 2 will primarily be on up-scaling component 3 activities in order to promote sustainable land management over a larger geographic area of the High Pamir and Pamir Alai mountain region. The component 4 research will continue with the aim of using the lessons learnt from the implementation of Phase 1 to develop generic technical, policy and legal guidelines for replicating the sustainable land management approach in comparable trans-boundary mountain regions of Asia and elsewhere.

139. In the last year of Phase 1 an external evaluation will be undertaken by UNEP in collaboration with UNU and the two NPSCs to assess the effectiveness of the project's trans-boundary and in-country interventions. This evaluation will determine whether any amendments may be needed to particular component activities. The evaluation will be submitted to the GEF Council together with the request of financing for Phase 2. Detailed outline of the implementation of individual project sub-components and activities by output and Phase is given in Table 3 below.

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<sup>48</sup> The national PMO for Kyrgyzstan will be located in Osh, while that for Tajikistan will be located in Khorog.

**Table 3. Implementation of project activities by Phase and outputs**

Sub-Components and Activities	Phase I (4 years)				Phase II (4 years)			
	1	2	3	4	5	6	7	8
<b>1.1. Transboundary SLM Strategy and Action Plan</b>								
1.1.1. Review of relevant documents and gap filling studies & surveys								
1.1.2. Stakeholder consultations and agreement on transboundary SLM Strategy and Action Plan								
1.1.3. Government Approval of the Transboundary Agreement and Establishment of a Joint Transboundary Institutional Mechanism								
<b>1.2. Improved national level regulatory frameworks for SLM</b>								
1.2.1. Review of relevant documents and gap filling studies & surveys								
1.2.2. Stakeholder consultations and formulation of improved regulatory frameworks								
1.2.3. Government approval of new/improved laws and regulations								
<b>1.3. Mainstreaming SLM in key land use planning government institutions and development strategies</b>								
1.3.1. Raise awareness of SLM among government officials								
1.3.2. Develop guidelines for mainstreaming SLM in relevant institut.								
1.3.3. Mainstream SLM in key resource use/land use planning institutions and strategic documents								
<b>2.1. Enhanced Capacities for SLM Advisory/Support Services</b>								
2.1.1. Identification & capacity assessment of Advisory Support Service Providers								
2.1.2. Capacity building of SLM Advisory/Support Service Providers								
2.1.3. Continued technical support of SLM Advisory/Support Service Providers								
<b>2.2. Enhanced Adaptive Research Capacities of Local Institutions</b>								
2.2.1. Adaptive Research Conceptual and Methodological Trainings								
2.2.2. Targeted Adaptive Research Grants Competition								
2.2.3. Implementation of Selected Adaptive Research Proposals								
<b>3.1. Community-based land use planning</b>								
3.1.1. Participatory community-based land use/ecosystem assessments								
3.1.2. Development of local land use/ecosystem management plans								
3.1.3. Capacity development for land use planning & implementation								
<b>3.2. Micro-project development and implementation</b>								
3.2.1. Preparation of SDU portfolio of micro-projects								
3.2.2. Screening of micro-project proposals								
3.2.3. Funding of micro-projects and implementation								
<b>3.3. Development of environmentally sensitive tourism</b>								
3.3.1. Assessment of constraints and opportunities for environmentally sensitive tourism development								
3.3.2. Development of tourism development master plans								
3.3.3. Development of tourism infrastructure and marketing								
<b>4.1. Vulnerability to LD conceptual framework development &amp; validation</b>								
4.1.1. Formulation of conceptual framework								
4.1.2. Baseline Vulnerability Assessment								
4.1.3. Mid-term and Final Vulnerability Assessments								
<b>4.2. Generic lessons drawn from case studies in the project area</b>								
4.2.1. Invitation for and submission of case study proposals								
4.2.2. Screening and commissioning of case studies								
4.2.3. Identification of generic lesson through the commissioned case studies								
<b>4.3. Development of generic guidelines from project's experience</b>								
4.3.1. Evaluation of project impacts, design and performance								
4.3.2. Review and refinement of the legal and institutional framework improvement process								
4.3.3. Preparation of generic guidelines for replication of the project's experience in other transboundary mountains areas								
<b>4.4. Development of recommendations for up-scaling &amp;replication</b>								
4.4.1. Review outputs of 4.1-4.3. to determine scope for up-scaling								
4.4.2. Develop recommendations for up-scaling and replication								
4.4.3. Determine generic lessons for GEF OP#15 strategic priorities								
<b>5.1. Establishment of project management structure</b>								
5.1.1. National project management								



5.1.2. Regional project management								
<b>5.2. Establishment of M&amp;E System</b>								
5.2.1. Development of M&E system and baseline								
5.2.2. Follow-up M&E and reporting								

## 6. INCREMENTAL COSTS AND PROJECT FINANCING

### 6.1 Incremental Costs

140. The incremental cost of the project for activities that are expected to provide global environmental benefits (GEF funding) is estimated at US\$ 3 million for Phase I and another \$3 million for Phase II. Leveraged co-financing from non-GEF resources associated with the GEF alternative project is estimated at US\$ 6,697,380 for Phase I and another \$5,840,700 for Phase II. The estimated total project cost for Phases I&II, including US\$ 650,000 during the PDF-B stage, amounts to US\$ 19,188,080 (see the incremental cost matrix in annex 2). The co-financing will primarily come from the countries involved, UNU, AKF, Japanese Universities, CDE/NCCR North-South, IAEA, ICARDA and other partners.

### 6.2 Component Financing

141. The breakdown for the GEF and co-financing project budget by component and Phase is as follows:

	GEF		Co-financing		Total
	Phase I	Phase II	Phase I	Phase II	Phases I+II
Component 1	\$650,000	\$100,000	\$978,360	\$600,000	\$2,328,360
Component 2	\$600,000	\$150,000	\$727,880	\$750,000	\$2,227,880
Component 3	\$1,000,000	\$2,000,000	\$1,378,080	\$2,000,000	\$6,378,080
Component 4	\$150,000	\$350,000	\$2,286,900	\$1,540,700	\$4,327,600
Component 5	\$600,000	\$400,000	\$1,326,160	\$950,000	\$3,276,160
<b>Total</b>	<b>\$3,000,000</b>	<b>\$3,000,000</b>	<b>\$6,697,380</b>	<b>\$5,840,700</b>	<b>\$18,538,080</b>

### 6.3 Co-financing Plan

142. The breakdown for the co-financing of the GEF alternative project budget by funding source is as follows:

Co-financing source	Category	Form	Amount (US\$)	
			Phase I	Phase II
Tajik National Park	National Government	Cash	600,000	400,000
Kyrgyz National Center for Mountain Regions Development	National Government	In-kind	400,000	400,000
Osh University	National University	In-kind	75,000	100,000
Tajik Agricultural Academy	National University	In-kind	50,000	50,000
UNU (ESD, P&G, EHS)	UN Agency	Cash	200,000	200,000
		In-kind	1,659,300	1,340,700
IAEA	UN Agency	Cash	270,000	200,000
		In-kind	30,000	
ICARDA	UN Agency	In-kind	280,000	300,000
UNESCO	UN Agency	Cash	20,000	
		In-kind	50,000	50,000
AKF/MSDSP	International NGO	Cash	1,640,000	1,550,000
The Mountain Institute	International NGO	In-kind	85,000	50,000
Hokkaido Univ./Japan	International University	Cash	70,000	450,000
		In-kind	330,000	
Nihon University	International University	Cash	44,400	50,000

		In-kind	75,600	
CDE, University of Bern	International University	In-kind	100,000	100,000
University of New England	International University	Cash	232,000	150,000
		In-kind	18,000	
CAIAG	Research Institute	In-kind	418,080	400,000
IDG, Russian Academy of Sciences	Research Institute	In-kind	50,000	50,000
<b>TOTAL</b>			<b>6,697,380</b>	<b>5,840,700</b>

#### 6.4. Cost Effectiveness

143. The estimated project baseline comes up to US\$146,500,000. It is substantial because of the considerable multi-lateral, bilateral and NGO support for development-oriented activities in the High Pamir and Pamir-Alai Mountains. On-going development interventions in the region are designed to address a number of critical problems in the project area, whose resolution could improve the livelihoods of local people and reduce anthropogenic pressures on the natural environment. The benefits of economic development, however, could contribute to the improvement of the current state of the environment in the region, only if natural resources and the causes and costs of their degradation are recognized and factored in economic development planning and interventions. GEF funding in the framework of the proposed transboundary project in the High Pamir and Pamir-Alai Mountains is designed to add the incremental inputs necessary for mainstreaming sustainable land and natural resources management in on-going development plans and projects at the community, national and transboundary levels through targeted technical and institutional capacity development and demonstration activities. To ensure the costs effectiveness of GEF funding, existing structures such as village organizations already strengthened to allow for community-based planning and micro-project implementation in the framework of other projects, as well as public and private sector advisory and support agencies with relevant mandates and responsibilities will be employed in the implementation of project activities. Furthermore, best SLM practices and lessons identified in past and on-going related initiatives at the transboundary, as well as the national and community levels, have and will continue to be integrated in the course of project implementation. Regular communication and coordination with donor agencies working in the project area will also be established to ensure that there are no overlaps of activities and to take advantage of possible beneficial synergies. Relevant GEF-funded initiatives and possible linkages with them have already been identified (see Section 8 on Regional Coordination and Collaboration for more details).

### 7. MONITORING, EVALUATION AND DISSEMINATION<sup>49</sup>

#### 7.1 Monitoring and Evaluation

143. The project will be *monitored* in accordance with the UNEP monitoring and evaluation requirements to ensure that all activities outlined above are met in accordance with the project implementation plan. Monitoring of progress will require half-yearly, annual, mid-term and final reports on substantive and financial matters. Monitoring will also entail a peer review process supervised by UNEP to ensure quality control in the produced documents.

144. The regular project reports will consider a need for adjustments in substantial, financial and implementation planning and timetable. The progress and any necessary adjustments to the work plan and timetable due to unforeseen contingencies will be reported to UNEP Division of GEF Coordination.

145. The project financial reports will be submitted to UNEP/GEF in the form of half-yearly, annual, mid-term and final expenditure reports, showing amount budgeted for the year, amount expended since the beginning of the year and unliquidated obligations. The financial reports on separate activities will be prepared within 30 days of the end of the reported activity. The project managers will prepare financial reports in the following formats: (i) books of account and records; (ii) vouchers and adequate documentation to support all project expenditures, and (iii) justification that the expenditures are incurred in accordance with the objectives and budget items outlined in the project document.

146. The final financial report will be submitted together with the final substantial report to UNEP/GEF no later than 90 days of the project completion. Any portion of cash advances remaining unspent or uncommitted by UNU

<sup>49</sup> See annex 6 for more details on stakeholder involvement and dissemination and annex 8 for monitoring and evaluation.

on the project completion will be reimbursed to UNEP/GEF within 30 days of the presentation of the final financial report.

147. Achievement of outcomes and outputs will be monitored against the indicators in the project logframe (Annex 1). In addition, a full M&E system will be developed during the first year of phase I activities (component 4.1) utilising the base line data collected, and GIS developed, during the PDF-B stage. The M&E system will cover: (i) project activity and financial expenditure; (ii) impact on organisational capacity building; (iii) environmental impact; (iv) beneficiary impact; and (v) participatory monitoring and impact assessment at the community level.

148. The *evaluation* will look in-depth into the achieved impact as well as process. A final evaluation will be undertaken by UNEP as a GEF implementing agency in accordance with internal agency procedures. Information will be gathered from primary and secondary sources and from the field. It will be concentrated at achievements of the project against the stated objectives, the cost effectiveness, the delivery of outputs and impact.

149. The methodology used for the final evaluation will follow an interactive participatory approach, utilising different primary information collection tools, such as: (i) interviews with interested parties and key informants; (ii) interviews with collaborating agencies, and/or partner agencies; (iii) interviews with main beneficiaries in the region, (iv) participation in the project activities and (v) visits to the project sites, where appropriate. The evaluation will consider all secondary sources of information, including project documents, revisions, financial reports, meeting reports, etc. to provide the necessary background.

150. A draft evaluation report will be shared with all interested parties to allow for comments and agreement on the evaluation results. Lessons from each evaluation will be compiled and circulated to both UNEP/GEF, donor – partners and main beneficiaries. Costs for overall project evaluation amount to US\$330,000 in the project budget of which GEF is expected to contribute US\$125,000.

## 7.2 Dissemination

151. Components 4.2 and 4.3 have been designed as the principal means for the project to document and disseminate the lessons learnt from implementation of its various component activities. The project will draw on these lessons to draft: (i) a ‘model’ guidelines framework for the design and implementation of sustainable land management activities in comparable trans-boundary mountain regions within Asia and elsewhere; and (ii) generic guidelines for the formulation of enabling legal and institutional frameworks for the protection and sustainable management of the ecosystem resources of high altitude mountain regions. The project will convene two international level workshops/expert consultations at which these documents, along with other findings on lessons learnt, will be presented for peer review and dissemination. The findings and conclusions from the workshop discussions will be incorporated into the final guideline documents which will be made internationally available for reading and downloading (in English and Russian) by being placed on the UNEP, UNU and GEF websites. Hard copies will be made available to concerned national and local government level stakeholder institutions within Kyrgyzstan and Tajikistan. Dissemination of other key findings and lessons from the project will be channelled through peer-reviewed publications and on-line learning materials and modules to be developed in the course of the project.

## 8. REGIONAL COORDINATION AND COLLABORATION

152. While this GEF project is the only one in Central Asia with a specific focus on the sustainable management of trans-boundary high altitude mountain ecosystems, there are several other national and regional level ones, with UNEP, ADB, UNDP or the World Bank as the GEF Implementing Agency, that have related concerns in the fields of: (i) land degradation; (ii) desertification; (iii) integrated ecosystem management; and (iv) biodiversity conservation. The project will develop collaborative linkages with related on-going GEF regional and national projects so as to avoid duplication, ensure complementarity, and to learn from each others experience in realising global environmental benefits as well as community level environmental and socio-economic benefits.

### 8.1 Regional GEF Projects

153. Regional projects of relevance to the activities of this project include:

- The ADB GEF project *Central Asian Countries Initiative for Land Management* (CACILM) covering Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The objective of CACILM is to establish a multi-country and donor partnership to support the development and implementation of individual national level programmatic frameworks to implement more comprehensive and integrated approaches to sustainable land management in Central Asia. Within each of the participating countries CACILM will seek to: (i) strengthen policy, legislative, and institutional frameworks to create conditions conducive for sustainable land management; (ii) increase the capacity of key institutions responsible for planning and implementing land

management interventions; and (iii) improve land management and natural systems through the combined impact of appropriate enabling conditions and targeted project investments. The focus is on national level macro planning for all of a country's ecosystems. CACILM is expected to complement rather than duplicate this project's activities which will focus on sustainable land management (at the community and regional levels) within the trans-boundary ecosystems of the High Pamir and Pamir Alai Mountain region.

- The UNEP GEF medium scale project ***Support to the Implementation of the Regional Environment Action Plan in Central Asia*** covering Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The overall goal of the project is to contribute to improvement of the Central Asian environment through: (i) promoting sustainable land management practices; and (ii) strengthening regional capacity and cooperation for sustainable development and implementation of the regional environment action plan (REAP). The main purpose is to implement some key aspects of the REAP and to build regional capacity for replication and scaling up of successful practices and approaches in sustainable land management. It is anticipated that there will be a sharing of knowledge on innovative sustainable land management practices between the two projects.
- The UNEP GEF project ***In Situ/On Farm Conservation of Agricultural Biodiversity (Horticultural Crops and Wild Fruit Species) in Central Asia*** covering Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The purpose of this project is to provide farmers, institutes and local communities with knowledge, methodology and policies to conserve globally significant in situ/on-farm horticultural crops and wild fruit species. This will contribute to achieving sustainable agricultural development, food security and environmental stability. The project has a particular focus on traditional local varieties of fruit crops maintained by farmers and their wild relatives growing in forests, and on the enhancement of farmers' and community capacities to conserve in situ horticulture diversity. Information from this project will be fed into the trans-boundary decision-support system to improve the database on agrobiodiversity in the High Pamir and Pamir Alai Mountain region.
- The ADB PRC-GEF ***Partnership on Land Degradation in Dryland Ecosystems*** covering 6 provinces and autonomous regions in western China<sup>50</sup>. Under the auspices of this partnership program Xinjiang Uygur Autonomous Region is currently being assisted to prepare a provincial strategy and action plan for combating land degradation through the adoption of an integrated ecosystem management (IEM) approach. As this will include the Chinese portion of the Pamir Alai mountain ranges, cross border links will be established to harmonise the approaches that will be advocated in the respective strategies and action plans. In addition Xinjiang as well as the other 5 provinces/autonomous regions in western China are being assisted to develop their own comprehensive IEM policy and regulatory frameworks for land degradation control. A step by step approach for doing this has been developed and written guidelines and training have been given to provincial level legal task forces. A start has been made to review and assess in detail the national and provincial level laws, regulations and policies covering: (i) grasslands; (ii) desertification; (iii) water and soil conservation; (iv) water resources; (v) forestry, (vi) agriculture, (vii) land administration, (viii) environmental protection and (ix) environmental impact assessment. This project will learn from the methods used in western China to review and assess the laws, regulations and policies concerned with sustainable land management, and apply these to the situation within the High Pamir and Pamir Alai mountain region.

## 8.2 National GEF Projects

154. National projects of relevance to the activities of this project include:

- The UNDP GEF ***Small Grants Programme*** of Kyrgyzstan. Small projects are developed using community based approaches for activities that would deliver global environmental benefits in the following GEF focal areas: (i) bio-diversity conservation; (ii) climate change mitigation; (iii) protection of international waters; (iv) elimination of persistent organic pollutants; and (v) prevention of land degradation. Grants are made directly to NGOs and CBOs. This project will learn from the experience of this GEF small grants programme in order to develop the operational mechanisms for preparing, screening and approving the proposed micro-projects (component 3.2).
- The UNDP GEF ***National Capacity Self-Assessment (NCSA) for Global Environment Management*** projects, one in Kyrgyzstan and another in Tajikistan. These two projects are concerned with improving coordination between the different national agencies that are in charge of implementing the three major UN global environmental conventions, specifically the UNCCD, UNFCCC and UNCBD. A report has been prepared assessing the capacity needs for implementation of each of these three conventions in Kyrgyzstan. While in Tajikistan an action plan has been prepared and submitted to the government. The findings of these two projects will serve as part of the baseline for the proposed mainstreaming and capacity building activities (components 1.2 and 2.1).

<sup>50</sup> Xinjiang Uygur Autonomous Region, Gansu Province, Qinghai Province, Shaanxi Province, Ningxia Hui Autonomous Region, and Inner Mongolia Autonomous Region.

- The World Bank GEF ***Community Watershed Development Project*** of Tajikistan. The emphasis is community involvement in the development of pilot sites for demonstrating improved agricultural development and watershed management practices. In its first three years activities will be undertaken in the Vanj, Zarafshan and Toirsu watersheds. Collaborative links will be established with this World Bank GEF project in order to share experiences with mainstreaming sustainable land use and biodiversity conservation considerations within agricultural and associated rural investment decisions. Likewise to learn from each other with regard to the use of participatory planning processes and the development and adoption of innovative field level sustainable land management practices.

### **SECTION III: WORKPLAN AND TIME TABLE, BUDGET AND FOLLOW UP**

**155. Workplan and Timetable:**

Please see Table 3. Implementation of Project Activities by Phase and Outputs

**156. Budget.**

Please see Annex 1: Budget in UNEP Format.

Please see Annex 19: Budget per project activity (Phase I).

## SECTION IV: INSTITUTIONAL FRAMEWORK AND EVALUATION

### *Institutional framework*

157. The United Nations University (UNU), as the Executing Agency, will be responsible for the implementation of the project in accordance with the objectives and activities outlined in Section 2 of this document. UNEP, as the GEF Implementing Agency, will be responsible for overall project supervision to ensure consistency with the GEF and UNEP policies and procedures, and will provide guidance on linkages with related UNEP and GEF funded activities. The UNEP/DGEF Coordination will monitor implementation of the activities undertaken during the executing of the project. The UNEP/DGEF Coordination will be responsible for clearance and transmission of all financial and progress reports to the Global Environment Facility.

158. Prior to contracts, sub-contracts, or letters of agreement being entered into by the National Commission for Environmental Affairs, UNU will submit to UNEP/DGEF Coordination copies of all these documents. Within ten working days, UNEP/DGEF Coordination will review, provide guidance and give UNU substantive clearance on the technical content of these contracts, sub-contracts and letters of agreement.

159. In the recruitment of all senior project personnel, a selection panel/committee consisting of representatives from UNU and UNEP/DGEF will conduct the evaluation of the candidates, and based on the recommendations of the panel/committee UNU will issue contracts whose terms and conditions will be cleared by the panel.

### **Correspondence:**

160. **All correspondence regarding substantive and technical matters should be addressed to:**

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E-mail: Jansky@hq.unu.edu

161. **All correspondence related to financial administrative and financial matters related to this sub-project should be addressed to: -**

At UNEP:

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## 162. **Evaluation**

UNU will maintain systematic overview of the implementation of the project by means of monthly project monitoring meetings or other form of consultation, as well as by regular quarterly progress reports. A terminal/final report of the project will be prepared by UNU at the end of the project.

Following development of detailed work-plan, the following steps will be undertaken: review of the project, review/definition of defects, gaps, identification of problems that might impede the project implementation. Furthermore, the review is aimed to define potential partners and sources of information for the project.

The implementing agency will oversee implementation of contracted project activities. With this purpose, the project in co-operation with the Regional and National Steering Committees will prepare work-plans for project implementation.

## SECTION V: MONITORING AND REPORTING

### Management Reports

#### 163. Quarterly Progress Reports

Within 30 days of the end of the reporting period, UNU will submit to UNEP, using the format given in **Annex 4**, quarterly progress reports as at 31 March, 30 June, 30 September and 31 December.

#### 164. Terminal Report

Within 60 days of the completion of the project, UNU will submit to UNEP/DGEF Coordination a Terminal Report detailing the activities taken under the project, lessons learned and recommendations to improve the efficiency of similar activities in the future, using the format provided in **Annex 6**.

#### 165. Substantive Reports:

- (i) At the appropriate time, UNU will submit to UNEP three copies in draft of any substantive project reports(s) and, at the same time, inform UNEP of its plans for publication of that text. UNEP will give the United Nations University substantive clearance of the manuscript, indicating any suggestions for change and such wording (recognition, disclaimer, etc.) as it would wish to see figure in the preliminary pages or in the introductory texts.
- (ii) UNEP will equally consider the publishing proposal of UNU and will make comments thereon as advisable.
- (i) UNEP may request UNU to consider a joint on a joint imprint basis. Should the UNU be solely responsible for publishing arrangements, UNEP will nevertheless receive 10 free copies of published work in each of the agreed languages, for its own purposes.

#### 166. Financial Reports (National Project Expenditure Accounts)

- (i) Details of project expenditures will be reported, on an activity by activity basis, in line with project budget codes as set out in the project document, as at 31 March, 30 June, 30 September and 31 December using the format given in **Annex 3**. All expenditure accounts will be dispatched to UNEP within 30 days of the end of the quarter to which they refer, certified by a duly authorised official of the United Nations University.
- (ii) In addition the total expenditures incurred during the year ending 31 December certified by a duly authorised official, should be reported in an opinion by a recognized firm of public accountants and should be dispatched to UNEP within 180 days, (i.e. by 30 June). In particular, the auditors should be asked to report whether, in their opinion:
  - Proper books of account and records have been maintained;
  - All project expenditures are supported by vouchers and adequate documentation;
  - Expenditures have been incurred in accordance with the objectives outlined in the project document;
  - The Expenditure reports provide a true and fair view of the financial condition and performance of the project
- (iii) Within 180 days of the completion of the project, UNU will supply UNEP with a final statement of account in the same format as for the quarterly expenditure statements duly signed by authorised official of UNEP and certified by a recognized firm of public accountants.

If requested UNU shall facilitate an audit by the United Nations Board of Auditors and/or the Audit Service of the accounts of the project.

- (iv) Any portion of cash advances remaining unspent or uncommitted by the United Nations University on completion of the project will be reimbursed to UNEP within one month of the presentation of the final statement of accounts. In the event that there is any delay in such disbursement UNU will be financially responsible for any adverse movement in the exchange rates.
- (v) Within 30 days of the reporting period, UNU shall submit to UNEP GEF Coordination, annual cofinancing report for the project using the format provided in **Annex 7** showing:
  - Amount of cofinancing realized compared to the amount of cofinancing committed to at the time of project approval, and
  - Reporting by source and by type:
    - Sources include the agency's own cofinancing, government cofinance (counterpart commitments), and contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector, and beneficiaries.
    - Types of cofinance. Cash includes grants, loans, credits and equity investments. In-kind resources are required to be:
      - dedicated uniquely to the GEF project,
      - valued as the lesser of the cost and the market value of the required inputs they provide for the project, and
      - monitored with documentation available for any evaluation or project audit.

## **TERMS AND CONDITIONS**

### **167. Inventory of Non-expendable equipment purchased against UNEP projects**

UNU will maintain records of non-expendable equipment (items costing US\$1500 or more as well as items of attraction such as pocket calculators, cameras, computers, printers, etc.) purchased with UNEP funds (or with Trust Funds or Counter funds administered by UNEP) and will submit, using format in **Annex 5**, an inventory of such equipment to UNEP, once a year, indicating description, serial no., date of purchase, original cost, present condition, location of each item attached to the progress report submitted on 31 December.

Within 60 days of completion of the project, UNU will submit to UNEP a final inventory of all non-expendable equipment purchased under this project indicating description, serial number, original cost, present condition, location and a proposal for the disposal of the said equipment. Non-expendable equipment purchased with funds administered by UNEP remains the property of UNEP until its disposal is authorised by UNEP, in consultation with UNU. UNU shall be responsible for any loss or damage to equipment purchased with UNEP administered funds. The proceeds from the sale of equipment, (duly authorised by UNEP) shall be credited to the accounts of UNEP, or of the appropriate trust fund or counterpart funds. A duly authorised official of UNU should physically verify the inventory.

### **168. Responsibility for Cost Over-runs**

The approved GEF budget of US\$3,000,000 cannot be. Any cost overrun (expenditure in excess of the amount budgeted in each budget sub line) shall be met by the organization responsible for authorizing the expenditure, unless written agreement has been received in advance, from UNEP. In cases, where UNEP has indicated its agreement to a cost overrun in a budget sub line to another, a revision to the project document amending the budget will be issued by UNEP.

#### 169. **Claims by Third Parties against UNEP**

UNU shall be responsible for dealing with any claims which may be brought by third parties against UNEP and its staff, and shall hold UNEP and its staff non-liaible in case of any claims or liabilities resulting from operations carried out by UNU, or other project partners under this project document, except where it is agreed by UNU and UNEP that such claims or liabilities arise from gross negligence or wilful misconduct of the staff of UNEP.

#### 170. **Cash Advance Requirement**

Initial cash advance of US\$300,000 will be made upon signature of the project document by both parties and will cover expenditures expected to be incurred by UNU during the first six months of the project implementation. Subsequent advances are to be made quarterly, subject to:

- (i) Confirmation by UNU at least two weeks before the payment is due, that the expected rate of expenditure and actual cash position necessitate the payment, including a reasonable amount to cover "lead time" for the next remittance; and
- (ii) The presentation of
  - ◆ A satisfactory financial report showing expenditures incurred for the past quarter, under each project activity (See format in **Annex 3**).
  - ◆ Timely and satisfactory reports on project implementation (**Annex 4**).

Requests for subsequent cash advances should be made using the standard format provided in **Annex 2**.

#### 171. **Amendments**

The Parties to this project document shall approve any modification or change to this project document in writing.

## **LIST OF ANNEXES**

Annex 1:	Budget in UNEP Format
Annex 2:	Format for Cash Advance Request
Annex 3:	Format for Quarterly Expenditure Statement with its Appendix 1 to Annex 3 providing explanatory notes on the reported expenditures.
Annex 4:	Quarterly Progress Report Format with its Appendix 1 to Annex 4 for inventory of outputs/services.
Annex 5:	Format for Inventory of Non Expendable Equipment
Annex 6:	Format for Terminal Report with its Appendix 1 to Annex 6 for the inventory of outputs/services.
Annex 7:	Format for Report on Co-financing
Annex 8:	Incremental Cost Analysis
Annex 9:	Project Logical Framework
Annex 10:	STAP Technical Review and IA Response
Annex 11:	Project Area and Pilot Sites
Annex 12:	Red Data Book Information, Kyrgyzstan and Tajikistan
Annex 13:	Land Degradation in the High Pamir and Pamir Alai Mountains
Annex 14:	Sustainable Land Management Micro-Projects
Annex 15:	Public Involvement and Dissemination Plan
Annex 16:	Terms of Reference
Annex 17:	Monitoring and Evaluation
Annex 18:	Co-financing Commitments
Annex 19:	Pamir-Alai Project Phase 1 Budget
Annex 20:	List of Acronyms & Abbreviations
Annex 21:	Letters of Endorsement and Co-financing Support

## ANNEX 2: CASH ADVANCE STATEMENT

Statement of cash advance as at .....

And cash requirements for the six-months of .....

Name of cooperating agency/ Supporting organization .....

Project No. ....

Project title .....

### I. Cash statement

1. Opening cash balance as at ..... US\$ .....

2. Add: cash advances received:

Date	Amount
.....	.....
.....	.....
.....	.....
.....	.....

3. Total cash advanced to date ..... US\$ .....

4. Less: total cumulative expenditures incurred ..... US\$ (.....)

5. Closing cash balance as at ..... US\$ .....

### II. Cash requirements forecast

6. Estimated disbursements for six-months ending\* ..... US\$ .....

7. Less: closing cash balance (see item 5, above) ..... US\$ (.....)

8. Total cash requirements for the six-months ..... US\$ .....

Prepared by ..... Request approved by .....

Duly authorized official of cooperating agency/ supporting organization

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\*A cash request should be supported by a detailed itemized breakdown of estimated expenditures using the same budget lines as per the approved budget in UNEP format, Annex 3.

### ANNEX 3: FORMAT OF QUARTERLY PROJECT EXPENDITURE ACCOUNTS FOR SUPPORTING ORGANIZATIONS

Quarterly project statement of allocation (budget), expenditure and balance (Expressed in US\$) covering the period

from.....to.....

Project No.:.....

Supporting organization.....

Project title:.....

Project commencing:.....

Project ending:.....

