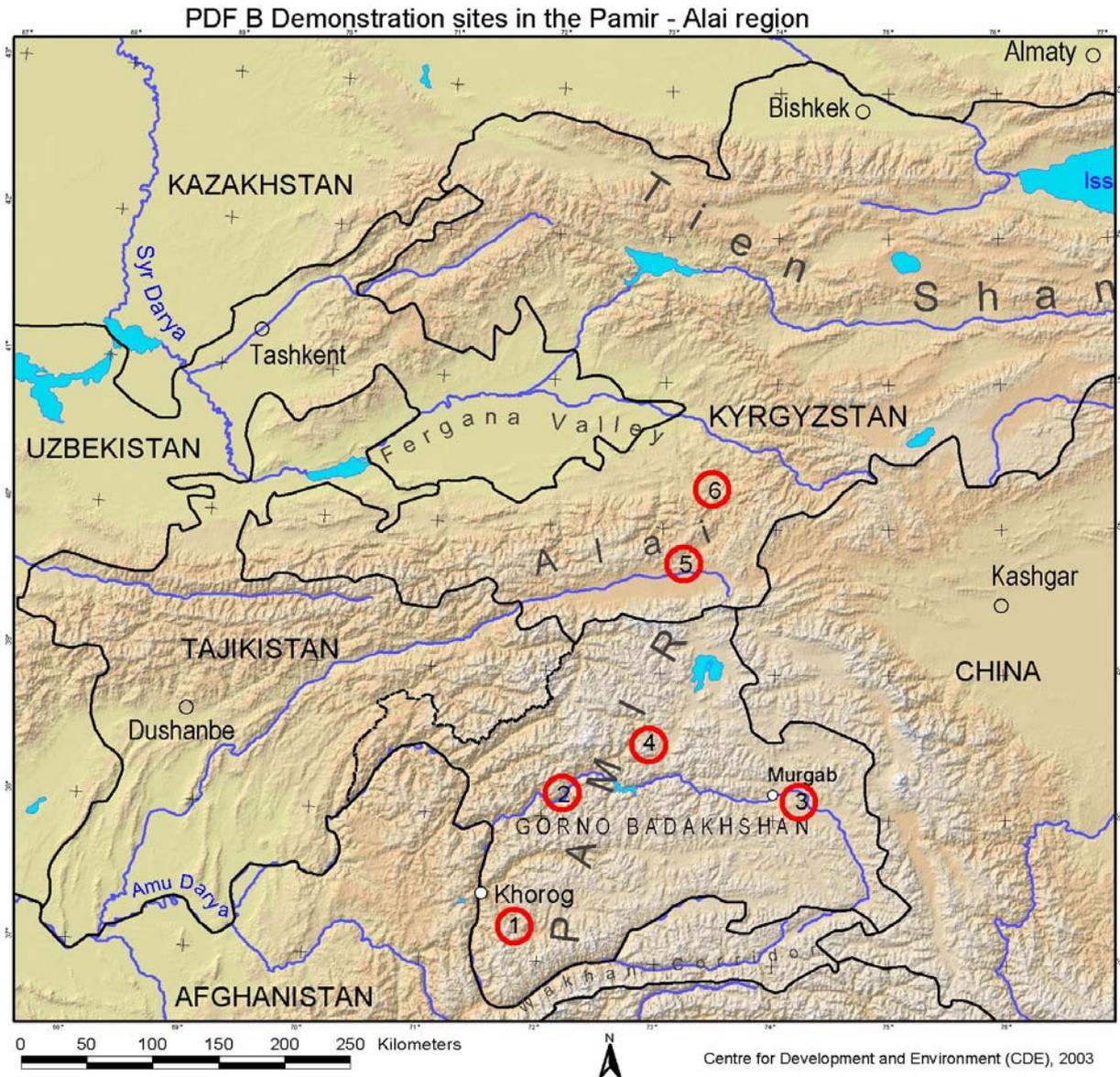


UNITED NATIONS ENVIRONMENT PROGRAMME

Sustainable Land Management in the High Pamir and Pamir-Alai Mountains - an Integrated and Trans-boundary Initiative in Central Asia

