



## United Nations Development Programme

Country: Peru

### PROJECT DOCUMENT<sup>1</sup>

**Project Title:** Transforming Management of Protected Area/Landscape Complexes to Strengthen Ecosystem Resilience

**UNDAF Outcome(s):** The State, with the participation of civil society, private sector, and academic and scientific institutions, will have designed, implemented and/or strengthened policies, programs, and plans, with a focus on environmental sustainability, for the sustainable management of natural resources and biodiversity conservation.

**UNDP Strategic Plan Primary Outcome:** Growth is inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded.

**Expected CP Outcome(s):** See UNDAF Outcome

**Expected CPAP Output(s):** Management instruments designed and in early implementation that contribute to the conservation and sustainable use of biodiversity at the local, regional and national scales.

**Executing Entity/Implementing Partner:** National Protected Areas Service (SERNANP)

**Implementing Entity/Responsible Partners:** UNDP

#### **Brief Description**

This project will transform the management of vulnerable ecosystems in Peru to alleviate the direct and indirect impacts of climate change (CC) on globally significant biodiversity and ecosystem functionality, through a three-pronged approach: development of management systems (monitoring and early warning systems, management decision making tools and sustainable financing) in order to optimize national readiness to address the implications of CC on ecosystems; expanding and strengthening PAs in landscapes that are particularly sensitive to CC, in order to protect refugia and corridors and build readiness to address specific CC impacts; and promoting sustainable land management in landscapes surrounding PAs in order to anticipate increased threats from current land uses for BD and ecosystem functions. This will reduce pressures on ecosystems and make them more resilient to expected CC impacts.

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<sup>1</sup> For UNDP supported GEF funded projects as this includes GEF-specific requirements

Programme Period:	2014-2020	<i>Total resources required:</i>	\$59,704,112
Atlas Award ID:	00081013	<i>Total allocated resources (cash):</i>	\$50,926,658
Project ID:	00090480	o GEF	\$8,991,434
PIMS #	5152	o UNDP	\$9,401,000
		o SERNANP	\$2,208,460
Start date:	15 <sup>th</sup> August 2014	o Regional Government of Madre de Dios:	\$9,300,000
End Date	14 <sup>th</sup> August 2020	o Belgian Government:	\$11,691,884
		o COSUDE	\$2,333,880
Management Arrangements	NEX	o German Government:	\$7,000,000
PAC Meeting Date	TBD	<i>In-kind contributions:</i>	
		o SERNANP	\$8,777,454

Agreed by (Government):

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

Date/Month/Year

Agreed by (UNDP):

Date/Month/Year

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## List of abbreviations

Abbreviation	English meaning	Spanish meaning
AIDSEP	Interethnic Association for the Development of the Peruvian Jungle	Asociación Interétnica de desarrollo de la selva peruana
ANP	Protected Natural Area	Área Natural Protegida
ATFFS	Technical Administration for Forestry and Wildlife	Administración Técnica Forestal and de Fauna Silvestre
BP	Protection Forest	Bosque de Protection
CA	Administration Contracts	Contratos de administración
CC	Climate Change	Cambio Climático
CEDIA	Centre for the Development of Amazonian Indigenous People	Centro para el Desarrollo del Indígena Amazónico
CG	Management Committee	Comité de Gestión
CI	International Cooperation	Cooperación internacional
COHARYIMA	Harakbut, Yine and Machiguenga Council	Consejo Harakbut, Yine y Machiguenga
COICA	Coordinator of Indigenous Organizations of the Amazon Basin	Coordinadora de las organizaciones indígenas de la cuenca amazónica
CONAP	Confederation of Amazonian Nationalities of Peru	Confederación de Nacionalidades Amazónicas del Perú
DESCO	Centre for Studies and Promotion of Development	Centro de Estudios y Promoción del Desarrollo
DRIS	Sustainable Rural Development	Desarrollo Rural Sustentable
EBCC	Cosha Cashu Biological Station	Estación biológica Cosha Cashu
ECAs	Executor of Administration Contracts of Communal Reserves	Ejecutor de Contrato de Administración de Reservas Comunales
FENAMAD	Native Federation of Madre de Dios River and its Tributaries	Federación Nativa del Río Madre de Dios and Afluentes
FP	Permanent Heritage Trust Funds	Fondos patrimoniales fiduciarios a perpetuidad
GEF	Global Environment Facility	Fondo para el Medio Ambiente Mundial
GOREMAD	Madre de Dios Regional Government	Gobierno Regional de Madre de Dios
GSN	Contributions of Sub-National Governments	Aportes de los Gobiernos sub-nacionales
IBC	Institute of Common Goods	Instituto del Bien Común
INEI	National Institute for Statistics and Information	Instituto Nacional de Estadística e Informática
JBM	Missouri Botanic Garden	Jardín Botánico de Missouri
MEF	Ministry of Economy and Finance	Ministerio de Economía and Finanzas
MIDIS	Ministry of Development and Social Inclusion	Ministerio de Desarrollo e Inclusión Social
MINAM	Ministry of Environment	Ministerio del Ambiente
OEFA	Organism of Environmental Evaluation and Control	Organismo de Evaluation and Fiscalization Ambiental
OI	Other income	Otros ingresos
OSINFOR	Organism Supervising Forestry and Wildlife Resources	Organismo Supervisor de los Recursos Forestales and de Fauna Silvestre

OT	Territorial Land Use Planning	Ordenamiento territorial
PIAV	Indigenous Population in Voluntary Isolation	Población indígena en aislamiento voluntario
PIF	Project Identification Form	Formulario de identificación de proyecto
PN	National Park	Parque Nacional
PNAP	Alto Purús	Parque Nacional Alto Purús
PNM	Manu National Park	Parque Nacional del Manu
PNUD	United Nations Development Programme	Programa de las Naciones Unidas para el Desarrollo
PNYCh	Yanachaga Chemillén National Park	Parque Nacional Yanachaga Chemillén
PPG	Project Preparation Grant	Preparation de proyecto de subvention
PROFONANPE	Fund for the Promotion of Natural Protected Areas in Peru	Fondo de promoción de las áreas naturales protegidas del Perú
ProNaturaleza	Peruvian Foundation for Nature Conservation	Fundación Peruana para la Conservación de la Naturaleza
RC	Communal Reserve	Reserva Comunal
RCA	Amarakaeri Communal Reserve	Reserva Comunal Amarakaeri
RCP	Purús Communal Reserve	Reserva Comunal Purús
RCY	Yánesha Reserva Comunal	Reserva Comunal Yánesha
RDR	Directly collected funds	Recursos directamente recaudados
REDD	Reduction of Emissions from Deforestation and Forest Degradation	Reduction de emisiones por deforestación y degradación de bosques
RO	Recurrent funds	Recursos ordinarios
SERNANP	National Service for State Protected Areas	Servicio Nacional de Áreas Naturales Protegidas por el Estado
SH	Historic Sanctuary	Santuario Histórico
SINANPE	National System for State Protected Areas	Sistema Nacional de Áreas Naturales Protegidas por el Estado
SN	National Sanctuary	Santuario Nacional
SNM	Megantoni National Sanctuary	Santuario Nacional Megantoni
SPN	National private sector	Sector privado nacional
UNESCO	United Nations Education, Science and Culture Organization	Organización de las Naciones Unidas para la Educación, la Ciencia and la Cultura
ZA	Buffer Zone	Zona de amortiguamiento
ZEE	Economic Ecological Zoning	Zonification ecológica económica
SZF	Frankfurt Zoological Society	Sociedad Zoológica de Francfort
SZSD	San Diego Zoological Society	Sociedad Zoológica de San Diego

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## SECTION I: ELABORATION OF THE NARRATIVE

### PART I. SITUATION ANALYSIS

#### Geography, Demography and Economy

1. Peru lies between 68°39'27 and 81°15'9 West longitude, and from 0°01'48 North to 18°21'03 South latitude, covering a territory of approximately 1,285,216.60 km<sup>2</sup>. The Andes are the main geomorphologic feature of the country and divide it into three main geographic regions: 1) the coastal region, in the west, is a narrow plain, largely arid area, except for valleys created by seasonal rivers flowing out of the Andes (52 in total); b) the Andes Mountains which run from north to south and form the geographic spinal cord of the country; and c) the Amazon basin which extends from the eastern flanks of the Andes towards the Brazilian border. Almost 60% of the country's area is located within the Amazon basin that is home to only 7% of the total population; approximately another 30% of the territory is located in the Andes, hosting 18% of the population. Approximately 65% of Peru's total population lives along the Pacific coast that accounts for 10% of the total territory, with 9 million living in the capital, Lima. Hydrographically, Peru is made up of three important watersheds: a) the Pacific coastal basin; b) the Amazon basin; and c) the Titicaca basin, the largest high-altitude freshwater lake of the world. Peru has significant surface water resources (lakes, ponds, rivers, streams, springs, etc.) distributed in 159 hydrographic units.

2. With a population of 29 million, of which, as of 2007, 75.9% lived in urban areas and 24.1% in rural areas, Peru is the fourth most populous country in South America.

3. It is characterized by a middle income market oriented developing economy; its 2010 per capita income is estimated by the IMF at US\$5,195, and as per the Human Development Index it scores at 0.723, based on 2010 data. Historically, the country's economic performance has been tied to exports of agriculture, minerals and other natural resources. Economic and political reforms have permitted sustained economic growth since 1993, except for brief slumps after the 1997 Asian Financial Crisis and the 2008 International Banking Crisis. Recent economic growth has been fueled by macroeconomic stability, improved terms of trade and rising investment and consumption. Peru has signed free trade agreements with its major trading partners, including Brazil, Canada, Chile, China, the European Union, Japan and the United States.

#### Biodiversity in Peru

4. Peru is one of the world's 10 most "megadiverse" countries, for its rich diversity in ecosystems, species, genetic resources and culture. Peru hosts about 25,000 plant species (10% of the world total) with 30% endemism. Of these, 4,400 species have known properties and are used by the population. In terms of fauna, Peru is first in number of fish species (close to 2,000 species, 10% of the world total); second in bird fauna (1,736 species); third in amphibians (332 species); third in mammals (460 species); and fifth in reptiles (365 species). There are about 5,528 plant species and 760 animal species endemic to Peru. There are a total of 222 endangered species of which 31 are facing extinction, 89 are classified as vulnerable, 22 are rare and 80 have an indefinite status. Peru is also rich in ecosystem BD with the major biomes being marine, mountain, forest, freshwater and agricultural ecosystems. It has 84 of the 104 life zones identified in the planet, the 4th largest area of tropical forest, the most extensive tropical mountain range, and 70% of tropical glaciers. Peru also has very high cultural diversity with 14 linguistic families and 44 distinct ethnic groups, of which 42 are found in the Amazon.

5. 11 ecoregions are represented in the country<sup>2</sup>: the cold sea of the Humboldt Current, tropical seashore, Pacific desert, equatorial dry forest, Pacific tropical forest, mountain steppe, puna, páramo, high forest, Amazon tropical forest or low forest, and palm savanna. The country also includes 16 biogeographical provinces<sup>3</sup>: equatorial dry forest; tropical, sub-tropical and warm temperate Pacific desert; tropical, sub-tropical and warm temperate Eastern Andes; Western Andes (*páramo*); tropical, sub-tropical and warm temperate puna; tropical and sub-tropical yunga; tropical and sub-tropical Amazonia and Lake Titicaca.

6. The project will focus on the eastern side of the Andes, stretching from the *altiplano* to the lowland rainforests as far as the Brazilian border. This area contains 98 PAs and constituent BD of highest global importance, covers a wide diversity of ecosystems and conditions, and are highly vulnerable to the effects of CC on ecosystem intactness and biological processes. The main ecoregions in the target area, which have been prioritized for attention by the Government of Peru due to their biological diversity, vulnerability and importance for the provision of environmental goods and services, are the following:

7. The *Southwest Amazon moist forest* ecoregion, which is characterized by a relatively flat landscape with alluvial plains dissected by undulating hills or high terraces. It contains a very rich biota because of dramatic edaphic and topographical variations at both the local and regional levels. It has the highest number of both mammals and birds recorded for the Amazonian biogeographic realm: 257 mammal species with 11 endemics, and 782 bird species with 17 endemics.

8. The *Peruvian yungas*, which are tropical and sub-tropical moist broadleaved forests on the eastern slopes and valleys of the Andes. They form a transition zone between the Southwest Amazon moist forests and Ucayala moist forests at lower elevations to the east and the Central Andean *puna* and wet *puna* at higher elevations to the west. The climate in this ecoregion varies from a tropical rainforest climate in the north to a subtropical highland climate in the south. This ecoregion contains over 3,000 species of plants and over 200 species of vertebrates, including the cock of the rock (*Rupicola peruviana*) (LC), Kalinowski's agouti (*Desyprocta kalinowski*) and the hairy long-nosed armadillo (*Dasyurus pilosus*) (VU), all of which are national endemics. The national coverage study of the SINANPE recognizes that the yungas forests should be the subject of particular attention for PA expansion, given their particular fragility and their long and narrow configuration (a function of their restriction to a narrow altitude belt along the eastern slopes of the Andes), which makes them particularly vulnerable to fragmentation.

9. The *Central Andean puna* ecoregion: this occurs above 3,500m and consists of high-elevation, wet, montane grasslands and lakes amidst plateaus, valleys, and high mountains. It is bordered on the west by the Sechura Desert and on the east by the yungas. To the north it transitions to the Cordillera Central páramo and to the south, the Central Andean puna. The ecoregion can be subdivided into three subregions: the high andean puna, wet puna, and wet montane grassland. The high Andean puna lies between 4,200 and 5,000m: the wet puna is located in the altiplano at elevations between 3,700 and 4,200 metres; and the wet montane grasslands occur in the eastern section of the ecoregion, at elevations of 3,800- 4,200m.

## Protected areas in Peru

### SINANPE

10. The National System of Protected Areas (SINANPE)<sup>4</sup> has an area of over 22 million ha (almost 17% of the territory). The PA estate has grown significantly in recent years, by more than 530,000ha: in 2006, there were only 60 ANPs covering just over 19 million ha. The categories of PA included in SINANPE are shown in Table 1.

<sup>2</sup> <http://dgffs.minag.gob.pe/index.php/ecorregiones-del-peru>

<sup>3</sup> <http://www.inei.gob.pe/biblioineipub/bancopub/Est/Lib0351/7315/c731501.HTM>

<sup>4</sup> <http://www.sernanp.gob.pe/sernanp/contenido.jsp?ID=9>



**Table 1. PAs making up the National System of Protected Areas (SINANPE)<sup>5</sup>**

Natural Protected Areas		Characteristics	Area (ha)
National (77)	National Parks (13)	Various ecosystems, relevant biodiversity, successional ecological and evolutionary processes, aesthetic and landscape values, indirect uses (research, education, tourism and recreation), no direct intervention.	19,520,609
	National Sanctuaries (9)	One or more biotic communities; relevant biodiversity; endemic, varied or limited range species; unique natural/geological formations; indirect uses (research, education, tourism and recreation), no or minimal direct intervention.	
	Historical Sanctuaries (4)	One or more biotic communities; monuments with high archeological or historic value, sites of important historical events, indirect uses (research, education, tourism and recreation), no direct intervention.	
	Natural Reserves (15)	Various ecosystems, relevant biodiversity, management practices and sustainable use alternatives, direct use of wild resources (flora, fauna, water resources), no timber harvesting.	
	Wildlife Reserves (3)	One or more biotic communities, hábitat of important, threatened, rare or migratory species or genetic resources; maintenance or recovery of species and/or habitat; indirect uses (research, education, tourism and recreation); intervention for habitat or species management	
	Landscape Reserves (2)	One or more biotic communities, outstanding landscape/ aesthetic characteristics, direct use (traditional uses in keeping with the conditions), intervention for resource use.	
	Communal Reserves (10)	Various ecosystems; relevant biodiversity; management practices and development of sustainable use alternatives; direct use of wild resources (flora, fauna, water resources), no timber harvesting; traditional uses in accordance with management plans; no establishment of new settlements, expansion of agricultural and ranching activities, or timber extraction; communal management.	
	Protection Forests (6)	One or more ecosystems, generally upper catchments, maintenance of vegetation cover; management practices and development of sustainable use alternatives; direct use of wild resources (flora, fauna, water resources); indirect uses (research, education, tourism and recreation); soil and water management; use and harvesting of wild fauna and non-timber forest products.	
	Hunting Reserves (2)	One or more biotic communities; management plans for the hunting of wild fauna and game	
	Reserved Zones (13)	Transitory, requiring further studies	
Regional Conservation Areas			2,405,559
Private Conservation Areas			259,446
<b>Total</b>			<b>22,160,601</b>

<sup>5</sup> <http://www.sernanp.gob.pe/sernanp/contenido.jsp?ID=9>

11. **Regional Conservation Areas** (ACRs) are administered by regional governments, and public and private institutions in coordination with peasant and native communities and other local populations living in the area. The ACRs form part of the national heritage and the same norms apply there as in PAs subject to National Administration. **Communal Reserves** must by law be managed by organized local communities and represented by an Executor of Administration Contract (ECA). The administration contracts in these cases are of indefinite duration. **Private Conservation Areas** (PCAs) are established wholly or partly on private lands, the environmental, biological, landscape and other characteristics of which enable them to complement PAs in the SINANPE. Priority is given to areas located in the buffer zones of nationally managed PAs, and their recognition is based on an agreement between the State and the landowner, with the aim of conserving the biodiversity on the property for a renewable period of not less than 10 years. PCAs are relevant to the issue of resilience, given that they are defined as areas that have suffered alterations, from which their natural habitats and biodiversity are in a process of recovery due to their innate resilience.

12. Under national PA legislation, PAs are comprised of core zones, which are the responsibility of SERNANP, and which may be internally sub-divided into zones with different management regimes (from strict protection through to controlled extraction); and surrounding buffer zones where productive sector ministries (such as the ministries of agriculture and mining) have lead responsibilities but where SERNANP has an advisory role.

13. The mission of the SINANPE is to “ensure the conservation of PAs, their biological diversity and the maintenance of their environmental services, within a framework of participatory management linked to an integrated policy for the sustainable development of the country”<sup>6</sup>. This mission statement confirms PAs as one of the key elements of the country’s strategies for conserving biological diversity and promoting sustainable development. Furthermore, the Governing Plan (*Plan Director*) indicates that PAs should be structural components of an interconnected system of spaces and practices for the occupation of lands and the use of resources, and should therefore be planned and managed as integrated parts of a broader context. This integration should also be understood to mean articulation with broader frameworks of policies and plans for sustainable development and economic and social integration, at international, national, regional and local levels. The principal elements of this approach are as follows:

- Buffer zones, established with the fundamental aim of minimizing the negative impacts of human activities on PA values, and facilitating connectivity. Their design and planning should be focused on improving the particular interactions that exist between each PA and its buffer zone.
- Environmental management systems and development plans, related to two regional instruments: the Regional System for Environmental Management (SRGA) and the Plan for Negotiated Regional Development (PDRC). These provide for the development of participatory budgets in support of the appropriate incorporation of considerations related to the environment and PAs.
- Territorial land use planning: according to the National Strategy for Biological Diversity in Peru, this has the objective of “establishing conditions of use and occupation of territories and their components so that these are carried out in accordance with their ecological, economic, cultural and social characteristics, taking into account the fragility, vulnerability and endemism of ecosystems and species, as well as genetic erosion, with the aim of maximizing their use without affecting their quality and sustainability”. PAs and buffer zones, together with their processes of planning, should be integrated with processes of territorial land use planning; the instruments through which territorial land use planning is expressed should be incorporated into PAs and buffer zones.

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<sup>6</sup> <http://www.sernanp.gob.pe/sernanp/contenido.jsp?ID=5>

- Connectivity: this refers to linkages that permit the movement of organisms between hábitat blocks in the landscape. As the PA system is progressively established in physical terms, it is proposed that regional and private networks of PAs should be established, together with other models of *in situ* biodiversity conservation (such as Environmental Conservation Areas) that strengthen its viability and functionality through the application of approaches focused on connectivity, ecosystem management and landscapes.

14. The objective of the SINANPE is to contribute to the sustainable development of the country, through the conservation of a representative sample of biological diversity, linking and realizing synergies between the country's PAs, through the effective management of protected natural areas, guaranteeing the contribution to society of their environmental, social and environmental benefits.

15. The SINANPE consists of two components: **physical**, made up of the PAs and their biotic and abiotic elements, as an interconnected set of natural and seminatural, representative protected spaces, that maintain a set of ecological relations and are inserted into a territorial matrix that has been transformed by human activities; and social and cultural, made up of diverse actors who interact with the PAs, making use of a body of policies, norms and coordination mechanisms.

The basic characteristics of the physical component of the system, indicated in the Governing Plan, are the following:

- Representativeness: containing samples of all of the communities, ecosystems and natural landscapes, and all of the species of wild flora and fauna present in a region.
- Equilibrium: ecosystems and populations should be included in a balanced manner.
- Complementarity: each PA should provide something significant and different to the whole, related to their permitted level of human activity (PA category), but independent of their political and administrative level.
- Consistency: containing sufficient natural habitats (ecosystems) and numbers of populations of wild flora and fauna to permit recovery in the case of disturbances resulting in local disappearances of habitats or local extinctions of species.
- Connectivity: the spaces that constitute the system should be functionally interconnected, in a way that permits the movement of species, processes of recolonization, genetic flows and other ecological processes. This is particularly important in the case of small PAs and highly mobile species.
- External coherence: the natural spaces should not be excessively affected by human activities in the territorial matrix in which they are inserted, and they should act as critical elements for the health and permanence of the overall ecological equilibrium of the landscape.
- Efficiency: they should satisfy the objectives of the PA systems with the least possible opportunity cost. The aim should be to find an appropriate relation between the size of the system and the need to satisfy other basic elements of social wellbeing.

16. The following criteria have been established for prioritizing sites for conservation in Peru (INRENA, 1999):

- Diversity of regions, ecosystems and landscape. Within the larger ecological regions or biomes, priority is given to those areas whose ecosystem and landscape diversity includes diverse types of vegetation, soils, climates, geology and geomorphological formations. This level of diversity may be best represented in altitudinal gradients, complete river catchment basins and areas of complex geology.

- Species diversity. The objective is to include the maximum possible number of families, genera and species, as well as centres of dispersal, endemism or origin of groups of species.
- Endemism. All wild species, genera and families that are unique to Peru and, in general, all those species with restricted geographic distributions should be included in PAs.
- Rarity: all numerous or unique populations of flora and fauna under threat of extinction, rare or vulnerable, that have lost their capacity for recovery due to use pressure and hábitat destruction, or low densities. These species are characterized by a low rate of renewal of their populations, minimal capacities for dispersal and a high degree of specialization.
- Genetic diversity: the efficiency of conservation of samples of biological diversity requires that, in addition to ecosystem and species, the degree of protection of the genetic diversity of species is evaluated.
- Additional criteria:
  - Resting points for migratory species.
  - Connectivity: the design of the network of PAs that makes up the SINANPE should avoid the creation of islands of hábitat with interrupted genetic flows, and should take into account interconnection across altitudinal gradients.
  - Size: PAs should be as large as possible in order to ensure the continuity of natural processes and viable populations.
  - Potential for buffering against future changes resulting from human activities or environmental factors.
  - Potential for restoration.

#### *Alternative conservation modalities*

17. The concessions given by the Ministry of Agriculture for NTFP extraction include two which are of relevance for biodiversity conservation: **Conservation Concessions**, which are preferentially issued in protection forest lands, and **Ecotourism Concessions**, which are issued in forests that do not qualify for permanent forestry production, in both cases for renewable periods of up to 40 years. To date 18 Conservation Concessions have been issued in Peru, over an area of 648,211.74ha, and 29 Ecotourism Concessions covering 59,774.10ha.

18. Peru contains four **Man and the Biosphere (MAB) Reserves** recognized by UNESCO: Huascarán, Nororeste and Manu, all three established in 1977, and Oxapampa-Ashaninka-Yanesha, established in 2010. Manu and Oxapampa-Ashaninka-Yanesha MAB Reserves coincide with the target areas of this project.

19. The indigenous organization COICA proposes that indigenous territories should be recognized as conservation areas, outside of the framework of the SINANPE, in recognition of the close interrelations between indigenous peoples and their natural environments. This recognition is central to the “Indigenous REDD+” initiatives being promoted by indigenous groups in various localities, as alternatives to conventional REDD and other environmental payment schemes, which they consider to be too narrowly and commercially focused<sup>7</sup>.

#### *Administration Contracts and ECAs*

20. Through Administration Contracts, the State, through SERNANP, entitles private without-profit entities to carry out (wholly or partially) PA management activities required for the implementation of the elements of the PA Master Plan that are specified in their contracts. These entities are then denominated Executors of Contracts of Administration (ECAs).

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<sup>7</sup> <http://servindi.org/actualidad/98845>

21. By law, all Communal Reserves must be managed by ECAs under a “special regime for the management of communal reserves”. The ECAs of Communal Reserves are recognized as organizations that represent the native communities and other neighbouring populations that are direct beneficiaries of the reserves. To this end, national NGOs and international cooperation have channeled funds to the formation and strengthening of the capacities of ECAs for the management of the reserves. The main functions of the ECAs of Communal Reserves are as follows:

- Management and conservation of the Communal Reserves, in coordination with SERNANP.
- Guaranteeing the security and effectiveness of the territorial rights of indigenous people in the sustainable management of Communal Reserves.
- Strengthening and guaranteeing the effective participation of beneficiaries in the management of the Communal Reserves.
- Promoting the implementation of projects and activities aimed at improving the conditions and quality of life of the beneficiary populations in the reserves.
- Guaranteeing the conservation and sustainable development of biodiversity within the reserves.
- Promoting sustainable management and traditional use of natural resources.
- Protecting and preserving collective traditional knowledge.
- Guaranteeing the territorial rights and culture of uncontacted populations or those in voluntary isolation, where these exist.

22. The principal characteristics of administration contracts are as follows:

- They are established in accordance with the objectives of the PA Master Plans.
- The institution that assumes the contract proposes strategies for the achievement of results and is responsible for the implementation and success of the contract..
- There is an interest in establishing long term contracts (up to 20 years).
- They are implemented in 5 year blocks, adjusted to the duration of the Master Plan of each PA.
- The team of the implementing entity is integrated as part of the PA Director’s team, complementing existing SERNANP personnel, with an approach of unified management
- In each PA with a complete or partial contract, SERNANP maintains a PA Director as the maximum authority of the area.
- The implementing entity participates in the financing of the Administration Contract, in the short and long term.
- The distribution of the benefits of conservation among the local population is encouraged
- They are intended to strengthen the participatory management of PAs.

23. Administration contracts have the following modalities:

- Total PA Administration Contract, which provides for the execution of all of the management and administration operations over the whole area of the PA.
- Partial PA Administration Contract, covering all management and administration operations on part of the area of the PA.
- Contract for Partial Administration of Operations, which provides for the execution of part of the management and administration operations contained in the Programmes of the Master Plan, over the whole area of the PA.
- Contract for Partial Administration of operations over part of the area of the PA.

#### ***PA Management Committees***

24. The Protected Areas Law (N° 26834) states that all PAs (apart from private conservation areas) must be supported by a Management Committee made up of representatives of public and private sectors, who

at local level have interests in or responsibilities for the PA, in order to improve their management and sustainable development. The Management Committees are required to support the PA in accordance with the provisions of the Law and Governing Plan, and the respective Regulation(s) and Master Plan for the PA. The Committees have no legal institutional status (*personería jurídica*) and may be established for an indefinite period.

25. The principal functions of the Management Committees are:

- To propose development policies and plans for the PA, for approval by the Competent National Authority, within the framework of national PA policy.
- To ensure the good functioning of the area, implementation of the approved plans and compliance with current norms.
- To propose measures to harmonize the use of resources with the conservation objectives of the PA.
- To supervise and control compliance with contracts and agreements related to the management of the area.
- To facilitate inter-sector coordination to support the management of the PA.
- To propose initiatives for obtaining financial resources.

26. The procedure that regulates the recognition and functioning of the Management Committees was approved in November 2006 (R.I. N° 051-2006-INRENA-IANP). This stipulates that the governing organisms of the Management Committees are the General Assembly and the Executive Commission, which should have at least five members. PA Management Committees bring together all stakeholders involved in the management of the areas, both public and private, including peasant and native communities, local populations, businesses, NGOs, the public sector, and research and education institutions: these total more than 1,000 organizations nationwide. These means that they have a potential for representation that is not shared by any other organization in the sector, and makes their strengthening and empowerment particularly important.

### ***Regional Conservation Systems***

A number of Regional Governments (GOREs) have initiated the formation of Regional Conservation Systems, made up of Regional Conservation Areas. There have been varying degrees of progress in this regard: Madre de Dios GORE has institutionalized the RCS these through the formation of a “technical group for the establishment of the Lago Valencia RCA and the Madre de Dios RCS”, and has received support from USAID, ProNaturaleza/Peruvian Foundation for Nature Conservation and the Perú Bosques Project for the establishment of the RCS; Ucuyali GORE has developed a proposal for the articulation of an RCS, but this is yet to be officialized; Cusco GORE has officialized a Regional System of ACRs; Junín GORE has established the legal basis for an RCS, which is currently undergoing consolidation and strengthening; and Pasco GORE has generated a proposal for an RCS but this is yet to be officialized.

### ***PA management instruments***

The hierarchy of PA planning and management instruments in the the SINANPE is shown in Table 2.

**Table 2. Hierarchy of planning and management instruments in the SINANPE**

Level	Long term (10 years)	Medium term (2-5 years)	Short term (1 year)
System	Guiding Plan ( <i>Plan Director</i> )	Action plans	
	Specific plans at System (strategy) level	Action plans (e.g, SERNANP training plan)	Annual Plans of Operations of each thematic entity (e.g.

Level	Long term (10 years)	Medium term (2-5 years)	Short term (1 year)
	on financing, citizen participation, dissemination (communications), training and research		training units)
Natural Protected Area	Master Plan (Strategic component: vision)	Master Plan (programmatic component: programmes and sub-programmes). Action plan for Management Plan.	Annual Plans of Operations of the PA team and other stakeholders (e.g. management committees)
		Public Use Plans (tourism and recreational use, research, environmental education). Management Plans for Renewable Natural Resources	Annual Plans of Operations
Buffer zone		Resource Management Plans	Annual Plans of Operations
Site		Site Plans	Annual Plans of Operations
Institutions	Institutional strategic plan	Programmes and projects	Annual Plans of Operations of institutional teams
Projects		Project documents and planing matrices (logical framework)	Annual Plans of Operations of Project teams
Individuals			Work plans.

Source: PAs Guiding Plan (National Strategy). 2009.

27. The PA Guiding Plan (*Plan Director*) was approved in 2009 and has a duration of 10 years. The Plan states that the effects of climate change on the connectivity and viability of the PA System should be taken into account, with priority given to the development of technical and organizational capacities that will allow local populations to adapt to the conditions resulting from climate change, and the focusing of research in such a way as to help understand the effects of global processes such as climate change on the biological diversity of the PAs, their surroundings and the system as a whole.

28. At PA level, the principal management instruments are Master Plans and Annual Plans of Operation. **Master Plans** are considered to be the highest level planning instruments at PA level, and determine activities in the interior of the PAs, as well as in their buffer zones. They are prepared through participatory processes, and are reviewed and updated every five years. **Annual Plans of Operations** provide for short term planning of activities, the results of which are reported through “annual memoirs”. These are complemented by annual patrolling plans, and public use plans, which can refer to tourism and recreational use, research and/or environmental education.

### **Territorial Land Use Planning (*Ordenamiento Territorial*)**

29. By August 2013, Economic Ecological Zoning (ZEE) studies have been completed in nine regions: San Martín, Callao, Amazonas, Madre de Dios, Cusco, Cajamarca, Piura, Ayacucho and Tacna. The next regions where ZEE studies will be completed are Huancavelica, Junín and Lambayeque<sup>8</sup>.