Object of expenditure in accordance with  UNEP budget codes	Project budget		Expenditure Incurred				Unspent balance of budget allocation for year.....
	Allocation for Year		For the quarter		Comulative expenditures this Year		
	m/m (1)	Amount (2)	m/m (3)	Amount (4)	m/m (5)	Amount (6)	m/m (7)
PROJECT PERSONNEL COMPONENT							
Project Personnel w/m (Show title/grade)							
1101 National Project Heads (Staff weeks: 77)							
1102 National Project Officers (Staff weeks: 384)							
1103 Regional Project Officer (Staff weeks: 96)							
1199 Sub-Total							
1200 Consultants * w/m (Give description of activity/service							
1201 Review relevant documentation, design and implement a strategy for improving the SLM regulatory frameworks in Tajikistan and Kyrgyzstan through the formulation of improved policies and legislation							
1202 Assess SLM awareness and capacity needs among key government agencies, NGOs, media and other stakeholders involved in shaping national development plans; design and support the implementation of a strategy for mainstreaming SLM in key documents and institutions							
1203 Analyze, select and collate a set of adaptive research techniques and modes of dissemination suitable for the project needs; provide training materials and technical guidance in the development and implementation of adaptive research proposals at selected pilot and demonstration sites							

1204 Appraise the SLM capacity needs of advisory service providers in Tajikistan and Kyrgyzstan; identify and validate a set of SLM techniques and approaches to enhance their capacities and support their work; provide pilot training and continued technical assistance							
1205 Undertake livelihoods and ecosystem assessments through community-based dialogue; identify land management strategies, planning needs and best practice options and support the development and implementation of SLM micro-projects at pilot sites							
1206 Identify strategies options for sustainable community-based ecotourism through participatory field research and market analysis; provide technical support to local communities in designing and implementing eco-tourism development plans							
1207 Investigate the role of women in land use decision-making and management; identify critical barriers to gender equity and promising approaches to addressing them through focus group interviews and policy analysis; support targeted initiatives aimed at promoting gender equity in land management in the project area							
1208 Develop and validate a conceptual framework for vulnerability and resilience assessment and identify appropriate V&R indicators; undertake baseline and final assessments using the indicators and develop recommendations for project upscaling in phase II							
1209 Identify project impact pathways and appropriate indicators for impact and replicability assessment; undertake case studies at pilot sites to validate the conceptual framework; develop recommendations for replication of the project's experience and approaches in similar areas							
1210 Provide strategic guidance on project implementation in light of its goals and the changing policy and scientific context regionally and internationally; support the design of an analytical framework for assessing the project's conceptual and management approach to promoting SLM in transboundary mountainous regions and GEF's strategic priorities in the field of SLM and relevant cross-cutting issues							
1299 Sub-Total							



<b>1300 Technical support w/m</b> <b>(Show title/grade)</b> 1301 National Administrative Officer 1302 Regional Administrative Officer 1399 Sub-Total <b>1600 Travel on official business (above staff) **</b> 1601 Project -related travel 1699 Sub-Total <b>1999 Component Total</b> <b>SUB-CONTRACT COMPONENT</b> <b>2200 Sub-contracts (MoU's/LA's for non-profit supporting organizations)****</b> 2201 Needs and feasibility assessment for improved transboundary enabling environment for SLM, development of regional strategy and action plan and establishment of a transboundary institutional mechanism for its implementation  2202 Development and implementation of adaptive research proposals and establishment of research and training demonstration sites at pilot villages  2203 Development of community-based land use plans and portfolios of micro projects, implementation and related capacity development  2204 Identify M&E indicators for global environmental and local development benefits derived through SLM initiatives in mountain regions; pilot test them through community-based assessments linked to national databases  2205 Develop E-learning modules to support capacity-building in the major project themes: mainstreaming SLM in regional and national policies and institutions, adaptive research, advisory service provision, community-based land use assessment and planning  2299 Sub-Total <b>2999 Component Total</b> <b>TRAINING COMPONENT</b> <b>3100 Fellowships (total stipend/fees, travel costs, etc)</b>							
--	--	--	--	--	--	--	--

3101 SLM fellowships for short courses for young researchers and advisory service providers (10 persons)							
3199 Sub-Total							
<b>3200 Group training (study tours, field trips, workshops, seminars, etc) (give title)</b>							
3201 Capacity development (regional methodological trainings, national technical workshops, best SLM practice exchange tours for farmers and community leaders, etc.)							
3299 Sub-Total							
<b>3300 Meetings/conferences (give title)</b>							
3301 Steering Committee Meetings (4)							
3302 Regional Technical Review Meetings (4)							
3303 National Advisory Group Meetings (8)							
3399 Sub-Total							
<b>3999 Component Total</b>							
<b>EQUIPMENT &amp; PREMISES COMPONENT</b>							
<b>4100 Expendable equipment (items under (\$1,500 each, for example)</b>							
4101 Field and laboratory equipment, office supplies, etc.							
4199 Total							
<b>4200 Non-expendable equipment (computers, office equip, etc)</b>							
4201 Computers / laptops for field work							
4202 Vehicles (for field work and visits)							
4299 Sub-Total							
<b>4300 Premises (office rent, maintenance of premises, etc)</b>							
4301 Office rent and maintenance							
4399 Sub-Total							
<b>4999 Component Total</b>							
<b>MISCELLANEOUS COMPONENT</b>							
<b>5100 Operation and maintenance of equip. (example shown below)</b>							
5101 Maint. of vehicles and computer equip.							
5199 Sub-Total							
<b>5200 Reporting costs (publications, maps,</b>							

newsletters, printing, etc)							
5201 Publications and information dissemination							
5202 Translation of project materials and dissemination products							
5299 Sub-Total							
<b>5300 Sundry (communications, postage, freight, clearance charges, etc)</b>							
5301 Internet access, communication costs, postage							
5399 Sub-Total							
<b>5500 Evaluation (consultants fees/travel/ DSA, admin support, etc. internal projects)</b>							
5501 Mid-term and final evaluations							
5599 Sub-Total							
<b>5999Component Total</b>							
<b>99 GRAND TOTAL</b>							

Signed:\_\_\_\_\_

Duly authorized official of supporting organization

**NB: The expenditures should be reported in line with the specific object of expenditure as per project budget.**

**ANNEX 4: FORMAT FOR BIENNIAL PROGRESS REPORT TO UNEP**  
**as at 30 June and 31 December**  
**(Please attach a current inventory of outputs/Services when submitting this report)**

1. Background Information

1.1 Project Number:

1.2 Project Title:

1.3 Division/Unit:

1.4 Coordinating Agency or Supporting Organization (if relevant):

1.5 Reporting period (the six months covered by this report):

1.6 Relevant UNEP Programme of Work (2002-2003) Subprogramme No:

1.7 Staffing Details of Cooperating Agency/ Supporting Organization (Applies to personnel / experts/ consultants paid by the project budget):

Functional Title	Nationality	Object of Expenditure (1101, 1102, 1201, 1301 etc..)

Sub-Contracts (if relevant):

Name and Address of the Sub-Contractee	Object of expenditure (2101, 2201, 2301 etc..)

2. Project Status

2.1 Information on the delivery of outputs/services

	Output/Service (as listed in the approved project document)	Status (Complete/ Ongoing)	Description of work undertaken during the reporting period	Description of problems encountered; Issues that need to be addressed; Decisions/Actions to be taken
1.				
2.				
3.				

2.2 If the project is not on track, provide reasons and details of remedial action to be taken:

### 3. Discussion acknowledgment (To be completed by UNEP)

<div>Project Coordinator's General</div> <div>Comments/Observations</div>	<div>First Supervising Officer's General Comments</div>
<div>Name: _____</div> <div>Date: _____</div> <div>Signature: _____</div> <div>_____</div>	<div>Name: _____</div> <div>Date: _____</div> <div>Signature: _____</div> <div>_____</div>

## APPENDIX 1 to ANNEX 4

### Attachment to Quarterly Progress Report: Format for Inventory of Outputs/Services

#### Meetings (UNEP-convened meetings only)

No	Meeting Type (note 4)	Title	Venue	Dates	Convened by	Organized by	# Participants	List attached Yes/No	Report issued as doc no	Language	Dated
1.											
2.											
3.											

#### List of Meeting Participants

No.	Name of the Participant	Nationality

#### Printed Material

No	Type (note 5)	Title	Author(s)/Editor(s)	Publisher	Symbol	Publication Date	Distribution List Attached Yes/No
1.							
2.							
3.							

#### Technical Information / Public Information

No	Description	Date
1.		
2.		
3.		

#### Technical Cooperation

No	Type (note 6)	Purpose	Venue	Duration	For Grants and Fellowships		
					Beneficiaries	Countries/Nationalities	Cost (in US\$)
1.							
2.							
3.							

**Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)**

No	Description	Date
1.		
2.		
3.		

10. NOTE 4

Meeting types (Inter-governmental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)

14. NOTE 5

Material types (Report to Inter-governmental Meeting, Technical Publication, Technical Report, Other)

15. NOTE 6

Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)

### ANNEX 5: Format for Inventory of Non-Expendable Equipment

PURCHASED AGAINST UNEP PROJECTS UNIT VALUE US\$1,500 AND ABOVE AND  
ITEMS OF ATTRACTION

As at \_\_\_\_\_

Project No. \_\_\_\_\_

Project Title \_\_\_\_\_

Executing Agency: \_\_\_\_\_

Internal/SO/CA (UNEP use only) \_\_\_\_\_

FPMO (UNEP) use only) \_\_\_\_\_

Description	Serial No.	Date of Purchase	Original Price (US\$)	Purchased / Imported from (Name of Country)	Present Condition	Location	Remarks/recommendation for disposal

The physical verification of the items was done by:

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



## **ANNEX 6: TERMINAL REPORT FORMAT**

### **1. Background Information**

#### **1.1 Project Number**

#### **1.2 Project Title**

#### **1.3 UNEP Division/Unit**

#### **1.4 Implementing Organization**

### **2. Project Implementation Details**

**2.2 Project Activities** (*Describe the activities actually undertaken under the project, giving reasons why some activities were not undertaken, if any*)

**2.3 Project Outputs** (*Compare the outputs generated with the ones listed in the project document*)

**2.4 Use of Outputs** (*State the use made of the outputs*)

**2.5 Degree of achievement of the objectives/results** (*On the basis of facts obtained during the follow-up phase, describe how the project document outputs and their use were or were not instrumental in realizing the objectives / results of the project*)

**2.6 Determine the degree to which project contributes to the advancement of women in Environmental Management and describe gender sensitive activities carried out by the project.**

**2.7 Describe how the project has assisted the partner in sustained activities after project completion.**

### **3. Conclusions**

**3.1 Lessons Learned** (*Enumerate the lessons learned during the project's execution. Concentrate on the management of the project, including the principal factors which determined success or failure in meeting the objectives set down in the project document*)

**3.2 Recommendations** (*Make recommendations to (a) Improve the effect and impact of similar projects in the future and (b) Indicate what further action might be needed to meet the project objectives / results*)

### **4. Attachments**

**4.1 Attach an inventory of all non-expendable equipment (value over US\$ 1,500) purchased under this project indicating Date of Purchase, Description, Serial Number, Quantity, Cost, Location and Present Condition, together with your proposal for the disposal of the said equipment**

**4.2 Attach a final Inventory of all Outputs/Services produced through this project**

## APPENDIX 1 to ANNEX 6

### Attachment to Terminal Report: Format for Inventory of Outputs/Services

#### a) Meetings

No	Meeting Type (note 4)	Title	Venue	Dates	Convened by	Organized by	# of Participants	List attached Yes/No	Report issued as doc no	Language	Dated
1.											
2.											
3.											

#### List of Meeting Participants

No.	Name of the Participant	Nationality

#### b) Printed Materials

No	Type (note 5)	Title	Author(s)/Editor(s)	Publisher	Symbol	Publication Date	Distribution List Attached Yes/No

**c) Technical Information / Public Information**

No	Description	Date
1.		
2.		
3.		

**d) Technical Cooperation**

No	Type (note 6)	Purpose	Venue	Duration	For Grants and Fellowships		
					Beneficiaries	Countries/Nationalities	Cost (in US\$)
1.							
2.							

**e) Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)**

No	Description	Date
1.		
2.		
3.		

Note 4: Meeting types (Inter-governmental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)

Note 5: Material types (Report to Inter-governmental Meeting, Technical Publication, Technical Report, Other)

Note 6: Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)

# **ANNEX 7: FORMAT FOR REPORT ON COFINANCING**

<b>Title of Project:</b>							
<b>Project Number:</b>							
<b>Name of Executing Agency:</b>							
<b>Project Duration:</b>	<b>From:</b>			<b>To:</b>			
<b>Reporting Period</b> <i>(to be done annually):</i>							
Source of Cofinance	Cash Contributions			In-kind Contributions			Comments
	Budget original (at time of approval by GEF)	Budget latest revision	Received to date	Budget original (at time of approval by GEF)	Budget latest revision	Received to date	
<b>Total</b>	0	0	0	0	0	0	

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_

*All amounts in US dollars*

## ANNEX 8: INCREMENTAL COST ANALYSIS

### Introduction

The High Pamir and Pamir-Alai Mountains represent a globally important ecosystem and one that provides multiple environmental and economic services to much of Central Asia. Over the past decade land degradation in the area and the resulting loss of ecosystem structure and function has become a growing issue of both regional and global concern. The continuing degradation of land and decline of its productivity is threatening the livelihoods of the inhabitants of the High Pamir and Pamir Alai mountains as well as of the people in the densely populated lowlands who are dependent on the “water towers” of Central Asia for sustaining their agriculture-based activities and livelihoods. At the same time, poverty, and the further degradation of soil and water resources it reinforces, has already begun to disturb the fragile ecological balance of the unique high mountain ecosystems as well as the traditional cultures they have sustained in the past. Climatic changes evident over the past decade have added an additional strain on local capacities to break the vicious cycle of poverty and resource degradation through more frequent and stronger floods and increased incidences of land slides and other natural disasters as a result of the observed increase in temperatures and associated environmental changes in the High Pamir and Pamir-Alai Mountains.

The key socio-economic issue in the High Pamir and Pamir-Alai Mountains since the disintegration of the system of central planning and the discontinuation of the associated fuel and other subsidies that had supported rural livelihoods in the region until the early 1990s, is how to transform the local economy, so that people can meet their livelihood needs without further degrading their resources and affecting the unique mountain ecosystems and their environmental services and global ecological value. So far, assistance to the region has been piecemeal and focused on meeting short-term subsistence needs. The establishment of a sustainable basis for the long-term development of the High Pamir and Pamir Alai Mountains requires the development of an integrated regional strategy, within the framework of which local communities could be assisted with the identification and implementation of sustainable and coordinated resource management approaches and practices for maintaining the fragile balance between people and environmental in the region.

### Incremental Cost Analysis

The analysis of incremental costs (ICA) is based on sustainable development appraisals undertaken at eight pilot villages at the local level, an assessment of the capacities of existing policy, legislative and institutional frameworks for SLM at the national and transboundary levels in the High Pamir and Pamir Alai region, and a comprehensive review of on-going government, NGO and donor-funded initiatives in Kyrgyzstan and Tajikistan. Formal consultations with a range of local, national and international stakeholders at the two regional and two national meetings held Kyrgyzstan and Tajikistan in the course of the project development phase<sup>51</sup> have confirmed the baseline findings and shaped the proposed alternative scenario. Individual stakeholder consultations carried out at different stages of the project preparation were used as a basis for costing the different types of interventions proposed as part of the alternative.

The Baseline Scenario identifies public programmes and donor-supported investments relevant to the project’s four technical components in the project area over the proposed 4+4-year life of the project (LOP). The GEF Alternative consists of the Baseline in addition to the costs associated with the necessary incremental activities to obtain the stated Environmental and Development Objective (see Annex 1 for more detail). The Incremental Cost is the difference between the costs of the GEF Alternative and the Baseline Scenario.

#### The Baseline Scenario

The baseline field assessments carried out at the eight PDF B pilot sites highlighted the widespread presence of land and soil degradation in the High Pamir and Pamir-Alai Mountains, and the underlying natural and anthropogenic causes of

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<sup>51</sup> The first regional meeting was held in June 2004 in Osh, Kyrgyzstan and the second in June 2005 in Dushanbe, Tajikistan. Outcomes from the baseline research undertaken in each country in line with the framework guidelines agreed at the first regional meeting were discussed at the national meetings held in December 2004 and January 2005 in Bishkek, Kyrgyzstan and Dushanbe, Tajikistan respectively. The results from the national baseline studies carried out in the framework of harmonized methodological approaches were discussed and integrated at the second regional meeting.

land degradation in the region (see Annex 4 for more details). The Baseline Scenario can be best described as a loss of production potential of the High Pamir and Pamir-Alai Mountains's natural resources and associated biodiversity. On-going development interventions aimed at or contributing to addressing the problem have been grouped in four major areas in line with the main intervention directions of the proposed alternative scenario spelt out in the project logical framework (Annex B) in order to estimate in monetary terms the baseline for the different components and thus decide on the necessary incremental inputs for achieving the project objectives. The criteria used for screening and grouping on-going interventions is as follows: (i) relevance to one or more of the Alternative's four technical project components, (ii) partial or full overlap with the 4+4-year Life of the Project (LOP), and (iii) overlap or similarity (in cases of relevant best practices) to varying degrees with the proposed project area.

The Project Baseline presented by component consists of the following:

**Component 1. Enhanced Regional Cooperation and Strengthened Legislative, Policy and Institutional Enabling Environment for SLM in the High Pamir and Pamir-Alai Mountains** Three main sub-components are seen as essential for the fulfilment of component 1, namely: i) establishment of a trans-boundary strategic and regulatory framework for guiding development interventions in the High Pamir and Pamir-Alai Mountains; ii) improvement of the existing policy and regulatory framework for SLM in the project area in each of the participating countries; and iii) mainstreaming of SLM concepts and principles in the strategic frameworks, institutional structures and management procedures of key national institutions. Baseline research in these areas undertaken during the project development phase indicates that currently few development interventions are targeting the achievement of these sub-components. An EU/TACIS funded initiative aiming at the establishment of a trans-boundary protected area in the Pamir-Alai Mountains is the major directly related project that is currently being developed in line with the priority area of intervention of sub-component one. While closely related to the proposed SLM initiative in the High Pamir and Pamir-Alai area, the EU/TACIS project is complementary rather than overlapping given its focus on protected area management as opposed to the SLM project focus on sustainable resource management in and around settlement areas. Synergies between the two projects will be explored based on the example of the similarly differentiated trans-boundary conservation projects in the West Tian Shan Mountains a percentage of which has also been included in the Baseline of sub-component one, due to the replicability of the projects' lessons to the High Pamir and Pamir-Alai Mountains. With regard to the baseline for sub-components two and three, it is relatively small since the development of a considerable number of legislative frameworks for resource management, including the fundamental land reforms that were undertaken in Kyrgyzstan and Tajikistan in the early 1990s, has already been completed, thus the legislative reforms necessary for ensuring environmentally sustainable resource management in the High Pamir and Pamir-Alai mountain areas could be seen as an incremental change of the existing frameworks. Such reforms are needed since many of the existing frameworks have been adopted hastily, based on previously existing legislation or international examples that have not been adequately adapted to respond to the dynamic region-specific needs of the two countries in the context of climatic changes and globalization. Some efforts at reforms of legislative frameworks aimed at providing an enabling environment for the sustainable management of the local resources are already underway. Two on-going FAO projects and one initiative supported by the Finnish government are very much in line with the goals of the High Pamir and Pamir-Alai Mountains trans-boundary SLM initiative and have been included in the baseline for the second and third sub-components of component one. Their focus on protected area and forest management in Kyrgyzstan, however, is indicative of the sectoral and country-focused approach to natural resource management that could be expected to continue to guide legislative reform processes in the region in the absence of GEF support for the development of an integrated regional strategy necessary to ensure the mainstreaming of sustainable land management in the High Pamir and Pamir Alai Mountains.

**Component 2. Improved Capacities to Promote SLM of Public and Private Sector Research and Advisory Support Agencies in the High Pamir and Pamir-Alai Mountains.** The High Pamir and Pamir Alai Mountains are characterised by their remoteness from the densely populated capital and low-land urban centres in Kyrgyzstan and Tajikistan and thus from the research and advisory support services available there. At the same time, the limited number of people and agricultural production resources in the high mountain areas has made investments in the development and support of research and advisory support services in the highlands economically inefficient in the context of scarce public resources and open market based development that has been promoted in Kyrgyzstan and Tajikistan over the past decade. So currently, research and advisory support capacity gaps in the region are generally dealt with on a project-by-project basis. Indeed, the total sum of the estimated capacity building interventions through relevant projects which forms the baseline of this component is considerable. The patchwork of capacity building interventions, however, has left multiple gaps with regard to SLM-specific technical and institutional

capacity needs, which the incremental inputs from GEF for this components would help address in an integrated and sustainable framework.

**Component 3. Restoration and Enhancement of the Productive and Protective Functions of the High Pamir and Pamir-Alai Mountains and Improved Rural Livelihoods.** The baseline for this component is formed primarily by government investments in poverty reduction and environmental protection activities in the High Pamir and Pamir-Alai area and varying degrees of some 30 on-going related initiatives funded by the World Bank, the Asian Development Bank, FAO, SDC, ICARDA, Japan and a number of other donors. Activities included in the baseline for sub-components one and two cover a number of areas related to poverty reduction and environmental conservation at the local level, such as forest and agricultural sector support projects, community-based watershed management initiatives, as well as infrastructural rehabilitation and disaster risk and prevention projects. The baseline for sub-component three is formed by a few tourism development initiatives funded by Helvetas in Kyrgyzstan and by UNESCO and SDC in Tajikistan.

**Component 4. Generic Guidelines for Up-scaling and Replication of Lessons Learnt from the Project's Experience for SLM in Other Trans-Boundary Mountain Areas.** Given the project-specific outcome of this component, the baseline for it is relatively small. It is formed by two on-going initiatives, one focusing on monitoring and support for environmental protection management in Kyrgyzstan funded by the government of Finland, and a World Bank, SDC and Japanese government funded project on Lake Sarez Risk Mitigation Project with a focus on vulnerability assessment in the Pamir Mountains in Tajikistan.

In total, the Baseline was estimated to be US\$146.5 million over the 4+4-year period of the project. The major share (about 80%) of the baseline comes from component 3-related initiatives, which constitute predominantly piecemeal poverty and disaster-risk reduction projects, aimed at addressing the symptoms rather than the causes of land degradation in the High Pamir and Pamir-Alai Mountains. The significant amount of such interventions is understandable and justifiable in the context of transitional reforms and post-conflict reconstruction of formal and informal institutional structures and policies that characterised developments in the two countries until recently. The re-establishment of political stability in the region, however, suggests a likely decline of development assistance in the years to come which could lead to increased anthropogenic pressures on the natural environment in the context of decreased external support, continuing pervasive poverty, and lacking mechanisms for sustainable resource use and development.

While some good local development interventions such as the ones supported by the GEF/UNDP small grants programme and the GTZ grassroots support for implementation of the UNCCD, have generated a number of good examples of alternative resource use strategies, their impact is limited due to the lack of an integrated framework for evaluation of the sustainability and replication of the best practices within the mountain areas in each country and across the political border. Although a number of national and regional strategies and action plans have been developed as frameworks for guiding various aspects of development in the two countries, their impact on the actual state of the environment and livelihoods in the High Pamir and Pamir-Alai area is limited. The findings of the baseline studies undertaken in the course of the project development phase indicate that this is partly due to the numerous gaps, overlaps and contradictions among the currently existing predominantly sectoral policy, regulatory and institutional frameworks and procedures which hinder their understanding and implementation, and partly due to the lack of mechanisms for linking policies and practices across different policy making and governance levels in an integrated framework. Those obstacles, however, are just symptoms of a more basic problem, namely the lip service paid to the slogan of the involvement of stakeholders from different sectors and levels in the policy-making process. The knowledge and capacities of local communities are yet to be recognized and mobilized in the process of policy development and implementation, which is critical given the limited sustainability of and available resources for the implementation of large scale externally-funded interventions, which underlie existing policy and strategic development frameworks.

### **The GEF Alternative**

To break the vicious circle of poverty and resource degradation, it is necessary to look beyond the financial and technical constraints, both at the household and community level, at which resource degradation takes place, as well as at the local and national government level, which is still burdened by the unrealistic expectations of arresting land degradation through large scale technical interventions. Without a change of the view of land degradation among stakeholders across relevant sectors and governance levels unsustainable resource use practices in the High Pamir

and Pamir Alai Mountains are likely to continue and land and other natural resources, including globally important biodiversity are bound to continue to be degraded to meet the needs of local people. By bringing relevant stakeholder together, highlighting alternative perspectives of the problem and fostering the joint identification of a coordinated and sustainable framework for management of the high mountain resources at the regional, national and local levels, the proposed project hopes to bring about substantial improvement of the living conditions of local populations while helping Kyrgyzstan and Tajikistan to arrest the accelerating process of land and ecosystem degradation in the High Pamir and Pamir Alai Mountains and thus to fulfil their obligations under the UNCCD as well as other international conventions.

The GEF Alternative intends to strengthen regional cooperation by reaffirming the international character of the High Pamir and Pamir Alai Mountains, defining an integrated framework for sustainable development to serve as a guide for national and local interventions in the region, and installing operating coordination mechanisms for stakeholder involvement in policy and strategy development and implementation across sectors and levels. The project would also strengthen national public and private sectors capacities to provide the necessary advice and services to land users and policy makers to ensure the mainstreaming of SLM policies and practices in the High Pamir and Pamir-Alai region. The development of an improved policy, institutional and technical enabling environment for SLM at the regional, national and local level in the High Pamir and Pamir Alai Mountains will be undertaken in the first part of the project. This would ensure that the necessary conditions for up-scaling during the second phase of the local level land use planning and micro project interventions that will be tested alongside with the policy and institutional reforms in the first phase. Without the intervention of GEF and other donors, the two countries are unlikely to initiate and carry out the trans-boundary collaboration for the development of an integrated resource use strategy and the necessary coordinated mechanisms for its implementation as a framework for mainstreaming SLM in the region and for preserving the unique high mountain ecosystems with their global and regional values.

Apart from the conservation of High Pamir and Pamir-Alai ecosystems and their global value, the project would provide a validated model framework for arresting land degradation and the associated loss of globally important biodiversity in trans-boundary high mountain regions. Given the short history of the GEF Operational Programme in Land Degradation and the scarcity of effective methodological models for mainstreaming SLM in transboundary environments of global importance, the lessons from the project's experience, and the specific guidelines and recommendations for up-scaling and replication of the model framework in similar mountain regions in Central Asia and elsewhere would make a major contribution for enhancing global benefits from GEF funding and interventions in the area of land management.

These global benefits will also generate substantial national benefits based on the restoration of shared ecosystems and collaborative approaches to rehabilitation of degraded land. The main benefit to countries is, above all, improved livelihoods of local communities living in the economically marginalized High Pamir and Pamir Alai Mountain areas. It is also important to point out that these national benefits underpin the global benefits: without securing and supporting local communities, the sustainability of interventions aimed at improving the quality of natural resources in the region is put at risk.

### **Incremental Cost Tables**

The incremental costs and benefits of the Project are presented in the Table below. The total cost of the GEF Alternative amounts to an estimated US\$ 165,688,080, of which US\$19,188,080 constitute the incremental cost necessary to meet the global environmental objectives described above. US\$6 million (about 33% of the total cost) represent the amount requested from GEF to finance the project in two phases (or US\$6.650 million if the PDF-B budget is added). The remaining two thirds of the project costs, US\$12,538,080, will come from co-financing from the two participating countries and local beneficiaries, United Nations University, Aga Khan Foundation, ICARDA, Center for Development and Environment at the University of Berne, Switzerland, Japanese universities and other sources.

The Alternative scenario includes installing mechanisms to promote and implement restoration activities of degraded lands, and formulation of suitable models for rehabilitating degraded lands and conserving globally important biodiversity in the High Pamir and Pamir Alai ecosystems using a participatory approach. Due to continued and substantial losses of biodiversity and arable land resources of the mountain ecosystem, the Project will focus on arresting and reversing such losses through regional cooperation mechanisms. Such mechanisms will sustainably support



conservation activities and continue them beyond the project's duration. The Project attempts to bridge the gaps in previous approaches so that conservation of soil, water and ecosystems is ensured by the creation of an enabling environment at both local and national level. The activities will produce additional benefits for the countries by providing a stable basis of income to the marginalized groups, including women and the poorest. The results and experiences of this project could be used as models for rehabilitating similar areas in the countries concerned, as well as other mountain ecosystems in Central Asia and elsewhere.