Annexes D-I



Annex D: Red Data Book Information, Kyrgyzstan and Tajikistan

| Red Data Book - Alai Region, Kyrgyzstan | | | |
|---|-----------------------------------|---------------------------|---------------------------------------|
| № | Latin | English | Russian |
| Mammals | | | |
| 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 | Белокотный 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 | Сурук Мензбира |
| Bird | | | |
| 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 pelegrinoides</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 leucopterus</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 крохоль |
| 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>Circaetus gallicus</i> | Short-toed eagle | Змееяд |
| 30. | <i>Cygnus olor</i> | Mute Swan | Лебедь кликун |
| 31. | <i>Pelecanus onocrotalus</i> | Pink Pelican | Розовый пеликан |
| 32. | <i>Terpsiphone paradisi</i> | Paradise flycatcher | Райская мухоловка |
| 33. | <i>Ibidirhynchus struthersii</i> | Ibisbill | Серпюклов |
| 34. | <i>Sirraptes 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 ichtyaetus</i> | Great black-headed gull | Черноголовый хохотун |
| 45. | <i>Ciconia nigra</i> | Black stork | Черный аист |
| 46. | <i>Aegyptius 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> | Horntail 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>Pulsatilla kostyzevii</i> | | Пострела Костычева |
| 2 | f. Brassicaceae <i>Iskandera alaica</i> (Korsh.) Botsch. et Vved | | <i>Искандера Алайская</i> |
| 3 | Asphodelaceae <i>Eremurus alaicus</i> Chalkuziev | Eremurus alaica | <i>Эремурус алайский</i> |
| 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 E: 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"¹.

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;

¹ 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 activity²;
- 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) 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.

² 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 construction and maintenance of irrigation systems:** on steep, and unstable slopes, where leaking from the canals can result in gullying 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 km² 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 F: Sustainable Land Management Micro-Projects

Introduction

1. Each jamoat/ayil 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.

2. 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

3. 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)³;

³ 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

4. 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

5. 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

6. 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 unit⁴ (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 Coordinator through the national project management office;
- (viii) the RPC, 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.

7. 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.

⁴ 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)

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

Section 6. Objectives

a) *Development objective (goal):*

b) *Immediate objectives (purpose):*

(i)

Section 7. Proposed project component activities:

(i)

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

2.

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 G: 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 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 PIL 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 2nd 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 Coordinator.

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: Yarmazar, Shitharv, Jelondy, Alichur | High interest in: - Improved livelihoods through agriculture and alternative income-generating activities; Capacities: - 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); Very high potential impact | Involved in: 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 | Interest in: - 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; Capacities: 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; High Potential Impact | Involved in: 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 | Key National Stakeholders | | |

| | | |
|--|--|--|
| <p>State Committee on Environment Protection and Forestry</p> | <p>Interest in:</p> <ul style="list-style-type: none"> - Integrated and rational use of natural resources; - Analysis, forecasting and prevention/control of harmful and illegal anthropogenic influences on the natural resources; - Increase of forest covered areas; - 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; - Establishment and improved management of protected areas; - Creation of favorable conditions for development of tourism; - Development and submission to the government of proposals for projects, policies, legal measures for improved protection and management of natural resources; <p>Capacities:</p> <ul style="list-style-type: none"> - Very good knowledge of and high potential to influence the national policy environment for SLM; - Limited fin., technical, and human capacities and resources for policy implementation; <p>High Potential Impact</p> | <p>Involved in:</p> <ol style="list-style-type: none"> 1) Execution, M&E of PDF B activities in TJ; 2) Coordination of cross-sectoral and participatory trainings and baseline research in Tajikistan; 3) Multi-level, cross-sectoral consultations; 4) Regional level consultations and development of full project concept; |
| <p>State Land Tenure Committee</p> | <p>Interest in:</p> <ul style="list-style-type: none"> - Land Management and land tenure policy development and implementation; - Monitoring, evaluation and registration of land resources; - Land degradation and soil erosion control; - Focal Point for UNCCD implementation; <p>Capacities:</p> <ul style="list-style-type: none"> - Very good knowledge of and high potential to influence the national policy environment for SLM particularly as related to land tenure; - Good capacities for M&E of land use type and distribution; - Limited fin. and technical resources for assessing and addressing land degradation; <p>High Potential Impact</p> | <p>Involved in:</p> <ol style="list-style-type: none"> 1) Cross-sectoral and participatory trainings and baseline research in Tajikistan; 2) National level consultations; 3) Regional level consultations and development of full project concept; |
| <p>Ministry of Agriculture</p> | <p>Interest in:</p> <ul style="list-style-type: none"> - 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); - Research and forecasting of the danger and spread of pests, diseases, weeds, pollution of lands by harmful chemical substances; - Research and selection work in the agrarian sector; - Land reclamation and farm organization - Reform of agricultural enterprises & support of cooperation, production, processing and marketing of agricultural products; - Development and submission to the government of relevant policy proposals and recommendations; <p>Capacities:</p> <ul style="list-style-type: none"> - 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; <p>High Potential Impact</p> | <p>Involved in:</p> <ol style="list-style-type: none"> 1) Baseline research and national and regional level consultations; |
| <p>Other National Stakeholders: Ministry of Melioration and Water Resources</p> | <p>SLM Relevant interests in:</p> <ul style="list-style-type: none"> - Water resources management policy development and implementation; - Reclamation and irrigation of new lands; | |