<sup>8</sup> <http://sinia.minam.gob.pe/index.php?accion=verMapa&idElementoInformacion=1383&idformula=>

30. Each ZEE process developed at regional and local level requires the formation of a Technical Commission for ZEE; this is optional in the case of micro-zoning. These Commissions are established through Ordinances of Regional and/or Local Governments, and are required to include the following members:

- i) One representative of the Regional Government(s) in question;
- ii) The mayor(s) of the municipality(ies) in question;
- iii) One representative of a scientific institution in the area in question;
- iv) One representative of the university(ies) in the area in question;
- v) Representatives of the sectors and levels of Government with responsibility for the emission of authorizations for use of lands or natural resources in the area;
- vi) Two representatives of organizations of indigenous peoples;
- vii) Two representatives of private enterprise
- viii) Two representatives of NGOs.

31. In practice, the Technical Commissions tend to have large memberships: in the case of Cusco, for example, it has 14 members defined by decree, and in Junin 23. Most Technical Commissions are relatively new and require institutional strengthening in order to fulfil their mandates effectively. A Methodological Guidance Document was approved by MINAM in 2013 for the preparation of the different technical instruments and specialized studies on which ZEE is based. A Territorial Land Use Planning Law is currently awaiting approval by Congress, which proposes four levels of planning, at each of which there are mutually interdependent integrated and territorial plans:

- 1) National: the National Development Plan, integrating the Regional Development Plans and Regional Territorial Land Use Plans;
- 2) Regional: Regional Development Plans and Regional Territorial Land Use Plans, together with Catchment Management Plans;
- 3) Provincial: Provincial Development Plans, Provincial Territorial Land Use Plans and Provincial Urban Development Plans, supported by specific thematic and territorial plans and zoning schemes;
- 4) Local: District Development Plans and Urban and Rural Development Plans, supported by specific thematic and territorial plans and zoning schemes at local level.

32. The sector head in relation to Territorial Land Use Planning, responsible for developing and applying the National Policy on Territorial Land Use Planning, is MINAM, specifically the General Directorate of Territorial Land Use Planning (DGOT), supported by a multi-institutional, multi-sector National Commission for Territorial Land Use Planning. Regional Governments are responsible for the preparation of Regional Territorial Land Use Plans, with support and oversight from Regional Territorial Planning Observatories made up of Universities, civil society and professional organizations, while municipal governments are responsible for local level processes, with support from provincial Territorial Planning Councils.

33. The status of ZEE coverage in the target regions is shown in Table 3.

**Table 3. Progress and coverage of ZEE instruments in the target regions**

Region	Total area (ha)	Area with ZEE (ha)	Source
Pasco	2,531,959	1,772,371	<a href="http://www.minam.gob.pe/consultaspublicas/wp-content/uploads/sites/52/2014/02/cp-tercer_plan_operativo_bienal_2011-2013.pdf">http://www.minam.gob.pe/consultaspublicas/wp-content/uploads/sites/52/2014/02/cp-tercer_plan_operativo_bienal_2011-2013.pdf</a>
Huánuco	3,684,885	1,105,465	
Ucayali	10,241,055	5,120,528	



Region	Total area (ha)	Area with ZEE (ha)	Source
Cusco	7,236,400	7,236,400	<a href="http://www.siar.regioncusco.gob.pe/index.php?accion=verElemento&amp;idElementoInformacion=1618">http://www.siar.regioncusco.gob.pe/index.php?accion=verElemento&amp;idElementoInformacion=1618</a>
Madre de Dios	8, 518,396	8, 518,396	<a href="http://www.muqui.org/adjuntos/6_MD_%20ZEE_2009.pdf">http://www.muqui.org/adjuntos/6_MD_%20ZEE_2009.pdf</a>
<b>Total</b>	<b>23,694,299</b>	<b>15,234,764</b>	

### Management of environmental information

34. There are a number of existing systems for the management of environmental information in the country, that are relevant to the project, including the following:

- The National System for Environmental Information (SINIA) <http://sinia.minam.gob.pe/>
- The information system of the National Meteorological and Hydrological Service (SENAMHI) <http://www.senamhi.gob.pe>
- The National System for Information on Water Resources <http://www.ana.gob.pe/sistema-nacional-de-informacion-de-recursos-hidricos.aspx> of the National Water Authority (ANA) within the Ministry of Agriculture and Irrigation MINAGRI
- AGRORED <http://www.agroredperu.org/index.php?q=node/3>
- The Centre for Conservation Data (CDC) of the National Agrarian University <http://cdc.lamolina.edu.pe>
- The Centre for Forestry Documentation and Information (CEDINFOR) <http://cedinfor.lamolina.edu.pe>
- The National System for Forestry and Wildlife Information <http://dgffs.minag.gob.pe/index.php/que-es-el-sniifs>, which is currently under development with support from USAID
- The National System for the Prevention of and Attention to Disasters (SINPAD) <http://sinpad.indeci.gob.pe>
- The information management system of the National Institute for Civil Defence (INDECI) <http://www.indeci.gob.pe/>.

35. At regional level, information management systems in the target areas of the project include the following:

- The Regional Environmental Information System (SIAR) of Cusco <http://siar.regioncusco.gob.pe/> (other regions in the country with SIAR include Puno, Amazonas, Loreto, Tumbes, Apurímac, Piura, Cajamarca, Ayacucho and Callao).
- The Local Environmental Information System (SIAL) of La Convención municipality [http://siar.regioncusco.gob.pe/sial\\_convencion/](http://siar.regioncusco.gob.pe/sial_convencion/)
- The Local Environmental Information System of Paucartambo municipality [http://siar.regioncusco.gob.pe/sial\\_paucartambo/](http://siar.regioncusco.gob.pe/sial_paucartambo/)

### Institutional framework

36. **Ministry of Environment (MINAM):** The Ministry of Environment was created in May 2008 by Legislative Decree No. 1013 as an Executive Branch agency, whose general function is to design, develop, implement and monitor national and sectoral environment policy. The purpose of MINAM is environmental conservation, so as to foster and ensure rational, sustainable and ethical use of natural

resources thereby ensuring that present and future generations enjoy a balanced environment suitable for the development of life.

37. Under the guidance of the Vice Ministry of Strategic Development of Natural Resources, the **Department of Climate Change, Desertification and Water Resources (DGCCDRH)** is designated as the focal point of MINAM to develop the National Strategy and Action Plan for Adaptation and Mitigation of Climate Change.

38. The following bodies are attached to MINAM:

- **National Service of Protected Areas by the State (SERNANP):** The SERNANP is the governing body of the National System of Protected Areas by the State (SINANPE) and works in coordination with regional and local governments and private conservation areas. Productive activities in PAs are subject to prior favourable opinion of SERNANP.
- **Research Institute of the Peruvian Amazon (IIAP):** The focus of IIAP is on scientific research and technological development in the sustainable use of biological diversity in the Peruvian Amazon.
- **Geophysical Institute of Peru (IGP):** The IGP is a leader in scientific research of the climate change variability and is currently focused on two key issues for Peru: the mechanisms of El Niño and climate change assessment.
- **National Service of Meteorology and Hydrology (SENAMHI):** Provides public services, advice, studies and scientific research in the areas of Meteorology, Hydrology, Agrometeorology and Environmental Affairs for the benefit of the country. Its focus on research in climate change is on the phenomenon of El Niño, the retreat of glaciers, river modeling scenarios, and meteorology.

39. The **Fund for the Promotion of National Protected Areas in Peru (PROFONANPE)** has the misión of generating, administering and channelling financial resources for the conservation of biological diversity in the PAs and their buffer zones<sup>9</sup>. PROFONANPE is in the process of consolidating its strategic role as the financial agency of the SINANPE. Through the broadening and diversification of its sources and mechanisms of finance, it is at the same time ensuring the financial sustainability of a representative number of PAs and actively promoting the creation of new ones on the initiative of private actors of regional and municipal Governments. At the same time, it is coming to assume a key role in the process of promotion and implementation of the model of participatory management of PAs in Peru.

40. The National System for Environmental Information (SINIA), of MINAM, is a network for technological, institutional and human integration that facilitates the systematization, accessibility and distribution of environmental information, as well as its use and interchange as a support to processes of decision making and environmental management, consolidating environmental information held by public and private organisms. The SINIA was developed to function as a support tool for the implementation of the National System for Environmental Management.

41. The **Ministry of Economy and Finance (MEF)** is responsible for planning, implementation and monitoring of the national budget, treasury, debt, accounting, fiscal policy, public investment and social and economic policy. It also designs, establishes, implements and monitors the national and sectoral economic and financial policy.

42. The **Ministry of Agriculture (MINAGRI)** is responsible for the formulation and implementation of the national agricultural policy, by promoting sustainable use of natural resources, competitiveness and

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<sup>9</sup> <http://www.profonanpe.org.pe/>

equity in the context of modernization and decentralization of government, with the aim of contributing to rural development and improving the quality of life of the population. Within MINAG, climate change is addressed by the following technical divisions and affiliated organs:

- The **General Directorate of Forestry and Wildlife (DGFFS)**, which is responsible for the formulation of national policies, strategies, plans, programmes and projects related to sustainable use of forest and wildlife resources in accordance with the National Environmental Policy and environmental regulations.
- The **General Directorate of Environmental Affairs (DGAA)** has the mandate for agricultural environmental management policy and strategy, and chairs the Working Group on Food Security and Climate Change (see below).
- The **National Water Authority (ANA)** is responsible for the development and implementation of the national policy and strategy for the sustainable management of freshwater resources, in coordination with regional and local governments and related sectors.
- The **National Service of Agrarian Health (SENASA)** is responsible for agricultural health and maintains the national system to monitor plant and animal health, in particular, pests and diseases that threaten food security.
- The **National Institute for Agrarian Innovation (INIA)** has the mission of promoting the development of agricultural technology to increase agricultural sustainability, productivity and competitiveness.
- The **Technical Working Group on Food Security and Climate Change** is responsible for proposing the sectoral vision to reduce the vulnerability of agriculture in relation to climate change, in order to guarantee food security in Peru. With support from the FAO, the working group is working on formulating the National Agricultural Plan for Climate Change Adaptation and Disaster and Risk Management.

43. The **Ministry of Energy and Mines (MINEM)**: MINEM is responsible for the formulation, implementation and monitoring of national mining and energy policies.

44. **Regional and Local Governments**: In Peru, the regional and local governments are autonomous political administrative institutions responsible for governance of regions and local municipalities. Under the process of decentralization, they have assumed greater responsibilities in relation to the territorial planning and management of natural resources

#### **Legal, planning, policy and incentive framework**

45. The key legal instruments of relevance to the project and the model which it will promote are as follows:

- The **Constitution of Peru (1993)** establishes the constitutional right to enjoy a balanced environment suitable for the development of life it also states that natural resources are national property and the State is sovereign in its use. Article 68 obliges the State to promote the conservation of biodiversity, creation and management of protected areas and sustainable development in the Amazon;
- The **Code of Environment and Natural Resources (1991, Legislative Decree No. 613)**: introduced a significant change in the decision making process of public and private policies and proposed preventive environmental protection measures. It established four key principles: a) citizen participation; b) reporting obligation on the state of the environment; c) environmental impact studies and d) right to judicial action without showing direct interest;

- Law N° 27867: **the Organic Law of Regional Governments of 2002** explicitly states that it is a function of regional governments to "formulate, coordinate, conduct and supervise the implementation of regional strategies with respect to biodiversity and climate change, within the framework of the respective national strategies";
- The **Regulations of the Economic and Ecological Zoning (EEZ)** state that the EEZ is a dynamic and flexible process for the identification of different alternatives for sustainable use of a given territory, based on the evaluation of their potential and limitations in terms of physical, biological, social, economic and cultural criteria;
- **Law of environmental management system:** Promulgated by Law No. 28245 of 2004,
- **General Environmental Law** (Law No. 28611), dated October 13, 2005. It regulates the implementation of a national environmental management system in conjunction with regional environmental commissions and the national environmental authority (MINAM).
- **National Environmental Policy** (Supreme Decree N° 012-2009-MINAM): This is the set of guidelines, objectives, strategies, goals, programmes and instruments of a public nature that aims to define and guide the actions of the institutions of national regional and local governments, private sector and civil society in environmental matters. It is formulated from the guidelines of the state policy on sustainable development and environmental management and in consideration of the environmental situation of Peru;
- **The Water Resources Act** (Law 29 338, 2009) regulates the use and management of water resources and includes surface water, groundwater, continental and property associated with this. It extends to the sea water and water in the atmosphere as applicable;
- **The Environmental Services Law Proposal** (still pending in Congress) will drive the development of participatory processes to implement payment schemes for environmental services;
- **The new Forestry Law, 2011** regulates the governance, control and verification of forest resources, in accordance with international commitments.
- **The Law of Prior, Free and Informed Consultation Proposal** guarantees the rights of indigenous and traditional peoples and local communities as recognized in article 1 of the Convention 169 of the International Labor Organization (ILO), as well as by other multilateral institutions such as the Andean Community, the Inter-American Court of Justice, the Inter-American Development Bank and the World Bank.
- A new **Framework Law for Climate Change** is currently under debate and is expected to be approved soon. This includes a proposal for the implementation of the National Centre for the Monitoring of Climate Change within the National Meteorological Service SENAMHI, and also mentions the importance of strengthening the resilience of natural systems and the strategic role of PAs.

46. The **National Biodiversity Strategy and Action Plan (NBSAP)** was developed by the General Directorate of Biological Diversity in 2001, and established the visión and commitments of the country in relation to the Convention on Biological Diversity. It was accompanied by 19 regional strategies. The present project relates to the following strategic guidelines of the NBSAP: 1.4) *In situ* conservation and 5) Improvement of knowledge of biological diversity.

47. The NBSAP also makes specific reference to territorial land use planning, which has as its objective "the establishment of conditions for the use and occupation of territory in accordance with its ecological, economic, cultural and social characteristics and those of its components, taking into account the fragility, vulnerability and endemism of ecosystems and species, as well as genetic erosion, with the aim of obtaining its maximum use without undermining its quality and sustainability".

48. The principal legal instruments for spatial planning are:

- The Regulation for the Classification of Lands according to their Use (DS 0062-75-AG).
- The Regulation for Economic and Ecological Zoning (087-2004-PCM), modified by Supreme Decree No 013-2009-MINAM
- The Organic Law of Municipalities (Law 27972) and the Regulation of Territorial Conditioning and Urban Development (DS 027-2003-VIVIENDA).
- The Forestry and Wildlife Law (Law 27308) and its Regulation (DS 014-2001-AG).
- The Law on the Conservation and Sustainable Use of Biological Diversity (Law N° 26839) and its Regulation (DS 068-2001-PCM),).
- The Law for Natural Protected Areas (Law 26834) and its Regulation (DS 038-2001-AG)
- The General Environment Law (Law 28611).
- The General Law for the Cultural Heritage of the Nation (Law 28296) and its Regulation (DS 011-2006-ED).

49. MINAM is currently updating the NBSAP. This will maintain the vision and principles up to the year 2021, proposed in the first version, and will include strategies for management, governance, decentralization and inclusion of diverse stakeholders at national, regional and local levels.

50. There are a number of specific national policies (presented in the *Acuerdo Nacional*<sup>10</sup>) related to sustainable environmental management and the management of climate risk. The most relevant to this Project are the following:

- Policy 15, which proposes measures against drought, desertification, pests, erosion of biological diversity and the degradation of soil and waters
- Policy 19, which promotes the institutionalization of environmental management and sustainability with an emphasis on vulnerable populations
- Policy 32, which states that the State must guarantee the integrated management of hydrological resources taking into account climate change.

51. The **National Strategic Plan for National Development 2010-2021**<sup>11</sup> (the Bicentennial Plan), approved by CEPLAN, proposes as a national objective (Axis 6 on natural resources and environment) the conservation and sustainable use of natural resources and biodiversity, with an environment that allows a high quality of life for people and the existence of healthy, viable and functional ecosystems in the long term.

52. Within this framework, and in parallel, the MINAM has approved the **National Plan for Environmental Action (PLANAA Peru) 2011-2020**, the objective of which is the sustainable development of the country, through the prevention, the protection and the recovery of the environment and its components, and the conservation and the sustainable use of its components in a responsible manner and in accordance with respect of the fundamental rights of people.

53. MINAM has developed numerous programmes and actions in relation to climate change. These include a “**National Agenda for Scientific Research on Climate Change 2010-2021**”, the thematic axes of which are climate change prediction, mitigation of greenhouse gases, vulnerability and adaptation to climate change and tools for decision making. A Second National Communication has been produced for the UNFCCC, which presents advances in relation to climate change adaptation, vulnerability and climate change in the country. Furthermore, a Vulnerability Map has been produced of the regions of Peru, which is currently being updated.

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<sup>10</sup> <http://www.acuerdonacional.pe>

<sup>11</sup> Eje Estratégico 6 Recursos Naturales. En: <http://www.ceplan.gob.pe/plan-bicentenario-indice>

54. The principal planning instrument in relation to climate change is the **National Strategy for Climate Change (2003)**, produced by the National Commission on Climate Change, which includes a vision, a set of principles, 11 strategic lines and their corresponding objectives and goals. This is also being updated at present. An Action Plan for Adaptation and Mitigation of Climate Change was produced in 2010.

55. The **Regional Strategies for Biological Diversity (ERDBs)** originate from the Organic Law of Regional Governments (Law N° 27867) of 2002, which stipulated that their formulation and approval are functions of regional governments.

56. In 2008 the **Programme for the Conservation of Forests in Peru** was developed, and presented to the Conference of Parties to the UNFCCC in 2008. In 2010 the National Programme for Forest Conservation for the Mitigation of Climate Change was created, with a duration of 10 years and a main objective of conserving 54 million ha of tropical forests as a contribution to the mitigation of climate change and to sustainable development.

57. MINAM has also designed a **National REDD Strategy and REDD Action Plan**, and is updating the R-PP and developing a Forest Investment Plan. At decentralized level, Regional REDD Platforms have been established in Piura, San Martín, Cusco, Madre de Dios, Loreto and Ucayali.

58. The General Directorate of Climate Change, Desertification and Hydrological Resources of MINAM has been working on the **Fifth Communication of the National Report on Desertification and Mitigation of the Effects of Drought** in Peru, corresponding to the period 2010-2011, to be presented to the Secretariat of the UNCCD.

### Target areas

59. SERNANP has prioritised three ecoregions for inclusion in the present project, on the basis of their biological diversity, vulnerability and importance for the provision of environmental goods and services: humid moorlands (*puna*) of the central Andes, Peruvian montane forests (*yungas*) and humid forests of the south-eastern Amazon.

60. **Central Andean moorland:** this ecoregion, which is related to the Andean páramo, is found on the high tablelands of the Andes. It is included in the mountain grasslands and scrub lands of the neotropical ecozone, and occurs at altitudes above 3,000m.a.s.l. in the Andes Range of Peru and Bolivia. In Peru, it stretches across the greater part of the Departments of Apurímac, Ayacucho, Huancavelica and Puno, large areas of Cajamarca, La Libertad, Ancash, Huánuco, Ica, Arequipa, Cusco, Lima, Junín and Pasco, and small areas of Tacna, Lambayeque and Moquegua. In phytogeographic terms, the puna consists of two distinct areas: the first is an extensive belt in the central part of Peru and the second stretches from the headwaters of the Amazonian catchments of Apurímac and Ucayali as far as the areas around Lake Titicaca. This ecoregion covers 5.95% of national territory (SERNANP, 2009).

61. **Peruvian yungas:** this is one of the most severely threatened of the twenty ecoregions represented in Peru (Dinerstein *et al.* 1995). Two priority *yunga* zones have been defined for conservation actions: a large zone in the north, in the Huallaga catchment, and a smaller one in the south in the Vilcabamba–Apurímac region. Five physiographic provinces have been defined: a) the Alto Huallaga river, b) the Alto Pachitea river, c) the Tambo-Ucayali river, d) the Urubamba river and e) the Madre de Dios river. The lower limit of the *yungas* is 800-1,000m.a.s.l., and the upper limit ranges from 3,000 to 3,500m.a.s.l. To the east, below 800-1,000m.a.s.l., the *yungas* present ecotones with the Ucayali and Southwest Amazon humid forest ecoregions. The Peruvian *yungas* cover around 10.54% of the national territory.

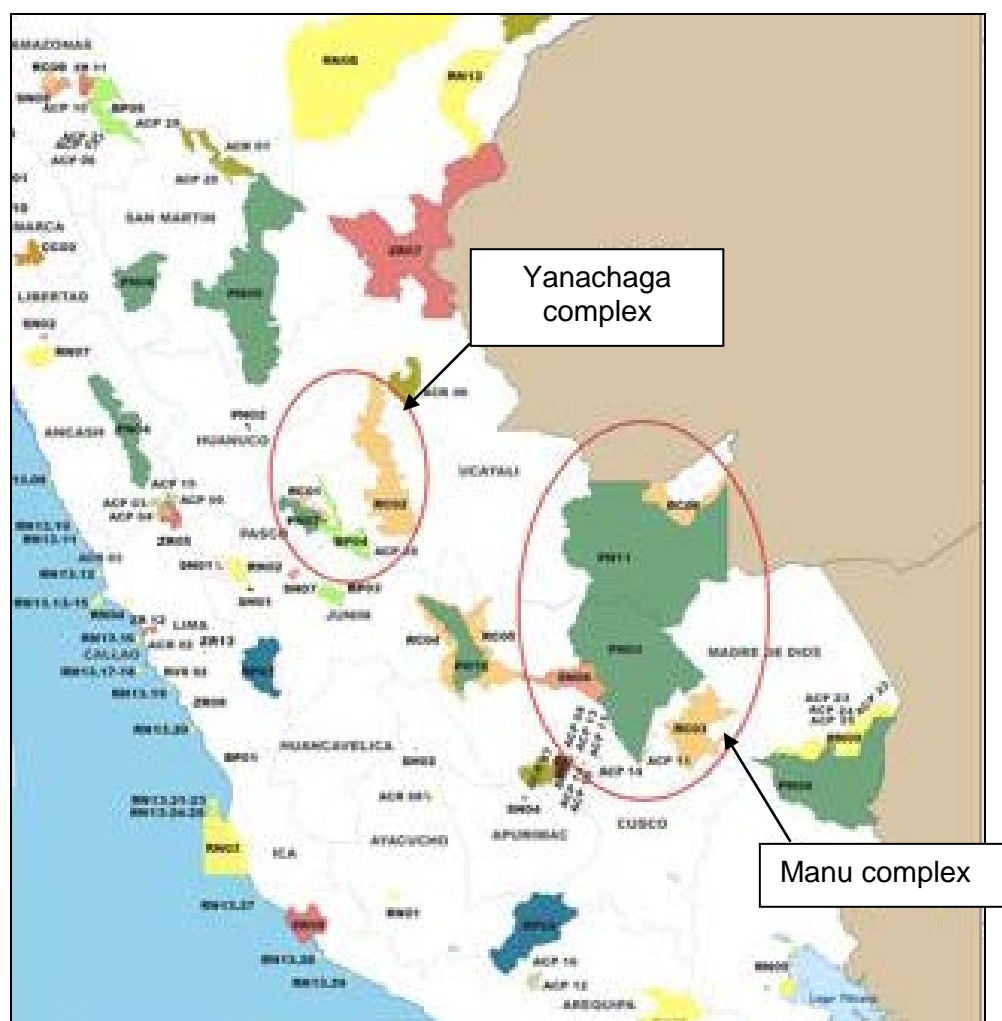
62. **Humid forests of southwestern Amazonia:** this is the predominant ecoregion in Peru, covering around 18.37% of the national territory.

63. Within these ecoregions, the project will focus specifically on two large target PA/landscape complexes, selected by the Government of Peru, each of which comprises a chain of target PAs gazetted under different categories, and their associated buffer zones (see **Error! Reference source not found.**). The total area of the complexes is 11,996,203ha.

**Table 4. Target PA complexes**

<b>PA complex</b>	<b>Protected Areas</b>	<b>PA areas (ha)</b>	<b>Buffer zones</b>	<b>Total</b>
Manu	Manu NP	1,698,577	5,000,000	10,035,567
	Alto Purús NP	2,514,711		
	Purús Communal Reserve	202,593		
	Amarakaeri Communal Reserve	403,811		
	Megantoni National Sanctuary	215,877		
	<b>Sub-total</b>	<b>5,035,567</b>		
Yanachaga	Parque Nacional Yanachaga Chemillén NP	110,441	1,000,000	1,907,558
	Yanesha Communal Reserve	31,621		
	San Matías-San Carlos Protection Forest	149,079		
	El Sira Communal Reserve	616,417		
	<b>Total</b>	<b>907,558</b>		
	<b>Total</b>	<b>5,966,203</b>	<b>6,000,000</b>	<b>11,943,125</b>

**Map 1. Locations of the target PA complexes**



64. Within these areas, the activities of the project will be focused specifically on key locations identified as being crucial for promoting resilience, for example:

- Transition zones between ecosystems, where CC-related stresses to ecosystems are expected to be most immediate and pronounced
- Key areas of habitat for species which are particularly vulnerable to the effects of climate change (by virtue of baseline endemism or threat status, or narrow tolerance ranges to environmental conditions)
- Areas where the principal production systems are at particular risk of degradation or failure as a result of changes in environmental conditions, with consequent risks of loss of ecosystem function and services, and/or emigration to other important or fragile ecosystems as a result of livelihood failure.



- Those parts of buffer zones which are judged to be particularly susceptible to immigration and incursions by people from other parts of the country.

### ***Manú PA complex***

65. This complex stretches from the high Andes to the Brazilian border. This complex includes the Manú and Alto Purús National Parks, Megantoni National Sanctuary and Amarakaeri Communal Reserve.

66. ***Manú National Park*** (NP), established in 1973, is a UNESCO Biosphere Reserve and World Heritage Site. The area covers 18,811 km<sup>2</sup>, including a 914 km<sup>2</sup> Cultural Zone, encompassing virtually the entire watershed of the Manú River, from the sources of its tributaries high in the Andes, to its distributary in the Madre de Dios River. Its altitude ranges from 150m.a.s.l. to 4,200m.a.s.l.: at the lower extreme the dominant ecosystem is Southwest Amazon moist forests; this blends at middle elevations to Peruvian yungas and eventually to Central Andean wet puna in the highest areas. Because of this topographical range, it has one of highest levels of BD of any park in the world. Overall, more than 15,000 species of plants are found in Manú, with up to 250 tree species/ha.

67. The zoning of the reserve has undergone changes over time. Initially, it responded to the MAB Reserve model, consisting of a) a Core Zone, the Manu NP; b) a Buffer Zone, the Manu Reserve Zone and c) a Cultural Zone, made up of the lands on the left bank of the Alto Madre de Dios River and the Acjanaco-Pillcopata road. These three zones had a total area of 1,881,200ha.

68. The inhabitants of the reserve have diverse cultural and settlement patterns, and some are in conditions of voluntary isolation or initial contact. The park is surrounded by the Territorial Reserve of the Kugapakori and Nahua ethnic groups, Megantoni National Sanctuary and Amarakaeri Communal Reserve; it is intended to integrate these areas, together with the lands of the Mapacho River catchment, into the Manu MAB Reserve, which would increase the total area of the reserve considerably, to 6.3 million ha.

69. The ***Alto Purús NP and Communal Reserve*** were created in 2004 and cover 25,107km<sup>2</sup> created on November 20, 2004. The productive activities of the indigenous communities in this area include raising the 'living fossil' fish (*Arapaima gigas*), turtle breeding and planting of the moriche palm (*Mauritia flexuosa*). The ***Megantoni National Sanctuary*** (2,159km<sup>2</sup>), also created in 2004, is of crucial importance for connectivity, as it acts as a corridor between Manú National Park and the neighbouring Vilcabamba PA complex. The 4,023km<sup>2</sup> ***Amarakaeri Communal Reserve*** was established in 2003, and forms part of an international conservation corridor that includes PAs in Bolivia and Brazil.

### ***Yanachaga complex***

70. This complex is composed of the Yanachaga-Chemillén National Park, the Yanesha Communal Reserve and the San Matías San Carlos Protection Forest.

- The 1,220km<sup>2</sup> ***Yanachaga-Chemillén NP*** includes part of the Peruvian Yungas and Ucayali moist forests ecoregions. The Palcazu river, Huancabamba river, and Pozuzo rivers flow through this PA.
- The ***Yanesha Communal Reservation*** or ***Yanesha Community Reserve*** was established in 1988 to protect both wild fauna and indigenous people, and covers an area of 34,744 km<sup>2</sup> (13,415 sq mi) in the Palcazu River basin.
- The ***San Matías-San Carlos Protection Forest*** was established in 1987, to preserve the soils and to protect infrastructure, towns and farming land against the effects of the water erosion and flash floods (huaycos). It also designated to preserve the cultural values of the native communities.
- The ***El Sira Communal Reserve*** protects the Cordillera El Sira, which is a unique ecosystem. It is a steep mountain range, rising up some 2,500m and clad with tropical forest, embraced by the

Pachitea and Ucayali Rivers in Peru's central jungle. The reserve aims to conserve the area's biological diversity, benefiting neighboring native communities.

- The *Oxapampa Ashaninka Yanesha MAB Reserve* was recognized by UNESCO in 2010, after a highly participatory process that lasted more than 30 years. It includes the entirety of the province of Oxapampa in the department of Pasco and covers an area of 1,867,379ha, which include the Yanachaga Chemillén NP, the Yanesha Communal Reserve, San Matías San Carlos Protection Forest and part of the El Sira Communal Reserve.

71. These areas form part of the Vilcabamba-Amboró Conservation Corridor (CCVA). Located in the tropical Andes and spanning Peru and Bolivia, with a total area of around 30 million ha, this is one of 25 global biodiversity "hotspots". It includes some of the best conserved areas in the world of montane forests, on the eastern slopes of the Andes, and rainforest on the adjoining lowlands, and consists of a mosaic of national parks, reserves and multiple use areas. In Peru, it includes 11 PAs (PN Bahuaja Sonene, RN Tambopata, RC Amarakaeri, PN Manu, PN Alto Purús, RC Purús, SN Megantoni, SH Machu Picchu, RC Machiguenga, PN Otishi and RC Ashaninka) and the Los Amigos Conservation Concession. The heart of the Vilcabamba-Amboró corridor is comprised of the PA complexes of Tambopata in Perú and Madidi in Bolivia; the corridor aims to link these nuclei to the other PAs of the two countries, in order to ensure the long-term viability of the constituent species of the region.

72. These areas are in many ways typical of conditions in Peru inasmuch as they include a range of ecosystems from lowland tropical forests through to high altitude moorlands. Furthermore, they are large landscape-wide complexes comprising protected and non-protected areas, the boundaries between which are highly porous in biological terms. The biological porosity of these boundaries is exemplified in particular by species such as the Andean spectacled bear and the jaguar: these species depend on PAs as refuges but also hunt and forage widely outside. Conversely, the PAs are (both by design and in practice) open to the production activities of the local populations, including camelid grazing on high-altitude natural pastures and subsistence agriculture and the extraction of non-timber forest products at lower altitudes. The status of the Manu NP as a Biosphere Reserve, for example, presupposes the existence of sustainable interactions between humans and natural resources; while the Yanachaga complex includes communal reserves similarly intended to allow indigenous communities to continue using natural resources in a sustainable manner in accordance with their cultural traditions. As discussed further below, the nature and sustainability of these interactions are also highly climate-dependent.

73. The objects of conservation in these areas (see Section IV Part VI) include a wide range of landscape units, ecological communities or life zones, special groups of communities, species and taxonomic groups including plants, fish, amphibians, reptiles, birds and mammals, and cultural values (especially in Communal Reserves).

74. In addition to the target PAs in which the project will work directly, the target regions include 9 other PAs, covering a total area of 2,172,637ha (see Section IV Part III)

75. There are two Regional Conservation Areas (RCAs) in the Project intervention areas: Imiría in Ucayali and Choquequirao in Cusco. Together, these cover an area of almost 240,000ha.

76. Of the 66 Private Conservation Areas (PCAs) in the country, 28 are located in the regions directly involved in the project: 14 in Madre de Dios, 10 in Cusco, 3 in Huánuco and 1 Pasco, covering a total area of more than 43,000 ha. The largest of these is Japu-Bosque Ukumari Llaqta PCA in Cusco región, which covers 18,695.75ha and is located on the property of Japu peasant community. The target areas also include 9 active Conservation Concessions and 20 Ecotourism Concessions (see e)PART III.4)).