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
<b>Domestic Benefits</b>	<ul style="list-style-type: none"> <li>• Rural livelihoods dependent on subsistence crop and livestock production</li> <li>• Heavy dependence on food aid</li> <li>• Very high levels of poverty/economic vulnerability</li> <li>• Over 85% of energy needs met from burning fuelwood and dung</li> <li>• Non-sustainable exploitation of mountain ecosystem resources</li> <li>• Uncoordinated sectoral development</li> <li>• Piecemeal community level development projects that focus on social needs rather than sustainable land management</li> <li>• Weak advisory support services</li> <li>• Inadequate body of enabling laws, regulations, and policies for sustainable land management</li> </ul>	<ul style="list-style-type: none"> <li>• Communities assisted to combat land degradation and increase the productivity of ecosystem resource based livelihoods through the preparation and implementation of their own sustainable land management plans.</li> <li>• Community level micro-project portfolios developed to secure the external investment funds needed for implementing component activities within the sustainable land management plan.</li> <li>• Public and private sector agencies assisted to build their capacity to provide advisory support services to farmers, herders, forest and wildlife resource users.</li> <li>• Central and local government authorities assisted to develop an improved enabling legal, regulatory and policy environment for sustainable land management.</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable and secure crop and livestock production reducing need for food aid and raising household incomes.</li> <li>• Communities with the skills and confidence to plan and implement their own micro-projects for the improved protection and utilisation of local ecosystem resources.</li> <li>• Community level energy needs increasingly met from renewable sources (hydro, solar, wind, biogas, fuelwood plantations/ woodlots).</li> <li>• Improved central and local level laws, regulations and policies enabling communities to take primary responsibility for the improved management of their local ecosystem resources.</li> </ul>
<b>Global Benefits</b>	<ul style="list-style-type: none"> <li>• Continuing degradation of critical ecosystems within one of the world's bio-diversity hotspots</li> <li>• Globally endangered/vulnerable species of fauna and flora facing increased threats</li> <li>• Continuing destruction of <i>teresken</i> shrub communities</li> <li>• Progressive loss of the protective and productive functions of key Central Asian mountain ecosystems</li> <li>• Reduction in the quality and quantity of water available to adjacent lowlands</li> <li>• No trans-boundary mechanisms for the improved management of shared mountain ecosystem resources</li> </ul>	<ul style="list-style-type: none"> <li>• Ecosystem degradation tackled through the promotion of sustainable land management practices within the croplands and pastures.</li> <li>• Proactive protection and restoration of degraded wildlife habitats and native plant communities.</li> <li>• Restoration of <i>teresken</i> shrub communities through regulation of grazing/fuel wood gathering, combined with replanting and assisted natural regeneration.</li> <li>• Both countries to collaborate in the development of a trans-boundary strategic planning and regulatory framework for the improved management of the ecosystems of the High Pamir and Pamir Alai Mountain region.</li> </ul>	<ul style="list-style-type: none"> <li>• The productive and protective functions of the High Pamir and Pamir Alai mountain ecosystems restored, sustained and enhanced.</li> <li>• Reduction in the threat to endangered/ vulnerable species of fauna and flora as wildlife habitats and areas of native vegetation recover.</li> <li>• Decline in the area of land with <i>teresken</i> shrub communities halted and reversed.</li> <li>• A replicable model developed for the sustainable management of trans-boundary mountain ecosystems.</li> </ul>

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
<b>Outcome 1:</b> Enhanced regional cooperation between Tajikistan and Kyrgyzstan creating the enabling regional strategic planning, and national legislative, policy, institutional, technical, and economic incentive, environment, for the sustainable management of the High Pamir and Pamir-Alai mountain ecosystems.	<ul style="list-style-type: none"> <li>There are no current plans to formulate a trans-boundary strategy and action plan for the entire High Pamir and Pamir Alai Mountain region</li> <li>Continued protection and management of existing protected areas and establishment of a trans-boundary national park.</li> <li>Some limited efforts to mainstream environmental issues related to the UNCCD, UNFCCC and UNCBD, but no specific focus on sustainable land management concepts and principles.</li> </ul>	<ul style="list-style-type: none"> <li>Formulation of a trans-boundary strategy and action plan</li> <li>Development of an improved trans-boundary enabling legal and regulatory framework.</li> <li>Mainstreaming of sustainable land management concepts and principles</li> </ul>	
	<b>Subtotal:</b> \$ 5,000,000	<b>Subtotal:</b> \$ 7,328,360	<b>Subtotal:</b> \$ 2,328,360 <b>GEF:</b> \$ 750,000 <b>Co-financing:</b> \$ 1,578,360
<b>Outcome 2:</b> Improved capacity of Tajikistan's and Kyrgyzstan's public and private sector agency research and advisory support service providers to promote sustainable land management within the High Pamir and Pamir-Alai Mountains.	<ul style="list-style-type: none"> <li>Limited public and private sector advisory support service providers operating in the project area currently receiving minimal institutional capacity building</li> <li>Very limited research into the specific constraints and opportunities for sustainable land management faced by mountain communities.</li> </ul>	<ul style="list-style-type: none"> <li>Public and private sector advisory support service providers capacity building.</li> <li>Adaptive research trials investigating innovative and sustainable agronomic, animal husbandry and mountain ecosystem resource management practices with the potential to address mountain specific ecological and economic concerns.</li> </ul>	
	<b>Subtotal:</b> \$ 15,500,000	<b>Subtotal:</b> \$ 17,727,880	<b>Subtotal:</b> \$ 2,227,880 <b>GEF:</b> \$ 750,000 <b>Co-financing:</b> \$ 1,477,880

<b>Cost/Benefit</b>	<b>Baseline (B)</b>	<b>Alternative (A)</b>	<b>Increment (A-B)</b>
<b>Outcome 3:</b> Reduction in rural poverty and economic vulnerability through restoration and enhancement of the productive and protective functions (ecological goods and services) of the High Pamir and Pamir-Alai mountain ecosystems.	<ul style="list-style-type: none"> <li>Existing community-based development projects primarily focus on improving rural household social welfare, livelihoods and food security, sustainable land management issues are secondary if addressed at all.</li> <li>Ad hoc identification and design of community level projects unrelated to any comprehensive assessment of the degradation status of the local ecosystem resources.</li> <li>Existing civil society organisational capacity building activities primarily focus on skills for social development.</li> <li>Very limited ecosystem resource based tourism development within the region.</li> </ul>	<ul style="list-style-type: none"> <li>Community-based land use planning and ecosystem resource based livelihoods development.</li> <li>SDU sustainable land management micro-project portfolios derived from a comprehensive assessment of current ecosystem resource degradation.</li> <li>Civil society organisational capacity building for sustainable land management.</li> <li>Commercialisation of the mountain landscapes and biodiversity resources through the development of environmentally sensitive tourism.</li> </ul>	
	<b>Subtotal:</b> \$ 121,000,000	<b>Subtotal:</b> \$ 127,378,080	<b>Subtotal:</b> \$ 6,378,080 <b>GEF:</b> \$ 3,000,000 <b>Co-financing:</b> \$ 3,378,080

<b>Cost/Benefit</b>	<b>Baseline (B)</b>	<b>Alternative (A)</b>	<b>Increment (A-B)</b>
<b>Outcome 4:</b> Generic guidelines developed for up-scaling and replication of the lessons learnt, from the project's experience with sustainable land management, within comparable trans-boundary mountain regions within Asia and elsewhere.	<ul style="list-style-type: none"> <li>Limited understanding of the causative factors underlying the link between poverty, vulnerability and land degradation.</li> <li>'Generic guidelines for high altitude mountain trans-boundary regions are currently unavailable for use in: (i) the design and implementation of sustainable land management interventions; and (ii) the formulation of enabling legal and institutional frameworks.</li> <li>Limited previous project experience with sustainable land management in Central Asia's trans-boundary mountain regions that could be replicated elsewhere.</li> </ul>	<ul style="list-style-type: none"> <li>The causative factors underlying the link between poverty, vulnerability and land degradation understood, and measures to mitigate the negative impacts identified.</li> <li>Development of a set of generic guidelines for high altitude mountain trans-boundary regions for use in: (i) the design and implementation of sustainable land management interventions; and (ii) the formulation of enabling legal and institutional frameworks.</li> <li>Review and documentation of project experience used to develop recommendations for up-scaling and replication of the project's approach within comparable trans-boundary high altitude mountain regions.</li> </ul>	
	<b>Subtotal:</b> \$ 5,000,000	<b>Subtotal:</b> \$ 9,327,600	<b>Subtotal:</b> \$ 3,837,600 <b>GEF:</b> \$ 500,000 <b>Co-financing:</b> \$ 4,327,600
<b>Outcome 5:</b> An national and regional management structure and a decision support/monitoring and evaluation system providing those responsible for promoting sustainable land management within the High Pamir and Pamir-Alai Mountains with a means of storing base line information, and comparing it with subsequently recorded data to measure changes over time.	<ul style="list-style-type: none"> <li>No existing project management structure for the implementation of the proposed trans-boundary and national level activities.</li> <li>Except for limited activities during the PDF-B no work has been undertaken to develop a management decision support/monitoring and evaluation system for the High Pamir and Pamir Alai Mountain region.</li> </ul>	<ul style="list-style-type: none"> <li>An operational regional and national project management structure implementing the proposed activities at both the trans-boundary and national levels.</li> <li>Development of a management decision support/monitoring and evaluation system for the High Pamir and Pamir Alai Mountain region.</li> </ul>	
	<b>Subtotal:</b> nil	<b>Subtotal:</b> \$ 3,276,160	<b>Subtotal:</b> \$ 3,276,160 <b>GEF:</b> \$ 1,000,000 <b>Co-financing:</b> \$ 2,276,160
<b>Total</b>	<b>Baseline Total:</b> \$ 146,500,000	<b>Alternative Total:</b> \$ 165,038,080	<b>Incremental Project Cost:</b> \$ 18,538,080 <b>GEF:</b> \$ 6,000,000 <b>Co-financing:</b> \$ 12,538,080
<b>PDF-B</b>		\$650,000	\$650,000
<b>GRAND TOTAL</b>	\$146,500,000	\$ 165,688,080	\$ 19,188,080

## Project Baseline Costs in US\$

Country	Project	Donor	Total Budget	% allocated to project area	Total for baseline costs
<b>Component 1 Improving the enabling legal, policy, institutional, and strategic planning, environment for sustainable land management</b>					
Ky & Tj	Establishment of Pamir Alai transboundary conservation between Kyrgyzstan and Tajikistan (transboundary national park)	EU/TACIS	1,450,000	100	1,450,000
Kyrgyzstan	West Tien Shan Biodiversity Conservation Central Asian Transboundary project	World Bank	3,038,000	15	455,700
Kyrgyzstan	West Tien Shan Biodiversity Conservation European Aid project	EU	968,000	15	145,200
Kyrgyzstan	Legal Frameworks for Development of Forestry and Hunting	FAO	176,000	50	88,000
Kyrgyzstan	Reconsideration and harmonisation of the legislation on protected territories	FAO	40,600	100	40,600
Kyrgyzstan	Project on registration of land and real estate	Finland	11,830,000	25	2,957,500
<b>Subtotal Component 1 baseline costs</b>					5,137,000
<b>Component 2 Capacity building for sustainable land management</b>					
Kyrgyzstan	Batken Capacity Building Project	GTZ	2,050,000	50	1,025,000
Kyrgyzstan	Central Asian Mountain Partnership	SDC	3,700,000	25	925,000
Tajikistan	Central Asian Mountain Partnership	SDC	40,000	100	40,000
Tajikistan	Governance training program	UCA	100,000	50	50,000
Ky & Tj	10% of component 3 baseline costs are assumed to be used for capacity building				13,413,095
<b>Subtotal Component 2 baseline costs</b>					15,453,095
<b>Component 3 Poverty Alleviation Through Community-Based Sustainable Land Management</b>					
Kyrgyzstan	Kyrgyz Swiss Program on support of forestry sector	SDC	15,000,000	25	3,750,000
Kyrgyzstan	Kyrgyz Norway Program on forest sector and environment	Norway	360,000	25	90,000
Kyrgyzstan	Agricultural Support Service Project	World Bank	21,666,000	25	5,416,500
Kyrgyzstan	Kyrgyz Swiss Agrarian Program	SDC	14,400,000	25	3,600,000
Kyrgyzstan	Promotion of Kyrgyzstan as a country of tourism	Helvetas	1,000,000	25	250,000
Kyrgyzstan	Emergency rehabilitation project	World Bank Japan	10,750,000	25	2,687,500
Kyrgyzstan	Reduction of risks of acts of nature in most vulnerable communities of Osh and Jalalabad oblasts	UNDP	300,000	50	150,000

Kyrgyzstan	Project on irrigation	World Bank	20,000,000	25	5,000,000
Kyrgyzstan	Irrigation System Rehabilitation	World Bank	35,000,000	30	10,500,000
Kyrgyzstan	Rural Investment Project	World Bank			
		Japan	19,149,000	25	4,787,250
Kyrgyzstan	Agro-business and marketing project	World Bank			
		Japan	12,850,000	25	3,212,500
Kyrgyzstan	Rural Water supply and sanitary project	World Bank	15,000,000	25	3,750,000
Kyrgyzstan	Rural development project	ADB	36,000,000	25	9,000,000
Kyrgyzstan	JUMP (juniper forest management plans)	EU/TACIS	1,195,000	50	597,500
Kyrgyzstan	Rural water supply and sanitation project	DfID	7,140,000	10	714,000
Kyrgyzstan	Improvement of production and income for farmers Osh Batken and Jalalabad	ADB	800,000	60	480,000
Kyrgyzstan	Capital investments in environmental protection (1999-2003)	Gov of Kyrgyzstan	5,500,000	25	1,375,000
Tajikistan	Increasing food security and improving rural livelihoods humanitarian assistance program	MSDSP	26,000,000	100	26,000,000
Tajikistan	Social development in eastern & southern Tajikistan	Swiss	3,304,000	100	3,304,000
Tajikistan	Pamir High Mountains Integrated Project	ACTED	80,500	100	80,500
Tajikistan	Community agricultural and watershed project	World Bank	4,500,000	20	900,000
Tajikistan	Poverty mitigation project GBAO	World Bank			
		KfW DfID	14,000,000	10	1,400,000
Tajikistan	DIPECHO Second Action Plan for Central Asia 2004-2005 disaster preparedness	EC	1,385,000	100	1,385,000
Tajikistan	Shagon - Zigar Road Construction	IDB	9,100,000	100	9,100,000
Tajikistan	Pamir Private Power Project	World Bank			
		Swiss	24,267,000	100	24,267,000
Tajikistan	Remote hazard assessment in the western Pamirs	SDC	153,000	100	153,000
Tajikistan	Emergency Food aid and rehabilitation activity	FAO WFP	1,823,000	100	1,823,000
Tajikistan	Community based disaster prevention project Central Tajikistan	WFP	441,000	20	88,200
Tajikistan	Improving rural livelihoods	Japan GTZ	2,420,000	100	2,420,000
Tajikistan	Poverty mitigation project Jirgatal	World Bank			
		KfW DfID	100,000	100	100,000
Tajikistan	Environmental protection related programs	Gov of Tajikistan	5,500,000	50	2,750,000
Regional	Eco-regional program: Collaborative Research Program for Sustainable Agricultural Development in Central Asia and the Caucasus 2003-2008	ICARDA	25,000,000	20	5,000,000

<b>Subtotal Component 3 baseline costs</b>						134,130,950
<b>Less 10% assumed to be for capacity building (component 2)</b>						120,717,855
<b>Component 4 Evaluating the Impact, and Determining the Lessons for Replicating Project Experience</b>						
Kyrgyzstan	Monitoring and support of the management of environmental protection	Finland	1,080,000	20		216,000
		Swiss	WB			
Tajikistan	Lake Sarez Mitigation Project	Japan	4,300,000	100		4,300,000
<b>Subtotal Component 4 baseline costs</b>						4,516,000



## ANNEX 9: Logical Framework for the full project

Intervention Logic	Indicators of performance	Sources of verification	Assumptions & Risks
<b>OVERALL GOAL</b>			
<p>To restore, sustain, and enhance, the productive and protective functions of the trans-boundary ecosystems of the High Pamir and Pamir-Alai Mountains, of Tajikistan and Kyrgyzstan, so as to improve the social and economic well-being of the rural communities and households utilizing the region's ecosystem resources to meet their livelihood needs, while preserving its unique landscape and globally important biodiversity.</p>	<ul style="list-style-type: none"> <li>• The trans-boundary mountain ecosystems of the High Pamir and Pamir Alai mountains providing improved ecological services and benefits.</li> <li>• Improved management of the region's croplands and pastures producing higher returns, more diversified products, and a reduction in the area affected by land degradation.</li> <li>• Quantitative and qualitative increase in the area's bio-diversity (in particular the endemic and/or globally vulnerable species of fauna and flora).</li> <li>• Improved welfare status of those rural households whose livelihoods derive from utilization of the ecosystem resources of the High Pamir and Pamir Alai mountains.</li> <li>• An improved enabling technical, institutional, legal and policy environment for sustainable land management within the High Pamir and Pamir Alai mountains.</li> </ul>	<ul style="list-style-type: none"> <li>• Local and national environmental and socio-economic surveys</li> <li>• Reviews of institutional policy and practice</li> <li>• National legislation</li> <li>• Trans-boundary and regional agreements</li> <li>• GEF Operational Program reviews</li> </ul>	<ul style="list-style-type: none"> <li>• Strong commitment in both countries to tackle degradation within the High Pamir and Pamir Alai trans-boundary mountain ecosystems through community-based approaches that address local cultural, socio-economic and ecological concerns.</li> <li>• Both governments willing to create the enabling technical, institutional, legal and policy environment required for sustainable management of the trans-boundary mountain ecosystems.</li> </ul>

Intervention Logic	Indicators of performance	Sources of verification	Assumptions & Risks
<b>PROJECT OBJECTIVES</b>			
<b>Developmental Objective</b>			
<p>To address the link between poverty, vulnerability and land degradation through the promotion of sustainable land management practices that contribute to improving the livelihoods and economic well-being of the inhabitants of the High Pamir and Pamir-Alai Mountains.</p>	<ul style="list-style-type: none"> <li>• The causative factors underlying the link between poverty, vulnerability and land degradation understood, and measures to mitigate the negative impacts identified and implemented leading to:</li> <li>• Human vulnerability to anthropogenic -induced land degradation decreased by 30% in the participating minimum of 48 sub-district units (SDUs) by end of PY8</li> <li>• Income from natural resources management activities increased by 10% in the participating SDUs by end of PY8</li> <li>• A minimum of 2000 farmers, and representatives from local CBOs and local authorities with enhanced capacities to assess their local land and ecosystem resources, to plan their management in an integrated framework, and to develop and implement micro-project proposals that improve both their livelihoods and environment by end of PY4 and 3000 by end of PY8.</li> <li>• At least 10 locally validated sustainable resource use measures/approaches providing higher returns to the households and communities that adopt them than they get from their current resource use activities available as replicable best practices for other SDUs in the Pamir-Alai mountains by end of PY8</li> </ul>	<ul style="list-style-type: none"> <li>• Beneficiary environmental and socio-economic impact assessment surveys.</li> <li>• Project and GEF progress and evaluation reports.</li> <li>• SLM environmental and socio-economic impact assessment guideline manuals.</li> <li>• Local and central government official statistics.</li> <li>• Special case studies.</li> </ul>	<ul style="list-style-type: none"> <li>• The promotion of sustainable land management practices will reduce rural poverty and economic vulnerability.</li> <li>• The ecosystem resources of the High Pamir and Pamir Alai Mountains, once better managed, have the inherent potential to provide the region's inhabitants with sustainable livelihoods and to meet their economic well-being needs.</li> </ul>

Intervention Logic	Indicators of performance	Sources of verification	Assumptions & Risks
<b>Environmental Objective</b>			
<p>To mitigate the causes and negative impacts of land degradation on the structure and functional integrity of the ecosystems of the High Pamir and Pamir-Alai Mountains through mainstreaming sustainable land management tools and practices from household, community, local government, national and regional levels.</p>	<ul style="list-style-type: none"> <li>• The concepts and principles of sustainable land management incorporated into local, national and regional level land use plans/strategies for mitigating the causes and negative impacts of land degradation on the structure and functional integrity of the ecosystem resources of the High Pamir and Pamir Alai Mountains leading to:</li> <li>• At least 400 000 ha of land (including cultivated, pasture and forest land) in the High Pamir and Pamir Alai Mountains brought under improved land management and 20% improvement in carbon stores above and below ground on 3,000 ha of land by end of PY4 with demonstration effect on another 1.2 mill ha by end of PY8</li> <li>• 20% of improved carbon stores above and below ground ecosystems on 3000 ha of land by end of PY8</li> <li>• Integrated community, national and transboundary mechanisms and measures for protection and/or restoration of 10 endangered animal and 20 plant species undertaken by end of PY8</li> <li>• A minimum of 1000 local and national officials, and representatives from research institutes and support service providers with enhanced technical and research capacities for mainstreaming sustainable land and ecosystem management policies and practices at the local, national and transboundary levels by end of PY4 and 2000 by end of PY8</li> </ul>	<ul style="list-style-type: none"> <li>• Local and national environmental impact assessment surveys</li> <li>• Project and GEF progress and evaluation reports.</li> <li>• SLM environmental impact assessment guideline manuals</li> </ul>	<ul style="list-style-type: none"> <li>• Land degradation within the High Pamir and Pamir Alai Mountains can be reversed, and has not yet advanced to the stage that it is no longer feasible to restore the structure and functional integrity of the region's ecosystems.</li> </ul>

Intervention Logic	Indicators of performance	Sources of verification	Assumptions & Risks
<b>PROJECT OUTCOMES</b>			
<p><b>Outcome 1:</b> Enhanced regional cooperation between Tajikistan and Kyrgyzstan creating the enabling regional strategic planning, and national legislative, policy, institutional, technical, and economic incentive, environment, for the sustainable management of the High Pamir and Pamir-Alai mountain ecosystems.</p>	<ul style="list-style-type: none"> <li>A regional strategy and action plan for the sustainable management of the ecosystem resources of the High Pamir and Pamir Alai Mountain region guiding local level land use plans and improved ecosystem management prepared by end of PY4.</li> <li>At least two (one/country) key national laws/legislative instruments regulating the use of land and other ecosystem resources in the High Pamir and Pamir Alai area improved by end pf PY4, creating the legal basis for sustainable land management within the High Pamir &amp; Pamir-Alai Mountain region.</li> <li>Evidence that the concepts and principles of sustainable land management have been incorporated into at least two (one /country) environmental management, and/or economic development plans, to be implemented within the High Pamir and Pamir Alai mountains by end of PY4.</li> </ul>	<ul style="list-style-type: none"> <li>A published regional strategy and action plan</li> <li>The proclaimed laws, implementing rules, regulations and legislative guidelines of both countries.</li> <li>The environmental management, and development, plans and policies of: (i) central and local governments; and (ii) the concerned technical sectoral agencies.</li> <li>The documents of development projects and programs implemented within the High Pamir and Pamir Alai mountain region.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Political stability allowing the governments of both States to cooperate in the development of trans-boundary strategies and action plans, policies, regulatory frameworks and legal instruments for sustainable land management within, the High Pamir and Pamir-Alai Mountain region.</li> </ul>
<p><b>Outcome 2:</b> Improved capacity of Tajikistan's and Kyrgyzstan's public and private sector agency research and advisory support service providers to promote sustainable land management within the High Pamir and Pamir-Alai Mountains.</p>	<ul style="list-style-type: none"> <li>Rural communities reporting an increase in the quality and quantity of advisory support services received from public and/or private sector agencies.</li> <li>At least four (two/country) key institutions conducting adaptive research into the area specific constraints and opportunities for sustainable land management faced by rural communities in the High Pamir and Pamir Alai mountains by end of PY4.</li> </ul>	<ul style="list-style-type: none"> <li>Monthly, quarterly and annual reports outlining activities undertaken by individual advisory support agencies and research institutions.</li> <li>Advisory support service providers users surveys.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>That there are public and private sector agencies, in both countries, that consider it important to provide area specific research and advisory support services to rural communities within the High Pamir and Pamir-Alai Mountains.</li> </ul>

Intervention Logic	Indicators of performance	Sources of verification	Assumptions & Risks
<p><b>Outcome 3:</b> Reduction in rural poverty and economic vulnerability through restoration and enhancement of the productive and protective functions (ecological goods and services) of the High Pamir and Pamir-Alai mountain ecosystems.</p>	<ul style="list-style-type: none"> <li>Ecosystem resource degradation assessments undertaken, and land use/improved ecosystem management plans prepared, for a minimum of 24 SDUs by PY 4 and 48 SDUs in the High Pamir and Pamir Alai by end of PY8</li> <li>At least 100 micro-projects implemented by a minimum of 24/48 of the High Pamir and Pamir Alai SDUs by end of PY4/PY8.</li> <li>Environmentally sensitive tourism plans developed and implemented within a minimum of 10 of the High Pamir and Pamir Alai SDUs.</li> </ul>	<ul style="list-style-type: none"> <li>Individual SDU community-based ecosystem status reports and land use/ecosystem management plans.</li> <li>Individual SDU micro-project portfolios.</li> <li>Individual SDU ecotourism plans.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>The ecosystem resources of the High Pamir and Pamir Alai mountains, with good land management and protection, can provide rural households with sustainable and profitable livelihoods.</li> </ul>
<p><b>Outcome 4:</b> Generic guidelines developed for up-scaling and replication of the lessons learnt, from the project's experience with sustainable land management, within comparable trans-boundary mountain regions within Asia and elsewhere.</p>	<ul style="list-style-type: none"> <li>A validated vulnerability analysis framework.</li> <li>Generic lessons identified for the implementation of sustainable land management in trans-boundary regions.</li> <li>Generic guidelines prepared for the up-scaling and replication of the lessons learnt within comparable high altitude trans-boundary mountain regions.</li> </ul>	<ul style="list-style-type: none"> <li>Case studies and other reports documenting the targeted research findings.</li> <li>A set of generic guidelines for high altitude mountain trans-boundary regions for use in: (i) the design and implementation of sustainable land management interventions; and (ii) the formulation of enabling legal and institutional frameworks.</li> <li>A set of generic guidelines for the up-scaling and replication of the lessons learnt within comparable high altitude trans-boundary mountain regions.</li> <li>Academic papers in peer reviewed journals and workshop/conference proceedings.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Experience gained from project activities within the High Pamir and Pamir-Alai Mountains is applicable to other trans-boundary mountain regions within Asia and elsewhere.</li> </ul>

Intervention logic	Critical steps and milestones	Sources of verification	Assumptions & Risks
<b>COMPONENT OUTPUTS AND ACTIVITIES</b>			
<b>Component 1 Improving the enabling legal, policy, institutional, and strategic planning, environment for sustainable land management</b>			
<p><b>Output 1.1:</b> A trans-boundary sustainable land management strategy and action plan prepared for the entire High Pamir and Pamir-Alai Mountains region outlining: (i) a common set of principles, technical standards and management requirements for sustainable, profitable, and equitable use of the region's mountain ecosystem resources; and (ii) an intervention schedule detailing the order of priority for addressing the degradation problems on an ecosystem and SDU basis.</p>	<ul style="list-style-type: none"> <li>Review existing related central Asian, national and local environmental and economic development strategies and action plans</li> <li>Undertake gap filling studies and field surveys</li> <li>Undertake stakeholder consultation, negotiation and conflict resolution</li> <li>Identify priority communities and ecosystems</li> <li>Reach agreement on a trans-boundary sustainable land management strategy and action plan for the entire High Pamir and Pamir-Alai Mountains region</li> <li>Develop a joint trans-boundary institutional mechanism for overseeing and regularly reviewing the implementation of the strategy and action plan.</li> </ul>	<ul style="list-style-type: none"> <li>The written trans-boundary sustainable land management strategy and action plan for the High Pamir and Pamir-Alai Mountains region.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Consensus agreement can be reached between the different national and local stakeholders (government, private sector, and ecosystem users) on a sustainable land management strategy and action plan for the High Pamir and Pamir-Alai Mountains region.</li> <li>Both governments willing to collaborate on the preparation and implementation of a trans-boundary strategy and action plan for the High Pamir and Pamir-Alai Mountains region.</li> </ul>
<p><b>Output 1.2:</b> An improved enabling legal and regulatory framework in place for the sustainable and equitable management, and utilisation, of the ecosystem resources of the High Pamir and Pamir-Alai mountain region.</p>	<ul style="list-style-type: none"> <li>Review existing national laws and regulations against the requirements for SLM within the High Pamirs and Pamir Alai Mountains</li> <li>Identify gaps, conflicts and overlaps in existing legislation</li> <li>Formulate an improved enabling legal and regulatory framework at the trans-boundary, national and local levels</li> <li>Draft at least two new/improved laws, implementing rules, regulations and legislative guidelines for the trans-boundary, national and local levels by end of PY4.</li> </ul>	<ul style="list-style-type: none"> <li>Project supported reviews of the laws and regulations of Tajikistan and Kyrgyzstan</li> <li>Proclaimed laws, implementing rules, regulations and regional and national legislative frameworks and guidelines.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Both governments willing to review and where necessary revise their existing legal regulatory framework for the equitable management and utilisation of mountain ecosystem resources from the regional (trans-boundary) to local levels.</li> </ul>

Intervention logic	Critical steps and milestones	Sources of verification	Assumptions & Risks
<p><b>Output 1.3:</b> Sustainable land management concepts and principles mainstreamed within the environmental management, and economic development, plans and policies of those institutions with administrative and technical responsibility for economic development, environmental preservation, and land use, within the High Pamir and Pamir-Alai Mountains.</p>	<ul style="list-style-type: none"> <li>• Raise awareness of central and local government planners and policy makers on the concepts and principles of SLM</li> <li>• Develop guidelines for mainstreaming SLM concepts, principles and standards into regional, national and local environmental management, and economic development, plans and policies for the High Pamir and Pamir Alai Mountains</li> </ul>	<ul style="list-style-type: none"> <li>• The written environmental management, and development, plans and policies of: (i) central and local governments; and (ii) the concerned technical sectoral agencies.</li> <li>• Institutional awareness assessments.</li> <li>• The documents of development projects and programs implemented within the High Pamir and Pamir Alai mountains.</li> <li>• Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>• Central and local governments willing to mainstream sustainable land management concepts, principles and standards into their environmental management, and development, plans, policies, projects and programs for the High Pamir and Pamir Alai mountains.</li> </ul>

Intervention logic	Critical steps and milestones	Sources of verification	Assumptions & Risks
<b>Component 2 Capacity building for sustainable land management</b>			
<b>Output 2.1:</b> A core group of public and private sector agencies, in both Tajikistan and Kyrgyzstan, providing improved advisory support services on sustainable land management practices, to farmers, herders, forest, and wildlife resource users within the High Pamir and Pamir-Alai Mountains.	<ul style="list-style-type: none"> <li>Identify, and assess the capacity of, the public and private sector agencies that can provide research and advisory support services to farmers, herders and forest users within the High Pamir and Pamir-Alai Mountains.</li> <li>Build the capacity of at least one of these advisory support service providers per country.</li> <li>Provide them with the technical information, participatory planning guidelines, extension literature and other materials required for promoting sustainable land management in the High Pamir and Pamir-Alai Mountains.</li> </ul>	<ul style="list-style-type: none"> <li>Institutional capacity assessment surveys.</li> <li>Monthly, quarterly and annual reports outlining activities undertaken by individual advisory support agencies.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Willingness of the agencies to improve their capacity to provide advisory support services to land users within the High Pamir and Pamir-Alai Mountains.</li> </ul>
<b>Output 2.2:</b> An enhanced capacity amongst government and academic research institutes to work with mountain communities, leading to the validation and adoption of a number of innovative and sustainable agronomic, animal husbandry and mountain ecosystem resource management practices with the potential to address mountain specific ecological and economic concerns.	<ul style="list-style-type: none"> <li>Government and academic research institutes invited to bid for project provided targeted research grants.</li> <li>Preparation and submission of adaptive research proposals to address mountain specific sustainable land management constraints and opportunities.</li> <li>Awarding of adaptive research grants.</li> <li>Implementation of at least 10 adaptive research trials in partnership between the research scientists and local farmers, herders, forest, and/or wildlife resource users.</li> </ul>	<ul style="list-style-type: none"> <li>Adaptive research proposals.</li> <li>Monthly, quarterly and annual reports outlining activities undertaken by individual advisory support agencies.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Government and academic research institutes have an interest in investigating the area specific sustainable land management problems faced by isolated and marginal mountain communities.</li> </ul>
<b>Component 3 Poverty Alleviation Through Community-Based Sustainable Land Management</b>			
<b>Output 3.1:</b> A minimum of 48 SDUs with their own land use plan for the improved management of their local ecosystem resources, and functioning community-based civil society organizations engaging in the planning and implementation of field level sustainable land management activities.	<ul style="list-style-type: none"> <li>Assess the degradation status of each participating SDU's ecosystem resources</li> <li>Develop community-based SDU wide land use/ecosystem management plans.</li> <li>Build the capacity of community-based civil society organisations to plan and implement field level sustainable land management activities.</li> </ul>	<ul style="list-style-type: none"> <li>SDU ecosystem status assessments and community-based land use/improved ecosystem management plans.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>SDUs are willing to spend up to a year working with the project to assess the degradation status of their ecosystem resources and prepare their own community-based land use/improved ecosystem management plans.</li> </ul>