| | | | |
|---|--|--|--|
| | <p>Ministry of Energy</p> <p>Health Ministry</p> <p>Ministry of Labor and Social Affairs</p> | <ul style="list-style-type: none"> - 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 | <p>Involved in:</p> <p>1) Baseline research / national consultations;</p> |
| 4 | <p>Research Institutes and Universities:</p> <p>Khorog University</p> <p>Pamir Biological Institute</p> <p>Tajik Agrarian Univ.</p> <p>Forestry Research Instit.</p> <p>Soil Science Institute</p> <p>“Bogparvar” Res. Inst.</p> <p>Institute of Agricultural Aero-Geodesic Research “FAZO”</p> <p>Economic Research Institute</p> <p>National Center for Biodiversity & Biosafety</p> | <p>Interested in different aspects of SLM-related research and in research collaboration</p> | <p>Involved/consulted in baseline research;</p> <p>Some involved in national and regional consultations;</p> |
| | <p>NGOs, media</p> <p>Tajik Association for Forest and Wildlife Conservation</p> <p>“Kuhiston” Foundation</p> <p>National Social Investment Fund</p> <p>NGO “ORIPR”</p> <p>NGO “Murgab”</p> <p>NGO “Ishkashim”</p> <p>NGO “Imdod”</p> <p>NGO “For the Earth”</p> <p>Navruzi Vatan newsp.</p> <p>Tajik Nat. Television</p> | <p>Interested in different aspects of environmental conservation and sustainable land management including environmental awareness raising, education, and grass-roots project implementation;</p> | <p>Informed and consulted at various stages of the project development;</p> |
| 5 | <p>International Organizations and donor agencies operating in the country:</p> <p>UNDP, UNCU, UNIFEM, UNTOP, ADB, FAO, ICARDA, WB, EU Commission, OSCE, JICA, AKF, MSDSP, CAMP, CAREC, ACTED, FOCUS, German AgroAction, KFW, etc.</p> | <p>Interested in supporting various aspects of development in the country and in fruitful cooperation where interests overlap.</p> | <p>Consulted and some involved in national and regional level project development consultations.</p> |

STAKEHOLDERS IN KYRGYZSTAN

| N | Stakeholder(s) | Interest/Capacities/Impact | Involvement |
|----|--|---|--|
| 1. | <p>Primary users of land and other local resources (farmers, livestock breeders, women, village heads, etc.) in four pilot Aylukmutu: Kashka-Suu, Lenin, Josholu, Alaiku</p> | <p>High interest in:</p> <ul style="list-style-type: none"> - Improved livelihoods through agriculture and alternative income-generating activities; <p>Capacities:</p> <ul style="list-style-type: none"> - Very good knowledge of local environment; - Household and community level resource use decision-making power; - Some experience with international projects/organ; - Limited resources (fin., technical, human); <p>Very high potential impact</p> | <p>Involved in:</p> <p>2) Assessment of local resources, problems, possibilities & limitations;</p> <p>2) National level consultations;</p> |
| 2. | <ul style="list-style-type: none"> - Aylukmutu Administration (Kashka-Suu, Lenin, Josholu, Alaiku) - Hokumat (Rayon) | <p>Interest in:</p> <ul style="list-style-type: none"> - Poverty reduction; - Ensuring favorable conditions for agricultural development | <p>Involved in:</p> <p>1) Cross-sectoral field research trainings;</p> <p>2) Evaluation of local needs,</p> |