77. The PAs in Yanachaga complex and its buffer zones make up a large part of the area of the Oxapampa-Ashaninka-Yanesha MAB Reserve, while those of Manu complex form part of the Vilcabamba-Amboró Conservation Corridor and the Manu MAB Reserve. Furthermore, in 1987 Manu NP was declared a World Heritage Site in 1987.

**Table 5. International categories of the PAs in Yanachaga and Manu complexes**

Protected area	Manu Biosphere Reserve	Oxapampa-Ashaninka-Yanesha Biosphere Reserve	Vilcabamba-Amboró Conservation Corridor	World Heritage Site
<b>Yanachaga Complex</b>				
Yanachaga – Chemillén National Park		X		
Yanesha Communal Reserve		X		
San Matías - San Carlos Protection Forest		X		
El Sira Communal Reserve		X		
<b>Manu Complex</b>				
Manu National Park	X		X	X
Alto Purús National Park	-		X	
Purús Communal Reserve	-		X	
Amarakaeri Communal Reserve	-		X	
Megantoni National Sanctuary	-		X	

78. The target complexes include representative samples of puna, páramo, high forest and low forest ecoregions (see Table 6), and six of the countries sixteen biogeographical provinces.

**Table 6. Ecoregions represented in the PAs of Yanachaga and Manu complexes**

PA	Puna	High forest	Low forest
<b>Yanachaga Complex</b>			
Yanachaga – Chemillén National Park	X	X	X
Yanesha Communal Reserve		X	X
San Matías - San Carlos Protection Forest		X	X
El Sira Communal Reserve		X	X
<b>Manu Complex</b>			
Manu National Park	X	X	X
Alto Purús National Park		X	X
Purús Communal Reserve		X	X
Amarakaeri Communal Reserve		X	X
Megantoni National Sanctuary	X	X	X

Source: Map of Ecoregions of Peru (MINAM, 2011), PA Master Plans

**Table 7. Biogeographical provinces represented in the target complexes**

PA	Tropical Puna	Subtropical puna	Tropical yunga	Subtropical yunga	Tropical Amazonía	Subtropical Amazonía
<b>Yanachaga Complex</b>						
Yanachaga – Chemillén	X		X		X	

PA	Tropical <i>Puna</i>	Subtropical <i>puna</i>	Tropical <i>yunga</i>	Subtropical <i>yunga</i>	Tropical Amazonía	Subtropical Amazonía
NP						
Yanesha Communal Reserve			X		X	
San Matías - San Carlos Protection Forest			X		X	
El Sira Communal Reserve			X		X	
<b>Manu Complex</b>						
Manu National Park		X	X	X	X	X
Alto Purús NP			X	X	X	X
Purús Communal Reserve			X		X	
Amarakaeri Communal Reserve			X	X		X
Megantoni National Sanctuary		X	X	X	X	X

Source: CDC (UNALM), 1998. PA Master Plans.

#### ***Management instruments in the target PAs***

79. The PAs of the Yanachaga and Manu complexes form part of the SINANPE and as such are under the jurisdiction and authority of SERNANP, in coordination with the respective regional and local governments.

80. The Master Plans constitute the principal strategic documents for PA management. These define the organization, objectives and specific plans, as well as zoning, strategies and general policies for the management of the areas. Of the 9 target PAs, San Matías-San Carlos Protection Forest does not have an approved Master Plan; while Yanachaga-Chemillén NP, Amarakaeri Communal Reserve, Megantoni National Sanctuary and El Sira Communal Reserve have expired Master Plans. The other PAs have Master Plans that will not expire until 2016, 2017 and 2018 respectively.

81. Five of the target PAs (RCY, RCES, PNM, PNAP and RCP) have current Master Plans, while those of three others (PNYCH, RCA and SNM) have now passed their 5 year duration limit and that of BPSMSC is still under preparation. Those of PNYCH and RCES are currently being updated, and the updating of those of RCA and SNM is due to start soon.

82. The Master Plan of Manu NP does include in its Plan for Public Use (Research) the “generation of a document of strategies for adaptation and mitigation of climate change and risk management”, while the Master Plan of Purus Communal Reserve provides for the establishment and implementation of a “system for the monitoring of climate variables” and that of El Sira Communal Reserve provides for the realization of scientific research with the aim of “knowing and monitoring ecosystem health and that of population of species of flora and fauna, as well as the impacts of climate change in two study areas (Yuyapichis-Ayamiría and Laguna Onkawo), even if none of the three provide for specific strategies in relation to climate change.

83. In El Sira Communal Reserve, the “Marisco” (Adaptive Management of Risk and Vulnerability in Conservation Sites<sup>12</sup>) methodology has begun to be applied since 2012, as promoted by the GIZ-funded project “Biodiversity and Climate Change in the El Sira Communal Reserve”. This is a methodological

<sup>12</sup> Manejo aadaptativo de riesgo and vulnerabilidad en sitios de conservation

approach aimed at facilitating the integration of a perspective of risk and vulnerability in the management of projects and conservation sites<sup>13</sup>.

84. The current Master Plans of the other PAs in the two target complexes have not considered conditions of climate change in their activity planning. The main activities proposed in the 2013 Annual Plans of Operations of the target PAs consist principally of the maintenance of infraestructura and equipment, actions of control and supervision and the strengthening of organizations that participate in biodiversity conservation and PA management.

85. Manu NP has a Tourism Use and Recreation Plan which includes agreements with six tourism businesses: PNYCH also has a current Tourism Use and Recreation Plan, and two site-specific plans within the framework of the overall plan. RCA has a plan approved, but it has not yet managed to implement it, and in SNM the plan is still under preparation.

86. The only one of the target PAs that has a Research Plan approved is Manu NP. In the year 2012 Manu NP have out 17 research permits, PNYCH issued 3 and SNM 1. Although all nine PAs carry out environmental education activities, none of them have a formally approved Environmental Education Plan.

87. None of the PAs have active Resource Management Plans.

#### ***Management capacities in the target PAs***

88. Current staffing levels in the target PAs are shown in Table 8.

**Table 8. Personnel in the target PAs**

PA	Personnel by type				
	PA head	Administrative	Specialists	Park Guards	Total
<b>Yanachaga Complex</b>					
PNYCH	1	1	2	15	19
RCY	1	1	1	8	11
BPSMSC	1	1	1	6	9
RCES	1	0	2	21	24
<b>Total</b>	<b>4</b>	<b>3</b>	<b>6</b>	<b>50</b>	<b>63</b>
<b>Manu Complex</b>					
PNM	1	2	3	28	34
PNAP	1	0	1	21	23
RCP	1	0	2	2	5
RCA	1	1	3	9	14
SNM	1	1	2	7	11
<b>Total</b>	<b>5</b>	<b>4</b>	<b>11</b>	<b>67</b>	<b>87</b>
<b>Overall Total</b>	<b>8</b>	<b>7</b>	<b>17</b>	<b>117</b>	<b>150</b>

89. In relative terms, RCY is the PA with the greatest number of park guards per unit area (23/10,000ha), followed by PNYCH (12/10,000ha). All of the others have four or less per 10,000ha, and PNAP and RCP have only 1/10,000ha.

90. Table 9 shows the infrastructure and equipment resources available in the target PAs. In addition to those shown, the PAs have other equipment such as computers, GPS, and digital still and video cameras.

<sup>13</sup> Análisis de vulnerabilidad and estrategias para la adaptación al cambio climático en la Reserva Comunal El Sira. Presentación de Luis Saavedra, Jefe de la RCES en Interclima 2012.

In general terms, the PAs meet the minimum requirements for management. The best equipped PAs are PNM, followed by RCY and RCES.

**Table 9. Infrastructure and equipment resources in the target PAs in 2013.**

Infrastructure and equipment	Yanachaga complex				Manu complex					Total
	PN YCH	RC Y	BP SMSC	RC ES	PN M	PN AP	RC P	RC A	SN M	
Administrative base	1	1	1	1	1	1	1	1	1	8
Sub-office	-	-	-	2	1	-	-	-	-	
Control post	3		2	2	7		4	3	3	
Interpretation centre	-	-	-	-	2	-	-	-	-	2
Truck	2		1	2	7		-	1	1	
Motocycle	9		6	3	5		1	-	2	
Boat	-		-	0	6		1	1	2	
Outboard motor	-		-	5	8		-	1	2	
Small motor	-		-	4	5		1	-	-	

#### **Biological monitoring in the target areas**

91. In PNYCH, monthly observations are made of the phenology of walnut (*Juglans neotropica*) and *cedro* (*Cedrela odorata*) trees on the western slopes and *shihuahuaco* (*Dipteryx sp.*) and *tornillo* (*Cedrelinga cateniformis*) on the eastern slopes. Under a cooperation agreement between SERNANP and Missouri Botanical Gardens, 60 camera traps have been installed on the Eastern slopes of the park, using the Tropical Ecology, Assessment and Monitoring (TEAM) Network methodology to photograph fauna. In addition, six permanent vegetation monitoring plots have been established. In RCY, RCP and BPSMSC, no biodiversity monitoring activities are reported.

92. In RCES, within the framework of the Project “Biodiversity and Climate Change in the El Sira Communal Reserve” and with technical assistance from GIZ, the methodology of altitudinal transects is being applied for monitoring climate change and its impacts on biodiversity<sup>14</sup>. This monitoring covers five aspects:

- Monitoring of vegetation along altitude gradients, through 5 permanent plots of 1ha each
- Measurement and analysis of the growth of representative trees of each type of vegetation, through the use of 75 high precision automatic electronic dendrometers
- The periodic observation of birds
- Monitoring of amphibian populations
- Climate monitoring, with three automatic meteorological stations located at different altitudes.

93. In PNM, with the support of the Andes Biodiversity and Ecosystem Research Group (ABERG) the Southeastern Peru Transect “From the Andes to Amazonia”<sup>15</sup> has been established, which includes 23ha of permanent monitoring plots in montane forest and 62ha in Amazon forest, with an average distance of 250m between plots, covering an altitude range of 300 to 3,625m, and in which measurements are taken of all trees, tree ferns, palms and lianas with diameters at breast height of 10cm or more. Observations are made of changes in tree populations (mortality and recruitment rates), changes in species distributions due to migration, and increases in temperature.

<sup>14</sup> <http://www.unesco.org/uy/mab/fileadmin/ciencias%20naturales/mab/2012/FiMe01-ElsiraGIZ-2011-11-292.pdf>

<sup>15</sup> [http://siar.regioncusco.gob.pe/siar\\_chumbivilcas/public/docs/3834.pdf](http://siar.regioncusco.gob.pe/siar_chumbivilcas/public/docs/3834.pdf)

94. In PNAP, the Park Guards carry out permanent evaluation and monitoring in the areas surrounding the control posts, including censuses of forest edge birds, smaller mammals, reptiles and turtles. In the RCP, no biodiversity monitoring activities are reported.

95. In RCA, within the framework of the Project “Integrated Management of Climate Change in the Communal Reserves of Amazonia”, which is implemented by UNDP in association with MINAM and SERNANP, it is planned to develop a system for early warning of climate risks.

96. In SNM, mammal tracks are monitored, and direct monitoring is also carried out of otters (*Lontra longicaudis*), the macaw *Primolius couloni*, the spectacled bear *Tremarctos ornatus*, and the white-bellied spider monkey *Ateles belzebuth*.

**Table 10. Summary of biodiversity monitoring in relation to climate change in the target PAs**

PA	Observations
<b>Yanachaga Complex</b>	
PNYCH	Permanent plots for monitoring vegetation, camera traps for fauna
RCY	-
BPSMSC	-
RCEs	Yuyapichis altitudinal transect: vegetation, fauna, climate
<b>Manu Complex</b>	
PNM	Southeastern Peru Transect “From the Andes to Amazonia: vegetation
PNAP	Fauna censuses
RCP	-
RCA	Early warning system (proposed)
SNM	Monitoring of mammal tracks

Source: 2012 PA records, and interviews with PA heads.

97. The Association for the Conservation of the Amazon Basin (ACCA), an NGO that manages the “Los Amigos” conservation concession in Madre de Dios, operates five climatological stations and two hydrological stations (one in the Madre de Dios river and one in the Los Amigos river, the only hydrological stations that are operative in the whole Madre de Dios catchment). Currently, monitoring data are available on climate, rivers, fauna, flora and production<sup>16</sup>.

#### **Administration contracts in the target PAs**

98. Of the target PAs, the 6 Communal Reserves all have current Administration Contracts, as do Yanachaga-Chemillén NO and San Matías-San Carlos Protection Forest (see Table 11). More detailed information on the ECAs and administration contracts in each case are given in Section IV Part VI.

**Table 11. PAs in the target complexes with Administration Contracts, and ECAs**

PA	ECA	Type of Contract	Duration of contract
<b>Yanachaga Complex</b>			
Yanachaga – Chemillén NP	DRIS	Total	2011-2031
Yanesha Communal Reserve	AMARCY	Total	Desde 2006
San Matías - San Carlos Protection Forest	DESCO-CAPRODEN	Total	2010-
El Sira Communal Reserve	ECOSIRA	Total	Desde 2006
<b>Manu Complex</b>			

<sup>16</sup> <http://www.acca.org.pe/espanol/investigacion/programas/monitoreo.html>

PA	ECA	Type of Contract	Duration of contract
Manu National Park	-	-	-
Alto Purús NP	-	-	-
Purús Communal Reserve	ECOPURÚS	Total	Desde 2007
Amarakaeri Communal Reserve	ECA-RCA	Total	Desde 2006
Megantoni National Sanctuary	-	-	-

Source: [www.sernanp.gob.pe](http://www.sernanp.gob.pe)

### *Socioeconomic conditions in the target areas*

99. Selected socioeconomic indicators in the target areas are presented in Section IV **Error! Reference source not found.**, and summarized by province in Table 12. The Yanachaga Complex has a total population of 217,964, and Manu Complex 211,596. Most of the districts where the target PAs are located have Human Development Index (HDI) values of less than 6 (Table 13), and HDI values tend to be higher in the Manu Complex than the Yanachaga Complex.

**Table 12. Summary of socioeconomic indicators in the target regions, by province.**

Ubigeo	Province	Population 2012	UNDP Human Development Index (2013)	Food Insecurity Ranking (out of 195 provinces)	Chronic Malnutrition Rate 2007
<b>Complejo Yanachaga</b>					
190300	OXAPAMPA	89,543	0.3495	87	37.5
120300	CHANCHAMAYO	193,140	0.4145	56	26
100900	PUERTO INCA	32,060	0.3093	138	27.8
250200	ATALAYA	50,569	0.2612	104	47.5
<b>Complejo Manu</b>					
250100	CORONEL PORTILLO	366,040	0.4681	31	26.7
81100	PAUCARTAMBO	50,323	0.1819	194	56.5
170100	TAMBOPATA	91,988	0.5754	13	14.3
170200	MANU	22,906	0.4670	44	26.3
170300	TAHUAMANU	12,745	0.6045	22	18.6
80900	LA CONVENCION	179,515	0.3691	115	40.2

**Table 13. Human Development Indices (HDI) for the provinces where the target PAs are located**

IDH		Yanachaga Complex	Manu Complex
Value	Level		
0.800-1.000	High	-	-
0.700-0.799	Medium-High	-	-
0.600-0.699	Moderate Medium	Oxapampa	Iberia, Iñapari, Tambopata, Tahuamanu, Huepetue, Inambari, Laberinto
0.500-0.599	Low Medium	Chontabamba, Pichanaki, Villa Rica, Puerto Inca, Yuyapichis, Tournavista, Huancabamba, Palcazú, Honoria, Puerto	Las Piedra, Madre de Dios, Manu, Quellouno, Echarate, Fitzcarrald,



IDH		Yanachaga Complex	Manu Complex
Value	Level		
		Bermúdez, Iparía, Pozuzo, Raymondi	Purús, Kosñipata
0.000-0.499	Low	Tahuanía	

100. The Yanachaga and Manu complexes and their areas of influence are located in the ancestral territories of around twenty Amazonian indigenous groups (see Table 14).

**Table 14. Indigenous peoples located in the PAs of the Yanachaga and Manu complexes**

PA	Indigenous peoples
<b>Yanachaga complex</b>	
Yanachaga – Chemillén National Park	Yanesha
Yanesha Communal Reserve	Yanesha
San Matías - San Carlos Protection Forest	Yanesha, Ashaninka
El Sira Communal Reserve	Ashaninka, Asheninka, Yanesha, Shipibo-Conibo, Cocama
<b>Manu complex</b>	
Manu National Park	Machiguenga, Yine, Harakmbut, Yora, Nanty, PIAV
Alto Purús National Park	Cashinahua, Sharanahua, Culina, Mastanahua, Chaninahua, Ashaninka, Amahuaca, Yine, Yora, Asheninka, Yaminahua, PIAV
Purús Communal Reserve	Amahuaca, Cashinahua (Juni-Kuin), Sharanahua, Mastanahua, Madijá, Chaninahua, Ashaninka, Yine and PIAV
Amarakaeri Communal Reserve	Harakmbut, Yine and Machiguenga
Megantoni National Sanctuary	Machiguenga, Yine, Ashaninka, Yora and PIAV

Source: PA Master Plans

### **Productive context**

101. The principal productive activities of the populations located in the target PAs are shown in Section IV Part VIII. They are principally focused on agriculture, livestock farming, multiple forest use, hunting, fishing and gathering. In some areas there are significant levels of gold mining, and in others fish farming and tourism.

102. There is some active management and extraction occurring in the target PAs, although none of them have current Resource Management Plans. In Manu NP, use is made of trees of *Cedrela odorata*, *Hura crepitans* and mahogany (*Swietenia macrophylla*) washed down naturally by the Manu River: in 2012 184 trees with an estimated volumen of 329,203 board feet were used in this way, directly benefiting the Association of Artisans of Boca Manu and Isla de los Valles.

103. In Alto Purús, agreements exist for indigenous people – principally Sharanahua – to enter the NP between the months of July and August to carry out traditional harvesting of wildlife, mainly large fish and turtles, primates, ungulates and birds. For the second year running, there has been active management of two turtle species with the participation of 22 indigenous communities and three public institutions, while in Purús Communal Reserve activities have included the collection of mahogany seeds as well as the management of turtles.

104. In the buffer zones of the PAs in the Yanachaga complex, a series of local resource management initiatives were developed between the years 2010 and 2012, through the PAES (Programme for Sustainable Economic Activities) modality, with an average budget of US\$20,000 per initiative from the

project “Reduction of Emissions from Deforestation and Forest Degradation, through PAs in the Amazon Region – MACC Selva Central”, with funds from the Germant agency BMU channelled through PROFONANPE. These and other related initiatives are shown in Section IV Part VIII.

### ***Tenure***<sup>17</sup>

105. In Peru, the land rights of native communities are recognised through property titles on land that is suitable for agriculture or grazing, and usufruct rights on forest land.

106. The process of titling indigenous lands in Peru dates from the 1970s, with the Law of Native and Peasant Communities. From that time until the recent suspension of the process, approximately 1,500 native communities have been titled, with a total area of more than 10.5 million ha, as well as 2.8 million ha of territorial reserves. Indigenous organizations, and AIDESEP in particular, have promoted major campaigns for the inscription and legalization of communal territories, through co-management arrangements with MINAGRI.

107. In the Peruvian Amazon, there are 1,933 native communities settled in an area of 10,879,392ha: 1,270 of these communities have titles, 537 are registered but not titled, and 126 are yet to be registered. The regions with the greatest numbers of titled communities are Loreto (499), Ucayali (226), Amazonas (171), Junín (158) and Pasco (98). In the six regions where the project will work, there are 568 native communities with titles, over an area of 4.66 million ha; 104 communities are registered but not titled, and 49 have yet to begin the registration process. There are 93 communities with title associated with the ECAs of the Yanesha, El Sira, Purús and Amarakaeri Communal Reserves, covering 887,293ha, which is where most of the project’s activities related to indigenous communities will be carried out; together with 5 that are registered but not titled and 1 that is not yet registered.

108. Despite these quantitative advances, however, two significant problems remain. The conformation of the titled areas does not in general correspond to that of the lands historically occupied by the indigenous people, in terms of form, area or quality, resulting typically in a multitude of small areas that fail to maintain territorial continuity. At the same time, the existence of judicially legitimate rights does not necessarily translate into the ability to exercise those rights in practice, due to inadequate enforcement of the legal provisions. The forest has been gradually penetrated by colonists, who have been obliged to withdraw; while in other cases the indigenous people themselves have ceded their rights and sold their lands under inexorable social and market pressures.

## **IB: BASELINE SITUATION**

### **Threats**

#### ***Overall***

109. The Andean landscape and the middle- and low-altitude ecosystems into which it transitions have been subject to anthropogenic transformation over the millennia, which has led to a fragmentation of the natural ecosystems, pushed out to marginal areas less suited for agriculture or livestock. Higher altitude forests are the most affected by this fragmentation. In addition to the remnants of native forests which are mostly confined to the steep slopes descending into the narrow valleys of the high Andes, much of the *puna* has also been affected by overgrazing, especially by sheep and cattle, which provoke more ecological damage than the native camelids (alpaca, llama and vicuña). Both the forests and the *puna* play important roles in regulating the hydrological cycle, as well as providing essential goods in the form of timber, firewood, wild foods (berries, herbs, mushrooms, etc) and pasture. Freshwater ecosystems, especially the high mountain watersheds, which traditionally have been well managed by local populations, have

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<sup>17</sup> <http://www.redalyc.org/pdf/126/12612890004.pdf>

suffered considerable deterioration due to factors such as loss of the vegetative cover and increased soil and wind erosion. Modern developments, such as urban expansion, roads, dams and mining, have all contributed to further fragmentation of high mountain Andean ecosystems. Threats affecting lowland forest ecosystems include both over- hunting and habitat fragmentation, which impact species such as tapirs, jaguars, harpy eagles, cracids like the helmeted curassow, and monkeys. Aquatic fauna are also affected by illegal mining and dynamite fishing.

110. Each section of Andes has specialized fauna and flora that have adapted to its conditions. However, the anthropogenic transformation of the Andean landscape over the millennia has led to a fragmentation of the natural ecosystems, pushed out to marginal areas less suited for agriculture or livestock. Higher altitude forests are the most affected by this fragmentation. In addition to the remnants of native forests which are mostly confined to the steep slopes descending into the narrow valleys of the high Andes, much of the Puna, the characteristic grassland and shrubland biome of the Central and Southern Andes above 3400 m, also has been affected by overgrazing, especially by sheep and cattle, which provoke more ecological damage than the native camelids (alpaca, llama and vicuña). Both the forests and the moorlands of the Puna, play important roles in regulating the hydrological cycle, as well as providing essential goods in the form of timber, firewood, wild foods (berries, herbs, mushrooms, etc) and pasture. Freshwater ecosystems, especially the high mountain watersheds, which traditionally have been well managed by local populations, have suffered considerable deterioration due to glacier retreat, loss of the vegetative cover, and increased soil and wind erosion. Modern developments, such as urban expansion, roads, dams and mining, have all contributed to further fragmentation of high mountain Andean ecosystems and a deterioration of the quality and quantity of their goods and services.

111. Deforestation has major effects on carbon sinks. Primary rainforest in the Peruvian lowlands was found in one study<sup>18</sup> to contain 465.84t/ha of carbon (total, taking above ground and soil biomass into the equation) compared to 195.73t/ha in home gardens, 193.69t/ha in shade coffee, 180.99t/ha in secondary forest, 119.75t/ha in silvopastoral systems and 97.26t/ha in pasture. Conversion from primary forest to pasture therefore involves a loss of 365.58t/ha of carbon. In the case of the Peruvian yungas, primary forest was found to contain 241.1tC/ha, compared to 173.3tC/ha when managed for timber, 172.3tC/ha and 40.8tC/ha for 15 and 3 year old fallow respectively, 31.0tC/ha for maize fields and 39.5tC/ha for degraded pasture. In the yungas, therefore, conversion from primary forest to pasture involves a loss of 201.6tC/ha of carbon.

#### ***Threats in the target PAs***

112. Table 15 shows the main threats affecting the biodiversity and sustainability of the two target PA complexes, as identified in the Master Plans of their constituent PAs. Climate change is not explicitly mentioned as a threat in any of the Master Plans, although increased rainfall, flooding, wind and hurricanes are.

**Table 15. Principal threats in the Yanachaga and Manu complexes, according to PA Master Plans**

PA	Threats
<b>Yanachaga Complex</b>	
Yanachaga – Chemillén	1. Invasion of lands by Andean colonists practising shifting agriculture. 2. Establishment of pastures for extensive ranching.

<sup>18</sup> "Cuantificación del Carbono Secuestrado por algunos SAFs and Testigos, en Tres Pisos Ecológicas de la Amazonía del Perú". D. Callo-Concha, L. Krishnamurthy, J. Alegre (2001). Simposio Internacional Medición and Monitoreo de la Captura de Carbono en Ecosistemas Forestales. 18-20 October 2001, Valdivia, Chile.

PA	Threats
National Park	<ol style="list-style-type: none"> <li>Commercial timber extraction.</li> <li>Fishing, hunting and gathering.</li> </ol>
Yanesha Communal Reserve	<ol style="list-style-type: none"> <li>Timber extraction</li> <li>Shifting agricultura</li> </ol>
San Matías - San Carlos Protection Forest	<ol style="list-style-type: none"> <li>Timber extraction</li> <li>Poorly planned road construction</li> <li>Shifting agriculture</li> </ol>
El Sira Communal Reserve	<ol style="list-style-type: none"> <li>Agriculture and extensive ranching.</li> <li>Unsustainable fishing.</li> <li>Mechanised timber extraction.</li> <li>Hunting and extraction of wild fauna.</li> <li>Unsustainable collection and harvesting of natural resources.</li> <li>Road construction (Tournavista-Santa Cecilia de Pacache).</li> <li>Artisan gold mining.</li> <li>Hydrocarbon extraction.</li> </ol>
<b>Manu Complex</b>	
Manu National Park	<ol style="list-style-type: none"> <li>Unsustainable hunting on the edge of the reserve</li> <li>Unsustainable timber extraction in the buffer zone</li> <li>Human activities leading to climate change</li> <li>Attempts to contact isolated indigenous groups</li> <li>Domestic animals without sanitary control</li> <li>Bioaccumulation of mercury</li> <li>Lack of planning of tourism in the buffer zone</li> <li>Lack of application of intercultural criteria with native communities.</li> <li>Drug trade.</li> <li>Road construction in the buffer zone without planning or environmental instruments.</li> <li>Failure to integrate the local population into tourism activities.</li> <li>Increase in rainfall.</li> </ol>
Alto Purús National Park	<ol style="list-style-type: none"> <li>Timber extraction.</li> <li>Hunting associated with timber extraction.</li> <li>Pression on groups in voluntary isolation.</li> <li>The Puerto Esperanza-Iñapari road.</li> </ol>
Purús Communal Reserve	<ol style="list-style-type: none"> <li>Timber extraction.</li> <li>Hunting associated with timber extraction.</li> <li>The Puerto Esperanza-Iñapari road.</li> </ol>
Amarakaeri Communal Reserve	<ol style="list-style-type: none"> <li>Gold mining.</li> <li>Timber extraction.</li> <li>Construction and use of roads (the third section of the transocean road and Itahuanía-Choque).</li> </ol>
Megantoni National Sanctuary	<ol style="list-style-type: none"> <li>Hydrocarbon extraction activities (Gas de Camisea).</li> <li>Construction of poorly planned roads</li> <li>Poorly planned colonization, mainly in the south of the reserve.</li> <li>Illegal timber extraction in neighbouring areas.</li> </ol>

PA	Threats
	5. Excessive hunting 6. Introduction of exotic species 7. Natural phenomena: flash floods, winds, hurricanes.

Source: PA Master Plans.

113. Table 16 summarizes and rates the principal threats affecting the PAs of the target complexes, as identified in the Management Effectiveness Tracking Tools prepared by PA managers. The PA that is under greatest threat by far is San Matías-San Carlos Protection Forest (39 points), followed by Manu NP and El Sira Communal Reserve (26 points each) and Yanesha and Amarakaeri Communal Reserves (23 points each). Among the least affected PAs are Yanachaga Chemillén and Alto Purús NPs (19 points each), Megantoni National Sanctuary (18 points) and Purús Communal Reserve (14 points).

In general terms, the greatest threats affecting the target PAs appear as:

- Consumptive use of biological resources, due principally to the illegal felling of timber, the extraction of NTPs, and uncontrolled fishing and hunting.
- Climate change and severe climatic conditions, mainly storms and flooding, the alteration of habitats and extreme temperatures.
- Agriculture and grazing inside the PAs.

**Table 16. Summary of threats to PAs as reported in Management Effectiveness Tracking Tools (METT) by PA managers**

	PNYCH	RCY	BPSMSC	RCES	PNM	PNAP	RCP	RCA	SNM	Total
<b>General information and resources</b>										
Year of establishment	1986	1988	1987	2001	1973	2004	2004	2002	2004	
Region	PAS	PAS	PAS	PAS UCA HUA	CUS MDD	UCA MDD	UCA MDD	MDD	CUS	
Area (ha)	122,000	34,745	145,818	616,413	1,716,295	2,510,694	202,033	402,356	215,869	5,966,223
Number of permanent staff	19	11	9	24	34	23	5	14	11	150
Annual SERNANP budget for operating costs (US\$)	55,859	41,117	29,739	63,634	130,207	320,580	18,429	57,926	8,374	725,866
Park guards per 100,000ha	12	23	4	3	2	1	1	2	3	2
Annual SERNANP Budget for operating costs (US\$/ha)	0.46	1.18	0.20	0.10	0.08	0.13	0.09	0.14	0.04	0.12
Biosphere Reserve	✓	✓	✓	✓	✓	-	-	-	-	-
World Heritage Site	-	-	-	-	✓	-	-	-	-	-
Conservation corridor	-	-	-	-	✓	✓	✓	✓	✓	✓
<b>Threats</b>	<b>19</b>	<b>23</b>	<b>39</b>	<b>26</b>	<b>26</b>	<b>19</b>	<b>14</b>	<b>23</b>	<b>18</b>	
1. Residencial and comercial development in the PA	0	2	1	2	3	1	0	1	1	11
2. Agriculture and grazing in the PA	2	3	5	3	3	1	1	1	3	22
3. Mining, hydrocarbons and enegry production in the PA	0	0	2	2	0	1	0	2	0	7
4. Access routes in the PA	2	0	3	1	2	3	0	1	2	14
5. Consumptive use of wild biological resources	3	4	8	4	5	2	5	5	3	39
6. Human intrusion and disturbance in the PA	0	0	0	2	2	3	0	3	0	10
7. Modifications of natural systems	0	2	5	3	2	1	0	1	2	16
8. Invasive and/or problematic species	4	4	4	0	1	0	0	2	2	17
9. Contamination introduced or generated in the PA	0	2	0	2	3	0	0	3	0	10
10. Geological events	2	2	2	1	1	2	0	0	1	11
11. Climate change and severe events	5	3	6	4	4	4	5	1	4	36
12. Loss of sociocultural values	1	1	3	2	0	1	3	3	0	14

114. As shown in Table 17, illegal timber extraction generates a range of direct and indirect impacts that affect large areas of the target PAs, although their nature and magnitude vary widely between sites.

**Table 17. Areas affected by the implications of illegal timber extraction in target PAs**

PA	Habitat loss		Over-use of resources		Pollution		Species displacement	
	ha	%	ha	%	ha	%	ha	%
PNYCH	-	-	-	-	-	-	-	-
RCY	-	-	450	1.38	450	1.38	-	-
BPSMSC	-	-	11,900	7.88	11,900	7.88	-	-
RCES	100	0.02	6,200	1.00	4,800	0.78	4,700	0.76
PNM	2,400	0.14	1,400	0.08	-	-	500	0.03
PNAP	72,300	2.87	72,500	2.88	72,500	2.88	71,900	2.86
RCP	-	-	-	-	-	-	-	-
RCA	4,400	1.09	2,400	0.60	-	-	-	-
SNM	100	0.05	-	-	-	-	-	-

Source: SERNANP, 2013. Evaluation matrix of the effects of anthropic activities.