Intervention logic	Critical steps and milestones	Sources of verification	Assumptions & Risks
<b>Output 3.2:</b> A minimum of 48 SDUs addressing ecosystem degradation and rural poverty through implementing innovative field level sustainable land management practices, and related micro-projects.	<ul style="list-style-type: none"> <li>• Prepare SDU portfolio of micro-project proposals.</li> <li>• Screen SDU portfolio of micro-project proposals according to the eligibility criteria.</li> <li>• Fund and implement eligible micro-projects.</li> </ul>	<ul style="list-style-type: none"> <li>• SDU micro-project portfolios.</li> <li>• Minutes of the micro-project screening committee.</li> <li>• Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>• The costs and benefits of the micro-projects will be shared equitably within the SDU and between different social groups.</li> <li>• SDUs will be interested in the design and implementation of micro-projects aimed at promoting sustainable land management.</li> </ul>
<b>Output 3.3:</b> The commercial value of conserving the unique landscape and biodiversity resources of the High Pamir and Pamir-Alai Mountains realised through development of the area's potential for environmentally sensitive tourism, with the costs and benefits shared equitably with the local communities.	<ul style="list-style-type: none"> <li>• Assess the constraints and opportunities for environmentally sensitive tourism within the High Pamir and Pamir Alai mountains</li> <li>• Develop with the local communities a 'master plan' for the commercial equitable development of environmentally sensitive trekking, ecotourism (wildlife watching and botanical tours) and limited trophy hunting based livelihood enterprises</li> <li>• Develop the tourism infrastructure and market it within and outside Central Asia.</li> </ul>	<ul style="list-style-type: none"> <li>• National surveys of tourists entering each country as to reason for visit and places to visit.</li> <li>• Hotel/guest house registrations and tour company records.</li> <li>• Records of number of hunting licenses issued and fees paid to government and local communities.</li> <li>• The High Pamir and Pamir Alai region being marketed as one of the destinations offered by international ecotourism companies.</li> <li>• Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>• The High Pamir and Pamir Alai mountains contain endemic and/or rare fauna and flora that would attract eco-tourists.</li> <li>• Tourists are willing, and can obtain visas/ permits to visit the High Pamir and Pamir Alai mountains for trekking, ecotourism and/or hunting purposes.</li> </ul>
<b>Component 4 Evaluating the Impact, and Determining the Lessons for Replicating Project Experience</b>			
<b>Output 4.1:</b> A validated conceptual framework being used to evaluate the impact of sustainable land management on reducing the vulnerability of rural livelihoods to land degradation, improving economic well being, and restoring the protective and productive functions of the High Pamir and Pamir-Alai Mountain ecosystems.	<ul style="list-style-type: none"> <li>• Develop and test a vulnerability analysis framework for assessing the impact of land degradation on mountain communities.</li> <li>• Undertake baseline studies using the vulnerability analysis framework.</li> <li>• Conduct follow up mid term and final year studies to determine changes in vulnerability and assess the impact of sustainable land management on livelihoods and economic well-being.</li> </ul>	<ul style="list-style-type: none"> <li>• A report outlining the concepts and principles of the vulnerability analysis framework and describing its use as a tool for assessing the impact of land degradation on mountain communities.</li> <li>• Baseline, mid term and final year study reports documenting the vulnerability analysis results.</li> <li>• Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>• The UNU-EHS vulnerability analysis framework can be adapted and applied within the area specific environmental and socio-economic circumstances of the High Pamir and Pamir Alai Mountains.</li> </ul>
<b>Output 4.2:</b> A set of generic lessons learnt for the improved implementation of sustainable land management interventions in Central Asian trans-boundary high altitude mountain regions.	<ul style="list-style-type: none"> <li>• Internationally renowned academic institutions invited to submit case study proposals</li> <li>• Screening and commissioning of case studies.</li> <li>• Conduct at least three (one/geographic sub-region) in-depth case studies to identify generic lessons that can be learnt from project experience.</li> </ul>	<ul style="list-style-type: none"> <li>• Case study proposals.</li> <li>• Case study reports documenting the generic lessons learnt.</li> <li>• Academic papers in peer reviewed journals and workshop/conference proceedings.</li> <li>• Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>• The selected SDUs are willing to cooperate with external academic researchers over an extended period to complete the in-depth case studies.</li> </ul>

Intervention logic	Critical steps and milestones	Sources of verification	Assumptions & Risks
<p><b>Output 4.3:</b> Experience gained from project implementation used to develop generic guidelines that can be used for the design and implementation of sustainable land management interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions within Asia and elsewhere.</p>	<ul style="list-style-type: none"> <li>Identify and review the project impact (environmental and socio-economic).</li> <li>Evaluate efficiency and effectiveness of project design and implementation.</li> <li>Review and refine the process used to formulate the enabling legal and institutional framework.</li> <li>Prepare a set of generic guidelines for the design and implementation of sustainable land management interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions within Asia and elsewhere.</li> <li>Review and disseminate the generic guidelines at an international workshop/ expert consultation held within the region.</li> </ul>	<ul style="list-style-type: none"> <li>A report outlining a set of generic guidelines for the design and implementation of sustainable land management interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions within Asia and elsewhere.</li> <li>Published proceedings of the international workshop/expert consultation.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Experience gained from project activities within the High Pamir and Pamir-Alai Mountains is not unique to the area but replicable in other trans-boundary mountain regions within Asia and elsewhere.</li> </ul>
<p><b>Output 4.4:</b> Experience gained from project implementation used to develop recommendations for up-scaling and replication of the project's approach within Central Asian trans-boundary high altitude mountain regions.</p>	<ul style="list-style-type: none"> <li>Review the outputs from components 4.1-4.3 to determine the scope for up-scaling and replication of project interventions.</li> <li>Develop recommendations for: (i) up-scaling activities to cover the rest of the High Pamir and Pamir Alai Mountain region; and (ii) replicating the project approach in comparable trans-boundary mountain regions within Asia and elsewhere.</li> <li>Determine the lessons from project experience that can contribute to the further development and refinement of GEF OP#15 strategic priorities.</li> </ul>	<ul style="list-style-type: none"> <li>A report with a set of recommendations for up-scaling and replication of the project approach.</li> <li>A report detailing the lessons and recommendations for further development and refinement of GEF OP#15 strategic priorities.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Experience gained from project activities within the High Pamir and Pamir-Alai Mountains is not unique to the area but can be up-scaled and replicated in other trans-boundary mountain regions within Asia and elsewhere.</li> </ul>

Intervention logic	Critical steps and milestones	Sources of verification	Assumptions & Risks
<b>Component 5 Project Management</b>			
<b>Output 5.1:</b> An operational international, regional and national management structure for the effective implementation of the project's trans-boundary and sub-regional component activities.	<ul style="list-style-type: none"> <li>Establishment of the IPPSC and the two NPSCs.</li> <li>Appointment of two NPHs and a RPO.</li> <li>Recruitment of 2 NPOs.</li> <li>Operationalisation of the 2 NPOs (including the appointment/ secondment of the technical and administrative support staff for each office)</li> <li>Appointment of the REAG.</li> </ul>	<ul style="list-style-type: none"> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>Both governments recognise the need for strong project management and appoint experienced staff to fill the positions of NC, NPM and the NPMO technical and administrative support staff.</li> <li>Political stability prevails enabling UNU to locate the RPMO within the region.</li> </ul>
<b>Output 5.2:</b> An operational management decision support/monitoring and evaluation system providing those responsible for promoting sustainable land management within the High Pamir and Pamir-Alai Mountains with a means of storing base line information, and comparing it with subsequently recorded data to measure changes over time.	<ul style="list-style-type: none"> <li>Develop a harmonised M&amp;E system with verifiable indicators for assessing changes in land degradation status and socio-economic well being within the region.</li> <li>Develop a harmonised M&amp;E system for assessing the impact of changes in the legal, regulatory, policy and institutional environment for sustainable land management at the regional and local level within the High Pamir and Pamir-Alai Mountains.</li> <li>Undertake baseline land degradation status, and socio-economic situation, assessments within representative SDUs.</li> <li>Undertake periodic follow up studies to determine changes in the base-line data and project impact.</li> </ul>	<ul style="list-style-type: none"> <li>A users guidelines 'manual' on how to access and use the data in the information system for making SLM decisions, and for monitoring and evaluation purposes.</li> <li>Information system search records.</li> <li>Papers in peer reviewed journals and workshop proceedings based on data derived from the information system.</li> <li>Project and GEF progress and evaluation reports.</li> </ul>	<ul style="list-style-type: none"> <li>The value of the management information/ monitoring system will be recognised by both governments so that the necessary financial and manpower resources are provided to enable it to continue functioning after project termination.</li> </ul>

## **ANNEX 10: STAP Technical Review and IA Response**

### **STAP TECHNICAL REVIEW**

#### **Sustainable Land Management in the High Pamir and Pamir-Alai Mountains – an Integrated and Trans-Boundary Initiative in Central Asia**

**William Critchley  
Vrije Universiteit Amsterdam**

**30 November 2005**

#### **1. PREAMBLE**

This STAP review of “Sustainable Land Management in the High Pamir and Pamir-Alai Mountains – an Integrated and Trans-Boundary Initiative in Central Asia” (hereafter termed “the project”<sup>52</sup>) follows the terms of reference (TOR) provided to the consultant. The seven key issues and six secondary issues are considered. There is also a general comments section. The basic document presented for review was the Draft Full Project Brief (FPB) dated 18 November 2005, including the Incremental Cost Analysis, logical framework and various technical annexes.

#### **2. GENERAL COMMENTS**

The FPB conforms well to the required GEF structure. It is furthermore well written, thorough, and both persuasively and cogently argued. Clearly, considerable time and effort has gone into its preparation. While there are some issues in the following analysis that still need attention, the project positions itself well within a GEF trajectory, and is one that this consultant believes can help achieve global environmental benefits. Nevertheless it needs to be pointed out at the start that it is a very ambitious project, set in an undeniably difficult geopolitical and environmental context. However the importance of this mountainous trans-boundary zone, in combination with its severe environmental problems mean that urgency is required, and a project must be ambitious to have a chance of impact. A final main point. This project is as much about governance of SLM – catalyzing partnerships for integrated action - as it is about simply piloting methods or technologies. That is commendable.

#### **3. KEY ISSUES**

##### **3.1 Scientific and Technical Soundness**

This is a sound project in terms of its scientific foundation, even though hard evidence (of biodiversity degradation, for example) is not always available. Where numbers and data are lacking, consultation with the local stakeholders has been used to draw conclusions about trends. The analysis of the “root” and “direct” causes, and the vulnerability of the area to land degradation is particularly convincing (see paras 41 onwards and Annex D). There are a variety of potential “micro-projects” on offer in Annex E. They have proven technical merit with a track record. These are, for the main part, reliable conventional technologies. The project will also

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<sup>52</sup> While this follows the FPB where it is referred to consistently as “the project”, it would be more logical and more in keeping with the overall concept to term it “the initiative”

draw on the “piecemeal” efforts of existing/ prior projects (which are criticised, however, for not having given attention to the ecosystem at large). What does not come through clearly enough, is how any of these technologies are related to, or could be adapted to, indigenous knowledge/ practice. Neither is there detail about *where*, or *how widespread* the actual implementation of SLM will be (other than the recurring figures of “100 micro-projects to be set up in at least 48 Sub District Units – SDUs”). Two final points here. First, it is correct to move away from the “protected areas” dependence of the two countries and into “proactive landscape management”. Secondly, the applied research programme is welcome, both in terms of strengthening the capacity in the relevant institutions and setting up a manageable number of adaptive/ participatory research projects.

### **3.2 Identification of global environmental benefits and/or drawbacks**

The development of a technical “model” and governance guidelines for sustainable land management comprise the basis of the project. This is in the face of the well described land degradation (severe in places), and a mountainous zone threatened further by climate change, and exacerbated degradation as a result. Sustainable land management (SLM) is at the heart of healthy ecosystem function, with its potential positive impacts on biodiversity (above and below ground: though there is little/ no mention of the latter, apart from insects), and carbon sequestration (mainly, in this project, an emphasis on maintaining the common/ grazing land carbon pool). Carbon sequestration/ carbon pool protection addresses climate change. Fundamental concerns about international waters flowing from this mountainous “water tower”, are also addressed – at least indirectly. There are no drawbacks envisaged.

### **3.3 Project’s fit within the context of GEF goals**

The project fits well within the GEF context. Its focus on SLM in an area with severe problems of land degradation and ecosystem vulnerability, and thus its relevance to OP 15, is clear. There is also a strong connection with OP 12 through the proposed better grazing management of the commons and other forms of land use, including wooded areas, and thus an integrated ecosystem approach. With respect to SLM-1 the project will tackle the issue of the enabling institutional environment, and – though rather less convincingly presented – is its commitment to SLM-2 (there is for example only fleeting mention of “reintroducing traditional farming and pasture practices”, but at least an analysis of local coping strategies). Beside these aspects, the project is participatory in nature, has been prepared through stakeholder consultation processes, and intends to launch pilot activities on the basis of each community’s chosen land use plans.

### **3.4 How well the project addresses land degradation and its relevance to the Convention to Combat Desertification**

As has been pointed out in 3.1, the problem of land degradation has been exhaustively analysed in the FPB. Furthermore, despite being mountainous, these are low rainfall areas, where intermittent drought adds to other predisposing factors in terms of land degradation and desertification. National Action Programmes (NAPs) under the UNCCD cover, in both countries, many/ most of the issues addressed under the project: for example in Kyrgyzstan’s NAP there is mention of desertification, ecosystems and biodiversity; and in Tajikistan’s NAP the principle aims cover biodiversity, pastureland and “rational use of natural resources”. In conclusion the project both addresses land degradation, and is certainly relevant to the UNCCD.

### 3.5 Global context: rationale for the project's global approach

This project's global importance lies in its significance of being located in the mountainous "water tower" of Central Asia, which is simultaneously a global "hotspot" of biodiversity. With respect to both water resources and biodiversity, climate change is a threat. The negative impacts of land degradation – and equally the benefits of improved land management stimulated by the project – will be felt in the whole region. There is compelling rationale when viewed from a global perspective.

### 3.6 Replicability of the project (added value beyond project itself)

Building on the global rationale presented above, there is a strong case for replicability also. This trans-boundary, mountainous "water tower" with threatened unique biodiversity, where land degradation and associated poverty has resulted from its particular geopolitical history – and climate change is clearly playing a role – may be thought of as being unique. But even if this precise combination is not echoed elsewhere, there are other mountainous zones with enough of these characteristics to make the project's findings relevant and replicable. While this is undoubtedly true, the project document does not specify clearly enough exactly where: much of the Hindu-Kush-Himalayas? the Andes? mountains of Northern and East Africa? The generic guidelines for integrated institutional and legislative arrangements in SLM (and the so-called "model" guidelines<sup>53</sup> which have more of a technical nature) will be an important project contribution, through the GEF, towards upscaling and replicability. The FPB implies, even if it does not use the exact words, that *"if it works in conditions as challenging as these, then it will work elsewhere"*.

### 3.7 Sustainability of the project

Several factors indicate a good likelihood of sustainability after the 4+4 years, two phase<sup>54</sup> project duration. Other factors leave the question pending. On the positive side, the eight years of commitment is a longer period than normally seen in project approaches, though this might not be enough to propel developments into an entirely self-standing future. Also positive is the fact that communities are being engaged in ecosystems assessment and land use planning. The concept of environmentally-sensitive tourism is indeed worth pursuing as a potential future income-generator. Hunting? This is worth considering, while being aware of the damage unregulated hunting/ gathering appears to have done already to the Marco Polo sheep/ ornamental plant populations. At a higher level, the emphasis on the creation of an enabling environment (in all its aspects: institutional, socio-economic and legal) is undoubtedly key to trans-boundary governance of SLM. Two points need better explanation in the FPB. The first is: what is the broad "exit strategy", especially with respect to (a) the various agencies that will have been set up, and (b) future finance to support the institutional processes and the land use initiatives? The second is: after having correctly introduced, within the early pages of the FPB, the paradox of these poorer mountainous states providing free environmental goods and services to their (relatively) wealthier downstream neighbours, the issue of payment for environmental services is not adequately followed up. Surely this is one of the preconditions for – or at least a key potential ally in – assuring the long-term future of sustained natural resources in such areas?

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<sup>53</sup> There needs to be more clarification in terminology and definition here: see the contrast between what is said in (a) the summary, (b) para 63 and (c) in the sources of verification under outcome 4.

<sup>54</sup> Again some confusion: having introduced the two phases in the cover page, they do not reappear in any detail until paras 137, 138. In any event, it seems, from the text and Table 2 (the timeline) that they basically merge into each other – two phases with different emphases.

## **4. SECONDARY ISSUES**

### **4.1 Linkages between land degradation and other focal areas**

There is a transparent link, clearly expressed, between land degradation and biodiversity, climate change, and international waters. These issues are woven together in the fabric of the FPB, which it must be said again, is skilfully constructed.

### **4.2 Linkage to other programmes/ action plans**

A large number of other programmes and action plans have connections with the project, and these are made explicit in the FPB. They include the Regional Strategy and Action Plan (for sustainable mountain development) – which recognises the importance of mountain ecosystems - and the Sub-Regional Action Plans (SRAPs) for Central Asian countries, where there is specific mention of monitoring and evaluation of desertification, biodiversity issues, water use in agriculture and capacity of local communities. As already mentioned, the FPB sits comfortably alongside the two NAPs. Also on the national level, the project is closely compliant with the National Poverty Reduction Strategies where environment and/ or ecosystems are stressed in both.

### **4.3 Other beneficial or possible damaging environmental effects**

It is unlikely that there could be any damaging environmental effects. However the FPB notes the importance of natural geophysical processes (earthquakes, landslides, “Acts of God” etc) in this region. It is clear that these erratic events – combined with the impacts of changing climate - *could* overshadow the less visual improvements achieved by human action through SLM. In other words, the project may be achieving its immediate objectives, but be apparently swimming against the tide. This does not make the initiative any the less valid, however.

### **4.4 Degree of involvement of stakeholders, including private sector**

A wide range of stakeholders have evidently been involved in the preparation phase of the project, both from within, and from outside. Stakeholder consultation has left a strong imprint on the document. As already noted, there is a laudable emphasis on communities, both in ecosystem/environmental assessment, as well as in development of land use plans. Land users were key in identifying the acceleration of land degradation over the last decade. The private sector has not been overlooked and will find a role in provision of services. One rather odd omission from the list of international collaborators is the CGIAR mountain development centre, ICIMOD<sup>55</sup>, based in Kathmandu, Nepal. While the project zone lies just outside ICIMOD’s mandate area, what of ICIMOD’s experience? What about the dissemination/ upscaling/ global mandate of the project? Can this omission be explained/ justified?

### **4.5 Capacity-building aspects**

The FPB stresses the problem of lack of traditional agricultural skills / indigenous natural resource knowledge and sustainable management practices (including grazing regimes) due to the previous status of many local people as workers on collective farms. Here lies one of the strongest needs in terms of capacity building. This is acknowledged and planned for. It may be asked, however, is three years really enough to build capacity and empower communities, even if technical advice continues afterwards? Much is expected of the cadre of “project trained

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<sup>55</sup> The Integrated Centre for Integrated Mountain Development

facilitators” (see paras 89, 113 for example). Will they manage all that is required of them? It is noted that training will be available for potential private sector service providers. In general it is commendable that, in keeping with the project’s general approach, it is not only SLM skills that will be sharpened: even more so, governance and institutional capacity building abilities will be improved at multiple levels. Finally there will be capacity upgrading within existing research institutes.

#### **4.6 Innovativeness of the project**

This will certainly be an innovative project. Above all this is a first in terms of such an integrated approach to improved governance of, and initiatives in, SLM within such a specific – and hugely important – mountainous zone. ‘Proactive landscape management’ is an intriguing, innovative concept. There are various other elements that are innovative and should be applauded: these include the upstream trans-national nature of the intervention; the role of communities in ecosystem assessment and land use planning (especially on grazing lands); the potential for ecotourism in such an area; and the reintroduction of traditional technical and management skills in natural resource management.

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### **RESPONSE TO THE STAP TECHNICAL REVIEW**

#### **Sustainable Land Management in the High Pamir and Pamir-Alai Mountains – an Integrated and Trans-Boundary Initiative in Central Asia**

##### **1. PREAMBLE**

UNEP and UNU would like to thank the STAP Reviewer for the thorough and constructive review of the Draft Full Project Brief (FPB) “Sustainable Land Management in the High Pamir and Pamir-Alai Mountains – an Integrated and Trans-Boundary Initiative in Central Asia”. Our joint responses to the reviewer’s comments on the seven key and six secondary issues are summarized below.

##### **2. GENERAL COMMENTS**

We agree with the reviewer that the problems that the project aims to address are extremely challenging. In this regard, the choices regarding the project’s design, nature and level of interventions, partners and broader stakeholder involvement have been based on strategic assessments of the difficult geopolitical and environmental context so as to have an impact, while minimize the associated risks.

##### **3. KEY ISSUES**

###### **3.1 Scientific and Technical Soundness**

The point the reviewer makes about indigenous knowledge is valid. Yet, baseline studies undertaken in the course of the project development have not identified any specific indigenous ‘best practices’ that offer pathways for the development of improved SLM. It is expected that a mix of indigenous pasture and land management practices from the pre-Soviet time of



collectivization, in combination with relevant advances in agricultural adaptation from the latter period, would emerge from the community based ecosystem resource assessment and land use planning exercise that would establish the basis for SLM interventions at the Sub-District Unit (SDU) level. The specific locations and extent of areas needing SLM in each SDU should also emerge from the planning process. Baseline studies, however, indicate that the areas in the vicinity of settlements would require most urgent and intensive interventions as they have been most severely degraded over the past decade of economic, social and political transformations. Based on preliminary estimates SDU land use plans will be developed for a total of 1.6 million ha of land over the 8-year duration of the project. This number has been included in the FPB and as an indicator in the logical framework.

### **3.2 Identification of global environmental benefits and/or drawbacks**

The generation of tangible global environmental benefits, especially in a region like the High Pamir and Pamir-Alai Mountains, is a long-term objective. In this sense, the integrated multi-level mechanisms for managing the unique mountain resources in a trans-boundary framework should be seen as setting the preconditions for its achievement. Given the harsh climatic conditions over much of the Pamir Alai mountain ranges, the potential for carbon sequestration, particularly in the short life time of the project, is limited due to the very slow growth of much the native flora (*Teresken*, a shrub type characteristic for the Eastern Pamirs, for example, takes decades to grow). In this sense the best options for carbon credits will come from promotion of mini hydro, solar and wind energy generation. With regards to the biodiversity of the region, both above and below ground, the establishment of a trans-boundary resource management framework as well as mechanisms for incorporation of local scientific and indigenous knowledge (much of which is not readily accessible to Western scholars), will provide the preconditions for its preservation.

### **3.3 Project's fit within the context of GEF goals**

We agree with the reviewer. Regarding indigenous knowledge and adaptation, apart from the SDU resource assessment and land use planning, which as mentioned above would allow for specific local approaches and technologies to emerge and/or be developed, a systematized review of relevant factors and indicators for both vulnerability to land degradation, and adaptation strategies and capacities will be undertaken in the framework of the planned vulnerability assessments, which will be carried out by UNU-EHS. It is expected that the findings of these studies will be able to contribute to the broader GEF OP#15 programme objectives and the SLM-2 priority in particular.

### **3.4 How well the project addresses land degradation and its relevance to the Convention to Combat Desertification**

We agree with the reviewer.

### **3.5 Global context: rationale for the project's global approach**

We agree with the reviewer.

### **3.6 Replicability of the project (added value beyond project itself)**

Other mountain ranges in the former Soviet Republics of Central Asia and in China such as the Tien Shan and Altay Shan, as well as the Hindu Kush and Karakoram mountains of Afghanistan

and Pakistan, would be considered as potential sites for replication of the project's experience, given their cultural and ecological proximity to the Pamir-Alai Mountains. Those specific names have been explicitly mentioned in the FPB as suggested by the reviewer. Otherwise many of the generic lessons learnt should apply in any high altitude mountain environment. Concrete possibilities for up-scaling and replication both within and outside Central Asia will be explored by UNU in collaboration with relevant partners working in the region, such as ICIMOD, mentioned by the reviewer, as well as in the broader context of its Global Mountain Partnership Programme and on-going collaborative initiatives in trans-boundary mountain regions in South and South-East Asia and the Balkans.

### **3.7 Sustainability of the project**

Baseline studies and field interviews undertaken in the course of the preparation of the FPB indicate that people running the commercial hunting around Murghab for example, work effectively with local communities to reduce poaching to ensure that all stakeholders have an interest in maintaining enough Marco Polo sheep to support sustainable hunting. The point about the exit strategy is valid but difficult to answer at this stage. It is perhaps something that should be written into the mid term review once the interest and capability of the stakeholder institutions can be properly assessed. The issue of post project financing is one of the issues that should be addressed through the regional trans-boundary strategy. Both points have been included in the FPB as additional explanation in the relevant sections. Regarding issues related to getting the downstream states to make a contribution to the costs of protecting their water sources, we believe that they would be better dealt with under the GEF-ADB CACILM project.

## **4. SECONDARY ISSUES**

### **4.1 Linkages between land degradation and other focal areas**

We agree with the reviewer that those linkages are critical. An important challenge in the course of the project would be to raise the awareness of national and regional stakeholders of various cross-cutting issues and to integrate them in an integrated regional development framework.

### **4.2 Linkage to other programmes/ action plans**

Special attention was given to identifying the existing national and regional programmes and action plans, so that the Pamir-Alai initiative could be designed as complementary and could contribute to their implementation. It is expected that the local level land use planning and micro project design and implementation component of the Pamir-Alai initiative would serve as an example and a catalyst in the operationalization and implementation of the core national and regional level development strategies and action plans, many of which currently exist only on paper.

### **4.3 Other beneficial or possible damaging environmental effects**

We agree with the reviewer and believe that the vulnerability assessments that will be undertaken in the framework of the project would prove helpful for identifying and assessing the various risks, perceptions thereof and coping strategies of different stakeholders, so as to help increase human security.

#### **4.4 Degree of involvement of stakeholders, including private sector**

ICIMOD is indeed a key stakeholder, whose experience in integrated mountain development would provide a solid basis for the development of a transboundary integrated framework for sustainable land and natural resources management in the High Pamir and Pamir Alai Mountains. UNU has worked with ICIMOD in a number of global mountain research and development initiatives, such as the UNU Initiative on Globally-Integrated Environmental Assessment Modelling, as well as in the organization of the Bishkek Global Mountain Summit. In the framework of the Pamir-Alai project linkages will be established with the ICIMOD-coordinated PARDYP Network, including partner institutions from India, Pakistan, Nepal, Myanmar, Bhutan and China. In addition, UNEP's Office for Asia and Pacific (UNEP-ROAP) has a longstanding collaboration with ICIMOD for the Himalayan and Hindu Kush region and is developing early warning systems together with ICIMOD for glacial lakes outburst floods and other mountain hazards. A link will be established with this programme and the Pamir-Alai project in order to promote dissemination and scaling up of good practices developed by the project.

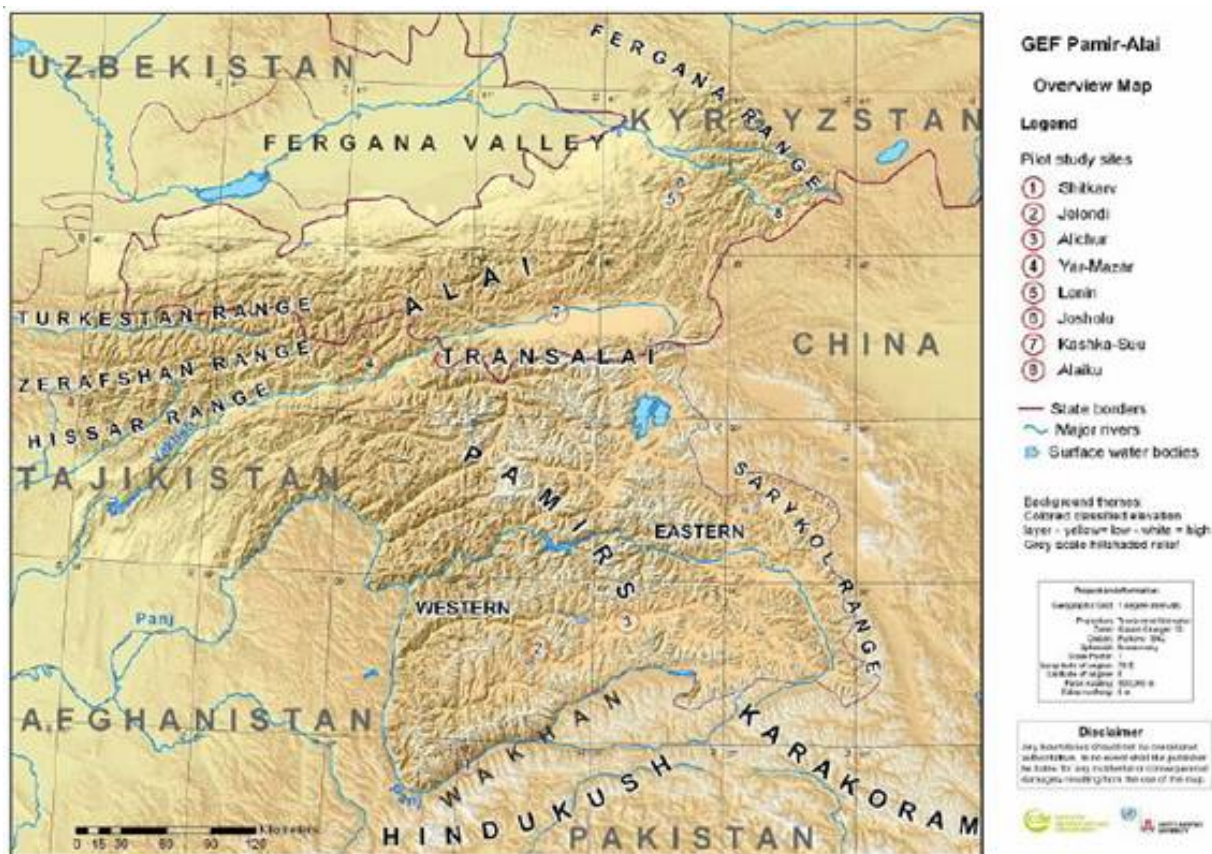
#### **4.5 Capacity-building aspects**

Limiting full capacity building support to 3 years should focus minds in the communities on becoming self reliant. Expectations of long term support can create a dependency culture. If a specific cut off point is not written in to the project, the temptation is for the project staff to continue focusing their attention on the first set of SDUs rather than starting the process again with the next ones. The emphasis will also be on building up the capacity of the local government and private sector advisory support services with the intention that these will be the agencies to provide on-going support once the project pulls out.