| | | | |
|---|---|---|--|
| | Administration (Chon-Alai, Alai, Kara-Kul) - Osh Oblast Administration | <ul style="list-style-type: none"> - Maintenance of productive quality of land; - Development of infrastructure for eco tourism; - Protection of local flora and fauna; <p>Capacities: 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;</p> <p>High Potential Impact</p> | development options and constraints; 2)National level communication and consultations; 4)Regional level consultations and development of full project concept; |
| 3 | Key National Stakeholders | | |
| | National Center for Mountain Regions Development | <p>Interest in:</p> <ul style="list-style-type: none"> - Rational use of natural resources and integrated development of mountain regions in Kyrgyzstan; - Coordination of research on problems and possibilities for sustainable mountain development and information dissemination; - Development and implementation of national and international collaborative projects related to sustainable mountain development; - Establishment of mountain village development models; - Development and submission to the government of proposals for projects, policies, legal measures for sustainable mountain development; <p>Capacities:</p> <ul style="list-style-type: none"> - Very good knowledge of and high potential to influence the national policy environment for sustainable mountain development; - Very flexible structure allowing for timely execution of project activities; - Limited fin., technical, and human resources for policy implementation; <p>High Potential Impact</p> | <p>Involved in:</p> <ol style="list-style-type: none"> 1) Execution, M&E of PDF B activities in KG; 2)Coordination of cross-sectoral and participatory trainings and baseline research in Tajikistan; 3) Multi-level, cross-sectoral consultations; 4)Regional level consultations and development of full project concept; |
| | Ministry of Ecology and Emergency Situations | <p>Interest in:</p> <ul style="list-style-type: none"> - Protection and sustainable use of natural resources; - Analysis, forecasting and prevention/control of harmful and illegal anthropogenic influences on the natural resources; - Analysis, forecasting and prevention/control of harmful for human security environmental events and processes; - Development and submission to the government of proposals for projects, policies, legal measures for improved protection and management of natural resource; <p>Capacities:</p> <ul style="list-style-type: none"> - Very good knowledge of and high potential to influence the national policy environment for environmental protection; - Limited fin., technical, and human capacities and resources for policy implementation; <p>High Potential Impact</p> | <p>Involved in:</p> <ol style="list-style-type: none"> 1) National and regional level consultations; |
| | State Land Registry Agency | <p>Interest in:</p> <ul style="list-style-type: none"> - Land tenure policy development and implementation; - Monitoring, evaluation and registration of land resources; - Development of proposals for rational use of common land resources; - Land degradation and soil erosion control; <p>Capacities:</p> <ul style="list-style-type: none"> - Very good knowledge of and high potential to influence the national policy environment for SLM particularly as related to land tenure; - Good capacities for M&E of land use type and distribution; - Limited fin. and technical resources for monitoring, assessing and addressing land degradation | <p>Involved in:</p> <ol style="list-style-type: none"> 1) methodological trainings, baseline research and national level consultations; |