### **Implications of climate change**

115. The principal **features of climate change** in Peru are expected to be<sup>19</sup>:

- **Modification of rainfall regimes**, including increases of up to 20% in some parts the central Andes, decreases of up to 20% in other parts of the central and southern Andes, and reductions in the frequency of extreme rainfall events;
- **Increases in temperature extremes** (both minima and maxima): maximum temperatures are expected to increase by up to 1.6°C (0.53°C/decade), with the greatest increases in the coast, the northern, central and southern Andes and the northern jungle area.

116. Peru is included among the ten most vulnerable countries to climate change in the world, and presents four out of the five vulnerability characteristics recognized by the CMNUCC: low coastal zones; arid and semiarid zones; zones exposed to floods, drought and desertification; and fragile mountainous ecosystems (Peru Second National Communication to the UNFCCC). There are concerns about the current and future impacts of climate change in Latin America in terms of vulnerability and these concerns aggravate the future panorama of Peru. Peru is also South America's most water stressed with 65% of its population living in the coastal desert where only 2% of water resources are found. Here, seasonal glacier melt producing river runoff coming from the Andes is crucial to water provision. The Andean region has lost 22% of its glacier area since 1970 (Trigoso Rubio 2007).

117. The main climatic effects related to climate change in the country are associated with the following phenomena:

- **Glacier retreat**: The past four decades have witnessed the loss of almost one quarter of the surface area of glaciers in Peru. At the same time, due to the increased runoff from glaciers new lakes have formed as well as water levels in existing lakes in the high Andes have risen. This has had a direct effect on river flows, with important consequences for the amount of water available for human consumption, agriculture, energy production, and industrial needs. In addition to the creation of new lakes, the increased water levels in lakes, and changes in water flow in rivers have led to increased risks of natural disasters such as floods, land and mudslides.
- **Changes in biodiversity**: The increase of temperature has led to the migration of lower elevation species to higher elevations, while it is speculated that, in the low lying areas of the Amazon, a process of savanization will transform the forest areas into semi-arid

<sup>19</sup> "Escenarios climáticos en el Perú para el año 2030: Segunda Comunicación Nacional de Cambio Climático. Resumen Técnico".  
[http://redpeia.minam.gob.pe/admin/files/item/4d77e7ad5bb27\\_Resumen\\_Escenarios\\_climaticos\\_del\\_Peru.pdf](http://redpeia.minam.gob.pe/admin/files/item/4d77e7ad5bb27_Resumen_Escenarios_climaticos_del_Peru.pdf)

grasslands. These changes will no doubt have important consequences in the balance and functioning of ecosystems, as well as contribute to GHG emissions due to vegetative cover change.

- **Reduction in Net Primary Productivity (NPP) of forests.** Worldwide, climate change has had contrasting effects on the NPP of natural ecosystems; in the Amazon basin, the effect is in general strongly negative, and the eastern slopes of the Andes and upper Amazon headwaters, where the project sites are located, are among the most severely affected with reductions of up to 21gC/m<sup>2</sup>/year between 2001 and 2009<sup>20</sup>.
- **The El Niño/La Niña phenomenon:** Through research conducted under the auspices of the National Study of the El Niño Phenomenon, the effect of El Niño on local and national climate patterns has been well documented. It has also been established that global climate change both affects and is affected by El Niño, which is projected to increase in frequency and intensity, causing significant variations in the intensity and distribution of rainfall in different parts of the country, increasing risks of natural disasters as well as affecting the hydrological cycle. In addition, increased disturbance in the upwelling of nutrient rich cold waters in the coastal waters of Peru directly affects the availability and productivity of marine resources, with important consequences for the artisanal and industrial fishing industry.
- **Rainfall patterns:** The effects of El Niño and La Niña on rainfall patterns and droughts are well documented, and both El Niño and La Niña are projected to increase in both intensity and frequency. In addition to this, changes in Amazonian climate and rainfall patterns has also been noted, provoked both by the rise of global temperatures as well as to increasing deforestation and forest degradation. Important changes have been remarked in the starting and stopping of the rainy and dry seasons, and also in the frequency, intensity and distribution of rainfall. These changes have serious impacts on local communities, especially in relation to their agricultural cycle.
- **Rising Sea Levels:** The National Service of Metrology and Hydrology (SENAMHI) projects that sea levels in the Peruvian coast will have risen by 4-6 cm during the period 1990-2020 and will further rise by 15-21 cm for the period 2020-2050, thus increasing the risk of flooding in coastal areas, especially in the seasons of El Niño. As most of Peru's population lives in coastal areas, the consequences of sea level rise could mean the internal displacement of millions of Peruvians who live on the coast.

118. Among of the most important sectors affected by climate change, are those described below:

- **Water Security:** The impact of climate change on water security is probably the most worrying, particularly for the inhabitants of the communities in the coastal zone and the Andean region, who will be the most affected. Glaciers retreat in combination with, deforestation and degradation of the vegetative cover in the high mountain watersheds will provoke serious disruption of the country's hydrological cycle, resulting in difficulties in ensuring quantity and quality of water supplies for human consumption, agricultural, industrial and sanitation, which also is expected to increase over time. This will require adaptation strategies to guarantee the efficient and effective use of freshwater, including recycling and wastewater treatment. It is possible that social and environmental conflicts over freshwater resources will become more frequent, between rural and urban areas, as well as between upstream suppliers and downstream users, as a result of competition for water supplies for human consumption, agriculture, industrial and energy needs.
- **Agriculture and Food Security:** The agricultural sector is highly vulnerable to climate change. The National Institute of Agricultural Research (INIA) and the National

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<sup>20</sup>Zhao M., Running S.W. (2010) Drought-induced reduction in global terrestrial net primary production from 2000 through 2009. Science 329:940–943.



Service of Metrology and Hydrology (SENAMHI) have conducted several important studies on the effects of climate change on agriculture, particularly in Andean and coastal areas. In the coastal area, where intensive, export oriented agriculture is being propagated the impact of climate change will be very heavy and adaptation strategies will be needed, as well as risk management measures (early warning systems) to cope with phenomena such as floods and frosts. Coastal agriculture depends almost 100% on irrigation, which is dependent on the Andean river flows, as well as water quality. The decrease in river flows, changes in water quality, combined with longer periods of water scarcity and drought, will without doubt cause a crisis in the sector, affecting crop yields and profitability of operations. This could result in a reduction of the total area under cultivation and the contraction of the agricultural sector, thus affecting the national economy as well as local livelihoods. In the highlands, the agricultural sector is composed largely of smallholders. The agricultural production in the highlands is oriented more towards subsistence needs, with surpluses sold on the local market. Andean farmers have already observed that climate change is affecting their production, particularly because of changes in the intensity and distribution of rainfall over time and space. At the same time, climate change has impacted livestock in the high Andes, as well as affected the quality and production of highland pastures. There are also serious concerns about the increase of pests and diseases caused by climate change, which will affect the performance, quality and profitability of agricultural production in the Andean region. Combined with the likely increase in prices of essential food products, particularly of cereals, tubers and proteins (meat and fish), climate change could have major implications for food security, especially for vulnerable populations in rural and urban areas.

- **Forestry Sector:** Peru has more than 72 million hectares of natural forest of high biodiversity. Of this total, 67 million hectares are found in the Peruvian Amazon, while the rest is located in the dry forests on the northern coast and high mountain Andean forests. Despite the efforts for the conservation and sustainable management of its natural forests, Peru is experiencing a significant increase in the rate of deforestation, which is advancing at an estimated 150,000 to 200,000 hectares per year, with almost 10% of the original forest area deforested and approximately 25% of the existing natural forest degraded. Forest conversion or land use change is the primary source of GHGs in the country, representing 47.5% of total GHG emissions. The main drivers of deforestation and forest degradation are the expansion of the agricultural frontier by slash and burn agriculture, large-scale intensive agriculture and cattle ranching, illegal activities such as coca cultivation and logging, development of roads and infrastructure in the Amazon, as well as increased demand for land and resources due to immigration and population growth. As mentioned above, in the low lying areas of the Amazon basin, climate change will result in the transformation over the next 50 years of significant areas of humid tropical forest into semi-arid pampas or savannas.

119. These changes will have a number of direct and impacts on BD and natural resources both within and outside PAs. The species composition of natural ecosystems is likely to change, due for example to the substitution of existing species by others with different ranges of physiological tolerance; ecological processes are likely to be modified, due for example to changes in the phenology of flowering plants due to shifts in the timing of climatic triggers; ecosystems are likely to undergo increased fragmentation, due to modifications in the spatial configuration of ecosystems within the landscape; and ecosystems will become increasingly susceptible to fire, due to increasing ambient temperatures and falling humidity.

120. Climate change will place additional stresses on PAs, and require innovative approaches to be applied for their management. This is especially the case with forest ecosystems and their constituent biodiversity, which form the cornerstone of the national REDD strategy due to their importance as carbon sinks, and which are also vital for the delivery of other global

environmental benefits (biodiversity and sustainable land management) as well as ecosystem services (especially water and the provision of forest products) of national importance.

121. Unless corrective measures are taken, these changes will reduce the effectiveness of PAs for conserving species and ecosystem diversity, in the following ways:

- ***The management prescriptions and spatial configurations of PAs may lose their relevance and effectiveness as the conditions under which they were defined undergo changes.*** Yungas forests, for example, occupy a relatively narrow altitude band, and as the isotherms that define its ecological limits move upwards due to temperature increases, there is a risk that the ecosystem will progressively migrate outside the limits of PAs, which were defined based on its current range. Unless upper PA limits are modified or new PAs are established, the new upper frontier of the ecosystem may be left without effective protection and be unable to establish itself effectively, and thereby to compensate losses at the receding lower edge. At the lower edge, management prescriptions based on the natural characteristics of the yungas may lose relevance as conditions become more favourable for other ecosystems normally occurring at lower altitudes: an example is shade coffee, which is capable of conserving many of the aspects of the composition and structure of yungas forests in PA multiple use zones, but may lose its productive viability as temperature and moisture conditions change (also affecting the role of shade coffee in maintaining stability and BD in buffer zones). Similar considerations apply in lowland humid forests, as hitherto sustainable offtake levels of game and non-timber forest products risk becoming unsustainable as climate conditions affect the population biology of the target species.
- As climatic conditions change, ***biological connectivity (between PAs and between remnant habitat blocks in buffer zones) will become increasingly crucial for the continued viability of some species:*** fauna with narrow tolerance limits to climatic and habitat variables, such as tapirs, will need to be able to migrate as the conditions which they require move within the landscape.
- At the same time, however, unless corrective measures are taken, ***CC will undermine connectivity by causing ecosystem regression.*** This effect will be particularly felt in those connectivity areas which are already narrowest and most fragmented, either as a result of natural biophysical conditions or anthropogenic pressures such as conversion to non-forest land uses (agriculture or ranching).
- Changes in temperature and moisture regimes will also affect lowland forests, in both PAs and their buffer zones. Amazon lowland forests are undergoing a progressive process of ***drying out, which is increasing their susceptibility to fire:*** this is expected to lead to a progressive transition to savanna, which in turn will generate harmful a positive feedback loop by reducing the contribution of evapotranspiration from these forests to regional rainfall. The resilience of these forests to this process is being undermined by baseline threats, namely disturbance from agriculture and logging, which is opening up the canopy, reducing humidity at the microclimate level, and increasing the relative proportions of pioneer vegetation which tends to be more susceptible fire than species typically found in primary forests. Furthermore, there is an increased incidence of fire outbreaks affecting natural ecosystems, as they come into increasing proximity with agriculture and ranching activities in which fire is routinely used.

122. CC will also affect the viability of production systems, especially in buffer zones and other surrounding landscapes. Rain-fed production systems, which are central to the livelihood support systems of most smallholders, will be affected by changes in the intensity and timing of rainfall events on which they depend: late or insufficient rains at sowing time or during development may lead to crop failure, while excessive or untimely rains at harvest time may lead to spoilage. Irrigated production systems may also be affected by reduced availability of glacier melt-water, on which they depend: it is estimated that in the next 10 years, all of the country's

glaciers below 5,000m.a.s.l. may disappear. The sustainability of the management of high altitude camelid pastures is also being affected by changes in temperature and humidity regimes. These processes are resulting in ***land degradation, as producers are obliged to move to more fragile marginal areas, and BD loss as producers migrate to areas with hitherto intact ecosystems such as yungas and lowland humid forests***: without adequate governance conditions and with limited access to sustainable productive alternatives, this has led to high levels of ecosystem degradation and deforestation, through the unsustainable extraction of forest products and the conversion of forest to agriculture and ranching.

123. This emigration, due to CC-induced livelihood collapse, also has a feedback effect, through the ***weakening of traditional systems of environmental governance and natural resource management***. This is of particular relevance to the high altitude punas, where long established (indigenous) community-based norms and mechanisms regulating the management of camelid pastures and the distribution and use of glacial runoff water for irrigation are being progressively eroded. In Callería NP, meanwhile, in the drainage basin of the Ucayali river, repeated flooding associated with climate phenomena is reported to have obliged the population of the affected communities to migrate to nearby settlements and urban centres, weakening governance conditions and impeding compliance with the provisions of forest management plans.

124. In addition to direct impacts on BD itself, ***CC is likely to have indirect impacts by modifying the nature and magnitude of anthropogenic threats currently affecting BD***. Increases in ecosystem degradation and fragmentation due to CC-related stress and altitudinal regression are likely to increase their exposure to encroachment by agriculture and logging, which in a ‘vicious circle’ effect will in turn lead to further degradation and fragmentation. These processes will also place ***increased demands on the management capacities of environmental and PA authorities***, opening up new ecosystem edges that need protecting and requiring modifications in management practices. CC will also affect the dynamics of production landscapes surrounding natural ecosystems and PAs, again with indirect implications for the ecosystems. Increased water stress may affect the functioning of existing production systems in these landscapes, leading farmers to expand areas with crops or livestock into hitherto intact ecosystems, or abandon their existing production areas and migrate into these areas. CC may also affect the ecological functioning and species/ecosystem composition of production landscapes, reducing their value for connectivity between natural habitat blocks, as well as their capacity to provide environmental services for the population at national and local levels. One example is shade coffee farms, which play a vital role in these regards; in the absence of adequate adaptation measures, CC may lead to increased incidence of coffee crop failure, and consequent conversion of these farms to less BD-friendly production systems.

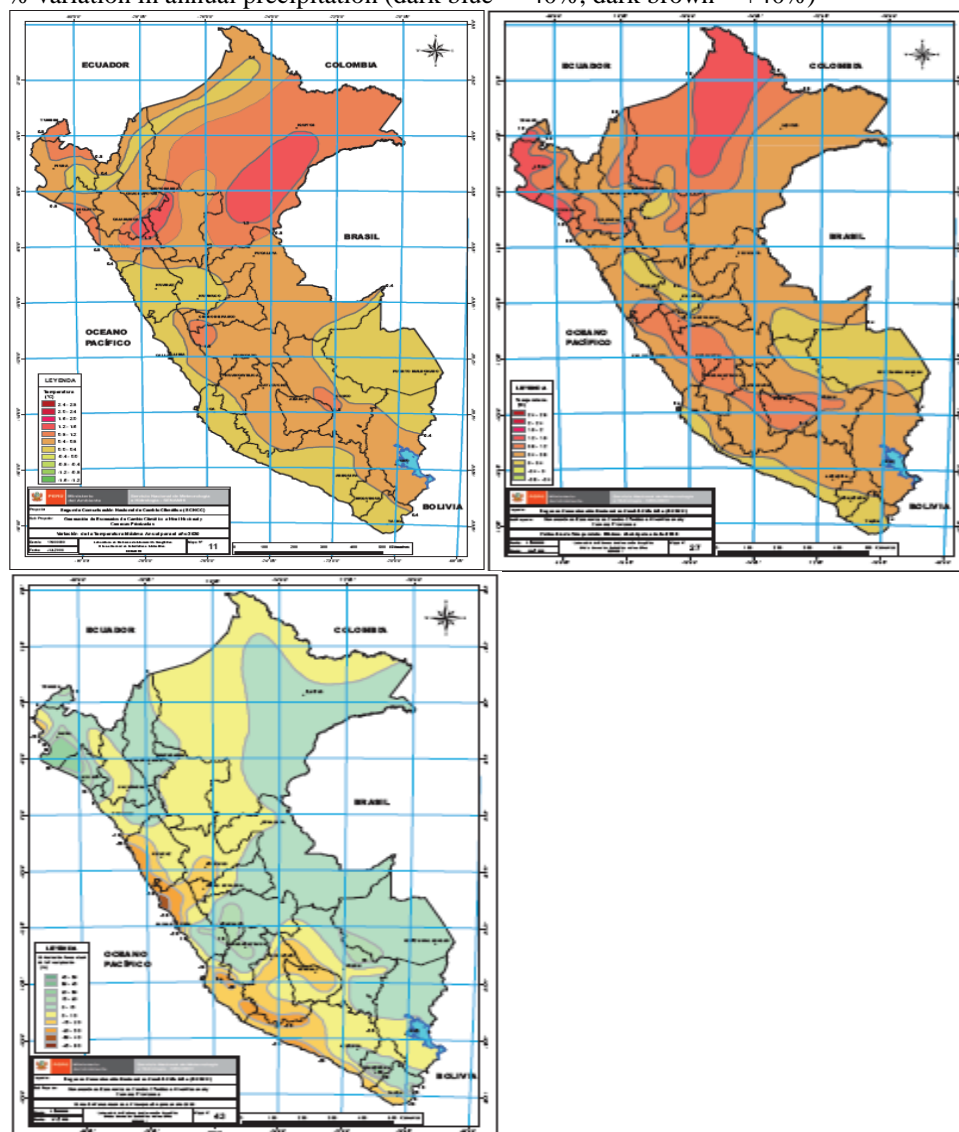
125. The high Andean ecosystems of the Puna in Central Andes and the Paramos in Northern Andes are expected to be seriously affected by increases in temperature. In the Northern Andes of Colombia, a net increase of 0.2 - 0.3°C per decade during the last 50 years and a decrease in rainfall between 2 to 3 mm per decade has been recorded. This trend is increasing throughout the region, affecting not only the biodiversity but also ecosystem goods and services, especially water supply and water regulation.

## Map 2. Projected variations in climate in Peru to 2030<sup>21</sup>

Variation in annual maximum temperatures (light brown = -8°C to -4 °C, dark red = +2.4°C to +2.8°C)

Variation in annual minimum temperatures (light brown = -8°C to -4 °C, dark red = +2.4°C to +2.8°C)

% variation in annual precipitation (dark blue = -40%, dark brown = +40%)



### *Physical vulnerability*

126. On the basis of an analysis of five natural conditions that are susceptible to multiple risks (lithology, physiography, current coverage and use, precipitation and slope), MINAM has generated a map of the physical vulnerability of Peru. PAs are considered as “exposed elements”, along with population centres, airports, ports, roads, hydroelectric plants, electricity transmission lines, oil and gas pipelines, and mining and oil drilling concessions (MINAM, 2011). Table 18 shows that the target PAs are mostly classified as moderate, high or very high physical vulnerability.

<sup>21</sup> “Climatic scenarios in Perú to 2030: Technical Summary, Second National Communication on Climate Change”. [http://redpeia.minam.gob.pe/admin/files/item/4d77e7ad5bb27\\_Resumen\\_Escenarios\\_climaticos\\_del\\_Peru.pdf](http://redpeia.minam.gob.pe/admin/files/item/4d77e7ad5bb27_Resumen_Escenarios_climaticos_del_Peru.pdf)

**Table 18. Levels of physical vulnerability in the PAs of the Yanachaga and Manu complexes**

PA	Levels of physical vulnerability				
	Very low	Low	Moderate	High	Very high
<b>Yanachaga Complex</b>					
Yanachaga – Chemillén National Park				X	X
Yanesha Communal Reserve				X	X
San Matías - San Carlos Protection Forest				X	X
El Sira Communal Reserve			X	X	
<b>Manu Complex</b>					
Manu National Park		X	X	X	X
Alto Purús National Park			X		
Purús Communal Reserve			X		
Amarakaeri Communal Reserve	X	X	X	X	X
Megantoni National Sanctuary				X	X

Fuente: Mapa de vulnerabilidad física (MINAM, 2011).

127. According to a recent study of the impacts of climate change and variability on 14 PAs in Peru (Mallqui, 2013), these processes are resulting in the disappearance or displacement of a number of climatic niches. This is in accordance with the findings of other studies, which suggest differentiated impacts between species, ecosystems, hydrological functions and crops, as a result of their varying degrees of exposure and sensitivity of the systems to the projected climatic alterations. Furthermore, it is expected that these changes in climate regimes will interact with other impacts associated with changes in land coverage and use (for example loss of the capacity of water regulation in páramo moorland due to ploughing), resulting in amplified impacts on the integrity of social and environmental systems.

128. The Amazon region is recognised in the study as one of the ecosystems with highest biodiversity, and it is also subject to the impacts of climate change. The most significant impacts are changes in the phenology of some plants, with flowering and fruiting occurring in different times of the year to normal; reductions in the harvests of traditional crops such as coffee and maize, increases in the mean temperature of around 2°C, fires in drought periods, changes in the breeding seasons of wild animals, losses of habitat and biodiversity, as well as the flooding of cropping areas located in valleys, landslides and damage to the road network, as well as impacts on local agrobiodiversity.

129. The first recommendation of the study is that PA managers should incorporate climatic variability and vulnerability into their planning processes and management instruments, including the causal chains of the conceptual model which allow the definition of adaptation measures.

130. Two of the 14 cases covered by the study are included in this project: Sira Communal Reserve in Yanachaga complex and Manu NP in Manu complex:

- The study “*Analysis of vulnerability and strategies for adaptation to climate changes in the Sira Communal Reserve*” (SERNANP-GIZ, 2011) identified the following factors as causing stress to biodiversity and also – directly or indirectly – affecting the communities that depend on the biodiversity: increase in the strength and frequency of flooding, droughts, reductions in river and stream flows, variable hydrological patterns, reductions in fish populations in dry periods, landslides in mountainous areas, increase in windthrow of big trees, and changes in the periods of flowering and fruiting. The principal anthropogenic causes of vulnerability mentioned include governance weakness and inadequate prioritization of conservation by the authorities, as well as external factors such as coca production and trade, demand for land and food crops, and increases in the price of gold. Climate change is aggravating this situation, for example

by motivating the immigration of population from the highlands, and the reduction of crop yields which leads to an expansion of the agricultural frontier.

- The study “*Analysis of climate change vulnerability and evaluation of risk of disasters and other social risks - identification and qualification of land use dynamics and identification of social and anthropic risks*”, carried out in Manu NP (2012) showed that most of the lands with high or very high susceptibility to disasters are located in the Andean portion of the PA and its buffer zone, rather than the Amazon, a situation which is related to the greater population density in the Andean zone. The principal threats and their impacts identified included flooding, landslides, forest fires, slash and burn cultivation, river erosion, and deforestation.

### **Baseline analysis**

131. The project will build upon a large and solid baseline of projects and investments. These address a range of issues of relevance to the project, including PA management, biodiversity conservation, natural resource management, sustainable economic development, ecosystem service provision, adaptation to climate change and spatial land use planning. The Government has given clear indications that it will continue to invest in addressing conservation priorities, strategic land-use planning, climate change and vulnerability issues as key priorities of its programme. The current volume of investments is likely to remain the same or increase over the next 5 years.

132. The strength of the baseline is evidenced by the generally solid base of management effectiveness in the target PAs, on which the project will build in order to incorporate considerations of resilience to climate change. Table 19 shows that the PAs are particularly strong in terms of their legal basis, the security of their budgets (although these are in general not considered adequate), the adequacy of design and the existence of key management instruments. There is considerable variation between the PAs in terms of their management effectiveness, ranging from a total score of 75/102 in the case of Manu NP to 44/102 in the case of Amarakaeri Communal Reserve.

**Table 19. Summary of Management Effectiveness Tracking Tool (METT), organized in descending order of average score**

Criterion	Complejo Yanachaga				Complejo Manu					Total	% of max. possible
	PNYCH	RCY	BPSMSC	RCES	PNM	PNAP	RCP	RCA	SNM		
1. Legal status	3	3	3	3	3	3	3	3	3	27	100
16. Budget security	3	3	3	3	2	2	3	2	3	27	89
2. PA regulations	2	3	1	3	3	2	1	3	3	27	78
4. PA objectives	2	3	2	2	3	2	2	2	3	27	78
5. PA design	2	3	1	2	3	3	2	2	2	27	74
7. PA Master Plan	4	4	2	5	5	6	5	4	5	54	74
30. PA values	2	4	1	4	6	6	4	4	6	40	69
8. Annual Plans of Operations	3	2	3	1	2	2	2	1	2	27	67
23. Indigenous peoples	1	3	1	3	2	2	2	2	2	27	67
24. Local communities	2	5	2	6	5	5	4	2	4	40	65
6. Demarcation of PA limits	2	2	2	2	2	2	2	1	2	27	63
10. PA protection system	2	2	2	2	2	2	1	2	2	27	63
14. Staff training	2	2	2	2	2	2	2	1	2	27	63
17. Budget management	2	2	2	2	2	1	2	2	2	27	63
18. Equipment	2	2	2	2	2	2	1	2	2	27	63
19. Equipment maintenance	2	2	2	1	2	2	2	2	2	27	63
3. Application of laws	2	2	2	1	2	2	2	1	2	27	59
9. Resource inventory	2	1	2	1	2	2	1	2	1	27	52
13. Staff numbers	2	2	2	1	2	2	1	1	1	27	52
15. Budget adequacy	2	2	2	1	2	1	1	1	2	27	52
22. State and commercial actors	1	2	1	2	2	3	1	1	1	27	52
21. PA land use planning	2	2	2	3	4	2	3	0	2	40	50
20. Education and awareness raising	2	1	1	1	2	1	1	1	2	27	44
26. Evaluation and supervision	1	1	1	1	2	2	2	0	2	27	44
25. Economic benefits for local communities	1	1	1	1	2	2	2	1	0	27	41
27. Visitor installations	2	0	2	0	2	0	1	0	0	27	37
11. Research	1	1	0	2	2	0	1	1	1	27	33
28. Commercial tourism operators	0	0	0	0	3	0	0	0	1	27	15
29. PA entry fees	1	0	0	0	2	0	0	0	0	27	11
12. Resource management	0	0	0	0	0	1	1	0	0	27	7
<b>Total</b>	<b>55</b>	<b>60</b>	<b>47</b>	<b>57</b>	<b>75</b>	<b>62</b>	<b>55</b>	<b>44</b>	<b>60</b>	<b>Average 29.2</b>	<b>Average 57.4</b>

133. Table 20 shows training events carried out in the target PAs in 2012. The issues covered in these events were very varied and included, for example, control and supervision, use of GIS, sustainable management of PAs, PA norms and planning, timber measurement, maintenance of outboard motors, monitoring systems, turtle management and resolution of socioenvironmental conflicts.

**Table 20. Training events for PA personnel in 2012**

	Personnel participating					
	PA head	Administrative	Specialists	Park Guards	Total	Events
Yanachaga Complex						
PNYCH	1	0	0	3	4	3
RCY	1	0	1	7	9	14
BPSMSC	N/D	N/D	N/D	N/D	N/D	N/D
RCES	0	0	0	11	11	3
Total	2	0	1	21	24	20
Manu Complex						
PNM	1	0	1	10	12	4
PNAP	1	0	1	21	23	15
RCP	0	0	1	0	1	2
RCA	0	0	0	9	9	3
SNM	4	0	5	62	71	2
Total	6	0	8	93	115	26
Overall Total	9	0	9	114	139	46

134. The diverse investments in the SINANP and its supporting institutions, which constitute the programmatic baseline for the project, are presented below.

Environmental spending

135. There has been a clear trend of increase in public environmental spending over recent years, growing from US\$74.71 million in 1999 to US\$543.17 million in 2012, and an estimated US\$909.05 million in 2013, of which the agricultural water use programme accounted for 51.8%, reduction of vulnerability and attention to emergencies from disasters 29.3%, sustainable management of natural resources and biological diversity 5.1%, efficient management of forest resources and wildlife 2.3%, reduction of degradation of agricultural soils 1.6%, and conservation of biodiversity and sustainable use of natural resources in PAs 1.6%.

136. The UNDP Action Plan for Peru 2012-2016 emphasises the programmatic areas of environmental sustainability (US\$45.35 million) and the reduction of risks from natural disasters and adaptation to climate change (US\$10.10 million).

**Table 21. Indicative resources from the UNDP Peru Country Programme Action Plan 2012-2016**

Programme area	Type of resources	(US\$ millions)						%
		2012	2013	2014	2015	2016	Total	
1. Democratic governance	Recurrent	0.15	0.05	0.04	0.04	0.04	0.32	0.2
	Other	23.25	8.00	6.00	5.00	4.00	46.25	30.5
	<b>Subtotal</b>	<b>23.40</b>	<b>8.05</b>	<b>6.04</b>	<b>5.04</b>	<b>4.04</b>	<b>46.57</b>	<b>30.7</b>
2. State decentralization	Recurrent	0.09	0.07	0.06	0.04	0.03	0.29	0.2
	Other	1.38	2.06	3.43	4.13	2.75	13.76	9.1
	<b>Subtotal</b>	<b>1.47</b>	<b>2.13</b>	<b>3.49</b>	<b>4.17</b>	<b>2.78</b>	<b>14.04</b>	<b>9.3</b>
3. Reduction of poverty and inequality and MDG achievement	Recurrent	0.20	0.18	0.13	0.11	0.07	0.71	0.5
	Other	3.00	5.75	8.75	10.5	7.00	35.00	23.1
	<b>Subtotal</b>	<b>3.20</b>	<b>5.93</b>	<b>8.88</b>	<b>10.61</b>	<b>7.07</b>	<b>35.71</b>	<b>23.5</b>



Programme area	Type of resources	(US\$ millions)						%
		2012	2013	2014	2015	2016	Total	
4. Environmental sustainability	Recurrent	0.07	0.07	0.07	0.07	0.07	0.35	0.2
	Other	8.21	11.68	9.30	8.75	7.06	45.00	29.6
	<b>Subtotal</b>	<b>8.28</b>	<b>11.75</b>	<b>9.37</b>	<b>8.82</b>	<b>7.13</b>	<b>45.35</b>	<b>29.9</b>
5. Reduction of natural disasters and adaptation to climate change	Recurrent	0.02	0.02	0.02	0.02	0.02	0.10	0.1
	Other	2.00	2.00	2.00	2.00	2.00	10.00	6.6
	<b>Subtotal</b>	<b>2.02</b>	<b>2.02</b>	<b>2.02</b>	<b>2.02</b>	<b>2.02</b>	<b>10.10</b>	<b>6.7</b>
Total	Recurrent	0.53	0.39	0.32	0.28	0.23	1.77	1.2
	Other	37.84	29.49	29.48	30.38	22.81	150.00	98.8
	<b>Subtotal</b>	<b>38.38</b>	<b>29.88</b>	<b>29.82</b>	<b>30.66</b>	<b>23.04</b>	<b>151.75</b>	<b>100.0</b>

Protected areas:

137. SINANPE invested around \$4.4 million in PA management in 2009: this compares with an estimated annual funding requirement of \$24 million under the basic scenario and \$41.8 million under the optimal scenario. SERNANPE is strengthening the PA system through a range of initiatives including the following:

- Strengthening of biodiversity conservation through the National Protected Areas Program: The project with financing from the GEF and KfW aims to improve the financial sustainability of the National Protected Areas System; improve the connectivity of key ecosystems; and develop capacities at the national and subnational levels. At the regional level, the project articulates with land use planning processes and regional biodiversity conservation strategies, and facilitates coordination between regional governments regarding protected area management (GEF: US\$8,891,000, US\$6,500,000) .
- The Belgian government-funded *Program for sustainable economic development and strategic management of natural resources in the Apurímac, Ayacucho, Huancavelica, Junín, and Pasco Regions*. The objective of this programme is to contribute to poverty reduction through the conservation and sustainable use of biodiversity and natural resources. Strategies include the implementation of land use planning at the regional and local levels; and the inclusion of Protected Areas in regional and local sustainable development strategies (2010-2016: 19,415,423 USD).
- *National Biodiversity Strategy and Action Plan Project*: Through this GEF-financed, UNDP-supported project, the Ministry of Environment will oversee the development of an updated National Biodiversity Strategy. Supporting studies will include the valuation of ecosystem services as well as potential impacts of climate change on biodiversity and ecosystems. The project will be implemented through the active participation of productive and economic sectors in the country.