#### **4.6 Innovativeness of the project**

We believe that the innovativeness of the project is a must if it is to address the challenges to maintaining the delicate ecological balance of the fragile mountain environment in the context of the dynamic climatic, socio-economic and political changes affecting the region. The risk associated with innovations is inevitably high but recognizing it should help alleviate it.

## ANNEX 11: Project Area and Pilot Sites



**Map 1: Overview Map of the Pamir-Alai Region**

# **ANNEX 12: Red Data Book Information, Kyrgyzstan and Tajikistan**

Red Data Book - Alai Region, Kyrgyzstan			
№	Latin	English	Russian
<b>Mammals</b>			
1.	<i>Rhinolophus hiposideres</i>	Lesser horseshoe bat	Малый подковонос
2.	<i>Tadarida teniotis</i>	European free-tailed bat	Широкоухий складчатогуб
3.	<i>Cuon alpinus</i>	Red wolf	Красный волк
4.	<i>Ursus arctos leuconix</i>	Brown bear	Белокоготный бурый медведь
5.	<i>Vormela peregusna pallidor</i>	Marbled polecat	Перевязка (семиреченский подвид)
6.	<i>Lutra lutra seistanica</i>	European otter	Речная выдра (среднеазиатский подвид)
7.	<i>Felis (Otocolobus)</i>	Manul	Манул
8.	<i>Uncia uncia</i>	Snow leopard	Ирбис
9.	<i>Ovis ammon karelini</i>	Argali	Тянь-Шаньский архар
10.	<i>Marmota menzbieri</i>	Minzber's Marmot	Сурок Мензбира
<b>Bird</b>			
1	<i>Oxyura leucocephala</i>	White-headed duck	Савка
2	<i>Plegadis falcinellus</i>	Glossy Ibis	Каравайка
3	<i>Platalea leucorodia</i>	Spoonbill	Колпица
4	<i>Aquila heliaca</i>	Imperial eagle	Могильник
5	<i>Hieraaetus pennatus</i>	Booted eagle	Орел карлик
6	<i>Haliaeetus albicilla</i>	White-tailed fish eagle	Орлан белохвостый
7	<i>Haliaeetus leucoryphus</i>	Pallas's fish eagle	Орлан-долгохвост
8	<i>Lyrurus tetrix</i>	Black grouse	Тетерев
9	<i>Accipiter badius</i>	Shikra	Тювик
10	<i>Burhinus oedicephalus</i>	Stone Curlew	Авдотка
11.	<i>Falco rusticolus</i>	Gyr Falcon	Кречет
12.	<i>Falco cherrug</i>	Saker Falcon	Балобан
13.	<i>Falco peregrinoides</i>	Barbary falcon	Шахин
14.	<i>Gyps fulvus</i>	Eurasian Griffon Vulture	Белоголовый сип
15.	<i>Aythya nyroca</i>	Ferruginous Pochard	Белоглазая чернеть
16.	<i>Dendrocopos leucophaea</i>	White-winged woodpecker	Белокрылый дятел
17.	<i>Ciconia ciconia</i>	White stork	Белый аист
18.	<i>Aquila chrysaetos</i>	Golden eagle	Беркут
19.	<i>Gypaetus barbatus</i>	Lammergeier	Бородач
20.	<i>Pterocles alchata</i>	Pintailed Sandgrouse	Белобрюхий рябок
21.	<i>Columba leuconota</i>	Snow pigeon	Белогрудый голубь
22.	<i>Dendrocopos major</i>	Great Spotted woodpecker	Большой пестрый дятел
23.	<i>Columba eversmanni</i>	Yellow-eyed pigeon	Бурый голубь
24.	<i>Anser indicus</i>	Bar-headed goose	Горный гусь
25.	<i>Mergus serrator</i>	Red-breasted merganser	Длиноносый крохаль
26.	<i>Otis tarda</i>	Great bustard	Дрофа
27.	<i>Chlamydotis macqueen</i>	McQueen's bustard	Дрофа-красотка
28.	<i>Anthropoides virgo</i>	Demoiselle crane	Журавль-красавка
29.	<i>Circus gallicus</i>	Short-toed eagle	Змееяд
30.	<i>Cygnus olor</i>	Mute Swan	Лебедь клин
31.	<i>Pelecanus onocrotalus</i>	Pink Pelican	Розовый пеликан
32.	<i>Terpsiphone paradisi</i>	Paradise flycatcher	Райская мухоловка
33.	<i>Ibidorhynchus struthersii</i>	Ibisbill	Серпоклюв
34.	<i>Sirripates paradoxus</i>	Pallas's sandgrouse	Саджа
35.	<i>Strix aluco</i>	Tawny Owl	Серая неясыть
36.	<i>Pandion haliaetus</i>	Osprey	Скопа
37.	<i>Gyps himalayensis</i>	Himalayan griffon	Кумай
38.	<i>Falco naumanni</i>	Lesser Kestrel	Степная пустельга
39.	<i>Aquila rapax</i>	Steppe eagle	Степной орел
40.	<i>Neophron percnopterus</i>	Egyptian Vulture	Стервятник
41.	<i>Otis tetrax</i>	Little bustard	Стрепет
42.	<i>Bubo bubo</i>	Eagle owl	Филин
43.	<i>Pterocles orientalis</i>	Black-bellied Sandgrouse	Чернобрюхий рябок
44.	<i>Larus ichthyaeus</i>	Great black-headed gull	Черноголовый хохотун
45.	<i>Ciconia nigra</i>	Black stork	Черный аист
46.	<i>Aegypius monachus</i>	Cinereous (Black) Vulture	Черный гриф
47.	<i>Gavia arctica</i>	Black-throated Diver	Чернозобая гагара
48.	<i>Hieraaetus fasciatus</i>	Bonelli's Eagle	Ястребиный орел

Insects			
1	<i>Prionus tschitscherini</i>	capricorn beetle Checherin	Усач Чичерина
2	<i>Kirgisobia bohnei</i>	capricorn beetle kirgizia	Усач-киргизобия
3	<i>Colias christophi</i>	Alfalfa butterfly Chistova	Желтушка Христофа
4	<i>Urocerus sah</i>	Horn-tail Sah	Рогохвост Сах
5	<i>Mazaris longicornis</i>	Bear Mazaris	Оса Мазарис длинноусая
6	<i>Sonjagaster coronatus</i>		Булавобрюх увенчанный
7	<i>Satanus gigas</i>	robber flies	Ктырь гигантский
8	<i>Cephalota galatea</i>		Скакун-галатея
9	<i>Carabus validus</i>	Carabus	Брызгун могучий
Fish			
1	<i>Glyptosternum reticulatum</i>	Glyptosternum	Туркестанский сомик
Flora			
1	Family Ranunculaceae <i>Pursatilla kostychevii</i>		Пострела Костычева
2	f. Brassicaceae <i>Iskandera alaica</i> (Korsh.) Botsch. et Vved		<b>Искандера Алайская</b>
3	Asphodelaceae <i>Eremurus alaicus</i> Chalkuziev	Eremurus alaica	<b>Эремурус алайский</b>
4	Solanaceae <i>Physochlaina alaica</i> Kototk. ex Kovalevsk.		Пузырница алайская
5	Berberidaceae <i>Berberis kaschgarica</i> Rupr	Barberry	Барбарис кашгарский
6	Asteraceae <i>Saussurea involucrata</i> (Kar. et Kir.) Sch. Bip.		Соссюрея обернутая
7	<i>Otostegia hikitiinae</i> V. Schar		Отестегия Никитиной
8	<i>Otostegia olgae</i>		Отестегия Ольгина
9	<i>Colutea brachyptera</i>	bladder fern	Пузырник короткокрылый
10	<i>Acantholimon compactum</i> Korov		Акантолимон плотный
11	<i>Centaurea alaica</i> Iljin.	Caltrop alaica	Василек алайский
12	<i>Tulipa rosea</i>	Pink tulip	

## ANNEX 13: Land Degradation in the High Pamir and Pamir Alai Mountains

### The nature of the land degradation problem

#### Definition

In the context of GEF's Operational Program on Sustainable Land Management (OP#15) land degradation is broadly defined as "... any form of deterioration of the natural potential of land that affects ecosystem integrity either in terms of reducing its sustainable ecological productivity or in terms of its native biological richness and maintenance of resilience"<sup>56</sup>.

#### Land Degradation Types

Within the High Pamirs and Pamir Alai Mountains it is possible to recognise a range of interrelated land degradation types that have contributed to losses in the protective functions and productive capacity of the ecosystem resources of the region. The following are considered of particular importance:

- (i) **Soil degradation** – resulting in a decline in the productive capacity of the soil resources as a result of adverse changes in their biological, chemical, physical and hydrological properties, which have in turn increased the vulnerability of erosion prone areas to accelerated soil loss through both water and wind erosion.
- (ii) **Vegetation degradation** - resulting in a decline in the quantity and quality of the natural biomass, combined with a decrease in vegetative ground cover.
- (iii) **Biodiversity degradation** - resulting in a decline in genetic resources, species numbers and ecosystem diversity.
- (iv) **Water degradation** - resulting in a decline in the quantity and quality of both surface and ground water resources and increased risk of downstream flood damage.
- (v) **Climate deterioration** – involving changes in the micro climatic conditions due to global warming resulting in a (short term) increase in melt-water from retreating glaciers, and a rising permafrost boundary with former areas of frozen rock and soil increasingly vulnerable to mud and debris flows.

#### Soil Degradation

Land with few limitations for agricultural production, and with the capacity to support dense vegetative growth, is very limited within the High Pamir and Pamir Alai region. The few areas suitable for crop production are under intensive cultivation and prone to various forms of soil degradation. The key soil degradation processes affecting the protective and productive functions of the mountain ecosystems of the region include:

- (i) **soil organic matter decline** - due to inadequate replenishment of organic matter following opening of the land for cultivation;
- (ii) **soil nutrient decline** - due to inadequate replenishment of nutrients lost by leaching and removed in the harvested produce;
- (iii) **loss of soil structure** - as a result of ploughing (and other tillage practices) and soil organic matter decline;
- (iv) **decrease in soil moisture availability** - due to aridification caused by decreased water infiltration following deterioration in the soils physical structure;

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<sup>56</sup> GEF 1999. Report of the STAP Expert Group Workshop on Land Degradation (GEF/C. 14/Inf.15).

- (v) **salinization** - due to a combination of high evaporation rates and use of irrigation water with a high mineral content;
- (vi) **water erosion** - in the form of splash, sheet, rill and gully erosion due to heavy rainfall and poor control of irrigation water flows;
- (vii) **wind erosion** - due to strong winds occurring when the soils are dry and exposed due to recent cultivation and/or overgrazing;
- (viii) **mass ‘gravitational’ erosion** - in the form of rockfalls, land slides, mud and debris flows, avalanches and glacial lake outbursts;
- (ix) **freeze/thaw erosion** - occurring when water in rock fissures and the topsoil freezes and expands, and later melts, enabling loosened rocks and surface soil particles to be carried away in melt water runoff, global warming has increased the problem with a rising permafrost boundary.

### **Vegetation Degradation**

Vegetative growth within the region is limited by cold temperatures, low soil water availability, and shallow soils with low inherent fertility. In response a number of highly specialised vegetation types have evolved, adapted to the local climate, topography and soils. Vegetation degradation within the region involves a combination of the following:

- (i) **reduction in vegetative biomass** – with fewer plants, at lower density, with reduced vigour producing less leaves, stems, flowers, fruits, seeds, etc;
- (ii) **reduction in vegetative ground cover** – with expanding areas of bare ground occurring in formerly vegetated areas;
- (iii) **reduction in the quality of the vegetative biomass** – where, although the total biomass may be about the same, plant species of high value (for fodder, timber, fuelwood, food, medicines etc) have been replaced by species of lower, or no value;
- (iv) **decline in number of plant species** – with the impoverishment of natural vegetation types through the reduction in quantity, and at times total loss, of individual plant species that were originally part of the vegetation association;
- (v) **degradation of individual plants** – which have been damaged through excessive removal of above, and below, ground parts for timber, fuelwood, fodder, fruits, food, medicine etc.

### **Biodiversity Degradation**

The High Pamirs and Pamir Alai Mountains region is one of Central Asia’s biodiversity hotspots. While at the regional level no species of fauna and flora are thought to have become extinct, within individual localities species once present have disappeared due to biodiversity degradation, in particular:

- (i) **habitat destruction** – many areas of the original natural vegetation have been destroyed through clearing for agriculture, draining of wetlands, overgrazing of hillside pastures and alpine meadows, and wholesale cutting of forests, woodlands and dwarf-shrub communities. Not only has this had an impact on the areas flora but it has adversely affected the fauna associated with the lost habitats;
- (ii) **habitat disturbance** – even where the habitat has not been lost, disturbance through livestock herding, hunting (legal and illegal) and fuelwood gathering can lead to a reduction in the numbers of wild animals present;



- (iii) **reduction in the genetic pool** – may occur where trophy hunters go for the males with the biggest horns, and plant collectors selectively remove the most vigorous and showy flowering plants;
- (iv) **individual species decline** – unregulated hunting of particular game species and over collection of rare plants has increased the threat of local and global extinction for a number of the species of fauna and flora found within the region;
- (v) **reduced ecosystem diversity** – the selective harvesting of particular plant species for fuel, fodder, food, medicines etc, has had a negative impact within particular ecosystems by reducing their relative numbers compared to the other species present.

### **Water Degradation**

The High Pamirs and Pamir Alai Mountains have been described as the water towers of central Asia with melt water from the winter snows and glaciers being the source of water for most of the inhabitants of the region as well as the surrounding lowlands. Degradation of these water resources has potential severe on-site and downstream consequences. Water resource degradation could include:

- (i) **changes in water quantity** – this is largely determined by climatic factors (winter snowfall) but changes are believed to be occurring due to global warming. In the short term this is increasing summer flows due to increased glacier melting, however in the long term shrinking glaciers can be expected to lead to a reduction in water quantity. There is also a possibility that in areas of degraded vegetation snow melt water may be lost as runoff rather than infiltrating lead to reduced spring water flows.
- (ii) **changes in water quality** – although water is generally of good quality in rural areas due to low population density and the virtual lack of polluting industries, the dumping of agricultural and domestic waste into water courses is locally cause for concern. Many of the major rivers have high sediment loads most of which is due to high rates of natural erosion, exacerbated by over grazing, over cutting of fuelwood, and soil erosion within the irrigated farmlands.
- (iii) **changes in flood frequency and severity** – there is some evidence that spring time flooding, following more rapid snow melt, and flash flooding following isolated severe summer rain storms is increasing.

### **Climate Deterioration**

Global warming, due to external factors outside the control of the population of the High Pamirs and Pamir Alai Mountains, is making its impact felt within the region, notably:

- (i) **increase in frequency and severity of winter avalanches** – higher winter precipitation (particularly of wet snow) has led to an increased avalanche risk;
- (ii) **pulsating glaciers, glacial surges and glacial lake outbursts** – have increased in frequency due to global warming;
- (iii) **rising permafrost boundary** – the altitude at which the ground is permanently frozen has risen so that areas where the rock and soil was formerly frozen throughout the year have become vulnerable to erosion with an increased incidence of mud and debris slides on formerly stable hillsides.

### **Current Land Degradation Status Within the High Pamirs and Pamir Alai Mountains**

No comprehensive studies have been undertaken into the current degradation status of the ecosystem resources of the High Pamir and Pamir Alai Mountains. As a result there is no base-line quantitative information on the areal extent or severity of the different types of land degradation that are believed to have occurred in the past, or are currently occurring. However interviews with local land users and other key informants provide anecdotal evidence that degradation is occurring and has got worse in the last 10 or so years.

The synthesis report prepared by CDE for the PDF-B phase broadly summarizes the status of the region's land resources as follows:

- (i) Vegetation is the land resource most affected by degradation. Particularly forest and pasture land as well as dwarf-shrub plant communities suffer badly from high pressure and unsustainable land use and show severe signs of degradation.
- (ii) Areas of agricultural soils are very scarce and although they form an essential resource for sustaining rural livelihoods have experienced high use intensity, unadapted land use practices and a moderate degree of degradation.
- (iii) Although concrete figures on wildlife are missing, continuous hunting activities and habitat destruction has led to the conclusion that there has been a considerable decrease in animal populations.
- (iv) With regard to water, it is, its availability and distribution, rather than water quality which is a major concern within the region, although there are local exceptions.

## **THE CAUSES OF THE LAND DEGRADATION PROBLEM**

The causes of the current land degradation within the High Pamir and Pamir Alai Mountains can be divided into natural factors, direct causes and root causes. There are specific bio-physical circumstances related to the region's ecological environment that increase the risk of land degradation taking place, and these constitute the *natural factors*. The unsuitable land use and inappropriate land management practices followed constitute the *direct (human) causes* of land degradation. Whereas the *root causes* are the underlying reasons why such inappropriate types of land use and management are practised. The root causes primarily relate to the socio-economic circumstances of the rural land users (farmers, herders and forest users) and the social, cultural, economic and policy environment in which they operate.

### **The Natural Factors**

The major natural factors within the High Pamirs and Pamir Alai Mountains, ie. the ecological conditions which act as predisposing factors for land degradation, are:

#### ***For soil erosion by water:***

- seasonal isolated rain storm events of high intensity;
- steep slopes, deep incised valleys and high ridges and peaks;
- soils with low resistance to water erosion (eg. topsoils low in organic matter);
- large areas of impermeable bare rock producing large quantities of rainwater runoff.

#### ***For soil erosion by wind:***

- semi-arid to arid climatic zones;
- strong winds, particularly in the Spring when the soil is dry and there is the least amount of vegetative cover;
- high rainfall variability, with liability to drought spells;
- soils with low resistance to wind erosion;
- an open and often sparse cover of natural vegetation (especially on the high plateaus of the Eastern Pamir).

#### ***For soil erosion by mass wasting (gravitational erosion):***

- geological instability associated with recently formed (in geological terms) mountain landscapes, exacerbated by periodic intensive seismic activity<sup>57</sup>;
- loose scree, and other unconsolidated materials of low structural coherence, on steep valley sides, prone to mass wasting (land slides, mud and debris flows) when saturated with water.

***For soil erosion by freeze/thaw mechanisms:***

- high altitude areas where temperatures fluctuate below and above freezing point according to season (winter/summer) and/or time of day (day time/night time);
- soil moisture derived from rainfall, and/or melting snow and ice, that expands on freezing loosening surface soil particles and increasing risk of soil loss through wind and water erosion.

***For soil fertility decline:***

- shallow soils with limited reserves of organic matter and soil nutrients;

***For salinization:***

- semi-arid to arid climate with low leaching intensity;
- areas of soils which are naturally slightly saline, and mineral rich spring water.

***For poor vegetative cover:***

- low and erratically distributed seasonal precipitation, and cold temperatures, makes the vegetation of the mountain ecosystems particularly susceptible to degradation and slow to recover from improper land use interventions;
- low rainfall and/or cold temperatures make the re-establishment of vegetative cover through reforestation and/or other vegetative means difficult;
- many of the mountain ecosystems are dominated by plant communities with slow growing species that can take many years to grow back to their original state once cut or grazed.

***For water quantity and quality:***

- water supplies for irrigation and hydropower generation are largely seasonal being derived from snow and glacial melt water (with the maximum water discharge from June to August);
- climate change between 1961 and 1990 resulted in an average temperature increase of more than 0.5°, there has been a corresponding reduction in the size of many of the region's glaciers, and the quantity of water stored in them;
- there are high rates of natural 'geologic' erosion contributing to high sediment loads in many of the regions rivers.

**Direct (Human) Causes**

Various types of human activity can be identified as the direct causes of land degradation within the High Pamirs and Pamir Alai Mountains. These can be considered under the following headings:

- **Poor soil and water management in plots used for irrigated and rainfed crop production:** in particular: (i) absence, or poor maintenance, of soil erosion control measures; (ii) improper crop rotations and inadequate restorative fallow periods; (iii) destruction of soil structure through poor tillage practices; (iv) mining of soil nutrients and organic matter through inadequate application of chemical fertilisers and organic manures; (v)

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<sup>57</sup> Geologically the High Pamir and Pamir Alai Mountains are part of the Himalaya-Hindukush mountain massif, and were formed by the northward drift of the Indian land mass colliding with Eurasia. Strong convergence rates produce intensive seismic activity along the large fault systems in the region.

poor irrigation water management and drainage resulting in salinisation; and (vi) use of poorly controlled flood irrigation practices with the excess water flow washing away the topsoil.

- **Poor construction and maintenance of irrigation systems:** on steep, and unstable slopes, where leaking from the canals can result in gullyng and slope destabilisation triggering catastrophic mud flows directly threatening settlements, roads and cultivated areas.
- **Increasing reliance on fuelwood and dung to meet household energy needs:** whereas before 1991 fossil fuels (coal, diesel) accounted for more than 60% of the region's fuel consumption, by 2000 fuelwood and dung met over 85% of the demand for fuel for cooking and heating. There has been a severe decline in wood resources over the last 10 years, with severe degradation of the few remaining natural forest areas, and the non-sustainable harvesting of the woody shrub *teresken* (*Eurotia ceratoides*). In the thinly populated Eastern Pamirs it has been estimated that an area of some 350 km<sup>2</sup> of *teresken* vegetation is being cleared annually as a result of the collection of these shrubs for fuel purposes. The increasing use of dung for fuel means that there is less of this household resource available to fertilise the croplands.
- **Poor pasture management:** in particular the overgrazing of pasture areas close to the village once remote summer pastures (up to 70-150 kms away) were no longer accessible to local herders because roads and bridges were no longer maintained and the transport of livestock to these areas by truck became too expensive. While total livestock numbers may have decreased with the dissolution of state farms following the break up of the Soviet Union, individual households have sought to improve their livelihood situation by maximising their herd size which have been intensively grazed on the pasture areas in the vicinity of the village. The collection of dung from these pastures, for fuel, has also had a negative impact on soil nutrient status exacerbating the decline in biomass productivity.
- **Poorly regulated hunting:** combined with grazing competition and habitat destruction is having a negative impact on wildlife numbers. In particular game animals such as the Marco Polo Sheep and Siberian Ibex have been targeted by 'licensed' national and foreign trophy hunters and local poachers (primarily for meat for sale and home consumption) and there has been a sharp decrease in their numbers over the last 30 or so years.

### Root Causes

The direct causes of land degradation cannot be addressed effectively without understanding the root causes, or underlying reasons why land degradation has occurred, and is continuing to occur. It is these root causes that help explain why unsuitable land uses and inappropriate land management practices are followed. They relate to the socio-economic circumstances faced by the land users as well as the social, cultural, economic and policy environment in which they operate. The following are believed to be some of the key root causes that have contributed to land degradation within the High Pamir and Pamir Alai Mountains:

- **Soviet border security concerns:** led the Soviet authorities to actively promote settlement and strong population growth within the High Pamir and Pamir Alai Mountains so as to have a human presence within a strategically important border area (adjacent to Afghanistan, Pakistan and China). This policy took no account of the limitations of the natural resources of the region, and sustaining the increased population required heavy subsidies from the Soviet authorities (for food, fuel, employment etc.). Because of this past border security policy the population of the region now exceeds the capacity of the natural resources to provide them with sustainable livelihoods. Loss of the subsidies following the collapse of the USSR has led to excessive pressure on scarce agricultural and pasture lands as rural communities have had to meet their fuel and subsistence food needs from within their own localities.
- **Collectivisation of agriculture during the Soviet era:** in which rural people became employed farm workers on state farms, contributed to the loss of the previous indigenous knowledge on how to manage mountain ecosystems as part of traditional natural resource based livelihood strategies. Having been forced back into livelihoods based on herding and subsistence crop production many rural households are having to learn anew the skills they require to grow crops and raise livestock on an individual basis.

- **Change from a centrally planned economy to a ‘free’ market economy:** During the centrally planned Soviet days the region received enormous subsidies from the central government in Moscow. Employment was guaranteed, with secure and relatively well paid jobs. Although domestic food production covered only 20% of demand, food supplies were secure. Infrastructure, public services, and social security were all of a relatively high standard. Following the break up of the USSR in 1989, local industrial and agricultural production decreased rapidly, at the same time the generous subsidies from the central government ceased. The sudden collapse of the previous economic system caused considerable rural hardship with a humanitarian catastrophe having to be averted through food aid and other relief programs administered by the Aga Khan Development Network, the World Food Programme and others. Today the region’s economy is characterised by the dominance of a subsistence-oriented agricultural sector. Although agricultural production has increased since 1996 it falls short of what is required for the region to be food self sufficient and a large number of the rural population are still dependent on food aid. Meeting immediate short term welfare needs (for food, fuel and shelter) therefore takes precedence over long term ecosystem resource sustainability.
- **Lack of adequate and affordable energy supplies:** since the disintegration of the Soviet system with the loss of subsidised coal, for domestic heating, and diesel, for electricity generation. The local population can no longer afford imported fossil fuels, and have been forced to rely on locally available biomass fuels (firewood, shrubs and dung) for cooking and heating. Shortage of alternative energy supplies has not only contributed to natural resource degradation, but also hinders the economic development of the region. Also high diesel and petrol prices has meant that herders can no longer transport their animals to previously used remote summer and winter pastures which has led to increased pressure on, and overgrazing of, pastures near to the villages.
- **Civil war:** in Tajikistan, from 1992 – 1996 (peace agreement reached in June 1997), led to increasing pressure on the region’s natural resources as refugees, fleeing from the fighting in adjacent areas of the country, moved into the relative safety of the Tajik Pamirs.
- **Geographic isolation:** due to the nature of the terrain rural communities are scattered and separated from each other by high mountain ridges, wide rivers, and along narrow valleys with limited pockets of land suitable for settlement and agriculture. This limits their opportunities for participating in the market economy and learning from each other.
- **Poor communications infrastructure:** has hampered the region’s development. Roads are difficult and expensive to build, and require constant maintenance. Large parts of the area are inaccessible during the winter months. This greatly increases the costs of any external inputs required for crop and livestock production as well as making it expensive to ship out surplus produce, and in particular limiting the opportunities for producing and selling perishable products. Poor telecommunications facilities limits access to market information for local products in surrounding areas.
- **Poverty and limited livelihood opportunities:** The great majority of those living within the region experienced a sharp decline in their standard of living following the collapse of the USSR. Unemployment increased dramatically with the closure of inefficient state industries and government retrenchment. The effect was to leave some 80% of the population either unemployed or underemployed, with little or no income earning opportunities. Poverty has therefore increased as employment prospects have decreased. Even those in employment have seen inflation reduce the purchasing power of their salaries. Hence most people have gone back to agriculture as the basis of their livelihood survival strategies. While crop and livestock production have increased in the short term, in many areas this has been at the expense of long term sustainability, and has increased land degradation.
- **Over-reliance on external help rather than community self-initiative:** is one legacy of the former centrally planned economy. Under the previous system development decisions were taken by higher authorities, with the communities implementing what others had decided was in their best interests. There is thus still a tendency for people to wait for external help to solve their problems, as they are not used (or lack the confidence) to use self initiative to improve their own situation. While several national and inter-national NGOs have implemented community-based development projects within the region (eg. Mini hydro-power plants, water supplies and

reforestation), these have generally lacked active participation from the beneficiaries and as a consequence have suffered from poor management and maintenance.

- **Lack of knowledge of locally appropriate sustainable land management practices:** has meant that those who have had to take up farming following the loss of their alternative livelihoods have lacked knowledge on how to increase crop and livestock production without causing degradation. Moreover much of the original indigenous knowledge on how to tap the full potential of the local ecosystem resources has been lost. People are therefore having to relearn traditional skills, such as how to identify, collect and process medicinal herbs and keep bees.
- **Limited institutional advisory support services:** The central and local (Oblast) level government technical agencies have limited financial and trained manpower capacity. This restricts their ability to provide effective advisory support services (research, extension and training) to rural land users, particularly with regard to the control and management of land degradation.
- **Conflicting mandates and narrow sectoral concerns amongst the institutional support services:** In both countries responsibility for overseeing the management and utilisation of the natural resources of the High Pamir and Pamir Alai Mountains rests with a number of different departments operating at the central and/or local government levels. Each institution has its own (often narrowly defined) mandate according to its specific sectoral economic and ecological concerns, thus agriculture, forestry, and environment are dealt with by separate ministries and departments. The end result is that soil and water conservation, forest management, ecology and wildlife protection, are dealt with separately rather than as inter-linked components of integrated sustainable mountain ecosystem management. It is rare for the respective policies and programmes of the different departments to complement each other, leading to gaps and contradictions in field level efforts to combat land degradation.
- **Inadequate policy environment for sustainable land management:** While both countries have many policies for agriculture, forestry, water, environmental conservation, and mountain, development, their effective implementation is severely inhibited by inadequate financial resources, as well as overlapping, competing and at times contradictory policies, of different institutions and ministries. The result is substantial duplication in roles and responsibilities of the principal land management policies and strategies. There is currently no mechanism for following an integrated approach to the formulation and implementation of comprehensive policies for sustainable land management and biodiversity conservation.
- **An inadequate regulatory environment for the sustainable management of mountain ecosystems:** Although each country has a body of environment related legislation, this is currently inadequate for the good management of each country's mountain environments. Key legislative elements, necessary for sustainable mountain ecosystem management, are absent from individual laws, and no coordination mechanism exists in either country to implement the provisions of the various laws in an integrated way. Substantial overlap occurs between resource management institutions which lack the capacity and skill to implement and enforce existing laws for a sustainable land management objective. Land utilization regulations are very weak and poorly enforced, due in part to limited financial and trained human resources within the designated enforcement agencies.
- **Underpricing of natural resources:** The undervaluing of the region's natural resources, notably water, pasture, forest and wildlife products, fails to encourage sustainable land management. There is no financial incentive to use irrigation water efficiently, nor to improve areas of natural grassland and woodlands, or protect wildlife. forest management, or reforestation at the rural community level. This is compounded in those situations where the end users of the resource do not pay a fair price to those who manage the resource. The High Pamir and Pamir Alai Mountains are an important source of water to farmers in the surrounding lowlands and yet they make no contribution to the protection of the upper watershed areas. Likewise little of the high fees paid by foreign trophy hunters goes to the communities in the areas where the game species occur.
- **Uncertain ecosystem resource user rights:** Given that all land resources are legally the property of the state, unclear private user rights for individual farm plots, and de facto common property resources (eg. pastures,

wildlife, woodlands), encourages short term resource exploitation rather than long term conservation. The result is a lack of stewardship, a deterrent to invest in conservation, and disputes within and between local communities, and local and central government authorities, over occupancy and resource use rights. Due to the uncertainties of climate and fluctuations in distant and local markets, local communities require secure resource rights, and long term security of land tenure and occupancy rights if they are to adopt sustainable land management practices and assume responsibility for ecosystem protection.