| | | | |
|---|---|---|---|
| | <p>Ministry of Water, Agriculture and Processing Industry</p> <p>State Forestry Agency</p> <p>Other National Stakeholders: Health Ministry</p> <p>Ministry of Labor and Social Affairs</p> <p>Tourism and Sports Agency</p> <p>Ministry of Education</p> | <p>processes; High Potential Impact</p> <p>Interest in:</p> <ul style="list-style-type: none"> - 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 & support of cooperation, production, processing and marketing of agricultural products; <p>Capacities:</p> <ul style="list-style-type: none"> - 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; <p>High Potential Impact</p> <p>Interest in:</p> <ul style="list-style-type: none"> - 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; <p>Capacities:</p> <ul style="list-style-type: none"> - 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; <p>High Potential Impact</p> <p>SLM Relevant interests in:</p> <ul style="list-style-type: none"> - Development of hot springs and establishment of sanitary resorts; - Collection and processing of medical plants; <ul style="list-style-type: none"> - Creation of additional work places; - Improvement of the standard of living - Reduction of out-migration abroad for economic reasons <ul style="list-style-type: none"> - Development of favorable conditions for development of tourism; - Tourism-related information collection, analysis and dissemination; <ul style="list-style-type: none"> - Development and implementation of national environmental education programmes; | <p>Involved in:</p> <p>1) Baseline research and national consultations;</p> <p>Involved in:</p> <p>1) Baseline research and national and regional consultations;</p> <p>Involved in:</p> <p>1) Baseline research and national consultations;</p> |
| 4 | <p>Research Institutes and Universities: Kyrgyz Academy of Sciences International University in</p> | <p>Interested in different aspects of SLM-related research and in research collaboration</p> | <p>Involved/consulted in baseline research; Some involved in national and regional consultations;</p> |

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

Annex H: Project Management

TERMS OF REFERENCE

A. Project Management Committees

1. International Project Policy Steering Committee

8. 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 months⁵ 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.

9. 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: | Project National Coordinator – Kyrgyzstan Project National Coordinator – Tajikistan Regional Project Coordinator |

2. National Project Steering Committees

10. 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;
- 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;

⁵ 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.

- Advising the IPPSC on country specific constraints and opportunities with regard to implementing the agreed annual project work plans.

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

| | |
|-------------|---|
| Chair: | Senior nationally renowned policy maker |
| Secretary: | National Project Coordinator |
| 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 Manager UNU Senior Academic Programme Officer Regional Project Coordinator |

3. Regional (Trans-boundary) Expert Advisory Group

12. 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.

13. 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 Coordinators and reviewed with the Regional Project Coordinator. 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 Coordinator

14. The lead national executing agency in each country will appoint one of its senior personnel to serve as the national project coordinator (NPC). 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 Manager, 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 NPC 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 Manager

15. Each country will appoint a full time National Project Manager (NPM) 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 NPM shall be selected through a competitive and transparent recruitment process undertaken by the NPC in consultation with UNEP and UNU. Based in either Khorog (Tajikistan NPM) or Osh (Kyrgyzstan NPM) 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 NPC 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 NPC;
- 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.

16. The NPM 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 NPM for the full duration of the project (4 + 4 years). The NPM would be subject to periodic assessment of his/her performance by the NPSC however any decision to replace the NPM would require the approval of UNEP and UNU.

3. Regional Project Coordinator (GEF funded position)

17. UNU, with the approval of UNEP, will appoint a Regional Project Coordinator (RPC). He/she will be based in Bishkek or Dushanbe and will be hosted by the corresponding National Executing Agency. The RPM 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 NPMs in the execution of the country specific and trans-boundary component activities. The specific responsibilities of the RPC will include:

- Promoting effective liaison between UNU, UNEP, IPPSC, and the NPCs and NPMOs, 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, RPM, NPCs and NPMs 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 NPCs and NPMs 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 NPCs and NPMs 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;