138. The following debt-for-nature projects are funded through PROFONANPE:

- SINANPE III (Effective Management of Protected Areas, 2012-2017, US\$11,198,470 KfW) aims to strengthen the management of the SERNANP and of the management models of the selected PAs, through technological innovations, as defined in the Steering Plan and PA Master Plans, and in accordance with the Strategic Plan for Biological Diversity 2011 – 2020.
- The Agreement for the Conservation of Tropical Forests (ACBT, 2002-2014, US\$10.6 million, USAID), through which projects are funded aimed at the establishment, restoration, protection and management of parks, PAs and reserves; support to administration, training programmes and research; and development and support of the livelihoods of people living in or near to tropical forests, in accordance with their protection.

- Strengthening of Biodiversity Conservation through the National PA Programme (2010-2015, US\$ 16,591,000, GEF-WB and KfW): Amotape Corridor (Tumbes y Piura), Dry Forest Corridor (Piura y Lambayeque), Amazonas Corridor (Amazonas), San Martín Corridor (San Martín) and Southern Corridor (Arequipa, Moquegua and Tacna)

Management of production landscapes:

139. MINAM is coordinating national investments in socioeconomic and land use planning and the Ecological and Economic Zoning (ZEE) on which it is based. Responsibilities for the implementation of ZEE are spread between different ministries, and regional and local governments. MINAM produces Biennial Operating Plans for ZEE and Territorial Land Use Planning, maintains a register of ZEE processes in the country and presides the Technical-Consultative Committee for Territorial Land Use Planning (CTCOT), which is a multi-sector entity comprised of 40 institutions (ministries and decentralized public organisms represented by regional and local governments, as well as indigenous organizations, representatives of the private sector and NGOs). ZEE processes are underway in all 24 provinces: they are 100% complete in 5 of them and at least 50% so in 13 provinces<sup>22</sup>.

Climate change:

140. The National Action Plan for Climate Change Adaptation and Mitigation, produced by MINAM in 2010, foresaw a total level of investment of relevance to climate change of more than US\$1,000 million: in reality, only part of this qualifies as baseline for the present project. Around 36.5% of that estimate consisted of projects then in execution and the remainder of projects at that time being formulated or negotiated. That total estimate included mitigation measures (49%) and adaptation measures (40%); of the projects then under execution, 88.2% were for mitigation measures (US\$ 365.08 million), while a large number of CC adaptation initiatives, totalling US\$399.66 million, were being proposed at that time, including the Programme for the Use of Renewable Energy (38.4%), the National Programme for Solid Wastes (31.2%) and the National Programme for Forest Conservation for Climate Change Mitigation (12.7%).

141. One of the main elements of the baseline investment in relation to climate change is the COSUDE Global Programme for Climate Change. The main objectives of this programme include the following:

- To carry out innovative projects in selected countries and regions (China, India, South Africa, the Andes), including the promotion of environmentally-friendly technologies, sustainable agriculture and ranching, the implementation of measure for the reduction of climatic risks and policy dialogue with national entities.
- Promotion of new forms of cooperation and the establishment of interinstitutional relations between scientific actors, the private sector, civil society and authorities, with the aim of improving the interchange of knowledge and the effectiveness of projects.
- To support awareness raising and institutional learning in relation to climate change and the environment.

142. The programme includes the following projects of specific relevance to Peru:

- Climatic Services for the Andes (CLIMANDES): August 2012-July 2015, US\$3.37 million, focused on the Peruvian Andes as a pilot area. The project will improve the availability of high quality and reliable climatic forecasts.
- Climate Change Adaptation Project (PACC Peru): February 2008 – December 2016, US\$9.03 million, Peru. Implementation of CC adaptation measures in Cusco and Apurímac Regions and lobbying at national level and in international negotiations.

<sup>22</sup> <http://geoservidor.minam.gob.pe/atlasperu/Default.asp?WCI=PltOTerritorial&WCE=4.2.0>

- Plan CC Peru (MAPS Latinos): July 2012 – December 2016, US\$4.17 million, Peru and Chile. Promotion of low carbon development, and inclusion of CC in development plans.
143. Other relevant national projects in relation to climate change research, adaptation and ecosystem vulnerability which will coincide with the project period, include the following:
- Climate Change Adaptation Project, Arequipa Region 2011 - 2014: Implemented by the Association for Sustainable Development (AEDES) with financial support from USAID, the project aims to support farmers to implement improved practices of water, grasslands, forests and farm management to reduce local vulnerability to climate change and increase resilience. The programme also works with the Regional Government of Arequipa and local governments to incorporate climate change risk management into development plans (US\$1,258,776).
  - Integrated Management of Climate Change in Communal Reserves in the Peruvian Amazon: This project has been proposed by UNDP and pre-selected for funding by the German Ministry of Environment. The project aims to increase the resilience of the indigenous populations that co-manage the Reserves through Ecosystem-Based Adaptation strategies. Along with co-financing from the Canadian Ministry of Environment, the project will focus on the Amarakaeri, Purus and Tuntanain Communal Reserves located in Madre de Dios, Ucayali and Amazonas, respectively (2013-2017: US\$7,462,687).
  - Mountain Ecosystem-Based Adaptation Program: This project is co-implemented by UNDP, UNEP and IUCN. It aims to build the economic and environmental case for Ecosystem-Based Adaptation, through the development of a pilot experience in the Nor Yauyos Cochas Landscape Reserve in Lima and Junin Regions. The Ministry of Environment, SERNANP and Ministry of Economy and Finance are the national counterparts of this program (2012-2014: US\$3,000,000).

#### Sustainable forest management and REDD

144. One of the major initiatives in the country in relation to sustainable forest management is the *Cusco Regional Reforestation Program*, financed by the Cusco Regional Government with an investment of more than US\$58 million. This programme intends to increase forest cover in order to guarantee the provision of ecosystem services, particularly water, for the local population. There will also be quantifiable co-benefits related to carbon sequestration and biodiversity conservation. This program will place emphasis on areas that can improve connectivity between local, regional and national protected areas within the Manu Protected Area Complex, as well as on areas particularly vulnerable to climate change. UNDP will provide support for the implementation of the program (2012-2015: 58,633,485 USD).

145. The *Forest Investment Programme (FIP)* is a key element of the country's REDD+ strategy and aims to reduce pressures on Amazon forests and ecosystems through the strengthening of institutional capacities to counter the direct and underlying causes of deforestation and forest degradation. This does not specifically provide for the implications of CC on the effectiveness of the activities foreseen under the strategy.

146. In 2011, there were 47 different REDD+ initiatives in Peru, at different stages (completed, under execution, under negotiation or being proposed) with a total value of more than US\$350 million, of which the largest parts came from the Governments of Japan (US\$89.36 million), USA (US\$72.4 million) and Germany (US\$41.51 million). Also of significance is the recent agreement to use US\$7 million of the FIP for land titling among indigenous people in the Amazon, US\$4.5 million to support community-based forest management and US\$4 million support to forestry governance among indigenous organizations and communities.

147. It is evident from the above that there is a solid programmatic baseline of investments in the SINANP and in LD and CC issues, and the SINANP and its constituent PAs consequently

have a sufficient degree of consolidation to allow further issues, namely the resilience of the PAs to climate change, to be addressed without draining resources from core functions.

148. Despite its size and diversity, however, the programmatic baseline lacks a harmonized and integrated programmatic focus on addressing the implications of climate change for PA functionality. The issues covered by different institutional and donor initiatives are addressed in a disparate manner and without an integrated vision of the implications of climate change: they do not provide for the kind of landscape-wide, cross-sector integrated approach which is required to ensure that PAs are able to continue to function effectively as a core element of the country's biodiversity conservation strategies under conditions of CC, or for multiple environmental benefits (including biodiversity conservation, sustainable land management, sustainable forest management and carbon capture) to be delivered simultaneously through the effective management of PAs and their integration with the landscapes that surround them.

149. This programmatic baseline on climate change mitigation and adaptation issues is almost exclusively focused on the vulnerability of human populations and the natural resources on which they depend, and corresponding adaptation strategies (including ecosystem-based approaches): missing from this baseline is a concerted and systematic focus on ensuring the continued ability of PAs to deliver broader environmental benefits of importance from a global perspective (biodiversity, sustainable land management and carbon capture), or, again to apply a macro landscape-wide vision which takes into account the potential of climate change to generate inter-regional imbalances of demographic, biological and productive processes (for example the displacement of population from climate-stressed upland areas to more intact lowland ecosystems).

150. Other implications of these strategic shortcomings in the programmatic baseline include the following:

- The locations of the limits of the PAs do not make adequate provision for the migration of ecosystem boundaries due to climate change.
- The management regimes foreseen in PA management plans do not adequately reflect the modified conditions and threat levels that are likely to result from climate change, such as the reduced viability of BD-friendly shade coffee in lower altitude multiple use zones of yunga PAs and the modified permissible off-take levels of game and NTFPs; they may therefore cease to function effectively as motivations for the maintenance of vegetation cover by local inhabitants, leading to the conversion of the areas in question to agriculture.
- The design and management of PAs do not take adequately into account landscape-level considerations, such as the landscape-wide foraging and hunting habits of species such as jaguars and spectacled bears, and the impacts of productive practices in the wider landscape (such as burning of agricultural and pasture areas): this limits their effectiveness as refugia complementing conservation efforts in the broader landscape.
- Human and logistical resources are assigned in an ineffective manner to activities and locations that do not reflect the true balance of needs and priorities.
- The ability of PA managers to combat threats is likely to be further weakened in the future as opportunities for effective co-management become scarcer, as a function of processes of demographic change that weaken social capital in rural areas.
- Territorial land use planning initiatives do not adequately take into account the full implications of CC in terms of the spatial location of ecosystem vulnerability hotspots and the migration of the boundaries of ecosystems and priority areas for conservation.
- Productive alternatives with proven potential to deliver direct SFM, SLM and BD benefits under the conditions of the target areas, such as shade coffee, tree-rich agroforestry with annual crops and NTFPs, are typically designed, promoted and applied with a 'static' perspective, without adequately taking into account how climate change

will affect their viability (which is strongly dependent on the physiological tolerance limits of their components, such as coffee which is highly altitude/temperature sensitive). As a result, there is a risk that they will fail under conditions of climate change, leading to forest clearance and land degradation.

### **Long-term solution**

151. The long-term solution to the climate change-related threats to priority vulnerable ecosystems in Peru is for PAs and their surrounding landscapes to be zoned, managed and buffered against changing conditions in an integrated, complementary and simultaneous manner, which recognizes the interdependence between BD conservation, sustainable land management and ecosystem service flows, and between natural ecosystems and those subject to active management for economic production. On the one hand, the project will help to combat threats which are currently reducing the natural resilience of ecosystems; on the other, it will improve the management and configuration of PAs and their surrounding landscapes in order to respond to anticipated changes in the future nature and magnitude of threats. Economic demands on land and other natural resources make it impractical to protect in PAs the entire ranges of any of the priority species or ecosystems in the target areas: the effective conservation of BD in the target ecosystems therefore depends on PAs being complemented by sound management in the landscapes that surround them, resulting in diverse and BD-friendly mosaics of different land uses: To this end, the project will apply the principles of ecosystem resilience, within the context of the landscape approach, proposed by Fischer et al., 2006 (see Design Principles and Strategic Considerations, paragraph 229 below).

### **Barriers to achieving the solution**

152. The following barriers exist, which currently prevent the gaps in the baseline situation from being addressed effectively, and this long term solution thereby being achieved:

#### **1. CC risks are not taken adequately into account in PA planning and management**

153. Although many of the priority species in the target areas are capable of tolerating the conditions of disturbance that are typical of production landscapes, under the conditions of uncertainty and the increased threats associated with climate change their long term security depends on the existence of a core of well-managed PAs that are able to function as refugia, and that maintain the resilience capacities of natural ecosystems. There are a number of barriers that at present limit the contributions of PAs in this regard:

#### ***Inadequate PA coverage***

154. The total area of PAs at present in the two target PA complexes is large, at almost 6 million hectares (see Table 4). These existing PAs are not, however, likely to be sufficient to ensure the effective conservation of priority biodiversity and ecosystem services in the target areas under conditions of climate change, as their locations and layouts do not take into account foreseeable CC implications such as possible changes in the future in the magnitudes and spatial configurations of threats, the possible migration of ecosystems due to changes in the spatial configurations of temperature and rainfall regimes, or possible increases in ecosystem fragmentation and corresponding increases in the need for provisions for connectivity between the PAs.

155. There is little opportunity for meeting these changed coverage needs through the conventional approach of relying on ANPs, within the State System of Protected Natural Areas (SINANPE), given that the Government is justifiably focused on consolidating the management of the existing ANP estate rather than increasing its area. There are legal provisions for a number of alternative conservation modalities (such as Regional Conservation Areas, Private Conservation Areas, Conservation Concessions and Management Agreements with local communities) which have the potential to complement the ANPs (see paragraphs 11-18) and thereby respond to these CC-related needs. However, although there are a limited number of initiatives under way, in general there has been little experience in practice with applying these provisions for alternative protection modalities.

***Inadequate provision in PA management instruments for the modified conditions and threat levels that are likely to result from climate change***

156. The normative framework for PAs (the PA Law N° 26834 and its Regulation (DS N° 038-2001-AG) emphasizes considerations of habitat regeneration, recovery and restoration, but makes no specific reference to the concept of resilience. One exception is the Supreme Decree N° 010-99-AG, which approves the Steering Plan (Plan Director) for PAs, in which the glossary defines resilience as the degree to which the structure and composition of an ecosystem may revert to their original conditions after disturbance, however this is not accompanied with specific provisions related to the promotion of CC resilience. Likewise, the Methodological Guidelines for the preparation of PA Master Plans<sup>23</sup> contain a chapter on PA zoning which provides for “recovery zones” where emphasis is promoting ecosystem resilience and corresponding recovery from disturbance due to exogenous factors; however there is no specific provision for including CC considerations into PA master plans.

157. Although a solid base of management instruments has already been developed for most of the target PAs (see paragraphs 79-87), the modified conditions and threat levels that are likely to result from climate change will have implications for the relevance of the management strategies provided for in these instruments. For example, BD-friendly shade coffee currently helps to buffer external threats to the lower altitude multiple use zones of yunga PAs, and to soften the transition in habitat conditions between the core PA zones and the surrounding landscapes; however, the productive viability of existing coffee plantations is likely to be affected by increases in temperature and reductions in the levels and reliability of rainfall, leading to the possible abandonment of some plantations and their conversion to less BD-friendly land uses. Likewise, current prescriptions for permissible off-take levels of game and NTFPs may become irrelevant as the ecology of the species in question change due to climate change. As a result, these may cease to function effectively as motivations for the maintenance of forest cover by local inhabitants, leading to the conversion of the areas in question to agriculture.

158. Furthermore, the design and management of PAs do not take adequately into account landscape-level considerations, such as the landscape-wide foraging and hunting habits of species such as jaguars and spectacled bears, and the impacts of productive practices in the wider landscape (such as burning of agricultural and pasture areas): this limits their effectiveness as refugia complementing conservation efforts in the broader landscape. SERNANP lacks a standardised methodology for evaluating the vulnerability of natural systems in the areas that it administers.

***Organizational, structural and market constraints for sustainable production systems***

159. An analysis carried out in 2011 highlighted the following difficulties for community-based forest management (CBFM), in order of importance: legal and administrative issues; marketing capacities; institutional leadership and development issues and technical limitations for harvesting and processing. In general, although significant advances have been made with social and ecological aspects, these issues still impede the achievement of economic sustainability in CBFM<sup>24</sup>. The activities identified with greatest potential for community-based management were the management of lagoons (*cochas*), fish farming, NTFP extraction, timber harvesting, agroforestry and tourism<sup>25</sup>.

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<sup>23</sup> Resolución de Intendencia N° 029-2005-INRENA

<sup>24</sup> Gaviria, A. y Sabogal, C. Editores. 2013. Sistematización de seis experiencias de manejo forestal comunitario en la Amazonía Peruana. Proyecto Inventario Nacional Forestal y Manejo Forestal Sostenible del Perú ante el Cambio Climático. Lima. 94p.

<sup>25</sup> Gaviria, A. 2011. Iniciativa de la FAO en apoyo al desarrollo de capacidades para el manejo forestal comunitario en la Amazonía peruana. Documento de trabajo. Proyecto Inventario Nacional Forestal y Manejo Forestal Sostenible del Perú ante el Cambio Climático. Lima. 39 p.

***Insufficient capacities to address the specific challenges posed by the incorporation of CC adaptation into the SINANPE***

160. Despite the strength of this baseline, there are significant quantitative and qualitative gaps in the capacities required to ensure that the issue of PA adaptation to climate change is effectively addressed. The Training Plan for SERNANP for the period 2009-2013 does not include a detailed baseline study of the adequacy of human resources, however current levels of staffing in the target PAs are shown in Table 8 and the levels of funding available to cover staff costs are presented in Table 22. According to the METT analysis carried out during the PPG phase, staff levels are inadequate for critical management activities in 4 out of the 9 target PAs and below the optimum in the other 5. In the same analysis, staff skills were characterized as generally good: in only one of the 9 PAs were they described as low relative to needs, and in the rest they were described as adequate, although they could be improved in order to fully achieve the objectives of management.

161. None of the above data and analyses takes into account the implications of climate change in terms of increased demands for enforcement and the need to incorporate new skills and knowledge; detailed analyses of this type will be carried out at the beginning of the project implementation phase as the basis for an updated capacity development plan. However, the fact that existing quantitative, and to a lesser extent qualitative, capacities, are inadequate or barely adequate to meet existing needs for management and enforcement implies that they will be significantly deficient in relation to the increased needs expected under conditions of climate change. One indication of this is the fact that only 3 of the 46 training events carried out in 2012 (in which two PA heads, one specialist and one park guard participated) covered the issue of climate change:

- Virtual course on “Protected Areas and Climate Change in Latin America” (FAO, September-November 2012); one PA head.
- Workshop on “Design of training plans for forest conservation and mitigation of climate change” (Oxapampa, 25-26 October 2012); one specialist and one park guard, from RCY.
- Induction workshop on climate change management and launch of the process of preparation of the Regional Climate Change Strategy for Pasco (Pasco, 19-20 September 2012); RCY PA head.

***Limited access to reliable information***

162. The abilities of PA planners and managers to correct the above deficiencies in PA instruments and capacities, and to assign the available resources in an efficient manner, depend on their access, at both central and local levels, to reliable information on the magnitude, nature and implications of climate change, specific to the conditions of the PAs for which they are responsible; and on the effectiveness in practice of their management activities, as measured by the threat levels and the conservation status of target species and ecosystems. Their abilities to take advantage of opportunities for co-management also depend on their being aware of trends in demographic and social conditions in local communities, and how these may be affected by CC impacts on livelihoods.

163. There are a number of significant monitoring initiatives under way in the target areas (see paragraphs 91-97), which are generating important information on climate change and ecology. Effective systems and capacities are lacking, however, to allow the resulting data to be effectively channelled to, and used by, PA planners and managers, and for biophysical and social data to be integrated effectively. Both SERNANP and MINAM itself have information management systems, but these are managed largely in isolation from each other and have limited thematic coverage: in particular, the National Environmental Information System (SINIA) of MINAM does not manage information on biodiversity, which limits opportunities for BD issues to be taken into account in the formulation of spatial, sector-based and development planning or in environmental assessments at project-specific or strategic levels.

***Inadequate funding to allow the incorporation of climate change considerations into PA design and management***

164. Currently the Budget of SERNANP is not sufficient to finance the effective management of the PAs that make up the SINANPE. As a consequence, there is a high degree of dependence on international cooperation, which accounts for 25.57% of the total resources available (without taking into account projects in the Yanachaga complex, for which data are not yet available).



**Table 22. 2014 budget for the target PAs, by financing source (US\$)**

Financing source	Yanachaga Complex				Manu Complex					Total	% of SERNANP	% of total
	PNYCH	RCY	BPSMSC	RCES	PNM	PNAP	RCP	RCA	SNM			
PA income	0	0	0	0	28,954	0	0	0	0	<b>28,954</b>	1.33	0.99
Budget assignation	54,062	41,117	29,739	63,634	101,253	316,702	18,429	57,926	8,374	<b>691,236</b>	31.81	23.68
Budget assignation for salaries	216,526	97,655	123,597	178,259	280,344	227,071	63,954	125,695	133,951	<b>1447,053</b>	66.59	49.56
Other	1,797	0	0	0	0	3,878	0	0	0	<b>5,675</b>	0.26	0.19
Total SERNANP	272,386	138,772	153,337	241,893	410,551	547,651	82,383	183,620	142,326	<b>2,172,918</b>	100.00	74.43
External contributions	N/D	N/D	N/D	N/D	53,259	285,000	236,797	93,326	78,278	<b>746,660</b>		25.57
<b>Grand total</b>	<b>N/D</b>	<b>N/D</b>	<b>N/D</b>	<b>N/D</b>	<b>463,810</b>	<b>832,651</b>	<b>319,180</b>	<b>276,946</b>	<b>220,604</b>	<b>2,919,578</b>		<b>100.00</b>

Source: 2014 Annual Plans of Operations for the PAs, and interviews with PAs heads.

**Table 23. 2014 budget for the target PAs, by financing source (%)**

Financing source	Yanachaga Complex				Manu Complex					Total
	PNYCH	RCY	BPSMSC	RCES	PNM	PNAP	RCP	RCA	SNM	
PA income	-	-	-	-	7	-	-	-	-	1.33
Budget assignation	20	30	19	26	25	58	22	32	6	31.81
Budget assignation for salaries	79	70	81	74	68	41	78	68	94	66.59
Other	1	-	-	-	-	1	-	-	-	0.26
Total SERNANP	100	100	100	100	100	100	100	100	100	100
External contributions	s.i.	s.i.	s.i.	s.i.	13	52	287	51	55	34.36

Source: 2014 Annual Plans of Operations for the PAs, and interviews with PAs heads.

165. The largest PAs (PNAP and PNM) have the largest budgets, but they also have the lowest levels of Budget per unit area (US\$0.22/ha and US\$0.24/ha respectively), as compared with US\$3.99/ha and US\$2.23/ha respectively for the two smallest PAs, RCY and PNYCH (Table 24).

**Table 24. Budget per unit area for the target PAs (US\$/ha)**

PA	Area		2014 budget		US\$/ha	
	Ha	%	US\$	%	SERNANP	Total*
<b>Complejo Yanachaga</b>						
PNYCH	122,000	2	272,386	13	2.23	
RCY	34,745	1	138,772	6	3.99	
BPSMSC	145,818	2	153,337	7	1.05	
RCES	616,413	10	241,893	11	0.39	
	<b>918,976</b>	<b>15</b>	<b>806,388</b>	<b>37</b>	<b>0.88</b>	
<b>Complejo Manu</b>						
PNM	1,716,295	29	410,550	19	0.24	0.27
PNAP	2,510,694	42	547,651	25	0.22	0.33
RCP	202,033	3	82,383	4	0.41	1.58
RCA	402,356	7	183,620	8	0.46	0.69
SNM	215,869	4	142,326	7	0.66	1.02
	<b>5,047,247</b>	<b>85</b>	<b>1,366,530</b>	<b>63</b>	<b>0.27</b>	<b>0.42</b>
<b>Total</b>	<b>5,966,223</b>	<b>100</b>	<b>2,172,918</b>	<b>100</b>	<b>0.36</b>	<b>0.49</b>

\*Including external contribution (data not available for Yamachaga complex)

166. Funding per unit area increases markedly when external cooperation is taken into account, in RCP (with contributions from USAID-IICA, WWF and ProPurús) and SNM (from Peru Gas Transportation Company). PNM receives support from the Frankfurt Zoological Society and the San Diego Global Zoo (SDZG), while RCA receives support from a UNDP-BMU project and funds from the Hunt Oil company.

167. Table 25 summarizes the estimated funding gaps for the target areas under basic and optimum management scenarios, without taking into account the additional cost implications of climate change. Overall, the budget available to the target PAs (in 2014) covers 48% of basic management needs and 29% of optimum management needs: for those PAs where data on external funding are available, this reduces the gaps by 42% and 20% respectively in the minimal and optimum scenarios.

**Table 25. 2014 budgets, needs and funding gaps for target PAs**

PA	Budget		Needs		Gap (with only SERNANP income)		Gap (including external income)	
	SERNANP only	With external income	Basic scenario	Optimum scenario	Basic scenario	Optimum scenario	Basic scenario	Optimum scenario
PNYCH	272,386	N/A	517,927	637,450	245,541	365,064	N/A	N/A
RCY	138,772	N/A	245,836	330,075	107,064	191,303	N/A	N/A
BPSMSC	153,337	N/A	260,649	349,963	107,312	196,626	N/A	N/A
RCES	241,893	N/A	331,009	1,241,573	89,116	999,680	N/A	N/A
PNM	410,551	463,810	1,004,415	1,536,539	593,864	1,125,988	540,605	1,072,729
PNAP	547,651	832,651	673,179	1,506,417	125,528	958,766	-159,472	673,766
RCP	82,383	319,180	361,134	484,880	278,751	402,497	41,954	165,700
RCA	183,620	276,946	719,174	965,605	535,554	781,985	442,228	688,659
SNM	142,326	220,604	385,865	518,086	243,539	375,760	165,261	297,482
<b>Totals</b>	<b>2,172,919</b>		<b>4,499,188</b>	<b>7,570,588</b>	<b>2,326,269</b>	<b>5,397,669</b>		

168. SERNANP has not as yet carried out an analysis of what the additional cost implications resulting from climate change would be. This will depend on a number of factors, the quantitative prediction of which will require complex analyses which will only be feasible during the implementation phase of the project, once the required systems and capacities are installed: these include the magnitude and spatial locations of changes in threat levels (for example increases in risks of environmental phenomena such as fires and floods, and increases in demographic pressures from “climate change refugees” displaced from other parts of the country), and the potential weakening of community-based environmental governance due to CC-related emigration.

**2. Inadequate capacities to address the landscape-wide and inter-sector nature of the implications of CC for vulnerable ecosystems.**

169. Economic demands on land and other natural resources make it impractical to protect in PAs the entire ranges of any of the priority species or ecosystems in the target areas. The effective conservation of BD in the target ecosystems therefore depends on PAs being complemented by sound management in the landscapes that surround them, resulting in diverse and BD-friendly mosaics of different land uses. There are also a number of barriers that currently impede the application of this approach.

***Limited provision for CC adaptation needs in regional governments and production sector institutions***

170. All Regional Biodiversity Strategies (ERDBs) in the target areas take into account aspects related to BD management within a regional context, and to this end receive technical support from MINAM and other institutions interested in supporting these processes. Generally, however, the ERDBs contain little or no reference to climate change. This deficiency is typically explained by the existence of other management instruments in the form of Regional Climate Change Strategies; however the absence of CC from the ERDBs represents a failure to recognize the close and mutual interrelations between BD and CC issues.

171. Similarly, the legal provisions for Territorial Land Use Planning (*Ordenamiento Territorial*) do not specifically consider climate change as a variable. This is a major shortcoming, given that *ordenamiento territorial* provides the overall planning framework for the spatial configuration of productive sector initiatives in the landscape, and the inappropriate location of such initiatives in a context of climate change has the potential seriously to exacerbate threats to BD and to undermine efforts to promote BD-friendly habitats and connectivity. The same limitations in terms of references to CC are found in the Consensus-Based Development Plans, as well as in financial instruments such as Participatory Budgets and the National System for Public Investment (SNIP).

172. The respective roles of SERNANP and productive sector ministries such as MINAG are well defined, in relation to PAs and buffer zones respectively. The effective application of the landscape approach to conservation that is proposed by the project, however, depends on close integration between the management of PAs and buffer zones, and by the institutions with lead responsibility for each: to date, the required degree of interinstitutional and landscape-wide cooperation has not been achieved in practice, due to a lack of adequately functioning channels for communication and coordination.

***Static perspective to design, promotion and application of production models***

173. While a number of productive alternatives exist which have been proven to be “BD-friendly” and “SLM-friendly” under the conditions of the project target areas (such as shade coffee, tree-rich agroforestry with annual crops and NTFPs), these types of production models are typically designed, promoted and applied with a ‘static’ perspective, without adequately taking into account how climate change will affect their viability (which is strongly dependent on the physiological tolerance limits of their components, such as coffee which is highly altitude/temperature sensitive). As a result, there is a risk that

they will fail under conditions of climate change, leading to forest clearance and land degradation. Likewise, there is limited experience of participatory, “adaptive” approaches to technology development, which would increase the inherent resilience of the production systems, permitting them to evolve, largely on the initiative of the farmers themselves but with support as necessary from fully informed extension agents, in response to such changing conditions.

174. These qualitative limitations of extension mechanisms are compounded by quantitative limitations in local people’s access to extension services. What extension support there is is largely provided by NGOs, as the extension services of the State are very limited. Support programmes such as the PNCB, and the PAES modality of incentives for conservation, are largely focused on the transfer of financial incentives, and lack significant backup in terms of technical support, particularly regarding how to address issues of environmental sustainability and CC resilience.

## **Stakeholder analysis**

### **MINAM**

175. MINAM is environment sector head: its purpose is environmental conservation, so as to foster and ensure rational, sustainable and ethical use of natural resources thereby ensuring that present and future generations enjoy a balanced environment suitable for the development of life. MINAM includes a number of institutions of key importance for the project, particularly SERNANP and DGOT, and implements initiatives in support of forest management and establishment, such as the Forest Programme (*Programa Bosques*). SERNANP and DGOT coordinate closely with others institutions of MINAM such as the General Directorate of Climate Change, Desertification and Water Resources and the General Directorate of Biological Diversity<sup>26</sup>, which are responsible for the national policies on climate change and biodiversity, and are linked to regional and local governments in relation to the promotion of climate change and biodiversity management within the frameworks of regional CC and BD strategies with the aim of supporting the scaling up of measures of resilience, adaptation and risk management, as well as the lessons that will be learnt by the project. The National Meteorological Service (SENAMHI) and the IGP also play important roles in relation to information management and research.

### **SERNANP**

176. Attached to MINAM, SERNANP is responsible for directing and establishing technical and administrative criteria for PA conservation and for the maintenance of biological diversity. SERNANP is the governing body of the National System of Protected Areas (SINANPE) and works in coordination with regional and local governments and private conservation areas. It has generated significant experience and lessons learnt in relation to PA management and CC adaptation, as set out in the Baseline Analysis above. In its role as Normative Technical Authority, it coordinates with regional and local governments and the owners of private conservation areas. It executes Budget Programme 0057 (Conservation of biological diversity and sustainable use of natural resources in Protected Natural Areas). SERNANP is the principal partner of the Project.

### **PROFONANPE**

177. The mission of the Fund for the Promotion of Natural protected Areas of Peru (PROFONANPE) is the collection, administration and channeling of financial resources for the conservation of biological diversity in PAs and their buffer zones (<http://www.profonanpe.org.pe/>). PROFONANPE is in the process of consolidating its strategic role as the financial agent of the SINANPE. Through the expansion and diversification of its sources and mechanisms of financing, it is contributing to the financial sustainability

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<sup>26</sup> <http://www.minam.gob.pe/cambioclimatico/>, <http://www.minam.gob.pe/diversidadbiologica/>

of a representative number of PAs and actively promoting the creation of new PAs, on the initiative of private actors of regional and municipal governments. Furthermore, it is assuming a key role in the process of promotion and execution of the model of participatory management of PAs in Peru.