## ANNEX 14: Sustainable Land Management Micro-Projects

### Introduction

155. Each jamoat/aiyl okmet community land use plan and sustainable land management strategy will include a portfolio of micro-projects for those agreed priority component activities that require external investment funding. To be eligible for financial support from the project, a micro-project must be one whose need has been identified through the community land use planning process. It will also have to be one whose implementation would be expected to make a positive contribution to reducing poverty while restoring, sustaining and enhancing the productive capacity, and protective functions, of the ecosystem resources of the High Pamir and Pamir Alai Mountains.

156. Grants of up to 70% of the external investment requirements will be available for eligible micro-projects from two sources, namely: (i) from the GEF budget component; and (ii) the co-financing budget component. To be eligible for GEF grant a micro-project would have to offer potential global environmental benefits in the following GEF focal areas: (i) bio-diversity conservation; (ii) climate change mitigation; and (iii) prevention of land degradation. While a micro-project that will lead primarily to improving people's livelihoods and economic well being, through sustainable management of their local ecosystem resources, will be eligible for a co-financing grant. However micro-projects with no direct environmental benefits, even if they have clear social benefits for the community (schools, health clinics etc) will not be eligible for project financial support.

### Eligible GEF Micro-projects

157. The following are illustrative of the types of micro-projects, with global environmental benefits, that would be eligible through the project for GEF grants:

- protection and restoration of relict fruit/nut woodlands and juniper forests through enrichment planting with native tree and shrub species;
- protection and restoration of the dwarf *teresken* shrub communities (and other native trees and shrubs) through regulation of grazing and fuel wood gathering, combined with replanting and assisted natural regeneration;
- providing alternatives to the gathering of *teresken* and other native trees and shrubs for fuel for heating and cooking through the development and installation of household and community level renewable sources of energy (mini-hydro power stations; wind driven turbines; solar water heaters, cookers, and electricity generators; biogas producers);
- protection and restoration of alpine pastures through improved grazing management and regulation and enrichment planting with native species;
- conservation, cultivation/reproduction, and sustainable utilisation, of indigenous culinary herbs and medicinal plants;
- protection and restoration of other wildlife habitats and areas of degraded ecosystem, through fencing, use regulation and/or enrichment planting with native species.
- rehabilitation and improvement of pastures close to the settlement areas (including some limited planting of areas to improved grasses/fodder plants);
- selective breeding programs to improve indigenous breeds of livestock (yaks, sheep, goats and cattle)<sup>58</sup>;

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<sup>58</sup> However micro-project proposals that would lead to an increase in livestock numbers would only be eligible for grant funding if they included a component for improved pasture management and increased winter fodder production. Without this there is a risk that improved livestock breeding would not only increase livestock numbers but also lead to increased pasture degradation, especially those close to the settlement areas.



- increased crop production through locally appropriate low external input sustainable agriculture practices (with the emphasis on integrated plant nutrition management and integrated pest management);
- installation of soil erosion control measures within croplands (vegetative strips, terraces, bunds, cut off storm drains, gully plugs, windbreaks etc);
- installation of mitigative measures (physical control structures, revegetation of bare/denuded areas) to reduce the impact of natural disasters (floods, glacial lake outbursts, land slides/debris flows);
- sustainable development of local ecosystem resource based cottage industries/rural livelihood enterprises.

### **Eligible Co-financing Micro-projects**

158. The following are illustrative of the types of micro-projects, with local socio-economic and environmental benefits from sustainable ecosystem management, that would be eligible through the project for Co-financing grants:

- development and installation of renewable sources of energy (mini-hydro power stations; wind driven turbines; solar water heaters, cookers, and electricity generators; biogas producers);
- improved insulation of houses, schools, clinics and other community buildings so as to reduce local energy demands for winter heating;
- planting of fast growing trees to meet local demands for fuelwood, building poles and/or timber;
- rehabilitation, and expansion, of fruit and nut orchards;
- improved production and storage of winter livestock fodder;
- rehabilitation (and where appropriate expansion) of irrigation infrastructure, and introduction of irrigated crop production water saving and salinity prevention practices;
- introduction and/or expansion of bee keeping enterprises and improved production and marketing of honey and bees wax;
- construction of fish ponds for raising trout and other freshwater fish species;
- basic community level infrastructure development, and training of local guides, for eco-tourism purposes;
- protection and development of community level potable water supplies;
- rehabilitation of local (community level) 'farm to market' access roads and trails;
- sustainable development of local ecosystem resource based cottage industries/rural livelihood enterprises.

### **Non-eligible Micro-projects**

159. The following are illustrative of the types of micro-projects that would not be eligible through the project for grants:

- construction of health centres, schools, mosques, produce markets and other community level social development facilities;
- rehabilitation of main roads, bridges and other regional communications infrastructure;

- opening of new, or rehabilitation of old coal mines;
- construction of new, or rehabilitation of old, power stations using fossil fuels (coal and diesel) to generate electricity;
- construction of dams and/or other infrastructure for supplying water to towns and other major settlement areas.

### **Micro-project Identification, Screening and Approval Process**

160. The micro-project identification, screening and approval process will be expected to follow the following steps:

- (i) identification of a series of micro-project ideas through the sub-district unit<sup>59</sup> (SDU) land use planning process;
- (ii) screening and prioritisation of the project ideas into a short-list at the SDU level;
- (iii) the proponents to prepare brief concept papers for the short-listed micro-projects using the standard proforma (see below) – training and assistance in their preparation to be provided by project trained facilitators;
- (iv) submission of the micro-project concept papers to the respective national project management offices;
- (v) a national project management office internal expert group to review and screen the concept papers according to the GEF and Co-financing eligibility criteria;
- (vi) those judged eligible to be returned to the proponents to be worked up into a full funding proposal – training and assistance in the preparation of the full proposal to be provided by project trained facilitators;
- (vii) the full proposal to be submitted to the Regional Project through the national project management office;
- (viii) the RPO, with the support of the UNDP country office, to convene an external expert review panel that would review the proposals (making site visits where appropriate), and recommend their acceptance, rejection or provisional acceptance (subject to further work to refine the project proposal and/or clarify the budget and cost sharing arrangements);
- (ix) approved proposals to enter the project work programme through a contract/memorandum of agreement to be signed between the proponent, a representative of the SDU authorities, and the national project management office and the UNDP country office.

161. An eminent national environmentalist familiar with his/her country's portion of the High Pamir and Pamir Alai Mountain region will be appointed as the chairman of his/her respective national external expert review panel. An additional 5 panel members will be appointed, taking into account their personal expertise and knowledge of the GEF concerns within the High Pamir and Pamir Alai Mountain region, so as to ensure a cross section of representatives from the key national and local public and private sector stakeholder institutions.

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<sup>59</sup> Jamoats in Tajikistan, Aiyl Okmets in Kyrgyzstan.

# PROFORMA FOR COMMUNITY-BASED SUSTAINABLE LAND MANAGEMENT MICRO-PROJECTS

## Summary Outline Proposal to Pre-feasibility Level (Concept Paper)

<i><b>Project Title:</b></i>
<i><b>Section 1. Location and geographic coverage of proposed project</b></i>  <i>Community/Village:</i> <i>Jamoat:</i> <i>Oblast:</i> <i>Country:</i> <i>Land area involved (hectares):</i>
<i><b>Section 2. Project Proponents, Proposed Implementers and Collaborators</b></i>  <i>Project proposed and prepared by:</i>  <i>Proposed project executors/implementers:</i>  <i>Expected collaborators:</i>  <i>Key advisory support service providers/project facilitators:</i>
<i><b>Section 3. Project background - how, why and by whom was the project conceived?</b></i>
<i><b>Section 4. Project rationale and justification</b></i>
<i><b>Section 5. High Pamir and Pamir Alai Mountain Region natural resource/ecosystem management concerns and policies that the project is related to:</b></i>  <i>Mountain ecosystem resource degradation problems to be addressed:</i>  <i>Conformity/links with the High Pamir and Pamir Alai Mountains regional strategy and action plan:</i>  <i>Conformity/links with the Jamoat land use plan:</i>

**Section 6. Objectives**

*a) Development objective (goal):*

*b) Immediate objectives (purpose):*

(i)

**Section 7. Proposed project component activities:**

(ii)

**Section 8. Expected outputs from completion of the project component activities**

3.

**Section 9. Type and quantity of resources/inputs required for the project:**

**Section 10. Overall project costs/budget requirements:**

**Section 11. Proposed cost sharing:**

*Project grant contribution:*

*Community cash contribution:*

*Community in kind contribution (type and cash equivalent):*

*Other sources of co-funding by agency:*

**Section 12. Opportunities for Income Generation/Capital Build Up**

**Section 13. Proposed timing and phasing of project activities and outputs**

*Proposed starting date:*

*Proposed duration:*

*Proposed activity phasing schedule:*

*Schedule of when project outputs are expected to be achieved:*

**Section 14. Organisational arrangements for managing project implementation**

**Section 15. Anticipated environmental impact**

*On-site environmental benefits*

*Off-site (downstream) environmental benefits*

*Potential negative on-site environmental impact*

*Potential negative off-site (downstream) environmental impact*

*Planned mitigative measures to minimise any negative environmental impact*

**Section 16. Anticipated socio-economic impact**

*Direct beneficiary stakeholders (who will benefit, and how will they benefit):*

*In-direct beneficiary stakeholders (who else might benefit and how would they benefit):*

*Are there any stakeholders who would potentially be affected negatively by the project (who and what would be the negative socio-economic impact):*

*Planned mitigative measures to minimise any negative socio-economic impact*

***Section 17. How will the project be monitored and evaluated***

*Proposed M&E methods:*

*Proposed indicators of success:*

***Supporting attachments***

*Proponent/implementor profile (a 1 page briefing sheet with details of the mandate, capacity, membership etc of the CBO, NGO, Jamoat or Government agency proposing and/or implementing the project):*

*Background information on the bio-physical and socio-economic characteristics of the area in which the project is to be implemented:*

*Other supporting information concerning the proposed technical interventions and/or management arrangements:*

## ANNEX 15: Public Involvement and Information Dissemination Plan

### STAKEHOLDER INVOLVEMENT DURING THE PDF B

Stakeholder involvement is essential for mainstreaming sustainable land management (SLM), given the multi-level and cross-sectoral aspects of both the causes and consequences of land degradation. In the countries of Central Asia, where despite significant progress towards the development of an active civil society over the past decade, the legacy of central planning is still tangible, concerted efforts in explaining the need for and ensuring the involvement of relevant stakeholders in land management planning, decision-making and implementation is particularly important. Thus in the course of the PDF-B special attention was paid to the involvement of relevant stakeholders in the project development and significant progress towards the establishment of cross-sectoral working relations across different levels of governance within and between the two countries was achieved through trainings, participatory research, workshops, conferences and consultations.

### CROSS-SECTORAL RESEARCH METHODOLOGICAL TRAININGS

#### *Training in Sustainable Development Appraisal (SDA)*

An on-the-job training involving an introduction and application of a number of methodological tools for undertaking comprehensive and participatory village level sustainable development assessments was conducted at one of the selected pilot sites in Tajikistan. The training introduced research tools such as transect walk, participatory village mapping, GPS mapping, institution mapping, participatory wealth ranking, agricultural and economic calendars, etc. for assessment of the available resources (natural, human, institutional, financial), the major problems, development options and constraints to their realization as conceived by local stakeholders and national experts. Given the nature of the training, two multidisciplinary expert groups, one from each country, including economists, agronomists, biologists, geographers, legal and gender experts, took part in the training. The experts included representatives from the national and oblast level government administration, research institutes and local NGOs. Given the lack of tradition of multi-disciplinary and participatory research in both Tajikistan and Kyrgyzstan, the SDA training provided a model for the involvement of scientists, policy-makers and NGO representatives in applied participatory research and a basis to build upon during the full project.

#### *Training in Policy, Institutional and Legislative (PLI) Frameworks' Capacity Assessment*

As both Tajikistan and Kyrgyzstan gained independence only in the early 1990s, both countries are still in the process of instituting wide-ranging and fundamental policy, institutional and legislative reforms in line with the needs and requirements dictated by the new economic, political and social systems of relations the countries are moving towards. Given the relatively short period of time since the start of the reforms, a number of formal and informal institutional structure, policies and rules for policy-making are still based on the principles of centralized control. At the same time, the urge for expedience in the reforms has resulted in the passing of numerous policy and legislative reforms without a proper understanding of the inter-linkages of different economic, social and political factors and sectors in the new market-based system of economic relations that is being introduced. This is particularly true in the case of environmental policy, institutional and legislative frameworks, which have been introduced only recently. In this regard, the methodological PLI assessment training organized in the framework of the PDF B provided local experts with the necessary theoretical model for assessing the capacities of the existing policies, institutional and legislative frameworks for SLM in the Pamir-Alai area from an integrated viewpoint, that takes into account the possible contradictions and synergies between different regulations and institutions which are currently constraining policy implementation and efficient institutional functioning. Like the SDA, the PLI assessment training brought together two interdisciplinary groups of national and local level experts from Kyrgyzstan and Tajikistan, including legal, natural resources management and mountain development specialists from relevant ministries and universities. Thus, the PDF B work in this area provided both a framework and a team of core experts in each country that could be used to further strengthen interdisciplinary, inter-institutional, and transboundary cooperation in the PLI area in the full project.

#### *Training in GIS Applications for Sustainable Land Management*

An introductory GIS database use and management training was conducted so as to demonstrate to local experts the possible use of GIS to integrate geo-physical and socio-economic data into policy-relevant databases and decision-support systems. The training was also used to introduce the Pamir-Alai GIS database developed during the PDF B

to the participants, who included technical experts, land use planners, and researchers from key resource management agencies, universities and related projects in Kyrgyzstan and Tajikistan. Like in the case of the other two trainings, the GIS training resulted in the establishment of an interdisciplinary team of experts that could serve as a basis for mainstreaming the use of GIS systems and the Pamir-Alai database in particular for SLM in management in key sectoral agencies at the national and local level.

#### PARTICIPATORY BASELINE RESEARCH AND FULL PROJECT CONCEPT DEVELOPMENT

Baseline research at the local, national and transboundary level was undertaken by the trained interdisciplinary and inter-agency expert groups in Kyrgyzstan and Tajikistan in line with the respective cross-sectoral participatory methodological frameworks discussed in the course of the above-mentioned trainings. The results of the SDA assessments carried out at each of the eight pilot sites in the project area were presented by national experts at the national meetings held in each country in December 2004/January 2005. The meetings brought together representatives from the pilot villages, from the respective rayon administration in which they are situated, as well as from key national agencies and research institutes which together with the expert groups revisited and agreed on a set of recommendations for promising measures, approaches and interventions for improved land management and human livelihoods at the selected pilot sites, taking into account lessons from past and on-going related initiatives and possible synergies, which were highlighted. Those recommendations, together with the findings from the PLI reviews and the GIS-based land management models that were completed in the meantime, were presented at 2<sup>nd</sup> Regional Meeting held in the framework of the Pamir-alai PDF B in Dushanbe, Tajikistan in June 2005, which brought together representatives from the key international and national level agencies, expert groups and communities who had been involved in the development of the PDF B as well as other potential partners. The results from different baseline research components were discussed in plenary sessions and in working groups, whose work served as a basis for outlining the overall full project goal and the specific local, national and transboundary objectives and core steps for achieving them. The details of the proposed project concept were re-validated and finalized through discussions with the relevant local and national stakeholders in the course of a field visit to six of the eight project pilot sites by the Chief Technical Consultant and the UNU PDF B Deputy Project .

#### STAKEHOLDERS IN TAJIKISTAN

N	Stakeholder(s)	Interest/Capacities/Potential Impact	Involvement
1.	Primary users of land and other local resources (farmers, livestock breeders, women, village heads, etc.) in four pilot jamoats: Yar-mazar, Shitharv, Jelondy, Alichur	<b>High interest in:</b> - Improved livelihoods through agriculture and alternative income-generating activities; <b>Capacities:</b> - Very good knowledge of local environment; - Household and community level resource use decision-making power; - Under-developed demonstration and mobilization potential; - Some experience with international projects/organ; - Limited resources (fin., technical, human); <b>Very high potential impact</b>	<b>Involved in:</b> 1) Assessment of local resources, problems, possibilities & limitations; 2) National level consultations;
2.	- Jamoat Administration (Yangy-Sar, Shitharv, Vankala, Alichur) - Hokumat (Rayon) Administration (Jirgital, Ishkashim, Shugnan, Murgab) - Gorno-Badakhshan Autonomous Oblast (GBAO) Administration	<b>Interest in:</b> - Poverty reduction; - Ensuring favorable conditions for agricultural development - Maintenance of productive quality of land; - Development of infrastructure for rehabilitational and eco tourism and hunting; - Protection of local flora and fauna; <b>Capacities:</b> Good knowledge of local environment and capacities; Legal authority and established institutional structures and processes for working with both local and national stakeholders; Limited decision-making power, fin., technical, and human resources; <b>High Potential Impact</b>	<b>Involved in:</b> 1) Cross-sectoral field research trainings; 2) Evaluation of local needs, development options and constraints; 2) National level communication and consultations; 4) Regional level consultations and development of full project concept;
3	<b>Key National Stakeholders</b>		
	State Committee on	<b>Interest in:</b>	<b>Involved in:</b>



Environment Protection and Forestry	<ul style="list-style-type: none"> <li>- Integrated and rational use of natural resources;</li> <li>- Analysis, forecasting and prevention/control of harmful and illegal anthropogenic influences on the natural resources;</li> <li>- Increase of forest covered areas;</li> <li>- Improved forest management and in particular increase of forest cover for protective and economic purposes e.g. through the establishment of nurseries for tree and bush saplings, and plantations of fruit trees and medical plants;</li> <li>- Establishment and improved management of protected areas;</li> <li>- Creation of favorable conditions for development of tourism;</li> <li>- Development and submission to the government of proposals for projects, policies, legal measures for improved protection and management of natural resources;</li> </ul> <p><b>Capacities:</b></p> <ul style="list-style-type: none"> <li>- Very good knowledge of and high potential to influence the national policy environment for SLM;</li> <li>- Limited fin., technical, and human capacities and resources for policy implementation;</li> </ul> <p><b>High Potential Impact</b></p>	<p>1) Execution, M&amp;E of PDF B activities in TJ;</p> <p>2) Coordination of cross-sectoral and participatory trainings and baseline research in Tajikistan;</p> <p>3) Multi-level, cross-sectoral consultations;</p> <p>4) Regional level consultations and development of full project concept;</p>
State Land Tenure Committee	<p><b>Interest in:</b></p> <ul style="list-style-type: none"> <li>- Land Management and land tenure policy development and implementation;</li> <li>- Monitoring, evaluation and registration of land resources;</li> <li>- Land degradation and soil erosion control;</li> <li>- Focal Point for UNCCD implementation;</li> </ul> <p><b>Capacities:</b></p> <ul style="list-style-type: none"> <li>- Very good knowledge of and high potential to influence the national policy environment for SLM particularly as related to land tenure;</li> <li>- Good capacities for M&amp;E of land use type and distribution;</li> <li>- Limited fin. and technical resources for assessing and addressing land degradation;</li> </ul> <p><b>High Potential Impact</b></p>	<p><b>Involved in:</b></p> <p>1) Cross-sectoral and participatory trainings and baseline research in Tajikistan;</p> <p>2) National level consultations;</p> <p>3) Regional level consultations and development of full project concept;</p>
Ministry of Agriculture	<p><b>Interest in:</b></p> <ul style="list-style-type: none"> <li>- Improvement of crop and pasture land productivity through introduction of effective land management systems (e.g. crop rotation), technologies (e.g. tillage), measures (protective forest belt planting around agricultural lands);</li> <li>- Research and forecasting of the danger and spread of pests, diseases, weeds, pollution of lands by harmful chemical substances;</li> <li>- Research and selection work in the agrarian sector;</li> <li>- Land reclamation and farm organization</li> <li>- Reform of agricultural enterprises &amp; support of cooperation, production, processing and marketing of agricultural products;</li> <li>- Development and submission to the government of relevant policy proposals and recommendations;</li> </ul> <p><b>Capacities:</b></p> <ul style="list-style-type: none"> <li>- Very good knowledge of and high potential to influence the national policy environment for SLM particularly as related to agricultural land use;</li> <li>- Good capacities for research and support of improved agricultural productivity but primarily in lowland areas;</li> <li>- Limited fin., technical and human resources for extending advisory and support services to highlands;</li> </ul> <p><b>High Potential Impact</b></p>	<p><b>Involved in:</b></p> <p>1) Baseline research and national and regional level consultations;</p>
<b>Other National Stakeholders:</b>	<p><b>SLM Relevant interests in:</b></p> <ul style="list-style-type: none"> <li>- Water resources management policy development and implementation;</li> </ul>	

	Ministry of Melioration and Water Resources  Ministry of Energy  Health Ministry  Ministry of Labor and Social Affairs	- Reclamation and irrigation of new lands;  - Development of the hydro-power potential of the country; - Development of coal deposits and alternative energy sources such as solar and wind energy; - Energy policy development and implementation;  - Development of hot springs and establishment of sanitary resorts; - Collection and processing of medical plants;  - Creation of additional work places; - Improvement of the standard of living - Reduction of out-migration abroad for economic reasons	<b>Involved in:</b> 1) Baseline research / national consultations;
4	Research Institutes and Universities: Khorog University Pamir Biological Institute Tajik Agrarian Univ. Forestry Research Instit. Soil Science Institute “Bogparvar” Res. Inst. Institute of Agricultural Aero-Geodesic Research “FAZO” Economic Research Institute National Center for Biodiversity & Biosafety	Interested in different aspects of SLM-related research and in research collaboration	Involved/consulted in baseline research; Some involved in national and regional consultations;
	NGOs, media Tajik Association for Forest and Wildlife Conservation “Kuhiston” Foundation National Social Investment Fund NGO “ORIPR” NGO “Murgab” NGO “Ishkashim” NGO “Imdod” NGO “For the Earth” Navruz Vatan newsp. Tajik Nat. Television	Interested in different aspects of environmental conservation and sustainable land management including environmental awareness raising, education, and grass-roots project implementation;	Informed and consulted at various stages of the project development;
5	International Organizations and donor agencies operating in the country: UNDP, UNCU, UNIFEM, UNTOP, ADB, FAO, ICARDA, WB, EU Commission, OSCE, JICA, AKF, MSDSP, CAMP, CAREC, ACTED, FOCUS, German AgroAction, KFW, etc.	Interested in supporting various aspects of development in the country and in fruitful cooperation where interests overlap.	Consulted and some involved in national and regional level project development consultations.

#### STAKEHOLDERS IN KYRGYZSTAN

N	Stakeholder(s)	Interest/Capacities/Impact	Involvement
1.	Primary users of land and other local resources (farmers, livestock breeders, women, village heads, etc.) in four pilot Aylukmutu: Kashka-Suu, Lenin, Josholu, Alaiku	<b>High interest in:</b> - Improved livelihoods through agriculture and alternative income-generating activities; <b>Capacities:</b> - Very good knowledge of local environment; - Household and community level resource use decision-making power; - Some experience with international projects/organ;	<b>Involved in:</b> 2) Assessment of local resources, problems, possibilities & limitations; 2) National level consultations;



	<p>the national policy environment for SLM particularly as related to land tenure;  - Good capacities for M&amp;E of land use type and distribution;  - Limited fin. and technical resources for monitoring, assessing and addressing land degradation processes;  <b>High Potential Impact</b></p> <p><b>Interest in:</b>  - Development and implementation of state policy on land reform, water use, agricultural development and processing;  - Improvement of crop and pasture land productivity through introduction of effective land management systems, technologies, measures;  - Research and forecasting of the danger and spread of pests, diseases, weeds, pollution of lands by harmful chemical substances;  - Reform of agricultural enterprises &amp; support of cooperation, production, processing and marketing of agricultural products;  <b>Capacities:</b>  - Very good knowledge of and high potential to influence the national policy environment for SLM particularly as related to agricultural land use;  - Good capacities for research and support of improved agricultural productivity but primarily in lowland areas;  - Limited fin., technical and human resources for extending advisory and support services to highlands;  <b>High Potential Impact</b></p> <p><b>Interest in:</b>  - Policy development and implementation with regard to rehabilitation, reproduction, conservation and rational use of forests and wildlife;  - Realization of concrete measures for improved forest management and biodiversity gene pool conservation;  - Increase of forest cover for protective and economic purposes e.g. through the establishment of nurseries for tree and bush saplings, and plantations of fruit trees and medical plants;  - Establishment and improved management of protected areas;  - Creation of favorable conditions for development of eco tourism and hunting;  <b>Capacities:</b>  - Very good knowledge of and high potential to influence the national policy environment for SLM particularly as related to sustainable forest management and biodiversity conservation;  - Limited fin., technical and human resources for policy implementation;  <b>High Potential Impact</b></p> <p><b>SLM Relevant interests in:</b>  - Development of hot springs and establishment of sanitary resorts;  - Collection and processing of medical plants;  - Creation of additional work places;  - Improvement of the standard of living  - Reduction of out-migration abroad for economic reasons</p> <p><b>Other National Stakeholders:</b>  Health Ministry</p> <p>Ministry of Labor and Social Affairs</p>	<p><b>Involved in:</b>  1) Baseline research and national consultations;</p> <p><b>Involved in:</b>  1) Baseline research and national and regional consultations;</p> <p><b>Involved in:</b>  1) Baseline research and national consultations;</p>
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	Tourism and Sports Agency	- Development and implementation of national environmental education programmes;	
	Ministry of Education		
4	Research Institutes and Universities: Kyrgyz Academy of Sciences International University in Kyrgyzstan Kyrgyz National University Osh State University Kyrgyz Institute of Livestock, Veterinary and Pastures	Interested in different aspects of SLM-related research and in research collaboration	Involved/consulted in baseline research; Some involved in national and regional consultations;
	NGOs and media Social Fund "Ecological Partner", Osh Oblast National Ecological Fund Regional Informational Network CARNET	Interested in supporting the development and implementation of field-oriented projects and concrete measures aimed at protection of the local environment, environmental awareness raising, education;	Involved in methodological research trainings, baseline research and national and regional consultations;
5	International Organizations and donor agencies operating in the country: UNDP, ADB, WB, EU Commission, UNESCO, CAMP	Interested in supporting various aspects of development in the country and in fruitful cooperation where interests overlap.	Consulted and some involved in national and regional level project development consultations.

## PLANS FOR FUTURE STAKEHOLDER INVOLVEMENT

IDENTIFIED STAKEHOLDERS	INVOLVEMENT IN:	MANNER OF INFORMATION DISSEMINATION AND CONSULTING
1. Farmers and other primary users of land resources	<ul style="list-style-type: none"> <li>• Community level land use planning</li> <li>• Development and implementation of concrete projects for improved land management</li> <li>• Benefiting from and sustaining best SLM practices</li> <li>• Demonstration &amp; propagation of best SLM practices</li> <li>• Evaluation of project impact(s)</li> </ul>	<ul style="list-style-type: none"> <li>• Trainings, Workshops, Conferences</li> <li>• Manuals</li> <li>• Village forums</li> <li>• Direct consultation</li> </ul>
2. Research scientists	<ul style="list-style-type: none"> <li>• Identification SLM problems and opportunities in the Pamir-Alai mountains and development of Regional SLM Strategy and Action Plan</li> <li>• Support in the development and implementation of community-based SLM micro-projects</li> <li>• Participation in inter-disciplinary and participatory research, demonstration and propagation of the benefits of such research collaboration</li> <li>• Monitoring &amp; evaluation of project impacts, lessons on land degradation and human security</li> </ul>	<ul style="list-style-type: none"> <li>• Trainings, Workshops, Meetings, Conferences</li> <li>• Academic Publications</li> <li>• Multi-media case studies</li> <li>• Mass Media</li> <li>• Direct consultations</li> </ul>
3. Government officials	<ul style="list-style-type: none"> <li>• Project coordination, logistical and admin. support</li> <li>• Policy, legislative and institutional reform development and implementation</li> <li>• Monitoring and evaluation of project performance</li> <li>• Up-scaling and replication of project lessons</li> </ul>	<ul style="list-style-type: none"> <li>• Trainings, workshops, conferences</li> <li>• Research reports and briefings</li> <li>• Multi-media case studies</li> </ul>
4. NGOs, private sector and other organizations	<ul style="list-style-type: none"> <li>• Extension services</li> <li>• Awareness raising and best practice propagation</li> </ul>	<ul style="list-style-type: none"> <li>• Trainings, workshops, conferences</li> <li>• Mass media</li> </ul>

## ANNEX 16: Terms of Reference

### A. Project Management Committees

#### 1. International Project Policy Steering Committee

162. An international project policy steering committee (IPPSC) will be established jointly by UNU and UNEP to monitor and review project progress and financial expenditure on behalf of GEF and the co-financing agencies. It will meet every 6 months<sup>60</sup> and be responsible for:

- Approving the project annual work plans and budget;
- Monitoring and reviewing progress with the implementation of project activities;
- Overseeing the financial management of the project as a whole;
- Overall quality control of key project outputs (notably the: (i) trans-boundary strategy, action plan and regulatory framework; (ii) the management decision support/M&E system; (iii) the 'model' sustainable land management design guidelines; and (iv) the generic legal and institutional guidelines) – to ensure they meet international standards and conform to GEF requirements; and
- Assisting the project management staff to resolve any administrative and institutional coordination problems for the smooth implementation of the project's local, national, and regional (trans-boundary) activities.

163. The composition of the IPPSC will be as follows:

Chair:	Rotating between the two countries
Secretary:	Senior Programme Officer UNU/ESD
Members:	Ministers of Environment - Kyrgyzstan and Tajikistan Programme Officer Land Degradation UNEP Equivalent technical officers/advisers from each of the main Co-financing Agencies Rector/Vice Rector UNU International Advisors with strong regional experience
Ex-officio:	National Project Head – Kyrgyzstan National Project Head – Tajikistan Regional Project Officer

#### 2. National Project Steering Committees

164. National project steering committees (NPSC) will be established for Kyrgyzstan and Tajikistan. Each NPSC will meet at least once every 3 months and be responsible for:

- Approving the annual work plans and budget of the national project management office;
- Monitoring and reviewing progress with the implementation of project activities within their part of the High Pamir and Pamir Alai Mountain region;
- Publicising and raising awareness of the projects activities and results amongst central and local government bodies and the general public;
- Liaising with the other NSPC on issues that require trans-boundary collaboration and intervention;
- Collaborating with the other NSPC in the formulation and implementation of the regional sustainable land management strategy and action plan, and the enabling trans-boundary policy, institutional and regulatory framework;

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<sup>60</sup> The committee members to meet as a group at least once every 12 months, with the intermediate meeting being in the form of a video/phone/e-mail conference link when appropriate.