18. The RPC 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.

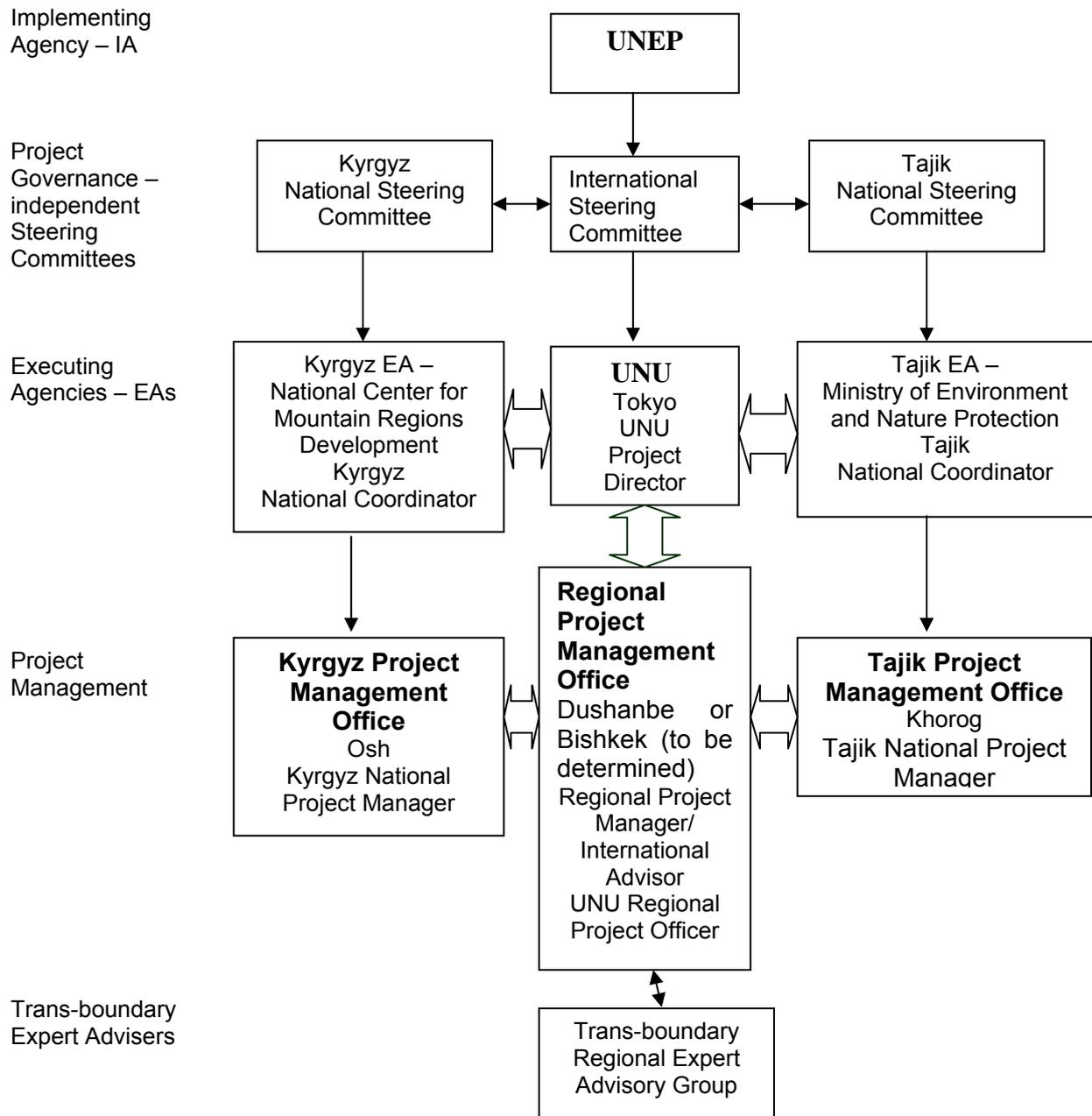
4. Senior Academic Programme Officer, UNU, Tokyo/Bonn (part-time, UNU-funded)

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 Coordinator in monitoring financial performance of the project. Will receive and scrutinize financial reports by the National Coordinators 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 I: 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 and Regional Coordinators, 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 Coordinators and National Managers.

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.

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>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.</p> <p>1.1 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>1.2</p> | <p>1.1</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>1.1</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>1.2</p> |

| | | |
|--|---|--|
| <p>Refine and update PDF B 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>1.3 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>1.2</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>1.3</p> <p>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>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>1.3</p> <p>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>Overall Outcome 1: <i>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</i></p> |
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| | | |
|---|--|---|
| <p>2.1 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>2.2 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>2.1 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>2.2 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>ecosystems.</i></p> <p>2.1 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>2.2 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> <p>Overall Outcome 2: <i>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.</i></p> |
|---|--|---|

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.