### **Ministry of Agriculture (MINAGRI)**

178. MINAGRI is responsible for the formulation and implementation of the national agricultural policy, by promoting sustainable use of natural resources, competitiveness and equity in the context of modernization and decentralization of government, with the aim of contributing to rural development and improving the quality of life of the population. Within MINAGRI, climate change is addressed by:

1. The General Directorate of Forestry and Wildlife (DGFFS), which is responsible for the formulation of national policies, strategies, plans, programmes and projects related to sustainable use of forest and wildlife resources. The functions of the DGFFS are in the process of being taken over by the Forest Service SERFOR, as the Lead Entity and Normative Technical Authority of the National System of Forestry and Wildlife Management (SINAFOR), which is composed of ministries and other public institutions at national, regional and local levels with roles and responsibilities for forestry and wildlife management. SERFOR executes Budget Programme 0035 (Efficient Management of Forest Resources and Wildlife). Given its responsibilities in PA buffer zones, it is a potentially important ally in the implementation of forest management plans with local populations.
2. The General Directorate of Environmental Affairs (DGAA): Given the mandate for agricultural environmental management policy and strategy, DGAA chairs the Working Group on Food Security and Climate Change
3. The National Water Authority (ANA): responsible for the development and implementation of the national policy and strategy for the sustainable management of freshwater resources, in coordination with regional and local governments and related sectors.
4. The National Service of Agrarian Health (SENASA): responsible for agricultural health and maintains the national system to monitor plant and animal health, in particular, pests and diseases that threaten food security.
5. The National Institute for Agrarian Innovation (INIA), whose mission is to promote the development of agricultural technology to increase agricultural sustainability, productivity and competitiveness.
6. The Technical Working Group on Food Security and Climate Change, responsible for proposing sectoral vision to reduce the vulnerability of agriculture in relation to climate change.

### **Ministry of Economy and Finance (MEF)**

179. MEF is implementing a Climate Change Unit with the following objectives:

1. Identify the economic impact of climate change in terms of its impacts on the welfare of the population and the country's competitiveness.
2. Identify business opportunities and promote greater competition generated around the mitigation activities. This includes promoting access to international carbon markets.
3. Identify and promote financial and economic instruments to finance activities related to climate change.
4. Coordination with MINAM of the launch and implementation of a national mechanism to manage international funding for climate change adaptation and mitigation in Peru.
5. To monitor national progress in achieving national goals related to climate change adaptation and mitigation. These activities will be conducted in coordination with the MINAM and other relevant stakeholders.

### **Executors of Administration Contracts (ECA)**

180. Through Administration Contracts, the State, through SERNANP, delegates to a non-profit private entity the total or partial development of the management and administration operations required for the implementation of the Management Plan of a PA, as specified in the contract. The following ECAs are active in the target PAs, and will be key partners of the project:

- DRIS in Yanachaga Chemillén NP
- DESCO and CANPRODEM in San Matías-San Carlos Protection Forest
- ECOSIRA in El Sira Communal Reserve
- AMARCY in Yanesha Communal Reserve
- ECA in Amarakaeri Communal Reserve
- ECOPURÚS in the Purús Communal Reserve.

### **Regional Governments**

181. These are autonomous political administrative institutions responsible for governance of regions and local municipalities. Under the process of decentralization, they have assumed greater responsibilities in relation to the territorial planning and management of natural resources, as well as for the formulation and implementation of regional climate change strategies and plans. The key areas of weakness of regional governments of relevance to the project are set out in the Barrier Analysis above, particularly paragraphs 170-172. According to the Organic Law for Regional Governments (Law 27867), and the national policies related to risk management, climate change, biodiversity and ecosystems, the functions of regional governments include the following:

- Approval and implementation of the Regional Plan of Environmental Action, the Regional Environment Agenda, the Regional Environmental Diagnosis, Economic Ecological Zoning, and Territorial Land Use Plan.
- Implementation of the Regional System of Environmental Management and the promotion of Regional Environmental Commissions (CAR).
- The production and application of Regional Strategies for Biological Diversity and Climate Change.
- Proposing the Creation of Regional and Local Conservation Areas.
- The promotion of programmes, projects and activities for environmental education and citizenship.
- Technical inspections to evaluate compliance with environmental norms.
- Identification of environmental services and the generation of economic valuation studies in natural forests or protected areas, in coordination with MINAM.
- Approval of Regional Ordinances for the preservation and administration of regional reserves and PAs, in accordance with the SINANPE.

182. The Regional Governments of Pasco, Ucayali, Madre de Dios, Cusco and Huánuco will be directly involved in the Project, through their Natural Resources and Environmental Management departments, and the Junín Regional Government will be indirectly involved.

183. To date, the Regional Governments of Ucayali and Madre de Dios have had the specific functions transferred to them of a) developing actions of vigilance and control to guarantee the sustainable use of natural resources in their jurisdiction and b) issuing forestry permits, authorizations and concessions, as

well as carrying out promotion and fiscalization in compliance with the national forestry policy<sup>27</sup>. The Regional Forest Authority of Ucayali is the Executive Directorate of Forestry and Wildlife, under the Regional Office for Economic Development, while in Madre de Dios it is the Regional Programme for Forest Resource and Wildlife Management, under the General Office of the Regional Government.

184. At regional level, the Regional Governments of Pasco, Huánuco, Ucayali, Cusco and Madre de Dios will be involved in the project. All of these have resources foreseen, principally for activities of reforestation and recovery of degraded areas. Of significance in Cusco Regional Government is a climate change adaptation project in the upper catchment of the Apurímac river, and a reforestation project in Vilcabamba. There is likely to be particular interest on the part of the Provincial Municipality of Oxapampa, given the existence of the Biosphere Reserve.

### **Municipal Governments**

185. There are 30 District Municipalities in the area of influence of the Project: the 9 target PAs coincide with 20 of these, and their buffer zones with the remaining 10. There are 9 Provincial Municipalities involved (Oxapampa, Puerto Inca, Coronel Portillo, Atalaya, Purús, La Convención, Paucartambo, Manu and Tahuamanu), plus Chanchamayo, which is related through the district of Pichanaki with the buffer zone of San Matías-San Carlos Protection Forest.

186. Local governments are responsible for overseeing natural resource management at local level, within their areas of jurisdiction, for ensuring that management strategies are appropriate to local needs and for ensuring that the needs of local stakeholders are taken into account in the definition of management strategies. They have a legal mandate to promote integrated development, economic growth, social justice and environmental sustainability. To this end, their specific roles and functions must be complied with in harmony with national, regional and local development policies and plans; the local planning process should be integrated, permanent and participatory, linking municipalities with their neighbours. The planning system has significant importance, as it is required to be guided by the following principles: citizen participation through neighbours and their organizations, transparency, modern management, financial accountability, inclusion, efficiency, effectiveness, equity, impartiality and neutrality, subsidiarity, conformity with national policies, specialization of functions, competitiveness and integration.

187. Within the framework of the specific functions established in the Organic Law of Municipalities of Peru, given the complexity and coverage of certain activities of local government, provincial municipalities are given the following roles:

- Integrated planning of local development and territorial planning, at provincial level;
- Permanent promotion of the strategic coordination of integrated plans of district development;
- Promotion, support and implementation of projects of investment and municipal public services that present externalities and economies of scale at provincial level, involving agreements with the respective district level municipalities
- Emission of general technical norms related to the organization of physical spaces and land use, as well as the protection and conservation of the environment.

188. The specific responsibilities and functions of provincial and district level local governments that are directly related to the Project are as follows:

- Organization of physical spaces and land use, and territorial zoning.

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<sup>27</sup> Clauses “e” and “q” of Article 51° of the Organic Law of Regional Governments

- Local public services: establishment, conservation and administration (directly or through concessions) of zonal parks, zoological parks, botanical gardens, and natural forests.
- Protection and conservation of the environment: formulation, approval, implementation and monitoring of local plans and policies related to the environment, in accordance with regional, sector and national policies, norms and plans; proposal of the creation of environmental conservation areas; promotion of environmental education and investigation in their locality and promotion of citizen participation at all levels; participation in and support to regional environmental commissions in the exercise of their functions; coordination with the different levels of national, sector and regional government; the correct local application of planning and environmental management instruments, in the framework of the national and regional system of environmental management.
- In relation to local development and economy: promotion of handicrafts, sustainable local tourism and programmes of rural development.

### **Technical Forestry and Wildlife Administrations (ATFFs)**

189. Technical Forestry and Wildlife Administrations are the administrative units charged with emitting permits and/or authorizations for the use of timber and non-timber forest products, and wildlife; controlling the use of wild flora and fauna; their transformation, transport and trade; authorizations for the functioning of centres for captive animals, zoos, animal rescue centres and temporary care centres; authorizations for hunting, information on the management of forest resources and wildlife; dissemination of the current legal framework related to biodiversity, and the application of administrative centres (confiscations and fines) to those committing infractions under forestry and wildlife law. The ATFFs of Huánuco (Huánuco), Selva Central (La Merced), Tahuamanu (Iberia) and Tambopata-Manu (Puerto Maldonado) are directly related to the project.

### **“Ecological Police”**

190. The correct name of the “Ecological Police” is the Environmental Protection Division of the National Police, which belongs to the Directorate of Tourism and Environmental Protection of the Police. Its functions include:

- Protection of PAs
- Prevention of ecological infractions, as well as infractions in relation to the Forestry and Wildlife Law, the Penal Code, and the Natural Resources and Environmental Code.
- Carrying out the functions of Tourism Police in PAs.
- Coordination with different authorities and institutions, and the implementation of technical programmes of dissemination and extension, for the maintenance of ecological equilibrium.
- Centralization of statistical information related to the activities of environmental protection at national level.
- Carrying out technical and normative roles at national level in compliance with the misión of protecting and conserving natural resources and the environment.
- Implementation of campaigns of social projection social, with the aim of creating ecological conscience.

191. There are delegations of Ecological Police in all of the target regions and some of the target provinces of the project.

### **Environmental Prosecutors**

192. Specialized Environmental Procurators (FEMAs) are responsible for the investigation of Ecological infractions, and others related to the environment. The FEMAs of Madre de Dios and Cusco are based in Cusco; that of Ucayali in Pucallpa and those of Junín and Huánuco in Huancaayo.



## **OSINFOR**

193. The Organism for the Supervision of Forestry and Wildlife Resources (OSINFOR) is responsible for the supervision and fiscalization of the sustainable use and conservation of forestry resources and wildlife, as well as environmental services provided by forests. In the target area, OSINFOR has offices in Pucallpa, Atalaya and Puerto Maldonado.

## **OEFA**

194. The Office for Environmental Evaluation and Fiscalization (OEFA) of the National System for Evaluation and Fiscalization (SINEFA) (Law N° 29325) is responsible for verifying compliance with environmental legislation. Additionally, it ensures that the functions of evaluation, supervision, fiscalization, control, and the application of sanctions and incentives related to environmental issues, under the aegis of diverse entities of State, are carried out in an independent, impartial, agile and efficient manner, in accordance with the judicial provisions of the National Environmental Police<sup>28</sup>. In the target areas, OEFA has offices in Pasco, Junín, Ucayali, Cusco and Madre de Dios.

## **NGOs**

195. NGOs and civil society organizations make an important contribution to the management of PAs and to obtaining resources. They will also be involved in providing technical assistance for the implementation of the project (see Part II Implementation Arrangements).

## **Civil Defence Committees**

196. Civil Defence Committees are made up by representative groups of community members, who develop and execute civil defence activities aimed at protecting the physical integrity of local populations and their resources against the effects of disasters related to natural or anthropogenic phenomena. They constitute the basic operational units of the National System of Civil Defence (SINADECI). They are permanent, and operate at regional, provincial and district levels.

## **Local population**

197. The local population in the target areas, who make up the grassroots stakeholder base of the project, consists of a total of 310,281 personas in the 20 target districts, including 170,740 men (55%) and 140,091 women (45%). Villages typically have around 5-7,000 inhabitants. Around 80% of the population is indigenous: the Yanachaga and Manu complexes and their areas of influence are located in the ancestral territories of around twenty Amazonian indigenous groups (see Table 14).

198. These people are almost all rural and poor (see Table 12 and Table 13) and are strongly dependent on primary production, principally subsistence agriculture and gathering. They are therefore particularly susceptible to the impacts of climate change on the productive sustainability of their farming systems, the productive collapse of which would weaken the social capital on which community-based governance depends, and place further pressures on the agricultural frontier.

199. There is an increasing trend towards the generation of income from cash crops (see Section IV Part VIII). Indigenous groups rely heavily on natural vegetation for products such as timber, fruit, fibers, medicinal plants, materials for arts and crafts, as well as hunting and fishing. Indigenous people and migrants differ substantially in how they make use of their natural resources. In general, the indigenous people are settled in native communities and make traditional use of their natural resources based on small-scale agriculture, hunting, fishing and gathering, while the migrant settlers farm on a larger scale, raise livestock, extract wood and fish on a commercial scale.

200. There are a large number of indigenous organizations and federations covering the communities of the area, which represent their interests in initiatives such as the Regional Environment Commissions,

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<sup>28</sup> <http://www.oefa.gob.pe/>

Forestry Platforms and Indigenous REDD+ Platforms (see below). Although in the minority, the non-indigenous population of the area, which is largely composed of colonist farmers and grazers, has a significant level of influence in regional and local governments.

201. There are a number of organizations representing women's interests at local level in the target areas, and at national level, as shown in Box 1.

### **Box 1. Women's organizations**

#### ***Yanachaga Complex:***

1. Mome Nueva Aldea Mother's Club Association, Loma Linda Laguna Native Community, Palcazú District, Oxapampa Province
2. Women Coffee Producers' Agrarian Cooperative – Pichanaki (Pichanaki District, Chanchamayo Province)
3. ARANCOM Women's Association, San Pedro de Pichanaz Native Community, Palcazú District, Oxapampa Province
4. OÑEKER Women's Club Association, Santa Rosa de Pichanaz Native Community, Palcazú District, Oxapampa Province
5. Association of Women for the Management of Wild Species "Santa Rosita", Santa Rosa de Chuchurras Native Community, Palcazú District, Oxapampa province
6. YERPUEM Women's Association for Integrated Development, Loma Linda Laguna Native Community, Palcazú District, Oxapampa Province

#### ***Manu Complex:***

1. 30 "Glass of Milk Programme" Mothers Clubs in the provinces of Atalaya, Manu, Tahuamanu and Tambopata.
2. Artisan Group, Pankirentsy Native Community (Purús District, Purús Province)
3. Woman, Gender and Family Programme of the Centre of Coffee Producing Agrarian Cooperatives (COCLA) of La Convención Province
4. Artisan Group of Bajo Urubamba (Echarate District, La Convención Province)

#### ***National level:***

1. "National Coordination of Coffee and Cocoa Producing Women" of the National Coffee Board
2. National Network of Women Cocoa Producers
3. National Organization of Andean and Amazonian Indigenous Women of Peru (ONAMIAP)

## STRATEGY

### Project rationale

202. Although Peru has established a significant PA estate with a solid foundation of management effectiveness, and there is a significant baseline of investment in sustainable natural resource management in PA buffer zones, this will not be sufficient to ensure the conservation of the country's globally important biodiversity and carbon stocks in the face of the modified threats and management challenges that are expected to arise from climate change. The project is necessary to ensure that the design and management of PAs and their buffer zones are capable of adapting to these changed circumstances. Further value will be added, with GEF funding, to promote and consolidate approaches that on one level ensure that PAs and buffer zones complement each other functionally (in recognition of the social and biological porosity of the boundaries between them) and on another promote connectivity across altitudinal gradients (in recognition of the upstream-downstream nature of many biological processes and flows of environmental benefits) – the “ridge to jungle” approach. This will result in major global environmental benefits, in terms of the ensured conservation status of globally important biodiversity (at species and habitat levels) and avoided loss of forest and carbon sinks.

### Policy conformity

203. The project directly advances the objectives of the GEF Biodiversity Focal Area, as CC is predicted to become one of the principal drivers of BD loss in Peru in the future, compounding existing anthropogenic threats. Specifically, it will spearhead **Strategic Objective One (SO1) on protected areas**. PAs currently play a central role in BD conservation in Peru; for them to continue to function effectively in this regard, the project will ensure that changing conditions and threats resulting from CC are factored into their management. It will also ensure that their spatial configuration takes into account CC-related phenomena such as the migration of ecosystem boundaries due to isotherm shifts, and resulting fragmentation. It will contribute to expanding the PA system to incorporate critical refugia for threatened BD. This corresponds with GEF 5 guidance governing investments in PAs: to support “the development and integration of adaptation and resilience management measures as part of PA management projects”.

204. The project will contribute to the following goals of the CBD Programme of Work on Protected Areas (POWPA): 1.1 “To establish and strengthen national and regional systems of PAs integrated into a global network”; 1.2 “To integrate PAs into broader land- and seascapes and sectors so as to maintain ecological structure and function”; 1.5 “To prevent and mitigate the negative impacts of key threats to PAs” and particularly 1.4 “To substantially improve site-based PA planning and management”, which makes specific reference to the “[integration] of climate change adaptation measures in PA planning, management , and in the design of PA systems” (activity 1.4.5).

205. The project also addresses the objectives of the **Land Degradation Focal Area**, given that CC is expected to undermine ecosystem functionality—and thus the ability of ecosystems to supply ecosystem goods and services. Specifically, it will contribute to SO3-reducing pressures on natural resources from competing land uses in the wider landscape through its support to spatial planning at landscape level and the adoption by local communities of CC-resilient land management practices.

206. Finally, it will advance the objectives of the **SFM-REDD Focal Area**, specifically SO1 (reduce pressures on forest resources and generate sustainable flows of forest ecosystem services). The SFM/REDD resources assigned to this project will allow it to develop management regimes specifically aimed at forest ecosystems in and around PAs (including Integrated fire management, enrichment planting and/or selective thinning to maintain ecosystem structure and connectivity, and Low impact production systems (e.g. shade coffee, sustainable extraction of NTFPs), given their importance for carbon storage and

other global environmental benefits (biodiversity and sustainable land management) as well as ecosystem services (especially water) of national importance. The BD, SLM and CC mitigation aspects of the project will be closely linked: by helping to make ecosystems more resilient to the adverse effects of CC it will in turn reduce the risk of carbon emissions being generated as a result of their degradation.

207. The country's **10 year Bicentennial Plan (Peru to the Year 2021)** recognizes the strategic importance of natural resources (including ecosystem function and BD) for the country's economy, given their contribution to satisfying the basic needs of the population and the development of activities that generate goods and services<sup>29</sup>. It also recognizes that CC will have negative effects on the country's BD, as well as increasing the incidence of forest fires and soil erosion. The National Objective of the Plan in relation to natural resources and the environment is the *"conservation and sustainable use of natural resources and biodiversity with an integrated and ecosystem focus, environment which permits a good quality of life for the human population and the existence of ecosystems which are healthy, viable and functional in the long term."* The policy priorities of the Plan include *"the promotion of the conservation and sustainable use of the country's natural heritage... carrying out actions to protect biodiversity [and] control the loss of forests and ecosystems; strengthening of the National Protected Areas System; promotion of mitigation and adaptation to climate change; and prevention, control and reversal of desertification and land degradation"*.

208. The 2001 **National Biodiversity Strategy and Action Plan (NBSAP)**, which is currently being updated (it is expected that the new version will be available for consultation in September 2014) recognizes Peru's BD as one of the pillars of its national economy, which plays a direct role in sustaining a large part of the population, has an important role for culture, science and technology and provides essential environmental services in terms of soil fertility, air quality and water supply. The vision of the strategy is that by 2021, Peru will be the first country in the world to have the best benefits for its population from its conserved and sustainably used BD, as well as having restored all its BD components in order to meet the basic needs and well-being for present and future generations. The 8 specific strategy lines of the NBSAP include the conservation of BD in Peru; integrating sustainable use of BD into the management of natural resources; establishing special measures for the conservation and restoration of BD faced with external processes; promoting participation and engagement from the Peruvian society in the conservation of BD; improving knowledge of BD; and perfecting the instruments needed for management of BD. Strategic Objective 3.5 of the NBSAP refers to increasing knowledge on the impacts of CC on BD, taking into account the distributions physiological tolerance limits, predictions of the responses of ecosystems and species, and modeling their implications for future needs for conservation and sustainable use.

209. The project also responds closely to the country's **National Climate Change Strategy (NCCS)**<sup>30</sup> (approved by Supreme Decree N° 086-2003-PCM): this decree is binding and must be included in policies, plans and sectoral and regional programmes. The objectives of the NCCS include the reduction of the impacts of CC through integrated assessment of vulnerability and adaptation in vulnerable areas or sectors where adaptation programmes apply, as well as the reduction of emissions. The NCCS is currently undergoing revision under the responsibility of the National Committee on Climate Change with the support of the Technical Adaptation Group (TAG), led by SENAMHI. The strategic priorities of the NCCS include the management of fragile ecosystems, particularly mountain ecosystems, as a means of mitigating vulnerability to climate change.

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<sup>29</sup> [http://www.mef.gob.pe/contenidos/acerc\\_mins/doc\\_gestion/PlanBicentenarioversionfinal.pdf](http://www.mef.gob.pe/contenidos/acerc_mins/doc_gestion/PlanBicentenarioversionfinal.pdf) pp19, 226

<sup>30</sup> <http://www.sernanp.gob.pe/sernanp/archivos/imagenes/Estrategia%20Nacional%20de%20Cambio%20Climatico.pdf>

210. The project will contribute to the objective of Peru's **Forest Investment Programme (FIP)** (a key element of the country's REDD+ strategy<sup>31</sup>), which is to reduce pressures on Amazon forests and ecosystems through the strengthening of institutional capacities to counter the direct and underlying causes of deforestation and forest degradation, and most specifically to Components II (conservation of forests, mitigation of deforestation and valuation of forest goods and services) and III (reduction of pressures on forests). It will address forest fires, land productivity and poor land practices, all of which are identified as causes of deforestation and forest degradation in the analysis carried out for the Government of Peru in support of the preparation of the national FIP strategy. This is complemented by the **Forest Programme of MINAM** ("Forest Conservation for the Mitigation of Climate Change"<sup>32</sup>), the objective of which is to conserve 54 million ha of tropical forests by 2021, equivalent to 42% of national territory.

211. The project will be closely coordinated with the country's initiatives in relation to REDD+. Peru is well advanced in relation to the REDD readiness: the R-PP was positively assessed in 2011, and the FCPF PC 8 consequently allocated funding for readiness preparation, with the Inter-American Development Bank (IDB) as Delivery Partner<sup>33</sup>. In 2011, there were 47 different REDD+ initiatives in Peru, at different stages (completed, under execution, under negotiation or being proposed) with a total value of more than US\$350 million (see paragraph 146).

212. The **Organic Law of Regional Governments** (Law N° 27867 of 2002) explicitly states that it is a function of regional governments to "formulate, coordinate, conduct and supervise the implementation of regional strategies with respect to BD and CC, within the framework of the respective national strategies"

#### **Coordination with related initiatives**

213. Opportunities for coordination with other projects in relation to financial sustainability are presented under paragraph 266 below. The project will in addition build on the institutional and financial bases for the PA system established through the following GEF projects:

- The now closed IBRD/GEF project "National Trust Fund for Protected Areas" (GEF ID 438), which provided the seed money for the Trust Fund for Conservation of Peru's Parks and Protected Areas (FONANPE)
- The IBRD/GEF project "Strengthening Biodiversity Conservation through the National Protected Areas Program" (GEF ID 2693).

214. The project will take advantage of a wide range of existing, well-established mechanisms to ensure that it coordinates effectively with other initiatives and national and local levels, in relation to key issues such as REDD, forest management, sustainable production systems, territorial planning (ZEE), climate change management, ecosystem and biodiversity management, risk management and the integrated planning of territories at regional and local levels. These include the following (many of the same actors are involved in these different mechanisms, including representatives of regional and local governments, of sector-specific public entities, grassroots federations and organizations, academia and civil society):

<sup>31</sup> [http://www.mef.gob.pe/index.php?option=com\\_content&view=article&id=2432&Itemid=101691&lang=es](http://www.mef.gob.pe/index.php?option=com_content&view=article&id=2432&Itemid=101691&lang=es)

<sup>32</sup> <http://www.minam.gob.pe/programa-bosques/>

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[http://forestcarbonpartnership.org/sites/fcp/files/2013/Oct2013/Peru%20FCPF%20REDD%20Readiness%20Progress%20Sheet\\_October\\_2013.pdf](http://forestcarbonpartnership.org/sites/fcp/files/2013/Oct2013/Peru%20FCPF%20REDD%20Readiness%20Progress%20Sheet_October_2013.pdf)

### **REDD Platforms**

215. There are three Regional REDD Platforms in the area of the project:

#### *1) Madre de Dios Regional REDD Platform<sup>34</sup>*

216. This platform was established in December 2009, as part of the Technical Commission on Climate Change in Madre de Dios Region, with 20 founder members. In 2012 its name was changed to “Working Platform on Environmental Services and REDD (MSAR)”. The Platform is headed by the President of the Regional Government of Madre de Dios, and has 29 founding members, including two representatives of indigenous organizations: FENAMAD and the Infierno Native Community. Currently the MSAR has active members, including 4 representatives of the Regional Government, 5 from MINAM (4 from SERNANP and 1 from IIAP), 7 from other State institutions, 13 NGOs, 2 Universities, 2 private businesses, 4 indigenous organizations and 4 other institutions.

#### *2) Cusco Regional REDD Platform*

217. This platform was formed in 2011 with the aim of “promoting institutional support to generate the conditions necessary for the implementation of initiatives for good management and administration of forests in the Department of Cusco, constituted as a technical space for debate and participation, and, if necessary, for proposing policy initiatives that improve the sustainable management of forests”.

218. The platform is presided by the Regional Office of Natural Resources and Environmental Management; its Technical Secretariat is held by the NGO ACCA and it currently has 23 recognised members<sup>35</sup>. The Platform is structured around three components: a) Governance, b) Technical and c) Financial.

#### *3) Ucayali REDD Platform*

219. This Platform was formed in 2012 as “a space for interlocution between different public and private organizations of the Ucayali región interested in REDD issues, based on free participation, transparency, good faith and commitment of its members. It is presided by the President of Ucayali Regional Government. It currently has 22 active members, including two representatives of indigenous organizations: ORAU and the Community Forestry Ombudsman (Veeduría).

### **Regional Indigenous REDD+ Platforms**

220. AIDESEP has been promoting the formation and functioning of **Regional Indigenous REDD+ Platforms** in the Peruvian Amazon. To date five platforms have been established, including three (Madre de Dios, Ucayali and Atalaya) in the project’s target area, with the participation of 27 indigenous federations as full members, as shown in Table 26.

**Table 26. Regional Indigenous REDD+ Platforms in the target areas**

<b>Platform</b>	<b>Place and date of formation</b>	<b>Number of indigenous federations (full members)</b>	<b>Indigenous peoples represented</b>
Madre de Dios	Regional agreement on Indigenous REDD+ in Madre de Dios and tributaries. Puerto Maldonado, 14th June 2011	3	Harakmbut, Ese Eja, Amahuaca, Shipibo, Quichua, Matsigenka and Yine
Ucayali	Regional agreement on Indigenous REDD+ in Ucayali. CN Jepe Ian, San Francisco de Yarinacocha, 28th	16	Shipibo-Conibo, Asháninka, Sharanahua, Yine, Ashéninka,

<sup>34</sup> <http://www.redd-madrededios.org/>

<sup>35</sup> [http://www.gruporedperu.net/index.php?option=com\\_content&view=article&id=160&Itemid=123](http://www.gruporedperu.net/index.php?option=com_content&view=article&id=160&Itemid=123)

Platform	Place and date of formation	Number of indigenous federations (full members)	Indigenous peoples represented
	June 2011		Cashinahua, Amahuaca, Culina, Cacataibo, Cocama Cocamilla and Awajun
Atalaya	Regional agreement on Indigenous REDD+ in Atalaya. Atalaya, 25th March 2013	8	Asháninka, Ashéninka, Yine, Shipibo-Conibo, Matsigenka and Amahuaca

Source: AIDESEP, REDD+ Indigenous Agreements (2011-2013)

### ***Technical Commissions for Ecological Economic Zoning and Territorial Planning (ZEE-OT)***

221. These Commissions are multisector entities with responsibility for the coordination of processes of ZEE-OT at Departmental level. They are responsible for leading and promoting processes of consultation and citizen participation, providing technical support and promoting the incorporation of ZEE and OT into local development plans. They are made up of representatives of Regional Offices of Planning, Budgets and Territorial Management, Natural Resources and others; Regional Sector Directorates (Agriculture, Energy and Mines, Education, Production, External Trade, Health and others); provincial municipalities; and civil society (peasant and native organizations, companies, NGOs and others); and the academic and research sector (universities and others). All six of the regions involved have ZEE-OT Commissions, with different levels of management.

### ***Regional Environmental Commissions (CAR)***

222. The General Environment Law (N° 28611) states that the Regional Governments (GOREs), through their offices of natural resources and environmental management, in coordination with CARs and the National Environment Authority, should implement a regional System of Environmental Management, including public and private entities with environmental functions or which affect environment quality, as well as civil society. The CARs are multi-sector environmental management entities, responsible for coordinating and negotiating regional environmental policy and promoting dialogue and agreement between public and private sectors and civil society. Regional Governments approve the creation, scope, composition and functions of the CARs, and in addition support compliance with the objectives of the CAR, in the framework of the National Environmental Policy<sup>36</sup>.

223. The first CARs were created through a Decree of the Directive Council of CONAM: since the creation of the Ministry of Environment through Law No. 1013, they are now created or modified by Ordinances of Regional Governments.

224. In general CARs have numerous members, including representatives of regional and municipal governments, sectors including agriculture, energy and mines, health, education, production, transport, tourism and others, producer organizations, native communities, universities, Municipal Environment Commissions (CAMs), grassroots organizations and NGOs. Linked to the CARs are technical working groups including the Regional Technical Groups on Climate Change and on Biological Diversity.

### ***Municipal Environment Commissions (CAM)***

225. CAMs are responsible for coordinating and negotiating local environmental policy, promoting dialogue and agreement between public and private sectors and civil society, linking their environmental

<sup>36</sup> Art. 23° de la Ley N° 28245, Ley Marco del Sistema Nacional de Gestión Ambiental.

policies with the CAR in question and the National Environmental Authority. Through municipal ordinances, provincial and district-level local governments approve the creation, scope, composition and functions of the CAM, and in addition support compliance with the objectives of the CAR, in the framework of the National Environmental Policy.

### ***Forestry Platforms***

226. Forestry Negotiation Platforms (Mesas de Concertation Forestal) are spaces for dialogue on forestry activity; they constitute the entity for consultation on forestry issues, for the definition and implementation of guidelines for national, regional and local forest policy. They are made up of representatives of government institutions, private organizations and indigenous and peasant populations. In the year 2000 the Ucayali Forestry Platform was created, and on the basis of that experience others were formed. As a result of this process, the National Forestry Platform was formed, made up of public, private and academic sectors, representatives of indigenous and peasant organizations, and others.

227. The Ucayali Platform for Forestry Dialogue and Negotiation (MDCFU) is the only platform that is still active at this time; it is made up of 26 institutions of public and private sectors and civil society. Its main objective is to promote interinstitutional actions in favor of regional dialogue, integrating efforts aimed at creating conditions that support forestry development in the region.

### ***Civil Defence Committees***

228. Civil Defence Committees (see paragraph 196) have particular potential for the coordination of integrated initiatives related to disaster and risk management and adaptation to climate change.

### **Design principles and strategic considerations**

229. This project will transform the management of vulnerable ecosystems in Peru, spanning altitudinal gradients from the Andes to the Amazon, to alleviate the direct and indirect impacts of climate change (CC) on globally significant biodiversity and ecosystem functionality. This will be achieved through a three-pronged approach, featuring the development of management systems (monitoring and early warning systems, management decision making tools and sustainable financing) in order to optimize national readiness to address the implications of CC on vulnerable ecosystems spanning altitudinal gradients; the expansion and strengthening of PAs in landscapes that are particularly sensitive to CC, in order to protect refugia and corridors and build readiness to address specific CC impacts; and the promotion of sustainable land management in landscapes surrounding PAs in order to anticipate increased threats from current land uses for BD and ecosystem functions. This will reduce pressures on ecosystems and make them more resilient to expected CC impacts.