- Overseeing and accounting for project expenditure within their part of the High Pamir and Pamir Alai Mountain region;
- Assisting the NPMO to identify additional financial and human resources from government and donor sources, for scaling up and sustaining activities post project;
- Advising the IPPSC on country specific constraints and opportunities with regard to implementing the agreed annual project work plans.

165. The composition of the NPSC will be as follows:

Chair:	Senior nationally renowned policy maker
Secretary:	National Project Head
Members:	GEF operational focal point
	Representatives of all major stakeholder ministries/central government agencies
	Representatives of the national research agencies, institutes and universities with related programs in the region
	Deputy/vice governor or equivalent from each of the Oblast's covered by the project
	Programme Officer from the UNDP Country Office
	Representatives from the national offices of the co-funding agencies
	Representatives from the international and national NGOs with related programs in the region
Ex-officio:	National Project Officer
	UNU Senior Academic Programme Officer
	Regional Project Officer

### **3. Regional (Trans-boundary) Expert Advisory Group**

166. A regional expert advisory group (REAG) will be set up to support project implementation by acting in an advisory, facilitatory, and advocacy, capacity for those trans-boundary activities that require cooperation and collaboration between the two countries. The duties and responsibilities of the REAG will include the following:

- to provide advice and guidance on how to develop and promote trans-boundary cooperation and collaboration in the formulation of an improved legislative, policy, institutional, technical, and economic incentive, environment, and regional strategy and action plan for the sustainable management of the High Pamir and Pamir-Alai Mountain region;
- to assist with awareness raising, and consensus building, amongst central government ministries, Oblast and other local government authorities/technical agencies and other key stakeholder institutions, on the importance of SLM;
- to advise on mainstreaming SLM concepts and principles in regional, national and local environmental management, and economic development, plans and programs;
- to facilitate networking among scientists, researchers, and development experts in both countries, with the aim of encouraging the formal and informal sharing of information on effective SLM technologies and approaches for combating ecosystem degradation within the High Pamir and Pamir Alai Mountain region;
- to act as national and regional advocates for the promotion and adoption of the SLM approach as an effective way to restore, sustain and enhance the productive capacity, protective functions, and bio-diversity, of the High Pamir and Pamir Alai Mountain trans-boundary ecosystems.

167. The membership of the expert group will consist of leading experts from each country selected according to their specific sectoral knowledge and disciplinary expertise related to SLM and their personal familiarity with the problems of ecosystem degradation within the High Pamir and Pamir Alai Mountain region. Each expert should be nationally renowned in his/her specific area of expertise, and have the respect of the high level policy makers and senior officials in his/her institutional sector, so as to be able to assist the project in influencing future government policies and development plans for the improved management of the trans-boundary ecosystems of the High Pamir and Pamir Alai Mountain region. A short list of suitable experts will be identified by the National Project Headss and reviewed with the Regional Project Officer. The final short list will be sent to UNU and UNEP for review and



endorsement by the IPPSC. The REAG will select a chairman and vice chairman from amongst the membership. The regional project manager will serve as the secretary to the expert group, and provide its members with the necessary technical and administrative backstopping support. Each member of the group will receive a small honorarium from the project as compensation for the time they spend on project related activities.

## **B. Project Personnel**

### ***1. National Project Head***

168. The lead national executing agency in each country will appoint one of its senior personnel to serve as the national project head (NPH). He/she will be appointed on a part time basis to serve as the focal point for responsibility and accountability to UNEP, UNU and GEF for the execution of project activities within his/her country. Based in either Bishkek or Dushanbe he/she will perform the following project duties and responsibilities:

- Acting as the responsible focal point for the project within his/her country and central Government executing agency;
- Acting as the secretary of his/her National Project Management Committee (NPMC);
- Ensuring that all Government inputs committed to the project are available to the project in a timely manner, as well as ensuring the timely delivery of all project outputs;
- Appointing the National Project Officer, subject to endorsement by UNEP and UNU;
- Ensuring all of the other required project personnel are seconded and/or recruited by the national and local government executing/collaborating agencies to enable the project to implement all of the proposed component activities;
- Ensuring that office space, of appropriate size and location, is made available, to house the national project management office;
- Ensuring that the national project management office is empowered to implement the in-country component activities of the project;
- Resolving implementation problems as necessary;
- Overseeing the effective working of the national project management office;
- Signing financial and other correspondence according to the procedures of UNEP, UNU and GEF, including requests for advance/direct payments, financial reports, combined delivery reports, annual/quarterly reports, transfer of title of equipment etc;
- Bearing responsibility and accounting for advance funds received from UNEP/UNU;
- Taking ultimate responsibility for the implementation of in-country project activities and coordinating these with the other national and local level collaborating agencies;
- Liaising on a regular basis with his/her counterpart NPH in the other country to facilitate the implementation of trans-boundary component project activities;
- Facilitating the work of the regional project manager and international short term consultants through provision of the necessary logistics support, and arranging for the timely issuing of all required permits, visas etc.

### ***2. National Project Officer***

169. Each country will appoint a full time National Project Officer (NPO) to manage and coordinate the implementation of project activities to be undertaken within its portion of the High Pamir and Pamir Alai Mountain region, so as to contribute to the overall achievement of the project's stated objectives, and realise its anticipated outcomes and outputs. The NPO shall be selected through a competitive and transparent recruitment process undertaken by the NPH in consultation with UNEP and UNU. Based in either Khorog (Tajikistan NPO) or Osh (Kyrgyzstan NPO) he/she will be responsible for the following:

- Day to day operational management of the project component activities undertaken within his/her country's portion of the High Pamir and Pamir Alai Mountain region;
- Identifying the appropriate personnel to be seconded and/or recruited to work in the national project management office (NPMO) and advising the NPH accordingly;
- Coordinating and supervising the work of the NPMO personnel and national/international consultants;

- Establishing within the NPMO an internal expert group to review and screen the micro-project concept papers according to the GEF and Co-financing eligibility criteria;
- Overseeing the work of the project trained facilitators as they assist communities to prepare their land use plans and micro-project portfolios;
- Mobilising all project inputs in line with UNEP guidelines;
- Preparing and updating project work plans and budgets and submitting these, in consultation with UNDP, on a timely basis to the NPSC for approval;
- Preparing quarterly and annual progress reports and ensuring their timely submission to the NPSC and UNEP;
- Ensuring the timely preparation and submission of financial reports and settlement of advances;
- Liaising on a regular basis with his/her counterpart NPM for the implementation of the project's trans-boundary component activities;
- Identifying and resolving national and local level implementation problems with the guidance of the NPH;
- Liaising regularly with the UNU and UNEP to ensure they are aware of progress in implementing project activities and where necessary to seek their technical and administrative assistance for the smooth operation of the project.

170. The NPO should be someone with previous project management experience, a good technical background in the concepts and principles of sustainable land management, and be familiar with the problems of ecosystem degradation within his/her country's part of the High Pamir and Pamir Alai Mountains region. He/she should be familiar with community-based participatory land use planning approaches and improved ecosystem resource management practices. He/she should be able and willing to work as NPO for the full duration of the project (4 + 4 years). The NPO would be subject to periodic assessment of his/her performance by the NPSC however any decision to replace the NPO would require the approval of UNEP and UNU.

### ***3. Regional Project Officer (GEF funded position)***

171. UNU, with the approval of UNEP, will appoint a Regional Project Officer (RPO). He/she will be based in Bishkek or Dushanbe and will be hosted by the corresponding National Executing Agency. The RPO will report to, and receive supervision and backstopping support from UNU and the IPPSC. His/her role will be to oversee the implementation of local, national and regional level project activities, and to provide technical, administrative, and moral, support to the NPOs in the execution of the country specific and trans-boundary component activities. The specific responsibilities of the RPO will include:

- Promoting effective liaison between UNU, UNEP, IPPSC, and the NPHs and NPOs, for the smooth operation of the project;
- Providing technical support to the strategy formulation team in the formulation of the trans-boundary strategy and action plan for the High Pamir and Pamir Alai Mountain region;
- Advising on and assisting with the execution of the community-based participatory planning and capacity building activities, and the micro-project preparation, screening, and approval, process, and with the implementation of the advisory support service provider capacity building programme;
- Assisting UNU, UNEP, NPHs and NPOs with the preparation of consultant terms of reference, selection of candidates, and review of their outputs;
- Training and mentoring of the technical and administrative support staff within the two NPMOs, to promote efficient project management, and timely and effective implementation of project activities.
- Overseeing the development and testing of a comprehensive management decision support/M&E system;
- Advising the NPHs and NPOs on the requirements and format for the various technical and financial reports that have to be submitted to UNU, UNEP and GEF, and assisting with their preparation to the required standard;
- Advising the NPHs and NPOs on, and assisting with, the review and assessment of project impacts and design of modifications to project component activities in the light of such assessments;.
- Liaising on behalf of UNU with the national, and regionally, based representatives of the co-financing agencies;

172. The RPO should have: (i) have first hand knowledge of the key stakeholder institutions in both countries, and within the High Pamir and Pamir Alai Mountain region; (ii) previous working experience with overseeing the work of counterpart government staff and international and national consultants; and (iii) be conversant with the

UNU, UNEP and GEF goals, procedures, and project reporting requirements. He/she should be fluent in both English and Russian.

**4. Senior Academic Programme Officer**, UNU, Tokyo/Bonn (part-time, UNU-funded)

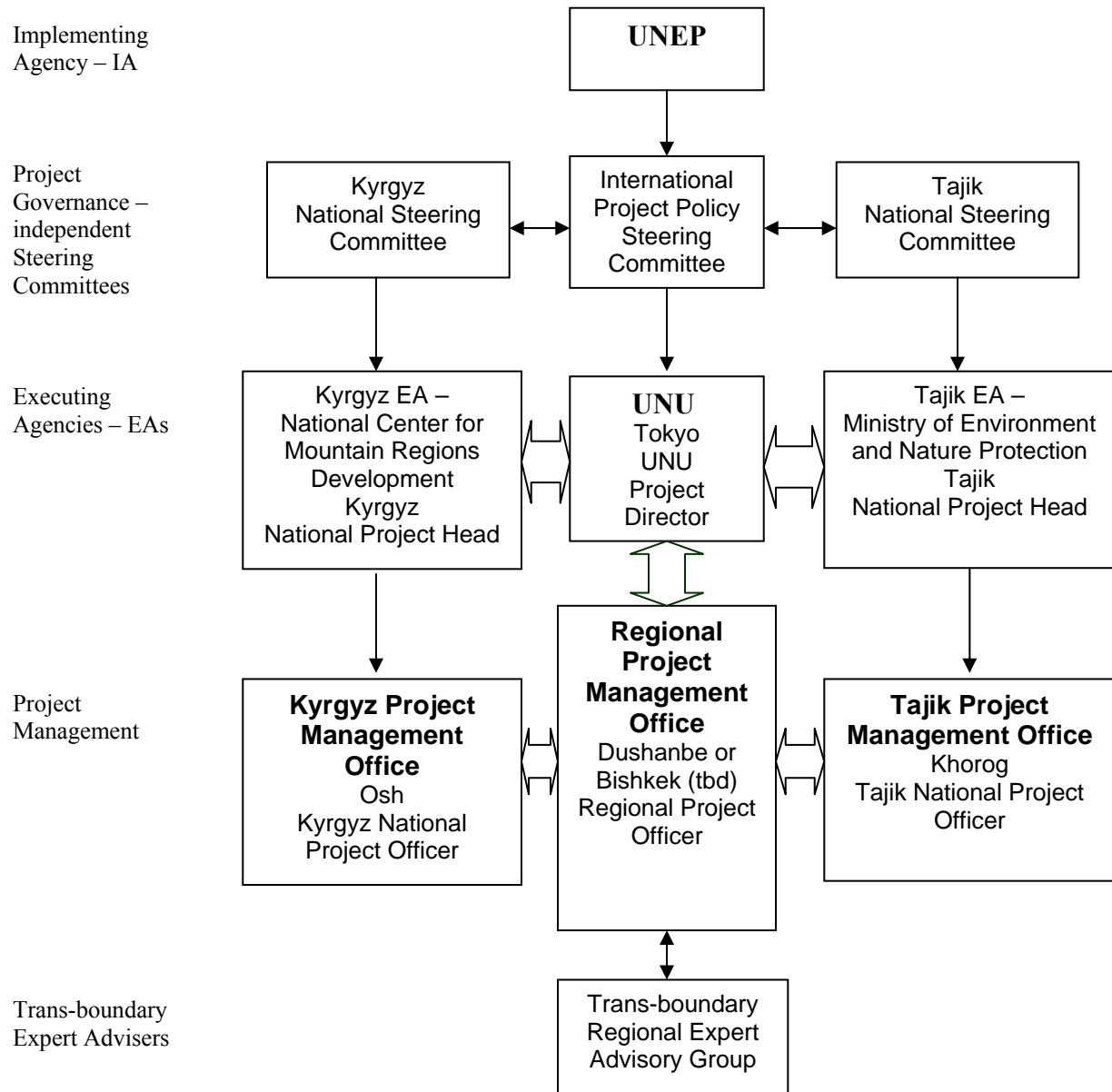
12. The Senior Programme Officer will have the overall responsibility for project execution and coordination between the organizations, units and individuals within the project, as well as externally. He will supervise project management, including issuance of contracts, networking, reporting, publications, etc. He will liaise with the Implementing Agency concerning the overall guidance, monitoring and evaluation of the project. The Senior Programme Officer will participate in the meetings of the IPPSC, NPSCs and REAG and work in close cooperation with them in giving direction to the project.

**5. Programme Administrative Officer**, UNU, Tokyo/Bonn (part-time, UNU-funded)

13. The Programme Administrative Officer will act as responsible officer for the management of the GEF funds for the Pamir-Alai SLM initiative at UNU. She will be in charge of regular monitoring of the budget and the cash flow. She will also be responsible for preparation of contracts for project participants and will cooperate with the Senior Programme Officer and Regional Project Officer in monitoring financial performance of the project. Will receive and scrutinize financial reports by the National Project Heads and by international scientific advisors and other consultants contracted by UNU. Will prepare financial reports on the project to UNEP for monitoring and reporting to the GEF Secretariat. Will perform other duties within the financial administration of the project as required.



**Fig. 1 Project Governance and Management**



## ANNEX 17: Monitoring and Evaluation Plan

### OBJECTIVES

1. The objective of monitoring and evaluation is to assist all project participants in assessing project performance and impact, with a view to maximizing both. Monitoring is the continuous or periodic review and surveillance by management of the implementation of an activity to ensure that all required actions are proceeding according to plan. Evaluation is a process for determining systematically and objectively the relevance, efficiency, effectiveness and impact of the activities in light of their objectives. Ongoing evaluation is the analysis, during the implementation phase, of continuing relevance, efficiency and effectiveness and the present and likely future outputs, effects and impact.

2. The general and specific objectives of the project, and the list of its planned outputs, have provided the basis for this M&E plan. The specific project objectives are: (a) To mitigate the causes and negative impacts of land degradation on the structure and functional integrity of the ecosystems of the High Pamir and Pamir-Alai Mountains through mainstreaming sustainable land management tools and practices from household, community, local government, national and regional levels; (b) to address the link between poverty, vulnerability and land degradation through the promotion of sustainable land management practices that contribute to improving the livelihoods and economic well-being of the inhabitants of the High Pamir and Pamir-Alai Mountains.

3. The project will be evaluated on the basis of:

1. **Execution performance.** Monitoring will concentrate on the management and supervision of project activities, seeking to increase the efficiency and effectiveness of project implementation. It is a continuous process which will collect information about the execution of activities programmed in the annual workplan, advise on improvements in method and performance, and compare accomplished with programme tasks. This activity will be the direct responsibility of the National Project Heads and Regional Officer, under the supervision of the UNU Senior Academic Officer, with advice from the Steering Committee Members. See Table 7.1 for the execution performance indicators.

2. **Delivered outputs.** Ongoing evaluation will assess the project's success in producing each of the programmed outputs, both in quantity and quality. Internal assessment will be continuously provided by the Steering Committee Members, and mid-term and final evaluation of outputs will be carried out by external consultants contracted by UNEP in consultation with UNU. See Table 7.2 for a summary of expected outputs by project objectives.

3. **Project impacts.** Impact evaluation will assess the project's success in achieving concrete, measurable changes in the natural environment, people's livelihoods and the enabling environment as a prerequisite for sustaining achieved improvements. The tools, methods and indicators for measuring the project impacts will be determined during the initial regional workshop to ensure adequate stakeholder participation in the design of the impact monitoring framework and a standardized approach shared by the involved countries.

4. The rest of the presentation is in tabular form, as set out below:

Table 8.1 lists in the indicators of project execution performance.

Table 8.2 describes inputs and expected outputs and their timings

Table 8.3 distinguishes the monitoring and evaluation responsibilities respectively of UNEP, UNU, Project and National Steering Committees and Advisors, National Project Heads and National Officers.

Table 8.4 sets out the monitoring and evaluation reports, their content, timing and responsibility.

Table 8.5 sets out the principal reports by area of activity, expected date, and drafting responsibility.

5. Further detail on stakeholder involvement, and on dissemination of information to a wider public, is provided in Annex 6.

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**Table 8.1 Indicators of project execution performance**

- The Project Regional and National Offices are functioning efficiently, and are served by effective scientific advisors.
- The Project and National Steering Committees are tracking implementation progress and project impact, and providing guidance on annual workplans.
- The Project and National Steering Committees and Regional Advisory Group are providing policy guidance, especially on achievement of project impact.
- Half-yearly and annual activity and progress reports are prepared in a timely and satisfactory manner.
- Half-yearly disbursement plans and half-year and annual financial reports are prepared in a timely and satisfactory manner.
- Performance targets are achieved as specified in the annual operating plan.
- Deviations from the annual operating plan are corrected promptly and appropriately.
- Disbursements are made on a timely basis, and procurement is achieved according to the procurement plan.
- Audit reports and other reviews show sound financial practices.

**Table 8.2 Description and timing of expected outputs by project objectives**  
(‘BEGUN’ MEANS WORK COMMENCED DURING THE PREPARATORY PHASE)

Objectives and inputs	Outputs	Start	Finish	Outcomes
<p><b>I. To mitigate the causes and negative impacts of land degradation on the structure and functional integrity of the ecosystems of the High Pamir and Pamir-Alai Mountains through mainstreaming sustainable land management tools and practices from household, community, local government, national and regional levels.</b></p> <p><b>1.1</b> Review existing related Central Asian, national and local environmental and economic development strategies and action plans</p> <p>Undertake gap filling studies and field surveys</p> <p>Undertake stakeholder consultation, negotiation and conflict resolution</p> <p>Identify priority communities and ecosystems</p> <p>Reach agreement on a trans-boundary sustainable land management strategy and action plan for the entire High Pamir and Pamir-Alai Mountains region</p> <p>Develop a joint trans-boundary institutional mechanism for overseeing and regularly reviewing the implementation of the strategy and action plan.</p>	<p><b>1.1</b></p> <p>Baseline review of relevant materials outlining necessary gap-filling studies for preparation of a regional development strategy.</p> <p>Reports from gap-filling studies and field surveys</p> <p>A common set of principles, technical standards and management requirements for sustainable, profitable, and equitable use of the region’s mountain ecosystem resources;</p> <p>An intervention schedule detailing the order of priority for addressing the degradation problems on an ecosystem and SDU basis.</p> <p>A trans-boundary sustainable land management strategy and action plan prepared for the entire High Pamir and Pamir-Alai Mountains region outlining.</p> <p>The strategy approved by the governments of the two countries and a joint trans-boundary institutional mechanism for overseeing and regularly reviewing the implementation of the strategy and action plan established.</p>			<p><b>1.1</b></p> <p>Necessary baseline information for outlining the framework (goals, objectives, means for achieving them) of a regional strategy for the sustainable development of the High Pamir and Pamir-Alai Mountains available.</p> <p>Relevant stakeholders involved</p> <p>Channels (formal and informal networks and mechanisms) for communication and negotiations as a basis for the implementation of the regional strategy established.</p> <p>A scientifically-based, publicly and politically endorsed strategy and action plan for achieving the common goals of sustainable regional development of the High Pamir and Pamir-Alai Mountains available as a guidance for national and local level interventions.</p> <p>The proper implementation and sustainability of the strategy ensured.</p>
<p><b>1.2</b> Refine and update PDF B</p>	<p><b>1.2</b></p>			



<p>baseline reviews of existing national laws and regulations against the requirements for SLM within the High Pamirs and Pamir Alai Mountains</p> <p>Identify a strategy for addressing gaps, conflicts and overlaps in existing legislation</p> <p>Formulate an improved enabling legal and regulatory framework at the trans-boundary, national and local levels</p> <p>Draft new laws, implementing rules, regulations and legislative guidelines for the trans-boundary, national and local levels.</p> <p><b>1.3</b> Raise awareness of central and local government planners and policy makers on the concepts and principles of SLM</p> <p>Develop guidelines for mainstreaming SLM concepts, principles and standards into regional, national and local environmental management, and economic development, plans and policies for the High Pamir and Pamir Alai Mountains</p> <p>Mainstream SLM in key land management, environmental protection and economic development institutions</p>	<p>Updated reports from national policy and legislative reviews</p> <p>Outline of guidelines and work plan for formulation of improved enabling legal and regulatory framework at different levels</p> <p>Amendments to laws, implementing rules, regulations for improved SLM enabling environment at the trans-boundary, national and local levels drafted</p> <p>The proposed legislative amendments approved by the governments of the two countries</p> <p><b>1.3</b> Central and local government planners and policy makers trained in SLM concepts and principles</p> <p>Guidelines and workplan for mainstreaming SLM concepts and principles mainstreamed within the environmental management, and economic development, plans and policies of those institutions with administrative and technical responsibility for economic development, environmental preservation, and land use, within the High Pamir and Pamir-Alai Mountains.</p> <p>Proposed modifications of the environmental management and economic development plans for policies of at least two (one per country) key institution with SLM related administrative and technical responsibilities in the Pamir-Alai</p> <p>Proposed modifications in line with the principles and concepts of SLM approved</p>	<p><b>1.2</b> A baseline for the formulation of improved enabling legal and regulatory framework for SLM at the trans-boundary, national and local levels available</p> <p>A strategy and action plan for undertaking concrete policy and legislative improvements prepared</p> <p>An improved enabling legal and regulatory framework in place for the sustainable and equitable management, and utilisation, of the ecosystem resources of the High Pamir and Pamir-Alai mountain region.</p> <p><b>1.3</b> Central and local government planners and policy makers acquainted with the concepts and principles of SLM and with the need and possibilities for mainstreaming them in relevant resource management and economic development plans and institutions</p> <p>An action plan for undertaking concrete measures available for implementation</p> <p>Sustainable land management concepts and principles mainstreamed within the environmental management, and economic development, plans and policies of key institutions with administrative and technical responsibility for economic development, environmental preservation, and land use, within the High Pamir and Pamir-Alai Mountains.</p> <p><b>Overall Outcome 1: Enhanced regional</b></p>
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<p><b>2.1</b> Update national institutional reviews and identify, and assess the capacity of, the public and private sector agencies that can provide research and advisory support services to farmers, herders and forest users within the High Pamir and Pamir-Alai Mountains.</p> <p>Build the capacity of these public and private sector advisory support service providers and provide them with the technical information, participatory planning guidelines, extension literature and other materials required for promoting sustainable land management in the High Pamir and Pamir-Alai Mountains</p> <p><b>2.2</b> Raise awareness of adaptive research issues and methodologies among relevant government and academic research institutes</p> <p>Develop and agree on conditions and requirements for supporting adaptive research through targeted research grants</p> <p>Preparation and submission of adaptive research proposals to address mountain specific sustainable land management constraints and opportunities with the support of international scientific advisors</p> <p>Assessment of proposals and awarding of adaptive research grants</p> <p>Implementation of adaptive research trials in partnership between the research scientists and local farmers, herders, forest, and/or wildlife resource users</p>	<p><b>2.1</b> National reports assessing the capacity of the public and private sector agencies that can provide research and advisory support services to farmers, herders and forest users within the High Pamir and Pamir-Alai Mountains.</p> <p>Key resource persons from the core public and private sector advisory support service providers trained in relevant methodological and technical capacity building workshops</p> <p><b>2.2</b> Representatives from government and academic research institutes trained in adaptive research issues and methodologies</p> <p>Conditions and requirements for adaptive research grants agreed and adaptive research grants advertised</p> <p>Research proposals developed, assessed</p> <p>Interdisciplinary cooperation among local and international scientists established</p> <p>Research grants assessed and awarded</p> <p>Reports from the results of the implemented adaptive research trials</p>	<p><i>cooperation between Tajikistan and Kyrgyzstan creating the enabling regional strategic planning, and national legislative, policy, institutional, technical, and economic incentive, environment, for the sustainable management of the High Pamir and Pamir-Alai mountain ecosystems.</i></p> <p><b>2.1</b> Adaptive research and advisory service providers' capacities and capacity building needs assessed as a basis for a synthesis report proposing a strategy for addressing them.</p> <p>A core group of public and private sector agencies, in both Tajikistan and Kyrgyzstan, providing improved advisory support services on sustainable land management practices, to farmers, herders, forest, and wildlife resource users within the High Pamir and Pamir-Alai Mountains.</p> <p><b>2.2</b> Government and academic research institutes acquainted with the conceptual issues and equipped with the technical skills necessary for undertaking applied adaptive research</p> <p>Academic research goals and standards, channels that could serve as a basis for mainstreaming adaptive research in the two countries established.</p> <p>Government and research institutes with hands-on experience in adaptive research conceptualization</p> <p>The established linkages among local and international scientists provide a basis for the establishment of networks for support of future adaptive research in the region</p> <p>An enhanced capacity amongst government and academic research institutes to work with mountain communities.</p> <p>A number of innovative and sustainable agronomic, animal husbandry and mountain ecosystem resource management practices with the potential to address mountain specific ecological and economic concerns validated.</p>
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	<b>Overall Outcome 2: Improved capacity of Tajikistan's and Kyrgyzstan's public and private sector agency research and advisory support service providers to promote sustainable land management within the High Pamir and Pamir-Alai Mountains.</b>	
<p><b>II. To address the link between poverty, vulnerability and land degradation through the promotion of sustainable land management practices that contribute to improving the livelihoods and economic well-being of the inhabitants of the High Pamir and Pamir-Alai Mountains.</b></p> <p><b>3.1</b> Assess the degradation status of each participating SDU's ecosystem resources</p> <p>Develop community-based SDU wide land use/ecosystem management plans</p> <p>Build the capacity of community-based civil society organisations to plan and implement field level sustainable land management activities</p> <p><b>3.2</b> Local communities prepare SDU portfolio of micro-project proposals justifiable on the basis of the SDU land use plans for GEF-funding</p> <p>Screen SDU portfolio of micro-project proposals according to the eligibility criteria</p> <p>Fund and implement eligible micro-projects</p> <p><b>3.3</b> Assess the constraints and opportunities for environmentally sensitive tourism within the High Pamir and Pamir Alai mountains</p>	<p><b>3.1</b> Reports from participatory resource assessments at 48 SDUs</p> <p>48 community-based SDU wide land use/ecosystem management plans</p> <p>Representatives from local NGOs and key resource persons from each participating SDU with hands-on experience in SLM planning and implementation through involvement in the participatory resource assessment and land use planning and implementation</p> <p><b>3.2</b> Each participating SDU with portfolio of micro-project proposals and local NGOs and key resource persons with hand-on experience in developing them</p> <p>Suitable for GEF funding micro-projects selected from the SDUs' portfolios</p> <p>Reports from the results of the implemented micro-projects</p> <p><b>3.3</b> Report on the constraints</p>	<p><b>3.1</b> An information base for community-based land use/ecosystem management planning for 48 SDUs in the High Pamir and Pamir-Alai mountains established</p> <p>Legitimate (accepted by the local communities) strategies for the integrated and long-term development of 48 SDUs available as a basis for justifying and obtaining external funding for the implementation of concrete SLM activities and measures</p> <p>Local capacities for sustainability of SLM activities and for up-scaling of the participatory community-based resource assessment, land use/ecosystem management planning and implementation in other SDUs post-project strengthened</p> <p><b>3.2</b> Local communities and SDUs in possession of practical skills and tools for raising funds for the implementation of their SLM plans and for meeting their development needs independently</p> <p>Criteria and mechanism for review and selection of micro projects to be funded by small grants established and functioning</p> <p>Improved management of local ecosystem resources, and community-based civil society organizations engaged in the planning and implementation of field level sustainable land management activities</p> <p><b>3.2</b> An objective basis for developing a strategy for the development of environmentally sustainable tourism available</p> <p>A sense of ownership, responsibility, and</p>

Develop with the local communities a 'master plan' for the commercial equitable development of environmentally sensitive trekking, ecotourism (wildlife watching and botanical tours) and limited trophy hunting based livelihood enterprises	and opportunities for environmentally sensitive tourism within the High Pamir and Pamir Alai mountains (as part of the regional strategy gap-filling studies)	incentives for preservation of unique local ecosystems established through involvement of local people in the planning of tourism-based income-generating activities
Develop the tourism infrastructure and market it within and outside Central Asia	Community-based strategies for realization of the commercial value of unique ecosystems in the region developed	The commercial value of conserving the unique landscape and biodiversity resources of the High Pamir and Pamir-Alai Mountains realised through development of the area's potential for environmentally sensitive tourism, with the costs and benefits shared equitably with the local communities.
	The capacities necessary for implementation of the above-mentioned strategies enhanced	
	Market access and links identified and established	
<b>4.1</b> Develop and test a vulnerability analysis framework for assessing the impact of land degradation on mountain communities		<b>Overall Outcome 3:</b> <i>Reduction in rural poverty and economic vulnerability through restoration and enhancement of the productive and protective functions (ecological goods and services) of the High Pamir and Pamir-Alai mountain ecosystems</i>
		<b>4.1</b> A framework for assessing the linkages between vulnerability and land degradation developed
Undertake baseline studies using the vulnerability analysis framework	<b>4.1</b> A report outlining the vulnerability analysis framework, method of application for assessing the impact of land degradation on mountain communities in the project area and justification	The vulnerability analysis framework tested and results used as a basis for setting and agreeing on project impact indicators
Conduct follow up mid term and final year studies to determine changes in vulnerability and assess the impact of sustainable land management on livelihoods and economic well-being	Report on baseline results from its application at selected sites in the project area	The results from the mid-term vulnerability assessment available for evaluation of project impacts over the first half of the project and for undertaking measures for improvement of project performance as needed
	Report from mid term follow-up vulnerability assessment studies highlighting changes in vulnerability and assessing the impact of sustainable land management on livelihoods and economic well-being	The results from the final vulnerability assessment available for evaluation of the overall project impacts and for drawing lessons and generic guidelines for the application of SLM activities and measures to reduce the vulnerability of rural livelihoods to land degradation in mountainous regions
	Report from final follow-up vulnerability assessment studies identifying changes in vulnerability and revising the mid-term assessment conclusions regarding the impact of sustainable land management on livelihoods and economic well-being	A validated conceptual framework available for application as a tool for planning, M&E of the impact of SLM on reducing the vulnerability of rural livelihoods to land degradation in other regions.
<b>4.2</b> Internationally renowned academic institutions invited		<b>4.2</b> Attention of renown international experts drawn to the problems of land degradation, vulnerability, adaptation capacities and human security in the Pamir-Alai region

to submit case study proposals

Screening and commissioning of case studies

Conduct in-depth case studies to identify generic lessons that can be learnt from project experience