3.1

Assess the degradation status of each participating SDU's ecosystem resources

Develop community-based SDU wide land use/ecosystem management plans

Build the capacity of community-based civil society organisations to plan and implement field level sustainable land management activities

3.2

Local communities prepare SDU portfolio of micro-project proposals justifiable on the basis of the SDU land use plans for GEF-funding

Screen SDU portfolio of micro-project proposals according to the eligibility criteria

Fund and implement eligible micro-projects

3.3

Assess the constraints and opportunities for environmentally sensitive tourism within the High Pamir and Pamir Alai mountains

Develop with the local communities a 'master plan' for the commercial equitable development of environmentally sensitive

3.1

Reports from participatory resource assessments at 48 SDUs

48 community-based SDU wide land use/ecosystem management plans

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

3.2

Each participating SDU with portfolio of micro-project proposals and local NGOs and key resource persons with hand-on experience in developing them

Suitable for GEF funding micro-projects selected from the SDUs' portfolios

Reports from the results of the implemented micro-projects

3.3

Report on the constraints and opportunities for environmentally sensitive tourism within the High Pamir and Pamir Alai mountains (as part of the regional strategy gap-filling studies)

Community-based strategies for realization

3.1

An information base for community-based land use/ecosystem management planning for 48 SDUs in the High Pamir and Pamir-Alai mountains established

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

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

3.2

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

Criteria and mechanism for review and selection of micro projects to be funded by small grants established and functioning

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

3.2

An objective basis for developing a strategy for the development of environmentally sustainable tourism available

A sense of ownership, responsibility, and incentives for preservation of unique local ecosystems established through involvement of local people in the planning of tourism-based income-generating activities

The commercial value of conserving the

trekking, ecotourism (wildlife watching and botanical tours) and limited trophy hunting based livelihood enterprises

Develop the tourism infrastructure and market it within and outside Central Asia

4.1

Develop and test a vulnerability analysis framework for assessing the impact of land degradation on mountain communities

Undertake baseline studies using the vulnerability analysis framework

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

4.2

Internationally renowned academic institutions invited to submit case study proposals

Screening and commissioning of case studies

Conduct in-depth case

of the commercial value of unique ecosystems in the region developed

The capacities necessary for implementation of the above-mentioned strategies enhanced

Market access and links identified and established

4.1

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

Report on baseline results from its application at selected sites in the project area

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

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

4.2

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

Case studies to be commissioned selected

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.

Overall 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*

4.1

A framework for assessing the linkages between vulnerability and land degradation developed

The vulnerability analysis framework tested and results used as a basis for setting and agreeing on project impact indicators

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

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

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.

4.2

Attention of renown international experts drawn to the problems of land degradation, vulnerability, adaptation capacities and human security in the Pamir-Alai region

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

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 achievements of objectives (1) and (2)

5.1

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

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

5.1

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

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*

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

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

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

5.2

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

| UNEP | UNU | International Steering Committee | National Steering Committees | National Coordinators | Regional Advisory Group |
|---|--|--|--|--|---|
| Monitor the agreed M&E plan in accordance with the terms of agreement with GEFSEC | Establish reporting guidelines for National Coordinators, and ensure that NCs meet reporting dates and provide reports of suitable quality | Review and approve the project annual work plans and budget | Review and approve the annual work plans and budgets of the national management offices | 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 | Oversee the financial management of the project as a whole | Oversee the financial management of the respective national funds | 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 | 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 | 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 | 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 | 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 | | 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 | 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. | 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 | Provide UNU with impact M&E reports in accordance with the format and time frame to be agreed | |
| | Receive and evaluate the reports of these advisers, and act | | Advise the International Steering Committee on country specific constraints and opportunities with regard to implementing the agreed annual work plans | Liaise with and assist UNU in carrying out regional level activities in the respective country | |
| | | | Facilitating the | | |

on any problems
noted within them

implementation of
the national and
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

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 and regional coordinators

| Report | Format and Content | Timing | Responsibility |
|---|--|---|---|
| Activity and Progress Reports | (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 Coordinators to NSCs and RPC |
| 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 |
| <hr/> | | | |
| National / Regional Scientific Coordinators' Half-yearly Reports | (No standardized format) | | |
| | Person reporting and date Activities during the period Comment on progress within the Expert Group for which the Scientific Coordinators 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 Coordinators to NPCs / RPC |
| Consolidated Half-yearly Progress Reports | (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 Coordinators' 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 Coordinator with input from National Coordinators, for forwarding to UNEP and the International Steering Committee |

Table 8.4 continued

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

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

| Report, number and title | Format and Content | Expected date | Responsibility |
|--|--|----------------------|--|
| 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 |