230. Implicit in its approach is the recognition of the following principles and strategic considerations:

- Mountain ecosystems, and particularly the altitudinal transition zones between ecosystems, are especially vulnerable to the implications of climate change;
- PAs (defined in their broader sense, not only according to the categories of the official National Protected Area System) will continue to play an important role as refugia for biodiversity, however their design and management may need to be adapted on a continuous basis to the changing biophysical and social conditions resulting from climate change;
- At the same time, an exclusive reliance on PAs for biodiversity conservation would be unsustainable in practical and biological terms, according to principles of island biogeography, and would also fail to conserve the large proportion of the extant biodiversity that is typically found in the landscapes located between the existing PAs: PAs therefore need to be complemented by sustainable management and biodiversity conservation in these landscape, both for their value in



their own right but also due to their importance for promoting biological connectivity between PAs;

- Both ecosystems (and their constituent biodiversity) and the human populations living in and around them are likely to be affected by climate change, and these impacts are not isolated from each other but mutually interdependent given that ecosystem decline is likely to affect livelihoods, while livelihood collapse is conversely likely to impose increasing pressures on natural ecosystems. Effective resilience strategies must therefore address livelihood and conservation needs at the same time, and local populations should be viewed as constructive actors in the generation and application of such strategies.

231. ***Strategies for promoting resilience:*** the strategies to be promoted by the project in support of ecosystem resilience to the general and site-specific threats set out in paragraphs 115-125, within the context of the landscape approach, will reflect the recommendations of Fischer *et al.* (2006) :

1. Maintain and create large, structurally complex patches of vegetation, and maintain small areas of native vegetation keystone structures.
2. Maintain structural complexity throughout the landscape, and mimic the matrix of natural vegetation patterns, in order to provide permanent habitat for endemic species, serve as corridors/enhance species movement, aid gene-flow and key processes such as pollination and seed dispersal, and reduce edge-effect impacts like micro-climate changes that can increase disturbance-adapted species.
3. Create buffers around sensitive areas or buffer patches around native vegetation (through the use of territorial planning instruments and the establishment of management and protection units under diverse modalities in complement to the SINANPE).
4. Maintain or create corridors or stepping stones to improve connectivity.
5. Maintain landscape scale heterogeneity and capture environmental gradients, and keep spatial patchiness and landscape pattern variability, including in highly productive, fertile soils.
6. Maintain key species interactions and functional diversity by identifying keystone species and key seed dispersal agents.
7. Apply appropriate disturbance regimes (e.g., fire regimes, hydrological flow regimes).
8. Minimize threatening ecosystem-specific processes (e.g., chemical pollution, over-hunting).
9. Maintain species of particular concern (e.g., highly threatened/rare species).

232. ***Approaches to buffer zone management:*** the project will pursue an integrated landscape-wide approach in which PAs and buffer zones are managed in a harmonized and complementary manner, recognising the social and biological porosity of the boundaries between them. Effective management of buffer zones in pursuit of project objectives, and the financial sustainability of project initiatives in buffer zones, will also require close coordination between stakeholders and institutions spanning different sectors; this will be achieved through the coordination mechanisms described in paragraphs 213-228. In accordance with STAP recommendations, the approach to buffer zone management to be adopted by the project will draw on lessons from both Peru and more widely (e.g. UNESCO/WHC World Heritage Paper No. 25, 2008), in relation to the following approaches:

- Strengthening relationships between management within PAs and that of wider areas including buffer zone, through a holistic and integrated approach.
- Maximizing participation and buy-in by local stakeholders to processes of designation and management of PAs and buffer zones;
- Connecting PA management to sustainable development use for local communities and other stakeholders, with a focus on sharing PA benefits and responding to community needs.

233. **Sustainable production systems:** the target areas face many of the socio-political challenges to SLM/SFM that are typical of agricultural frontier areas throughout the humid tropics. Foremost among these challenges are the following:

- i) *De facto* tenure insecurity (see paragraphs 105-108): this acts as a disincentive to the establishment of land management systems that require high levels of investment of financial and human capital, such as intensive agroforestry systems based on planted trees, or labour-intensive soil conservation structures.
- ii) Relative abundance of off-farm tree products, meaning that farmers may not be stimulated by scarcity to invest in establishing trees on farm, in intensive agroforestry systems.
- iii) Relative abundance of land, meaning similarly that farmers may not be stimulated by declining soil fertility and falling yields to invest in soil conservation, but may instead prefer to open up new areas for cultivation;
- iv) Opportunity cost of labour: faced with numerous alternatives for investing their limited labour, such as agricultural expansion and off-farm work, investing it in intensive agroforestry systems may appear unattractive.

234. In recognition of these factors, the project will emphasize low-input, low-investment forms of land management such as maize/Mucuna based systems, the use of felled fallow vegetation as mulch; and the promotion of natural tree regeneration (coupled with rationalization or elimination of the use of fire) rather than planting. The maize/Mucuna system and fallow mulch offer the advantages of having very low requirements of labour or other inputs (in fact reducing labour costs by suppressing weeds; maintaining/restoring soil nutrients; and (importantly in relation to CC resilience) protecting soil moisture.

235. Despite the proven potential of these systems throughout the humid tropics, these systems will be validated locally in a highly participatory manner (using approaches such as “Farmer Field Schools” and farmer-based action research), in order to maximize ownership and buy-in to the systems, and to ensure their compatibility with complex and often site-specific social, economic, cultural and biophysical conditions.

236. **Participation:** the effectiveness and sustainability of the project will be strongly dependent on the effective participation of stakeholders at a number of levels. The participation strategy for the project is set out in Section IV Part IX.

237. **Gender:** during the PPG phase, a guidance document was drawn up by gender specialists in the Peru office of the United Nations Entity for Gender Equality and Women’s Empowerment (UN-Women) on how the project should address gender issues and optimize its benefits for women. This document recommended in particular the following strategies, which will be applied in the project:

- The development and dissemination of a concrete gender strategy at project outset;
- Awareness raising and training regarding the gender focus of the project in order to ensure full understanding and buy-in among all participants;
- The systematization of relevant experiences regarding women managing natural resources and contributing to CC resilience;
- The promotion of women’s participation in spaces of dialogue and decision-making in relation to the project;
- The identification and characterization of existing organizations representing women’s interest, and their involvement and strengthening as mechanisms for women’s participation in the project;
- The adoption of active measures to contribute to women’s economic empowerment, with a specific budgetary provision for “ad hoc” use in support of opportunities that may arise for such measures.

- Assignment to the project of staff with specialist capacities in relation to gender issues (for example United Nations Volunteers, Junior Professional Officers or interns).

238. In accordance with the 2014-2017 Strategic Plan of UN-Women, the document proposed that the Project should explicitly aim that women, especially the poorest and most excluded, be economically empowered and thereby obtain development benefits. To this end, it proposed that women's livelihoods should be improved through services that incorporate a gender perspective, and through improved access and control to means of production and resources.

239. A number of experiences have been documented in Peru regarding the relations between women's traditional resource management systems and CC adaptation. In the southern Andean region of Cusco and the northern coastal region of Piura, it has been demonstrated through a project on climate justice and rural women implemented by the Flora Tristán Centre<sup>37</sup>, that women bear a disproportionate share of the impacts of climate change, but also that they can develop skills that allow them to play an active role in adaptation. A key area of contribution of women in this regard is their accumulated knowledge and practical wisdom with regard to the care and preservation of native crop seeds, which are typically more resilient to climate change and variability, and associated phenomena such as pest outbreaks, than commercially produced seed. It has also been shown that women's small scale agricultural initiatives have the potential to contribute to climate change adaptation by promoting productive and livelihood diversity: in another pilot project, Oxfam and partner organization AIDESEP are supporting indigenous Kichwa women in five rural communities in the San Martín region of Peru with their management of shared gardens in which they plant diverse native crops<sup>38</sup>.

240. In accordance with the UN-Women recommendations and building upon these and other experiences reported to date in Peru, a gender focus will be applied throughout the project, specifically in relation to ensuring women's equitable participation in dialogue and decision-making (gender equity will be specifically provided for in the rules for the conformation and functioning of the project's participation mechanisms), taking into account the differential implications of climate change for them, and actively identifying and promoting opportunities for them to obtain concrete benefits in terms of economic and social empowerment and livelihood sustainability. Under this approach, emphasis will be placed on the condition of women as potential agents of transformation, in recognition of their capacities to contribute to the solution of climate-related threats to livelihoods and biodiversity, rather than solely categorizing them as victims of climate change.

### **Project objective, outcomes and outputs/activities**

241. The **objective** of the project will be to strengthen the resilience of vulnerable ecosystems in the two target PA/landscape complexes<sup>39</sup> to the impacts of climate change, and thereby to conserve threatened BD and ecosystem functionality. Under the baseline situation, PAs would be subject to increasing demographic pressure as the result of immigration of people from areas affected by CC-related decline of production and livelihood support systems, and their management and boundaries would lose relevance and effectiveness as the characteristics, ecological functioning and spatial configuration of the ecosystems that they seek to protect are subject to CC-induced changes. The project will build upon a solid but dispersed baseline of investments in relation to protected area management, climate change adaptation and territorial land use planning, introducing a landscape-wide, cross-sector integrated approach which will ensure that PAs are able to continue to function effectively for the delivery of multiple environmental benefits of global as well as national importance.

<sup>37</sup> <http://www.ipsnews.net/2012/05/rural-women-in-peru-key-to-adaptation-of-seeds-to-climate-change/>

<sup>38</sup> <http://www.oxfamamerica.org/explore/stories/in-peru-women-confront-climate-change-with-traditional-gardens/>

<sup>39</sup> See Section IV Part II for explanation of the process of prioritization of the targeted ecosystems and PA complexes.

**Table 27. Threats related to climate change, and corresponding responses**

Threat	Responses	Benefits
Upward movement of lower and upper limit mountain ecosystems, due to temperature increases (upward movement of isotherms)	- Active management of areas affected by regression in order to maintain habitat conditions, for example by enrichment and selective thinning of yungas forest at its lower altitude limits to maintain its structural diversity in the face of encroachment by other ecosystems from lower altitudes	- Maintenance of effective sizes of habitats and populations
	- Declaration and management (regeneration and enrichment) of corridors to facilitate species movement under conditions of increased fragmentation, Particularly important for yungas forests (and constituent species such as <i>T. ornatus</i> ) given their long narrow configuration and strong dependence of range limits on isotherm locations.	- Maintenance of connectivity, to counter fragmentation caused by upward movement of lower limits
	- Upward movement of upper limits of PAs, to include higher altitudinal areas into which ecosystems such as yungas can migrate as isotherms move upwards	- Facilitation of upward migration of upper ecosystem boundaries in order to compensate regression of lower limits
Modification of ecological functioning and species composition of natural ecosystems due to changes in climatic factors	- Strengthening of existing PAs and establishment of complementary reserves (in buffer zones and surrounding landscapes), to maintain large, structurally complex patches of vegetation, and maintain small areas of native vegetation keystone structures. - Promotion of structurally complex production systems (e.g. shade coffee and agricultural/ranching systems with high tree content), mimicking the matrix of natural vegetation patterns,	- Provision of permanent habitat for endemic species, corridors to enhance species movement, aid gene-flow and key processes such as pollination and seed dispersal, and reduce edge-effect impacts like micro-climate changes that can increase disturbance-adapted species.
Reduction in productive viability of shade coffee plantations in yungas area due to changed rainfall regimes, resulting in conversion to non-tree land uses	- Diversification and management of coffee shade (including CC-resilient shade species and increasing shade density to maintain microclimate) - Continued investment in market-based instruments (building on GEF/UNDP Rainforest Alliance project) to maintain the attractiveness of shade coffee even if productivity/ha falls	- Maintenance or increase of value of coffee forests as habitat for flora and fauna, as connectivity routes for fragmentation-sensitive species such as <i>T. ornatus</i> , and as source of environmental services such as water supply and soil protection
Decline in productivity and sustainability of agricultural and grazing practices in highlands, due to changes in moisture regimes and loss of glacier meltwater supply, leading to land degradation and migration to vulnerable forest areas	- Introduction of agroforestry systems to maintain humidity and nutrient cycles - Systematization, revival and adaptation of traditional knowledge and practices, such as raised-field systems, manuring and community-based mechanisms for the planning and regulation of camelid pasturing, and the management and regulation of irrigation water.	- Improved sustainability of land management <i>in situ</i> (reduced soil erosion, enhanced hydrological and nutrient cycles) - Reduction of migration trends to vulnerable ecosystems (e.g. yungas and lowland forests) by populations affected by productive and livelihood collapse
Conversion of yungas	- Technical, marketing and organizational support to	- Reduced deforestation rates

Threat	Responses	Benefits
and lowland forests to agriculture and grazing by immigrants from areas affected by land degradation and productive failure	sustainable management of forests for timber and/or NTFPs in order to strengthen the occupancy and use rights of existing populations, and to provide economically attractive alternatives to deforestation	
Drying out of lowland forests and progressive conversion to savannas	<ul style="list-style-type: none"> <li>- Integration of integrated fire management practices (e.g. controlled burning, thinning and enrichment planting) into management plans<sup>40</sup></li> <li>- Increased investment in fire control measures (equipment and early warning systems)</li> </ul>	- Reduction in rates of transition of humid forest to savanna, and consequent maintenance of regional rainfall patterns
Changing demographic pressures	<ul style="list-style-type: none"> <li>- Declaration of new PAs in priority areas vulnerable to future demographic pressures</li> <li>- Support to sustainable production systems (coffee, sustainable agriculture, NTFPs etc.) in buffer zones, to strengthen the occupancy rights of existing populations minimize and reduce the risk of their displacement by immigrants to more vulnerable areas</li> <li>- Support to local environmental governance structures</li> </ul>	- Reduction in deforestation rates

242. The project will consist of two complementary components, which correspond to the barriers identified above. Given the porous nature of the boundaries which separate the PAs and surrounding landscapes, the project will support the application of a “macro” landscape approach to spatial planning and environmental management. This will ensure that decision-makers have access to reliable and updated information and are able to understand the diverse implications of development and conservation initiatives; that initiatives in different sectors are coordinated in order to minimize the risk of unintended negative impacts between sectors, and maximize the potential for cross-sector synergies; that land managers themselves have the capacities to apply resource management practices that optimize environmental benefits; and that local communities are able to participate effectively in decisions related to resource management, in order to minimize the risks of conflicts between their livelihood support systems and the conservation of BD and the natural capital on which these systems depend.

**Table 28. Logical correspondence between baseline, alternative and global environmental benefits**

Current situation	Alternative to be put in place by the project	Selected environmental benefits
<b>1. Protected areas</b>		
<b>PA expansion and management:</b> large PA estate, undergoing expansion and consolidation but: <ul style="list-style-type: none"> <li>- Reduced resilience and increased fire risk due to CC</li> <li>- Increasing incursion into PAs</li> </ul>	<ul style="list-style-type: none"> <li>- Expansion of PA coverage including new categories</li> <li>- Modification of management regimes (e.g. fire management, enrichment/thinning, coffee with diverse shade)</li> <li>- Strengthened PA management</li> </ul>	<b>BD:</b> <ul style="list-style-type: none"> <li>- Major habitat blocks, and BD patterns and processes, protected from modified threats</li> <li>- Increased effectiveness of enforcement in 9 PAs covering 6 million ha</li> </ul>

<sup>40</sup> Rodríguez Trejo D.A. 2008. Fire Regimes, Fire Ecology, and Fire Management in Peru. *AMBIO: A Journal of the Human Environment* 37(7):548-556.

Current situation	Alternative to be put in place by the project	Selected environmental benefits
<p>due to migration</p> <ul style="list-style-type: none"> <li>- Static management regimes</li> <li>- Boundaries do not contemplate ecosystem migration with CC</li> <li>- Financial resources inadequate for expansion</li> </ul>	<ul style="list-style-type: none"> <li>- instruments (e.g. GIS, management plans)</li> <li>- Strengthened PA enforcement capacities</li> <li>- Monitoring mechanisms of CC and management effectiveness</li> <li>- Financing framework for expansion and management</li> </ul>	<ul style="list-style-type: none"> <li>- Improvement in conservation status of vulnerable species in PAs (e.g. <i>Myrmecophaga tridactyla</i>), <i>Dinomys branickii</i>, <i>Tapirus terrestris</i>, <i>Tremarctos ornatus</i>, <i>Mazama chunyi</i>, <i>Callimico goeldii</i>)</li> <li>- Additional 100,000ha of PAs protect core refugia</li> </ul>
<b>2. Production landscapes</b>		
<p><b>Socioeconomic planning:</b></p> <p>ZEE underway in all 24 provinces, but:</p> <ul style="list-style-type: none"> <li>- Inadequate incorporation into ZEE of CC implications (locations of priority ecosystems, vulnerability hotspots, ecosystem migration)</li> </ul>	<ul style="list-style-type: none"> <li>- Cross sectoral institutional platform supporting planning, implementation, enforcement and monitoring of buffer zone management in accordance with regional guidelines on territorial management, climate change, biodiversity and ecosystems</li> <li>- Integrated Natural Resource Management plans, directing investments in LD and SFM in non-PA areas.</li> </ul>	<p><b>LD:</b></p> <p>Reduced land use conflicts in 6,000,000ha of buffer zones result in:</p> <ul style="list-style-type: none"> <li>- Reduced land degradation in puna</li> <li>- Reduced deforestation in yungas</li> <li>- Well-functioning ecosystem services (eg water supply and reduction of exposure to CC-related environmental risks such as floods and droughts)</li> </ul> <p><b>SFM/REDD:</b></p> <ul style="list-style-type: none"> <li>- Increased forest patches through refocused baseline reforestation programmes in vulnerable areas</li> </ul> <p><b>BD</b></p> <ul style="list-style-type: none"> <li>- Improved connectivity through appropriate location of land uses and corridors in landscape</li> </ul>
<p><b>Rangeland management:</b></p> <ul style="list-style-type: none"> <li>- Agricultural and grazing practices in highlands under decline due to CC</li> </ul>	<p>Sustainable CC-resilient land management systems incorporating CC risk management and adaptation measures, such as:</p> <ul style="list-style-type: none"> <li>- Eco/agrotourism</li> <li>- Sustainable management of high altitude camelid pastures and irrigation traditional water management systems</li> </ul>	<p><b>LD:</b></p> <ul style="list-style-type: none"> <li>- Reduced soil erosion rates and consequent increases and stability of production</li> <li>- Stable habitats of plant and animal species in production landscapes (e.g. coffee forests and high altitude grasslands)</li> <li>- Increases in indices of water quality and flow</li> <li>- Increased carbon sinks (253,500tC in 5,000ha of agroforestry systems)</li> </ul>
<p><b>Forest management:</b></p> <ul style="list-style-type: none"> <li>- Conversion of yungas and lowland forests to agriculture and grazing</li> <li>- Drying out of lowland forests and progressive conversion to savannas</li> </ul>	<p>CC-resilient resource management systems allow sustainable management and effective conservation of forest ecosystems, including:</p> <ul style="list-style-type: none"> <li>- Climate resilient shade coffee</li> <li>- Sustainable management of forests for non-timber forest products</li> </ul>	<p><b>SFM/REDD:</b></p> <ul style="list-style-type: none"> <li>- Avoided deforestation of 8,000 ha of lowland forest with a net gain of 2,900,000tC</li> <li>- Avoided deforestation of 4,000ha of yungas forest with a net gain of 808,000tC</li> <li>- Reductions in CC-related pressures affecting vulnerable ecosystems in buffer zones</li> </ul>

### **Component 1: Core PAs with increased resilience to CC**

243. Activities under this component will focus principally on promoting the effective conservation of biodiversity in core PAs, and will therefore be the main target of the BD1 resources assigned to the project.

#### ***Output 1.1 Additions to protected area coverage***

244. A key element of the conservation strategy promoted by the project will be the creation and strengthening of mosaics of areas subject to effective *in situ* protection. Given that SERNANP is presently focusing on consolidating management effectiveness in its existing estate of National Protected Areas (ANPs), it is not proposed to add new ANPs to the SINANPE; rather, the proposed expansion in the area of coverage of *in situ* conservation will be achieved through alternative models of conservation, including (as appropriate):

- **Private Conservation Areas:** established on private lands, at the request of their owners, by Resolution of the Minister of the Environment for a renewable period of at least 10 years. Their main objective is *in situ* BD conservation, and priority is given to areas located in the buffer zones of national ANPs.
- **Conservation Concessions:** established on national lands, preferably in areas suited to forestry use, with the aim of conserving BD and capturing carbon. They are given to NGOs, by the Minister of Agriculture, for renewable periods of up to 40 years.
- **Management Agreements:** these are entered into between ANP Directors and local people, so that the local people can carry out activities in support of the management and conservation of BD in ANPs.
- **Municipal Conservation Areas:** this model was established under the Organic Municipalities Law #27972, which requires local governments to plan local development and develop land use plans, as well as identifying areas of protection, areas of security from natural risks, agricultural areas and environmental conservation areas. The first MCAs were created through the Protected Areas Law # 26834 of 1997, and its Regulation (Supreme Decree 038-2001-AG), which recognized them as complementary to the SINANPE.
- **Regional Conservation Areas:** these are aimed at *in situ* BD conservation and form part of the national PA estate. They are subject to approval by Supreme Decree, and they are administered by the Regional Government of the area in question. Some concerns have been expressed by indigenous organizations regarding the RCA model and these concerns will be taken into account, with further consultation with indigenous groups as required, before proceeding with the establishment of additional RCAs.

245. In all cases where new conservation areas are proposed, the project will respect national policies and legislation regarding requirements for consultation with and prior informed consent by indigenous populations. Furthermore, in discussion with regional and local governments, NGOs, indigenous and colonist organizations and other grassroots entities, the project will develop case-by-case strategies for managing potential socioenvironmental conflicts that may arise by virtue of the existence of pre-existing uses in these target areas that may be incompatible with conservation goals, including the establishment of local dialogue platforms, the sharing of lessons learnt in similar situations elsewhere, and an emphasis on participatory approaches to the development of management strategies and zoning that will ensure that different stakeholders' interests are recognised and wherever possible respected, and conflict avoidance/mitigation options are identified.

246. In accordance with the recommendations of Fischer et al. (2006) for promoting ecosystem resilience, the aim of this expansion will be to maintain and create large, structurally complex patches of vegetation, maintain small areas of native vegetation keystone structures, maintain structural complexity throughout the landscape, and mimic the matrix of natural vegetation patterns, in order to provide permanent habitat for endemic species, serve as corridors/enhance species movement, aid gene-flow and key processes such as pollination and seed dispersal, and reduce edge-effect impacts like micro-climate changes that can increase disturbance-adapted species. The proposed expansions will be based as much as

possible on accurate site-specific information on the ecology and conservation biology of the species and ecosystems concerned, and their likely vulnerability and responses to the effects of climate change, generated through applied research as proposed in paragraph 254 below.

247. Within the specific context of the project area, and subject to site-specific analyses (as proposed under output 1.3a) and negotiations, the aims of this strategy will include, for example:

- The protection of additional areas of natural ecosystems in transition areas likely to be affected by the altitudinal migration of ecosystems and species, in order respond to their new spatial configurations
- Increases in the levels of protection afforded to ecosystems and species reflecting increases in anthropogenic pressures resulting from climate change (such as the possible immigration of population from areas affected by CC-related productive failure and livelihood collapse)
- Permitting flexibility in *in situ* conservation in the light of the uncertainties associated with climate change.

248. The nature and locations of the proposed additions will be confirmed on the basis of the GIS analyses proposed under Output 1.3, which will overlay the locations of priority species and ecosystems with high conservation value, CC vulnerability and importance for the provision of ecosystem services, and priority areas of connectivity and management, and the implications on these of climate change (based on official data of SENAMHI), resulting in an objectively defined list of priority sites where there is the maximum potential to generate Global Environmental Benefits and maximize ecosystem resilience to climate change. This prioritization will then be reconciled as far as possible with the PA and conservation priorities already defined by the regional governments of the target areas, as identified in the Regional Conservation Agenda (SERNANP, 2013)<sup>41</sup>, within the overall frameworks of Regional Biodiversity Strategies; the spatial modelling of priorities will be coordinated with the offices responsible for territorial planning and GIS in regional offices of SERNANP.

249. Out of the regions prioritized in this project with high vulnerability to climate change, Cusco has made most progress with the identification of priority sites for conservation, and is the only one that appears in the Regional Conservation Agenda, with 17 prioritized sites, 7 of which are located in La Convención and Paucartambo provinces, where the project will operate directly (see Table 29). In the course of the participatory workshop carried out during the PPG phase in Cusco (12th November 2013), discussions were held with the Regional Office of Natural Resources and Environmental Management in Cusco regarding the provision of support by the project to the creation of the largest proposed Regional Conservation Area there, Urusayhua-Kushireni (402,337ha), which conserves the headwaters of four drainage basins; this proposal, which originated in a request to the regional government by local communities<sup>42</sup>, will be confirmed at project start-up with the new representatives of the regional government.

**Table 29. Priority sites for conservation identified in the La Convención and Paucartambo provinces, Cusco region**

Name	Area (ha)	Location	Principal values
Urusayhua-Kushireni	402,337	La Convención Province (Santa Ana, Echarate and Vilcabamba Districts)	High forest and q'euña forests, headwaters of the Cirialo, San Miguel, Concevidayoc, Urusayhua and Chuyapi catchments, landscape beauty of the Urusayhua mountain

<sup>41</sup> <http://www.sernanp.gob.pe/sernanp/archivos/.../AGENDA%20REGIONAL.pdf>

<sup>42</sup> Presented in a Public Audience in the village of Palma Real on 5<sup>th</sup> February 2012 (GORE Cusco, 2013: working document on consultancy for the approval by local landowners and peasant and native communities in the area of influence of Urusayhua-Kushireni RCA.



Name	Area (ha)	Location	Principal values
			and waterfalls, Espíritu Pampa, Ñusta Hispana and Rosaspata archeological sites.
Queros-Paucartambo Nation	73,896	Paucartambo Province (Distritos Kosñipata and Paucartambo Districts)	High forest of the Kosñipata river catchment, potato, maize, oca and olluco ecotypes, the magic/religious culture of the Queros nation.
Villa Virgen-Vilcabamba	70,120	La Convención Province (Kimbiri and Vilcabamba Districts)	High forest of Pampaconas, piedmont dry forest of Lucmahuaycco, living culture of the native communities of the valley of the Apurímac and Ene rivers.
Paccaypata Canyon and Vilcabamba Puya stand	43,053	La Convención Province (Vilcabamba District)	High forest and piedmont dry forest of Paccaypata, stand of <i>Puya raimondii</i> in Vilcabamba, q'euña forests of Chillihua, landscape beauty of Cañón del Apurimac in Paccaypata.
Headwaters of Lacco-Yavero	65,153	La Convención Province (Distrito Quellouno District) Calca Province (Yanatile District)	Headwaters of the Yavero river, high forest of Quellouno and Yanatile, piedmont dry forests of Yavero.
Headwaters of Lucumayo, Ocobamba and Yanatile	94,086	La Convención Province (Distritos Huayopata and Ocobamba Districts). Calca Province (Yanatile District)	Q'euña forests of Alfamayo, Tojopuquio and Carmenpata, high forests of Mesapelada, Ccorimayo. Pintobamba and Racachapata, riverine forests of Michu Chico.
Huachipaire	6,991	Paucartambo Province (Kosñipata District)	Piedmont humid yungas forest and palms, culture of Queros community of the Huachipaire people.
<b>Total</b>	<b>755,636</b>		

250. The Regional Governments of Ucayali, Madre de Dios and Pasco are in the process of preparing their respective Regional Conservation Strategies and have not yet finished the identification of priority sites for conservation. Pasco Regional Government has made preliminary progress towards the identification priority sites for conservation in Yanachaga complex (Table 30).

**Table 30. Priority sites for conservation identified in Oxapampa province, Pasco region<sup>43</sup>.**

Name	Area (ha)	District	Ecosystems
Sho'llet Forest Municipal Conservation Área <sup>44</sup>	8,438	Oxapampa and Villa Rica	High forest, cloud forest
El Oconal Lagoon Wetland Municipal Conservation Área	164	Villa Rica	High forest
Camino de los Colonos Delfín Chumalle Municipal Conservation Área	5,200	Pozuzo	High forest, cloud forest
Yanachaga Mirador Municipal	4,500	Pozuzo	High forest

<sup>43</sup> Adapted from GIZ 2013: P. Aguilar. Analysis of the application of other forms of *in situ* biodiversity conservation in the Yanachaga complex as a strategy for facing climate change

<sup>44</sup> The Municipal Conservation Area modality does not as yet formally exist, so different options are currently being explored to permit the management of these areas by local governments

Name	Area (ha)	District	Ecosystems
Conservation Área			
Huachón Peasant Community Private	9,000	Huancabamba	Humid moorland ( <i>puna</i> ), permanent snow
Chontabamba-Huancabamba Regional Conservation Área	20,908	Chontabamba, Huancabamba	High forest, humid moorland ( <i>puna</i> )
<b>Total</b>	<b>48,210</b>		

***Output 1.2 Conservation agreements with local communities for supporting the conservation and management of key areas of habitat***

251. The project will support the negotiation and implementation of “conservation agreements”, using the well-proven PAES (Programme for Sustainable Economic Activities) modality whereby local communities in sites prioritized for conservation receive incentives in the form of support for productive activities, in exchange for committing to refraining from carrying out deforestation and other forms of environmentally-damaging activities, and to participating actively in monitoring and enforcement of controls on environmentally-damaging activities in their areas.

252. The incremental support to be provided by the project in this regard will include the recommendation of geographical priorities for the establishment of these arrangements, on the basis of objective analyses of conservation need and vulnerability to the impacts of climate change (see Output 1.3a); and the recommendation of specific management practices to be promoted in participating communities, on the basis of their environmental sustainability, their resilience to climate change, and their potential actively to contribute to CC resilience and the conservation of priority species and habitats, as well as their social, technical and financial feasibility. Particular attention will be paid to evaluating the social and gender implications of these options and on maximising the benefits they generate for women and marginalized people.

***Output 1.3 PA management instruments strengthened to address climate change induced threats and pressures likely to undermine resilience***

***a) Analyses of implications of climate change scenarios for PAs and their constituent BD***

253. The National Meteorological and Hydrological Service (SENAMHI) has developed detailed predictions of climate change scenarios in Peru, as presented in the Second National Communication on Climate Change (these will be updated in the context of the Third National Communication). The project will refine these predictions at site-specific level, and combine them with information on the ecological characteristics of the different PAs, resulting in the generation of predictions of how they would each be affected under CC scenarios. These analyses will cover a range of factors, including:

- Movements of the spatial limits of the ecosystems, which in mountain areas may be affected by the upward displacement of isotherms and changes in rainfall regimes
- Modifications to the internal structure and ecological dynamics of the ecosystems, for example as a result of changes in phenology and the competitive pressures affecting key elements of their BD.
- Modifications in demographic and productive pressures, for example due to the impacts on related climate-sensitive production systems such as high altitude grazing and shade coffee production.

254. This will build upon and complement the results and methodologies developed by the Andean Biodiversity and Ecosystem Research Group (in collaboration with Wake Forest University, Oxford University, Florida International University, Florida Institute of Technology, the University of Edinburgh and the Jet Propulsion Laboratory) through its project “Response of montane forests to climate change”. Opportunities will be sought to involve national universities and other research centres in these analyses, in order to take advantage of and develop national and sub-national capacities and maximise national

ownership of the processes and results, and transfer technologies and methodologies for applied research to SERNANP and Regional and Local Governments.

b) Inter-institutional and inter-sector decision support system

255. The project will support the development of an inter-institutional and inter-sector decision support system, into which the results of these analyses will be fed. This system will build upon and take advantage of the existing capacities of MINAM and MINAGRI in relation to environmental monitoring, which have recently received a major boost in the form of a donation by the Government of Japan of equipment (cars, motorbikes, still and video cameras, GPS units, satellite imagery, aerial photos, computer hardware, GIS and remote sensing software) worth more than US\$10 million for monitoring forest conditions, climate change and land uses planning<sup>45</sup>. It will serve to integrate the information system and platform of SERNANP, which focuses largely on protected areas, with the National System for Environmental Information (SINIA) of MINAM, which currently places little emphasis on biodiversity.