**4.3**  
Identify and review the project impact (environmental and socio-economic)

Evaluate efficiency and effectiveness of project design and implementation

Review and refine the process used to formulate the enabling legal and institutional framework

Prepare a set of generic guidelines for the design and implementation of SLM interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions in Asia and elsewhere

Review and disseminate the generic guidelines at international workshops/ expert consultation held within the region and through online learning tools and modules

**4.4**  
Undertake a feasibility study on the needs and possibilities for up-scaling and replication of the project's approach within Central Asian trans-boundary high altitude mountain regions

**III.To establish a functioning project management structure and decision-support M&E system to support the**

**4.2**  
Case study proposals for identifying generic lessons that can be learnt from the project experience

Case studies to be commissioned selected

Reports from the commissioned case studies

**4.3**  
Project Impact M&E report

Project design & implementation M&E report

Legal, policy and institutional capacity development M&E report

Project lessons and generic guidelines for design and implementation of SLM interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions in Asia and elsewhere

Pier-review publication and on-line learning modules prepared based on the generic guidelines and dissemination

**4.4**  
Feasibility study report with recommendations for up-scaling and replication of the project's approach within Central Asian trans-boundary high altitude mountain regions

Their involvement enlisted and efforts mobilized to validate the project's model and impact

A set of generic lessons learnt for the improved implementation of sustainable land management interventions in Central Asian trans-boundary high altitude mountain regions

**4.3**  
Understanding of the inter-linkages between SLM interventions and environmental and socio-economic conditions in the High Pamir and Pamir-Alai Mountains enhanced and generated knowledge available as a basis for drawing generic lessons for application in other areas

Project design and implementation evaluation available to inform the formulation and implementation of similar projects

A tested and validated model for enhancing the SLM-enabling legal, policy and institutional environment at the local, national and transboundary-level available for replication

Experience gained from project implementation formulated as generic guidelines for the design and implementation of sustainable land management interventions, and the formulation of enabling legal and institutional frameworks, within comparable trans-boundary mountain regions within Asia and elsewhere

Generic project lessons adapted to different user groups and information needs and capacities easily accessible to interested parties in a user-friendly format

**4.4**  
A basis for the development of a concrete project proposal for up-scaling and replication of the project's approach and knowledge within Central Asian trans-boundary high altitude mountain regions available

**Overall Outcome 4:** *Generic guidelines developed for up-scaling and replication of the lessons learnt, from the project's experience with sustainable land management, within comparable trans-boundary mountain regions within Asia and elsewhere*

**achievements of objectives  
(1) and (2)**

**5.1**

Establishment of the IPPSC, and the two NPSCs and first meetings

Recruitment of the two NPMs & operationalisation of the two NPMOs

Appointment and first meeting of the REAG

**5.2**

Develop and agree on a harmonised M&E system with verifiable indicators for changes in land degradation status and socio-economic well being within the region

Develop and agree on a harmonised M&E system for assessing the impact of changes in the legal, regulatory, policy and institutional environment for SLM at the regional and local level

Refine/update and integrate PDF B baseline data and GIS database with vulnerability assessments into the established M&E decision support system

Undertake periodic follow up studies to determine changes in the base-line data and project impact

**5.1**

IPPSC and NPSC members assumed their tasks and responsibilities and approved project workplans

NPMs have assumed their positions, office space and equipment for the two NPMOs procured, and technical and administrative support staff for each office seconded/recruited

REAG work plan developed and approved

**5.2**

A harmonized M&E system for assessing changes in land degradation status and socio-economic well being within the region agreed

A harmonized M&E system for assessing the impact of changes in the enabling environment for SLM at the regional and local level agreed

A functional M&E system with complete baseline info

Reports from follow-up studies with analysis of changes and recommendations for project modifications

**5.1**

An operational international, regional and national management structure for the effective implementation of the project's trans-boundary and sub-regional component activities

**5.2**

A multi-level and multi-sectoral framework for project impact monitoring and evaluation established

An operational M&E system providing those responsible for promoting sustainable land management within the High Pamir and Pamir-Alai Mountains with a means of storing base line information

A functioning mechanism for assessment of project impacts and for making recommendations for improvements of the project's effectiveness as well as for drawing generic lessons from the project's experience to support its replication

**Overall Outcome 5:** *A functioning project management structure and decision-support M&E system to support the implementation of the project and the achievement of its objectives*

**Table 8.3 Monitoring and evaluation responsibilities**

<b>UNEP</b>	<b>UNU</b>	<b>International Steering Committee</b>	<b>National Steering Committees</b>	<b>National Project Heads</b>	<b>Regional Advisory Group</b>
Monitor the agreed M&E plan in accordance with the terms of agreement with GEFSEC	Establish reporting guidelines for National Project Heads, and ensure that NCH meet reporting dates and provide reports of suitable quality	Review and approve the project annual work plans and budget  Oversee the financial management of the project as a whole	Review and approve the annual work plans and budgets of the national management offices  Oversee the financial management of the respective national funds	Receive continuing M&E data from the national project managers and provide advise on national and local activity implementation	Provide strategic and policy guidance for the development and promotion of a regional strategy and action plan
Receive consolidated half-yearly and annual activity, progress and financial reports, and copies of all substantive reports, from UNU	Review and comment on half-yearly and annual national activity and progress reports, regional advisers' reports, and all substantive reports submitted by the two countries	Receive half-yearly national activity and progress reports, scientific advisers' reports, and all other substantive reports; and as a 'peer-review' group use them to review the quality of key project outputs and progress of work in the project as a whole	Receive quarterly national activity and progress reports, scientific advisers' reports, and all other substantive reports; and as a 'peer-review' group use them to review the progress of work in the project at the national level	Ensuring the quality and timeliness of the delivery of national project outputs	Evaluate awareness raising and scientific networking needs for mainstreaming SLM at the regional level, advise and assist with addressing them
Task manager or deputy to attend and participate fully in general project meetings, and meetings of the Project Steering Committee	Prepare consolidated half-yearly progress reports and annual summaries for UNEP, and forward substantive and financial reports, with comment as appropriate, in a timely manner to UNEP	Provide overall guidance for the project implementation, and advise UNU on implementation problems that emerge, and on desirable modifications to the workplan for the succeeding year	Provide guidance for the project implementation at the national level	Ensure the efficient and effective financial management of the national project funds	Assess the need and possibilities for developing project linkages with other initiatives for ensuring the up-scaling and wider impact of project work, advise and provide the necessary support for establishing them
Engage and prepare terms of reference for independent M&E consultants to conduct the mid-term review and final evaluation	Carry out a programme of regular visits to the two countries and the project area to supervise activities, and pay special attention to any serious implementation problems that may arise	Advise UNU on the recruitment of scientific advisers / international consultants as needed	In particular, review progress and any problems in relations with stakeholders, affecting success in project impact	Prepare and submit quarterly, half-yearly and annual financial, progress and activity reports to the national Steering Committee and UNU	
Facilitate the selective review of the project by STAP and/or GEFSEC		Assist the project in developing linkages with other projects with view of up-scaling the project-generated model and lessons, thus ensuring the wider impact of project work	Advise the respective national project managers on the recruitment of scientific and regional advisers and	Agree on Impact indicators at national and regional level	
Carry out such other monitoring as is determined in collaboration with UNU	Establish terms of reference for scientific advisers engaged as consultants to advise on particular areas of expertise, and/or provide specialized training for national participants.  Receive and evaluate the reports of these advisers, and act on any problems noted		Advise the International Steering Committee on country specific constraints and opportunities with regard to implementing the agreed annual work plans  Facilitating the implementation of the national and	Provide UNU with impact M&E reports in accordance with the format and time frame to be agreed  Liaise with and assist UNU in carrying out regional level activities in the respective country	

within them

regional activities  
e.g. through  
publicizing the  
project, liaising on  
policy issues as  
needed, and  
collaborating with  
the other National  
Steering Committee

Assisting the national  
offices with the  
identification and  
obtaining of  
additional financial  
and human resources  
support for up-  
scaling and  
sustaining activities  
post project

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**Table 8.4 Monitoring and evaluation reports**

This refers to the 6-monthly administrative and financial reporting, with a fixed format, to be respected by the national project heads and the regional project officer

Report	Format and Content	Timing	Responsibility
<b>Activity and Progress Reports</b>	(Reports will use a standard format to be developed following the UNEP Progress Report model)		
Document the completion of planned activities, and describe progress in relation to the annual operating plan	Person reporting and Date  Activity name and accomplishments within each activity this half-year	Half-yearly	National Project Heads to NSCs and RPO
Review any problems or decisions with an impact on performance	Targets for the next half-year  Comment on performance, progress toward project goals, and problems/constraints		
Provide adequate substantive data on methods and outcomes for inclusion in consolidated project half-yearly and annual progress reports	Report on any unanticipated results and opportunities, and on any checks to project progress  Any highlights		
The Project Implementation Review (PIR) reports		Yearly	UNEP-GEF Coordination Office to GEF Secretariat
<b>National / Regional Scientific Advisors' Half-yearly Reports</b>	(No standardized format)		
	Person reporting and date  Activities during the period  Comment on progress within the Expert Group for which the Scientific s have special responsibility  Distinguish any comments 'in confidence' that should not be included in reports forwarded to MG or in consolidated reports	Half-yearly	National / Regional Scientific s to NPHs / RPO
<b>Consolidated Half-yearly Progress Reports</b>	(Reports will use a standard format to be developed following the UNEP Progress Report model)		
Provide a summary of half-yearly reports of progress, for UNEP monitoring and transmission	Summary of National Project Heads' reports Report on progress in each project activity, within each country and in the project as a whole Activities of scientific advisers Summary of problems and proposed action Highlights	Half-yearly, within 30 days of end of each reporting period, but not required where a Consolidated Annual Summary Report is due	UNU Senior Academic Officer and Regional Project with input from National Project Heads, for forwarding to UNEP and the International Steering Committee

**Table 8.4 continued**

<b>Report</b>	<b>Format and Content</b>	<b>Timing</b>	<b>Responsibility</b>
<b>Consolidated Annual Summary Progress reports</b>  Presents a consolidated summary review of progress in the project as a whole, in each of its activities and in each country  Provides summary review and assessment of progress under each activity set out in the annual workplan, highlighting significant results and progress toward achievement of the overall work programme  Provides a general source of information, used in all general project reporting	(Reports will use a standard format to be developed following the UNEP Progress Report model) A consolidated summary of the half-yearly reports, with evaluation  Summary of progress and of all project activities  Description of progress under each activity and in each country  Review of delays and problems, and of action proposed to deal with these  Review of plans for the following period, with report on progress under each heading	Yearly, within 45 days of end of the reporting period	UNU Senior Academic Officer, Regional Project Officer, [with National Project Heads] for forwarding to UNEP and the International Steering Committee
<b>Financial reports</b>  Details project expenses and disbursements	(Standardized format to be developed compatible with UNEP form) Disbursements and expenses in categories and format as set out by the UNU Programme Administrative Officer, together with supporting documents	Half-yearly	All contracted institutions to UNU
<b>Summary financial reports</b>  Consolidates information on project expenses and disbursements	(Standardized format) Disbursements and expenses by category. Requirement for coming period	Half-yearly, within 30 days of end of period	UNU Programme Administrative Officer, for forwarding to UNEP
<b>Financial audits</b>  Annual audit by an audit team appointed by the UN Board of External Auditors	Audit of UNU accounts for project management and expenditures	Annual	UN Auditors
<b>Scientific Reports</b>	<b>Advisers'</b> (No standardized format)  Content specific to each contract	Periodic, as required in the terms of the individual PSA contract, normally with an interim report required after any mission	Scientific Advisers on short-term contract to UNU

**Table 8.5 Principal Reports by title, number, timing and responsibility**

<b>Report, number and title</b>	<b>Format and Content</b>	<b>Expected date</b>	<b>Responsibility</b>
1. M&E system for assessing project impact	Content will follow guidelines provided by UNU. There will be no standardized format		UNU-EHS and CDE
2. Baseline, mid-term and final vulnerability assessment	As above		UNU-EHS
3. Proposed legislative amendments to existing laws and regulations for improved SLM enabling environment in Kyrgyzstan and Tajikistan	As above		National Legislative Expert Groups
4. Proposed modifications of strategic and management action plans of key for SLM institutions in Kyrgyzstan and Tajikistan	As above		National Policy and Institutional Reform Expert Groups
5. Trans-boundary Sustainable Land Management Strategy and Action Plan	As above		National Legislative Expert Groups with support of regional/international advisers
6. Reports from results of implemented adaptive research trials	As above		Adaptive Research Grants Awardees
7. 48 SDU land use / ecosystem management plans	As above		SDU administration
8. Reports from the implementation of GEF-supported micro projects (including tourism development ones)	As above		Micro-Project Grant Awardees
11. Commissioned Impact Assessment Case Studies	As above		Commissioned parties
12. Generic guidelines for formulating enabling policy, legal and institutional environment for SLM in transboundary mountain regions	As above		tbd
13. Generic lessons from the project experience	As above		tbd
14. Recommendations for up-scaling and replication of the project's approach in Central Asia	As above		tbd

### ANNEX 18: Co-financing Commitments for Phase I

	1.1 Regional Strategy for SLM	1.2 National Laws & Policies	1.3 National Institution s	2.1 Advisory Service Providers	2.2 Adaptive Research	3.1 Land use planning	3.2 Micro projects	3.3 Tourism Developmen t	4.1 Assessment & generic lessons	4.2 Upscaling & replication	5.1 Managem ent	5.2 M&E	Co-Financing (in USD)	
													In-kind	cash
AKF-MSDSP						60,000	430,000	50,000	300,000	800,000				1,640,000
CAIAG	24960				74,880	168,480				93,600		56,160	418,080	
CDE	25,000		10,000	5,000					15,000	20,000		25,000	100,000	
Hokkaido University	4,000				60,000	80,000	60,000	160,000	16,000			20,000	330,000	70,000
IAEA				40,000	160,000				65,000	20,000		25,000	30,000	270,000
ICARDA					80,000	50,000			50,000	50,000		50,000	280,000	
IDG-RAS	10,000			20,000	20,000								50,000	
NCMRD	50,000	50,000	50,000					50,000			75,000	125,000	400,000	
Nihon University	2,400				18,000	24,000	20,400	55,200					75,600	44,400
Osh University				10,000	10,000	10,000	15,000	10,000	10,000			10,000	75,000	
Tajik Agr. Academy				25,000	25,000								50,000	
Tajik National Park	100,000	100,000	100,000					100,000			75,000	125,000		600,000
The Mountain Institute	20,000					10,000		25,000	10,000	10,000		10,000	85,000	
UNE	25,000	100,000	12,000						75,000	38,000			18,000	232,000
UNESCO	30,000				20,000				10,000	10,000			50,000	20,000
UNU-EHS									224,300	50,000			274,300	
UNU-ESD	235,000				170,000				210,000	180,000	278,297	451,703	1,325,000	200,000
UNU-P&G	30,000								15,000	15,000			60,000	
<b>Co-financing</b>	556,360	250,000	172,000	100,000	627,880	402,480	525,400	450,200	1,000,300	1,286,600	428,297	897,863	3,620,980	3,076,400
	978,360			727,880		1,378,080			2,286,900		1,326,160		<b>6,697,380</b>	
<b>GEF Financ.</b>	650,000			600,000		1,000,000			150,000		600,000		<b>3,000,000</b>	
<b>TOTAL</b>	1,628,360			1,327,880		2,378,080			2,436,900		1,926,160		<b>9,697,380</b>	

**Notes:**

- The monetary distribution of co-financing across sub-components is based on partners' co-financing letters and UNU estimates
- (c) – cash contributions; (k) – in-kind contributions where information is available
- (number) – estimated co-financing included in the project document
- component 4 – sub-divided into two as opposed to 4 sub-components for simplicity
- acronyms:
  - o AKF-MSDSP – Aga Khan Foundation – Mountain Societies Development Support Programme, Tajikistan
  - o CAIAG – Central Asian Institute of Applied Geosciences, Kyrgyz Republic
  - o CDE – Centre for Development and Environment, Institute of Geography, University of Berne, Switzerland
  - o Hokkaido University – Graduate School of Environmental Earth Sciences, Sapporo, Japan
  - o IAEA – International Atomic Energy Agency, Vienna, Austria
  - o ICARDA – International Center for Agricultural Research in the Dry Areas, Syria
  - o IDG–RAS – Institute of Dynamics of Geosphere, Russian Academy of Sciences, Moscow, Russia
  - o NCMRD – National Centre for Mountain Regions Development of the Kyrgyz Republic
  - o Nihon University – College of Humanities and Sciences, Tokyo, Japan
  - o NEESPI – North Eurasia Earth Science Partnership Initiative, USA; University of Idaho, College of Science, Moscow
  - o Osh University – Osh State University, Kyrgyzstan
  - o SGP KG – The GEF Small Grants Programme, Kyrgyzstan
  - o Tajik Agr. Academy – Soil Science Research Institute of Agrarian Academy of Sciences, Tajikistan
  - o Tajik National Park – State Directorate of Protected Areas "Tajik National Park", State Committee on Environment Conservation and Forestry of the Republic of Tajikistan
  - o The Mountain Institute – Washington D.C., USA; Asia Regional Office, Kathmandu, Nepal
  - o UNE – University of New England, Australian Centre for Agriculture and Law, Armidale, New South Wales, Australia
  - o UNESCO – UN Educational, Scientific and Cultural Organization, Division of Ecological and Earth Sciences, Man and Biosphere (MAB) Programme, Paris, France
  - o UNU-EHS – UNU Institute for Environment and Human Security, Bonn, Germany
  - o UNU–ESD – UNU Environment and Sustainable Development Programme, Tokyo, Japan
  - o UNU-P&G – UNU Peace & Governance Programme, Tokyo, Japan

## ANNEX 19 : Pamir-Alai Project Phase 1 Budget

*Table 1. Component Financing in US\$*

Components & Outputs	GEF	Co-financing		TOTAL
		In Kind	In cash	
<b>Component 1: Improving the enabling legal, policy, institutional, and strategic planning, environment for SLM</b>	<b>650,000</b>	<b>471,360</b>	<b>507,000</b>	<b>1,628,360</b>
<b>Output 1.1. : Transboundary SLM strategy and action plan for the entire High Pamir and Pamir Alai mountains</b>	<b>300,000</b>	<b>361,360</b>	<b>195,000</b>	<b>856,360</b>
<b>Activity 1.1.1</b> Review of baseline capacity and needs assessments conducted during the PDF B, harmonization of objectives, and identification of an optimal strategy for improving the transboundary SLM enabling environment in the Pamir-Alai region	50,000	33,960	65,000	148,960
<b>Activity 1.1.2</b> Development of a transboundary SLM Strategy and Action Plan and stakeholder consultations	150,000	177,400	80,000	407,400
<b>Activity 1.1.3</b> Government Approval of the Transboundary Agreement and Establishment of a Joint Transboundary Institutional Mechanism	100,000	150,000	50,000	300,000
<b>Output 1.2 : Improved national legal and regulatory framework for SLM</b>	<b>150,000</b>	<b>50,000</b>	<b>200,000</b>	<b>400,000</b>
<b>Activity 1.2.1:</b> Review of baseline capacity and needs assessments conducted during the PDF B and identification of an optimal strategy for improving the national legal and policy environment for enabling SLM	30,000	10,000	40,000	80,000
<b>Activity 1.2.2</b> Formulation of improved regulatory frameworks, focus group discussions, national stakeholder consultations and policy briefings	70,000	20,000	100,000	190,000
<b>Activity 1.2.3</b> Government approval of new/improved laws and regulations and information dissemination among relevant stakeholders	50,000	20,000	60,000	130,000
<b>Output 1.3 : SLM concepts and principles mainstreamed within key land use planning government institutions and development strategies</b>	<b>200,000</b>	<b>60,000</b>	<b>112,000</b>	<b>372,000</b>
<b>Activity 1.3.1:</b> Assessment of SLM awareness among key national and local government agencies and other institutional	50,000	10,000	20,000	80,000

stakeholders and development of strategy and guidelines for SLM sensitization and mainstreaming				
<b>Activity 1.3.2</b> SLM mainstreaming in at least two (one/country) key government agencies and their development strategies and plans	70,000	40,000	60,000	170,000
<b>Activity 1.3.3</b> Capacity development for SLM mainstreaming and information dissemination on good practices	80,000	10,000	32,000	122,000
<b>Component 2: Capacity building for SLM</b>	<b>600,000</b>	<b>502,880</b>	<b>225,000</b>	<b>1,327,880</b>
<b>Output 2.1: Enhanced capacities for SLM advisory/support services</b>	<b>250,000</b>	<b>60,000</b>	<b>40,000</b>	<b>350,000</b>
<b>Activity 2.1.1:</b> Identification & capacity assessment of Advisory Support Service Providers	30,000	10,000	10,000	50,000
<b>Activity 2.1.2</b> Identification and validation of suitable techniques and approaches for improved SLM Advisory Service provision through pilot training at project sites	100,000	20,000	15,000	135,000
<b>Activity 2.1.3</b> Up-scaling of successful advisory service provision methods and practices throughout the project area and continued provision of technical support	120,000	30,000	15,000	165,000
<b>Output 2.2: Enhanced adaptive research capacities of local institutions</b>	<b>350,000</b>	<b>442,880</b>	<b>185,000</b>	<b>977,880</b>
<b>Activity 2.2.1:</b> Identification of adaptive research needs and capacities in the project countries, collation of suitable techniques and development of guidelines for their application	50,000	212,880	60,000	322,880
<b>Activity 2.2.2</b> Development of targeted adaptive research proposals by national research institutes and individual scientists, application, selection and disbursement of adaptive research grants	200,000	70,000	50,000	320,000
<b>Activity 2.2.3</b> Implementation of research proposals and establishment of research and training demonstration sites at selected villages in the project area	100,000	160,000	75,000	335,000
<b>Component 3: Poverty alleviation through community-based SLM</b>	<b>1,000,000</b>	<b>629,680</b>	<b>748,400</b>	<b>2,378,080</b>
<b>Output 3.1: A minimum of 20 SDUs with their own land use plan for the improved management of their local ecosystem resources</b>	<b>300,000</b>	<b>342,480</b>	<b>60,000</b>	<b>702,480</b>
<b>Activity 3.1.1:</b> Participatory community-based livelihoods and ecosystem	70,000	68,480	20,000	158,480

assessments, identification of SLM planning options and needs in line with local aspirations and capacities				
<b>Activity 3.1.2</b> Development of local land use/ecosystem management plans at PDF B pilot sites and up-scaling at hotspots throughout the project area	150,000	174,000	20,000	344,000
<b>Activity 3.1.3</b> Continued technical assistance for community-based land use planning and implementation	80,000	100,000	20,000	200,000
<b>Output 3.2: A minimum of 20 SDUs addressing ecosystem degradation and rural poverty through implementing innovative field level SLM practices and related micro-projects</b>	<b>600,000</b>	<b>89,000</b>	<b>436,400</b>	<b>1,125,400</b>
<b>Activity 3.2.1:</b> Preparation of SDU portfolios of micro-projects based on local land use plans	50,000	25,000	100,000	175,000
<b>Activity 3.2.2</b> Screening of micro-project proposals, selection and disbursement of micro-project grants on a continual basis	400,000	20,000	146,400	566,400
<b>Activity 3.2.3</b> Continuous identification of capacity needs and provision of technical assistance with micro-project implementation	150,000	44,000	190,000	384,000
<b>Output 3.3: Commercialisation of the mountain landscapes and biodiversity resources through the development of environmentally sensitive tourism</b>	<b>100,000</b>	<b>198,200</b>	<b>252,000</b>	<b>550,200</b>
<b>Activity 3.3.1:</b> Assessment of the constraints and opportunities for the development of environmentally sensitive tourism at selected pilot villages and across the project area	25,000	75,000	50,000	150,000
<b>Activity 3.3.2</b> Development of eco-tourism master plans building upon the experience and capacities of existing tourism development agencies and associations in the project area	25,000	70,000	92,000	187,000
<b>Activity 3.3.3</b> Provision of technical and financial support for the implementation of selected eco-tourism development master plans and the development of appropriate infrastructure and marketing	50,000	53,200	110,000	213,200
<b>Component 4: Evaluating the impact and determining the lessons for replicating project experience</b>	<b>150,000</b>	<b>1,015,900</b>	<b>1,271,000</b>	<b>2,436,900</b>
<b>Output 4.1: Validated vulnerability and resilience assessment framework employed in prioritizing SLM interventions in the project area</b>	<b>40,000</b>	<b>444,300</b>	<b>150,000</b>	<b>634,300</b>



<b>Activity 4.1.1:</b> Formulation of conceptual frameworks for vulnerability and resilience assessment	5,000	224,300		229,300
<b>Activity 4.1.2</b> Baseline vulnerability and resilience assessment and development of decision-support V&R indicators for prioritizing SLM interventions	15,000	70,000	50,000	135,000
<b>Activity 4.1.3</b> Final assessment based on V&R indicators, identification of SLM vulnerability hotspots in the project area and development of recommendations for Phase II of the project	20,000	150,000	100,000	270,000
<b>Output 4.2: Validated impact assessment framework, lessons from project interventions identified and recommendations for future SLM work in the project area developed</b>	<b>50,000</b>	<b>390,000</b>	<b>150,000</b>	<b>590,000</b>
<b>Activity 4.2.1:</b> Development of a conceptual framework for impact and replicability assessment	5,000	180,000		185,000
<b>Activity 4.2.2</b> Selection of case studies and baseline assessments at project sites	15,000	80,000	50,000	145,000
<b>Activity 4.2.3</b> Final impact assessments and identification of generic lesson and recommendations for Phase II of the project	30,000	130,000	100,000	260,000
<b>Output 4.3: Proposal for up-scaling the project's experience in Phase II of the initiative and generic guidelines for replication in other transboundary mountainous regions developed*</b>	<b>60,000</b>	<b>181,600</b>	<b>971,000</b>	<b>1,212,600</b>
<b>Activity 4.3.1:</b> Evaluation of project impacts, design and performance and development of a proposal for operationalizing Phase II of the PALM project	30,000	125,000	725,000	880,000
<b>Activity 4.3.2</b> Preparation of generic guidelines for replication of the project's experience in other transboundary mountain areas	30,000	56,600	246,000	332,600
<b>Component 5: Project Management and M&amp;E</b>	<b>600,000</b>	<b>1,001,160</b>	<b>325,000</b>	<b>1,926,160</b>
<b>Output 5.1: An operational international, regional and national management structure for the effective implementation of the project's transboundary and sub-regional component activities</b>	<b>170,238</b>	<b>303,297</b>	<b>125,000</b>	<b>598,535</b>
<b>Activity 5.1.1:</b> National project management	55,160	75,000	75,000	250,160
<b>Activity 5.1.2:</b> Regional project management	115,078	228,297	50,000	393,375
<b>Output 5.2: A management decision support/monitoring and evaluation</b>	<b>429,762</b>	<b>697,863</b>	<b>200,000</b>	<b>1,327,625</b>

<b>system for the High Pamir and Pamir Alai Mountain region</b>				
<b>Activity 5.2.1</b> Development of M&E system and baseline	170,000	370,000	50,000	590,000
<b>Activity 5.2.2</b> Follow-up M&E and reporting	259,762	327,863	150,000	737,625
<b>TOTAL</b>	<b>3,000,000</b>	<b>3,620,980</b>	<b>3,076,400</b>	<b>9,697,380</b>

## **Annex 20: List of Acronyms**

UNEP -	United Nations Environment Programme
UNU -	United Nations University
UNON-	United Nations Office in Nairobi
UNESCO-	United Nations Education, Social and Cultural Organization
SLM -	Sustainable Land Management
GEF -	Global Environment Facility
UNCCD -	United Nations Convention to Combat desertification
UNCBD -	United Nations Convention on Biological Diversity
UNFCCC -	United Nations Framework Convention on Climate Change.
XUAR -	Xinjiang Uighur Autonomous Region
REAP -	Regional Environmental Action Plan
SRAP/CD	Subregional Action Programme for the Central Asian Countries on Combating Desertification
UNU GMPP -	United Nations University's Global Mountain Partnership Programme
UNU EHS -	United Nations University Institute for Environment and Human Security
NEAP -	National Environmental Action Plan
NPRS -	National Poverty Reduction Strategies
GBAO -	Gorno Badakshan Autonomous Oblast
AKDN -	Aga Khan Development Network
WFP -	World Food Programme
GLASOD -	Global Assessment of Soil Degradation
UNEP/GEF -	United Nations Environment Programme/ Division of Global Environment Facility Coordination
CAMP -	Central Asian Mountain Partnership
PHIP -	Pamiri High Mountains Integrated Project
GTZ -	Deutsche Gesellschaft für Technische Zusammenarbeit
ACTED -	Agency for Technical Cooperation and Development
MSDSP -	Mountain Societies Development Support Programme
SDU -	Sub- District Units
PRA -	Participatory Rural Assessment
CBO -	Community-Based Organisations
PLEC -	People, Land Management and Environmental Change
ICARDA -	International Center for Agricultural Research in the Dry Areas
RPO -	Regional Project Officer
IPPSC -	International Project Policy Steering Committee
NPMO -	National project management Offices
GIS -	Graphical Interface System
ICIMOD -	The International Centre for Integrated Mountain Development
PARDYP -	People and Resource Dynamics Project
NPH -	National Project Head
AKF -	Aga Khan Foundation
CDE/NCCR North-South -	Swiss National Centre of Competence in Research
IAEA -	International Atomic Energy Agency
CACILM -	Central Asian Countries Initiative for Land Management
REAP -	Regional environment action plan
IEM -	Integrated Ecosystem Management

## **ANNEX 21: Letters of Endorsement and Co-financing Support**