256. The system to be supported by the project will take the form of a collaborative information network on climate change and PAs, conceptualized as an inclusive and participatory network of learning and knowledge management, which will be used for:

- a) The generation and management of climatic, hydrological and environmental information relevant to the target sites, in support of the monitoring of project impacts
- b) The generation of knowledge (the development and sharing of knowledge and technical/scientific information on aspects related to CC, including the identification of information gaps and needs for action research), taking advantage of regional technical working groups on BD and CC to generate inputs into the process of formulation/updating of regional CC and BD strategies.
- c) The development of capacities (the promotion of interchanges, systematization, on the job training and learning communities)
- d) Policy lobbying (the generation and discussion of proposals related to key CC issues)
- e) The dissemination of documents, information and news between members of the network and the public in general.

257. Key elements of this system, which will serve to improve public policies regarding CC and BD at regional and local levels, will include an atlas portraying the spatial implications of CC for different PAs and surrounding landscapes, a GIS database, an online portal (inserted into the existing internet portal of MINAM<sup>46</sup>), and publications on key findings tailored to the information needs and capacities of a range of target audiences. The project will also provide methodological support to each of the main for the internal application of the decision support systems, for example in the formulation of their medium and long term strategic and investment plans, and will provide them with specific technical guidance on natural resource management issues. These processes will be linked to Regional Governments, for example in relation to the generation of maps and support from Regional Environmental Information Systems (SIARs).

258. Participating institutions will include MINAM (SERNANP, SENAMHI, IIAP, the General Directorate of Climate Change Desertification and Water Resources, the General Directorate of Biodiversity, the General Directorate of Land Use Planning, and the Forest Programme), MINAGRI (DGFFS), MEF (the Climate Change Unit), Regional Governments (Departments of Natural Resources and Environmental Management), INDECI, CENEPRED, academia, research centres, indigenous organizations, producer organizationa and local media.

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<sup>45</sup> <http://www.minam.gob.pe/notas-de-prensa/minam-y-minagri-recibieron-equipos-donados-por-japon-para-el-monitoreo-cuidado-de-bosques-y-ordenamiento-territorial/>

<sup>46</sup> <http://geoservidor.minam.gob.pe/intro/>

c) Modified management and financial plans providing for CC adaptation

259. On the basis of this information, the project will support the development or modification, as appropriate, of management plans for existing, new or expanded conservation areas, reflecting the changed conditions expected as a result of CC and including provisions for resilience and adaptation: all management plans will in future contain specific analyses and strategies for adaptation to climate change, and include participatory processes of analysis to ensure that local perceptions of climatic and environmental conditions are taken into account. The specific management modifications to be included in the plans will be defined on a case-by-case basis during the implementation phase of the project, on the basis of the analyses and information inputs to be generated under sub-outputs 1.3a) and b) above and in accordance with regional policies on BD and CC. Given that (with the exception of special use areas), active management is not permitted in most categories of PAs, these modifications are likely principally to refer instead to the internal zoning of PAs, reflecting changing threats and spatial drifts in conditions due to CC; and possible modifications to the nature and emphasis of relations with local stakeholders, taking into account changing demographic and governance conditions under climate change, and the increasing need to ensure the consolidation of local communities and their NRM practices in the face of such changes.

260. Three of the nine target PAs are due to update their Master Plans during 2014, and advantage will be taken of these processes to introduce the foreseen modifications, in accordance with CEPLAN guidelines for sector and regional planning; however the PA management planning process of SERNANP is designed in such a way as to allow continuous inputs into management instruments without the need to wait for programmed dates for updating.

261. These management plans will be complemented by new or modified financial and staffing plans, adjusted to reflect the financial implications of CC for PA management: for example, the cost of including and managing additional areas to allow for the upward migration of the upper limits of mountain ecosystems and to compensate for CC-related fragmentation, and the need for additional staffing and logistical resources to address increases or changes in threats to PAs as a result of expected influxes of population from other areas affected by CC-related livelihood and productive collapse.

***Output 1.4 Strengthened capacities for PA management and enforcement in the context of CC adaptation***

262. The management tools proposed under Output 1.3 will necessarily be accompanied by the strengthening of capacities among PA staff for enforcing their provisions in practice. Additional resources will be required for enforcement, above current levels, given the risk of increased flows of population to the target ecosystems as a result of CC-related livelihood and productive collapse in other areas; the progressive thinning out of the canopy of lowland forests canopies as a result of their CC-related drying out, which will make them more vulnerable to conversion to agriculture and ranching; and the weakening of traditional governance structures as a result of CC-related migration processes. To this end, PA staff will be provided with equipment for surveillance, monitoring, communication and transport, enabling them to detect and respond effectively to threats. This will be complemented by the provision of training to PA staff in order to develop their technical capacities, in terms of increased awareness and technical knowledge of the implications of CC for ecosystem characteristics and threats, and of corresponding options of enforcement strategies. Detailed strategies for putting this capacity strengthening into practice will be defined in detail in the first year of the project, on the basis of in-depth site- and institution-specific analyses of current capacities.

263. In the case of SERNANP, the project will focus on putting into practice the recommendations contained in the existing SERNANP training strategy. This makes specific reference to training on issues of global change and PAs, including climate change, aimed at management committees, park guards, park

heads, PA specialists and staff of central and regional offices, and covering issues such as BD monitoring, biological corridors, PA ecosystem services, sustainable NRM, buffer zone management, REDD projects, agroforestry and agroecological projects, ecotourism and environmental interpretation. Project support will focus on ensuring that considerations of integrated landscape management, interinstitutional and inter-sector integration, global benefits, resilience and gender aspects are incorporated into this training.

### ***Output 1.5: Monitoring mechanisms***

264. In order to ensure the effectiveness of the adaptive management and financial planning proposed above, the project will invest in the establishment of mechanisms for monitoring, analysing, disseminating and responding to information on the impacts of climate change on PAs, and on the effectiveness of vulnerability reduction strategies, and early warning systems for detecting threats exacerbated by climate change. The existence of adequate capacities and systems for such monitoring is particularly important given the levels of uncertainty that existing regarding the magnitude and nature of the impacts of CC. This will include provisions for long term biological monitoring of targeted species and ecosystems, covering issues such as the breeding success of target species, the physical structure and microclimatic conditions of ecosystems, and the status of species selected as indicators of ecosystem integrity. These mechanisms will be integrated with the framework of Indicators for Evaluation of the Impacts of Climate Change on the Biodiversity of Andean Community Countries, proposed by CONDESAN<sup>47</sup>, and with existing mechanisms for monitoring and early warning of climate-related risks (including District-level Civil Defence Committees); at the other end of the scale, they will integrate indicators used in existing community-based monitoring initiatives, in order to reflect the priorities of local communities, incorporating gender aspects. Their detailed design will be based on a wide-ranging mapping of all of the entities currently involved in environmental and biodiversity monitoring in the target ecosystems and regions, complementing the information collected during the PPG phase.

### ***Output 1.6: Financing framework***

265. There is considerable, at present largely untapped, potential for generating additional financial resources to in order to support the financial sustainability of the PA management model proposed through under the project. The levels of funding potentially generated in this way are estimated in Section IV Part IX. Potential sources include the following:

- **Existing funds of local and regional governments, within the framework of the National System for Public Investment (SNIP)<sup>48</sup>:** local and regional governments have access to significant levels of funding for activities related to climate change mitigation, adaptation and sustainable economic activities, and their investment in PA and buffer zone management (in accordance with the priority areas of action identified in Regional CC Strategies) would be compatible with their objectives as well as contributing to PA resilience in accordance with the objectives of the present project. It is estimated that the funds potentially channeled from these sources in the target areas could reach around US\$8.75 million per year by project end, by which time capacities for project formulation would have been developed to allow this level to be (at least) maintained into the future.
- **Funds channeled through other ministries and programmes of the Government:** these include the AGROIDEAS (Competitiveness Compensation) Programme of the Ministry of Agriculture<sup>49</sup> and the PROCOMPITE Programme<sup>50</sup>, both of which are aimed at increasing rural competitiveness and have the potential to be used to support sustainable productive activities in buffer zones. It is

<sup>47</sup> <http://www.condesan.org/portal/sites/default/files/publicaciones/archivos/0503667001292864192.pdf>

<sup>48</sup> [http://www.mef.gob.pe/index.php?option=com\\_content&view=article&id=306&Itemid=100883&lang=es](http://www.mef.gob.pe/index.php?option=com_content&view=article&id=306&Itemid=100883&lang=es)

<sup>49</sup> [http://www.agroideas.gob.pe/web/?page\\_id=113](http://www.agroideas.gob.pe/web/?page_id=113)

<sup>50</sup> <http://www.snip.gob.pe/index.php/procompite>

estimate that annual income from these sources in the target areas could reach around US\$1.4 million by project end.

- **Funds from central Government:** these include income from levies charged on petroleum companies operating in the country and from the National Council of Science and Technology (CONCYTEC), which have the potential to generate up to US\$2.6 million per year in the target areas.
- **Competitive research funds from Universities,** some of which have access to levies from petrochemical companies and some have their own research funding available (up to around US\$1.4 million/year).
- **Social and environmental responsibility funds of extractive industries,** with potential to generate around US\$1.5 million/year.
- **Cooperation projects generated by national NGOs,** from bilateral and multilateral sources, up to around US\$1.2 million/year.
- **REDD+:** this is an option in those PAs that have Administration Contracts, but its potential varies widely between sites depending on factors such as the degree of legal security in the area, the levels of threats, and the perception of the REDD+ model by indigenous stakeholders.
- **Amazon Indigenous REDD (“REDD+ Indígena”):** this model, promoted by the indigenous organizations AIDESEP and CONAP, responds to concerns among indigenous organizations regarding the narrow vision of conventional REDD+, and has a more holistic focus. Three of the target sites are considered as REDD+ Indígena pilots, and it is estimated that they will be able to access around US\$0.3-0.4 million/year in funds from the Forestry Investment Plan (FIP).

266. The project will complement, and be coordinated with a number of ongoing initiatives of other agencies, the aims of which include the promotion of financial sustainability and sustainable productive activities in PA buffer zones (which will in turn promote community involvement in governance and contribute to PA management effectiveness). These initiatives include the following (see Section IV Part X for further details):

- “Forest Protection and Natural Resource Management in Manu NP” project (ProBosque Manu – Frankfurt Zoological Society), which aims to reduce forest and biodiversity loss through community participation in forest protection and natural resource management;
- “Conserving headwaters of the Purús-Manu corridor” project (USAID-ICAA), the objectives of which include the promotion of financial sustainability, improvement of management and promotion of natural resource management;
- PRODERN II, the objective of which is the sustainable economic development and strategic management of natural resources in the regions of Apurímac, Ayacucho, Huancavelica, Junín and Pasco, and which operates in Yanachaga-Chemillén National Park and San Matías – San Carlos Protection Forest;
- The upcoming European Union/SERNANP-MINAM project on benefits from environmental goods and services reducing poverty in high biodiversity areas of the Peruvian Andean Amazon, in Yanachaga-Chemillén NP;
- The FF IICA-MFS project on FSC certification and ecosystem services in four Yánesha native communities, in Yánesha Communal Reserve;
- The BMU-SERNANP project on biodiversity conservation with co-management in communal reserves of Amazonia (“*Co-Gestión Amazonía Perú*”), in El Sira Communal Reserve, which aims to improve the protection and conservation of biodiversity and sustainable use of forest resources in communal reserves and their buffer zones in the Peruvian Amazon with an approach of co-management;

- The IICA-MFS project on sustainable financial innovations to improve profitability in the use of forest goods and services in indigenous communities of the El Sira Communal Reserve.

267. Complementing and coordinating with these other initiatives, the project will deliver the following sub-outputs in support of the financial sustainability of the PA/buffer zone management framework:

a) Inter-institutional strategic financing plan for PA adaptation to CC

268. Based on the results of the analysis of the implications of CC scenarios for the target ecosystems, the threats affecting them and associated production systems (Output 1.3a), analyses will be carried out of their resource implications for key institutions, and an inter-institutional strategic financing plan will be developed accordingly. Issues to be considered will include, for example, the following:

- Needs for additional specialized staff to analyse and develop strategic solutions for new, CC-related technical challenges;
- The geographical reassignment of staff due to spatial changes in the nature and location of threats,
- Needs for additional staff and equipment to counter increased levels of threat such as increased incidence of fire and pest outbreaks
- The introduction and/or improvement of systems for the monitoring of CC implications and the effectiveness of adaptation support measures.

269. The financing plan will build upon existing initiatives, for example in relation to the strengthening of the financial sustainability of PAs in the country, and will *explore opportunities for diversifying and increasing income sources* and for *increasing efficiency through the development of inter-institutional synergies*. Particular attention will be paid to exploring and developing opportunities for the *payment of ecosystem services*: this is especially relevant given that the degradation of mountain ecosystems, as a direct and/or indirect result of CC, is reducing their ability to buffer the implications of CC for human populations. Improved CC resilience of forests, for example, will help to maintain their beneficial effect on the stability of hydrological flows from Andean watersheds, offsetting the increased flow variability and overall reduction in water yield that are expected to result from CC.

b) PA-specific financing plans and financial coordination mechanisms

270. Based on this system-level financial planning framework, plans will be developed to determine how individual PAs will make specific provisions for the implications of climate change. The development of these plans will be carried out in parallel with the modification of PA management master plans, under Output 1.3. The project will also support the establishment of mechanisms, focused on each target PA, to coordinate the funding plans and proposals of the different institutional stakeholders (Government and NGOs) active in and around the PAs, in order promote complementarity and synergies, avoid duplication and wastage of efforts and resources, and optimize the flow of information on funding opportunities between them.

c) Science-based lobbying instruments and capacities for promoting budgetary assignation to PA adaptation

271. The project will also assist the increased budgetary assignations from the Government to cover the cost implications of increasing ecosystem resilience to CC: to this end, it will generate and disseminate convincing, science-based information on the implications of CC impacts on mountain ecosystems for the national economy, in terms of the loss of ecosystem services. Dissemination instruments to this end may include, for example, a specific PA atlas depicting these impacts in easily understandable terms, supported by smaller publications and maps suitable for mass distribution, conferences, media events, email postings and website(s), in accordance with a communication strategy to be developed early on during the project implementation phase, drawing elements for example from the communication strategy recently developed

for the El Sira Communal Reserve<sup>51</sup>. SERNANP staff will also receive training and facilitation support regarding the tailoring of the development of funding proposals to include resilience issues and to target funding sources that specifically cover this issue.

### **Component 2: CC-resilient production landscapes buffering PAs.**

272. This component will be the main target of the LD3 and SFM/REDD1 resources assigned to the project. The LD3 resources would be mainly channeled to the multi-sectoral planning (Integrated Natural Resource Management) proposed under Output 2.1, in order to reduce conflicts between land uses (such as mining and overgrazing). Under conditions of climate change, and the related processes of migration and productive change, the effects of competing land uses over the landscape will increase: this is particularly true in the altitudinal transition complexes which dominate the target areas. SFM/REDD1 resources, meanwhile, will be used to ensure the effective conservation of forestry patches in specific targeted (non-PA) areas under conditions of climate change. This would bring direct CC benefits. It would also indirectly enhance and lever BD benefits because it would increase connectivity, allowing the non-PA forest patches to complement the ecosystems in PAs, on which the BD1 funds under Component 1 would focus, and thereby the generate BD benefits which would not be possible if PA and non-PA areas were treated in isolation. These SFM investments will be guided by the INRM processes, which will indicate where SFM should be undertaken to increase connectivity and resilience and where to restore forest through reforestation for rehabilitation, thereby building on and orienting the baseline investments in reforestation described above.

#### ***Output 2.1: Institutional framework for planning and managing buffer zones***

273. The project will support the application of a landscape-wide approach to planning the configuration and management of the buffer zones that surround PAs, under principles of INRM, in order to anticipate and compensate effects of CC such as the fragmentation and spatial migration of ecosystems, reductions in the sustainability of traditional resource management systems, and corresponding increases in anthropogenic pressures on hitherto intact ecosystems. This will serve to orient and reconfigure baseline investments on Ecological and Economic Zoning (EEZ) (see paragraphs 29-32 and 139) to ensure they take adequately into account the implications of CC and incorporate the INRM approach.

##### **a) Information systems and tools to facilitate the consideration of ecosystem vulnerability in productive development and EEZ**

274. A prerequisite for applying this approach is that decision-makers have access to updated, accurate and relevant information on the biological importance, fragility and productive potential of ecosystems, now and under a range of CC scenarios. To this end, the project will support the development of capacities and mechanisms for making such information easily available in useful formats (including maps, databases portals and publications), through information management systems and Geographical Information Systems. There have already been significant advances made with the development of information management systems by a number of different institutions at central and local levels (see paragraphs 34-35); the focus of the project will be on supporting the incorporation into these of information that will allow BD, LD, SFM and in particular PA resilience to be considered in an integrated manner, and on promoting horizontal and vertical integration between the diverse, institution-specific existing systems. This will allow, for example, information on CC scenarios to be taken into account in Strategic Environmental Assessments (SEA) of the landscape-level impacts of infrastructural or productive development programmes, in national, regional and sector development plans, and in PA master plans. to . Key institutional beneficiaries of these actions will include PA managers, PA Management Committees,

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<sup>51</sup> [http://www.sernanp.gob.pe/sernanp/archivos/baselegal/Estrategias\\_Comunica/EC-RCS.pdf](http://www.sernanp.gob.pe/sernanp/archivos/baselegal/Estrategias_Comunica/EC-RCS.pdf)



Executors of Administration Contracts (ECAs), Regional and Local Government, Civil Defence Committees, and EEZ Commissions.

275. A communication strategy will be developed and implemented, defining principles and operational aspects of the communication of such information to project beneficiaries in a consistent and effective manner. This will go beyond technical aspects to ensure that institutional beneficiaries are regularly updated on key advances and strategic aspects of the project.

b) Incorporation of CC resilience considerations into spatial, sector and development planning instruments

276. As described in paragraphs 29-32, significant advances have been made with the development of spatial planning instruments in the country, by Regional Governments within the regulatory and methodological framework of the General Directorate for Territorial Planning (DGOT) of MINAM. The project will support Regional Governments throughout the target areas in incorporating CC resilience considerations into pending and existing plans and their Regional CC Strategies, in order to ensure that they defining priority areas for conservation and connectivity and the range of specific uses and management regimes appropriate to different site types, based on reliable, standardized and uniform data. At the other end of the scale, it will support the incorporation of these considerations into community-based environmental plans and Life Plans (*Planes de Vida*) of indigenous communities, based on participatory analyses of resource management options and zoning. This support will be provided in close coordination with the leaders of local communities and indigenous organizations, as well as leaders of local governments, and will incorporate gender considerations.

c) Strengthened early warning system for environmental risks

277. The project will strengthen existing environmental risk warning systems, to enable them to adapt effectively to changes in the magnitudes, nature and spatial configuration of events such as floods and fires, as a result of climate change. This will take advantage of an existing platform with CENEPRED coordinated with Regional and Local Risk Management Systems, and will include MINAM through the Regional CC Strategies. Mechanisms will be strengthened to allow information (from the information management systems proposed above under Output 2.1a) on climate change scenarios and their implications, and extreme climatic events, to be input into these systems, resulting for example in the generation of modified fire and flooding vulnerability maps reflecting a range of projected CC scenarios. This in turn will facilitate the generation of appropriate risk preparedness strategies and the allocation of the corresponding resources in such a way as to maximise effectiveness. In addition to reducing disaster risks in the short term, these measures will generate biodiversity and adaptation benefits by reducing the impacts of environmental risks such as flooding on social and governance conditions (on which resilience strategies are highly dependent) and reducing the long-term ecological impacts of forest fires (which may have indirect impacts in terms of exposing the affected forests to the risk of permanent conversion for non-forest uses).

d) Awareness raising programme on integration and reconciliation of production and environmental issues in relation to PA adaptation to CC

278. The model proposed by the project assumes the integration and reconciliation of production sector and environmental issues, and therefore collaboration between the diverse institutions with responsibilities for these issues. To this end, the project will raise awareness among national stakeholders regarding the integrated, inter-institutional and landscape-wide approach that is proposed, and assist them to work together on its implementation, and to develop and apply national, regional and local guidelines in this regard. This will result in concrete benefits in terms of the nature and magnitude of the impacts generated by these institutions at field level. This awareness raising is of fundamental importance given the novelty of the approach proposed, which contrasts with the sector-based and vertical approaches that have tended

to dominate to date. The targets of this awareness-raising will include actors in the environmental sector (MINAM and its dependencies such as the Directorates of Land Use Planning, Climate Change and Biodiversity, and as well as the staff of conservation projects under its responsibility, and national and international environmental NGOs); production sector institutions (e.g. MINAGRI and rural development NGOs), and local and regional governments (given their responsibilities for spatial, sector and development planning, and for environmental management and conservation).

e) Strategic planning documents of key institutions and organizations incorporating landscape approach to CC adaptation in and around PAs

279. The project will support the development of mechanisms and procedures in target institutions, to ensure that awareness regarding the approaches which it is promoting is mainstreamed and institutionalized, rather than being dependent on the mindset of their current staff members. This will be achieved by ensuring that these approaches are formally incorporated into their strategic planning documents at regional and local levels, which constitute multi-annual frameworks for their institutional actions; this will be complemented by more specific training of local and technical staff of these institutions on how to put the concepts promoted by the project into practice. Concrete mechanisms will be established for putting these commitments to communication and collaboration into practice at regional level, in the form of platforms or committees for the joint planning of institutional actions in key areas such as monitoring and enforcement. Target institutions in this regard will include MINAM and its respective directorates, SERNANP, MINAG, MEF, CEPLAN/PCM, Regional Governments, ECAs, and indigenous communities and the organizations that represent them.

f) Integrated inter-institutional programmes for monitoring, evaluation and enforcement

280. Taking into account wherever possible existing mechanisms, the project will facilitate dialogue and promote mechanisms for coordination between institutional actors active in monitoring, evaluation and enforcement in the target landscapes, with the aim of identifying and realizing opportunities for synergies between their respective actions and reducing duplication, contradictions and corresponding ineffectiveness and inefficiency of resource use. This coordination will include, for example, joint planning of monitoring activities and investments, and sharing of monitoring results; joint enforcement teams; the joint planning of enforcement patrols and infrastructure in order to achieve optimal coverage in spatial and temporal; and harmonization of how environmental regulations should be interpreted and applied by different institutions.

g) Strengthened capacities and mechanisms for effective engagement by local stakeholders

281. Effective engagement by local communities in the proposed modifications to the management of buffer zones is essential for sustainability, and for optimizing the compatibility between environmental and social goals. To this end, the project will work strengthen the capacities of local communities and their participation mechanisms (including PA management committees, ECAs, and indigenous organizations and federations), enabling them to analyse in an objective and informed manner the proposals developed through the project, to channel the interests and opinions of local stakeholders, and to develop and present “counter proposals” as appropriate. The sustainability of this support will be furthered by close involvement of indigenous organizations in the implementation of the project, as described in the Stakeholder Participation Plan (Section IV Part IX). Particular attention will be paid to addressing gender issues, by helping the local stakeholder groups and organizations to develop capacities and procedures for incorporation gender considerations into their analyses and for identifying and promoting specific opportunities for furthering the social and economic empowerment of women in the proposals that they develop.

***Output 2.2 Sustainable CC-resilient production systems generating SLM benefits, and/or reducing extractive and demographic pressures on vulnerable ecosystems***

282. The project will support the application of family-based production systems that are resilient to climate change and that restore the functioning of landscapes and their capacity to provide ecosystem services, adapted to the range of biophysical, socioeconomic and productive conditions in the target areas, for promotion among producers and by extension agents. These options may include sustainable agriculture, incorporating soil and water conservation and environmental risk reduction practices; improved pasture and water management on high altitude camelid grazing lands (e.g. fencing, camelid rearing, sheds for livestock protection, provision of best animal loads in relation to LD risk and vulnerabilities, planting of permanent pastures, and grazing management guidelines, and the recovery of traditional governance systems and technical practices applied by indigenous communities); and agrotourism or ecotourism. This will serve to stabilize processes of land use change, thereby reducing the risk that climate change will oblige farmers to expand their areas under cultivation or to migrate into PAs. They will also generate environmental benefits *in situ*: in the case of sustainable pasture management they will include the reduction of land degradation processes which have ramifications at local, regional and global levels; and ecotourism or agro-tourism, has the potential to provide direct economic incentives to farmers for managing the land in ways that deliver environmental benefits.

283. To this end, GEF funds will be channelled through local NGOs (and other entities as appropriate) and projects to establish pilot experiences of each of these production systems, focusing in particular on areas that are identified as being of particular importance for connectivity, or particularly vulnerable to productive collapse, where baseline initiatives exist on which to build and where there are opportunities for cofinanced support in order to maximize impact. A range of methods will be used to confirm and refine these productive options, including systematization exercises involving members of institutions involved in agricultural development, natural resource management and conservation, as well as representatives of producer organizations, and reviews of academic and grey literature from both Peru and overseas. Project resources will be used by local partner organizations to provide direct technical, organizational and marketing support to producers, together with limited amounts of equipment and other inputs to “kick-start” the pilots, as required. The project will take advantage of, and orient, a number of existing initiatives, including the PAES model (see paragraphs 104 and 251); the Procompite programme<sup>52</sup> under which regional and local governments fund productive activities in their areas of jurisdiction; and the National Programme for Forest Conservation (PNCB).

284. With all of the productive options promoted under output 2.2 and 2.3, particular attention will be paid to addressing gender considerations. The project will ensure that women are involved in an equitable and effective manner in the identification of the productive options, that the implication of these for them are analysed in a participatory and informed manner, and that adequate advantage is taken of opportunities actively to promote the status of women. Such opportunities may include, for example, their involvement in ecotourism and NTFP businesses, which tend to have particular potential to fit in well with women’s existing work patterns and responsibilities; emphasis will be placed on empowering women to receive concrete social and economic benefits from these options, rather than simply adding to their workloads. Each of these opportunities will be analysed on a case-by-case basis, within the context of local social and cultural conditions.

***Output 2.3 CC-resilient resource management systems which allow the sustainable management and effective conservation of forest ecosystems***

285. Specific attention will be paid to increasing the resilience of forest ecosystems (the *yungas* and the Southwest Amazon moist forests) to CC, through the application of sustainable forest management

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<sup>52</sup> <http://www.snip.gob.pe/index.php/procompite>

practices. These investments in SFM will contribute to the maintenance of carbon sinks, and thereby to the achievement of the country's REDD+ strategy, as well as the protection of habitat for flora and fauna, and the provision of watershed protection services.

286. In particular, this will build upon the considerable experience generated to date in the country with community-based forest management (CBFM): Box 2 gives examples of some of these experiences, which have shown that CBFM has considerable potential for contributing to the environmental sustainability of forest ecosystems. These examples also highlight the importance of paying attention to financial, technical, marketing and organizational issues if these experiences are to be effectively replicated and sustained.

287. The main contribution that these forms of CBFM can make to ecosystem resilience is by strengthening local people's rights and capacities for occupying and using forest ecosystems, in the face of the growing threat of them being taken over by colonists moving in as a result of climate-related productive and social instability elsewhere. They also provide the opportunity for climate-related changes in forest ecology to be addressed through proactive management, for example through the application of selective thinning and enrichment planting tailored to evolving ecological conditions.

288. There is wide experience throughout the greater Amazon basin, and beyond, with the silvicultural management of natural forests, and national institutions as well as local forest managers have significant knowledge in this regard: the specific contribution of the project will be to support the introduction of additional knowledge and adaptive management systems enabling these practices to be modified to take into account changing climatic conditions, for example through changes in the species mixes used in enrichment planting and adjustments to thinning intensities in order to maintain favourable humidity and light levels.

289. A similar approach will be used in shade coffee plantations in buffer zones: although relatively limited in extent in the target areas, these currently play an important role in maintaining many of the ecological processes generated by natural forests, as well as providing an incentive to local people for the maintenance of tree cover (albeit ecologically modified), thereby helping to buffer the peripheries of forest ecosystems against encroachment and land use change. Here, the project (working with sector institutions) will support adaptive management processes that will maintain the productive, ecological and financial viability of shade coffee, for example through the use of more climate-resilient coffee varieties and modifications to the composition and structure of the coffee shade trees.

## **Box 2. Experiences of Community-Based Forest Management in the Peruvian Amazon**

A recent FAO-sponsored systematization study highlighted a number of successful examples of community-based forest management (CBFM) in the Peruvian Amazon, in the target areas and other locations with similar conditions. These included the following:

- **Community-based forest governance mechanisms in Ucayali:** these have been effective in reducing external threats affecting forest ecosystems such as illegal timber harvesting; however, they have been heavily reliant to date on external funding and further attention is required in the future to ensuring the financial sustainability of such models.
- **Certified CBFM in Callería native community, Ucayali:** 63% of the communal lands of this community have been dedicated to CBFM, the environmental sustainability of which is guaranteed through the requirements of the certification scheme which is applied. These operations have shown a profit margin of around 30% recently, generating an average income of US\$562 in the last two harvests, for each of the families involved. Profitability in the future will be strongly dependent on the development of improved processing and marketing capacities.
- **CBFM in Coriteni Tarso native community, Junín:** the planning and organization processes

supported under this initiative have led local people to put a temporary halt to timber extraction, which to date has generated limited benefits for them (and has therefore failed to contribute to social and environmental sustainability), until such time as conditions improve. The community is instead receiving incentives from the National Forest Conservation Programme (PCNB), which are generating around US\$487/family/year.

- **Sustainable harvesting of aguaje (*Mauritia flexuosa*) in Veinte de Enero community, Loreto:** as a result of this initiative, there has been a shift from unsustainable forms of collection involving the felling of trees, to harvesting from standing trees in accordance with ecologically sustainable off-take levels defined in a management plan. At its height, 450t of *aguaje* were being collected per year, which was generating around US\$2,042/year for each of the families involved through sale to an ice-cream producer; at present, however the contract with this producer has lapsed due to disagreements regarding the reliability of supply and payments.
- **Ecotourism in Palotoa Teparo native community, Madre de Dios:** the management plan for this activity has defined ecologically-sustainable levels of tourism carrying capacity, which are enforced by community-based governance mechanisms backed up by control by PA staff. Total annual gross income for this activity is around US\$7,492, however as the break-even point is calculated to be 50 visitors per year and there are currently only around 25, it is still dependent on external subsidies.

#### ***Output 2.4 Capacities for the development, transfer and application of CC-resilient production systems***

290. The project will support the development of integrated training and extension modules for producers and producer organizations, focusing on BD-friendly and CC-resilient production practices such as those presented above and on environmental considerations in more general terms. These modules will be tailored to the different sociocultural and productive circumstances of colonists and indigenous people. Rather than focusing solely on vertical “technology transfer”, the project will support the development of capacities among the producers themselves for technology generation (including participatory experimentation, innovation and validation, based on the farmer field school model originally developed by the FAO), and for horizontal farmer-to-farmer technology communication.

291. This direct support to producers, which will principally be delivered through partner NGOs operating at field level in the target sites, will result in high levels of immediate impact: more significantly in terms of sustainability and long term impact, the project will also invest in “training the trainers”, by developing integrated training modules and materials for the extension agents themselves, resulting in more effective and participatory delivery of extension services and the incorporation into extension messages of environmental issues including sustainability, resilience, production of ecosystem goods and services and the compatibility of productive practices with BD conservation. Given the relatively limited scale of State-supported extension programmes, this will principally be aimed at NGOs and cooperatives with extension functions. The ownership and uptake of this guidance will be promoted by the fact that a number of these entities will themselves function as delivery mechanisms for the project’s support to producers, enabling the guidance to be developed in a fully participatory and negotiated manner.

#### **Incremental reasoning and expected global, national and local benefits**

292. The above set of activities and outputs will lead to major environmental benefits within the three focal areas covered by the project. In the **biodiversity** focal area, it will contribute to the conservation status of the Central Andean wet puna, Peruvian yungas and Southwest Amazon moist forest ecoregions, and their constituent globally important BD including species such as the jaguar (*Panthera onca*) (NT), ocelot (*Leopardus pardalis*) (LC), giant otter (*Pteronura brasiliensis*) (EN), giant anteater (*Myrmecophaga*

*tridactyla*) (VU), South American tapir (*Tapirus terrestris*) (VU), Peruvian spider monkey (*Ateles chamek*) (EN), gray woolly monkey (*Lagothrix cana*) (EN), Dwarf Brocket deer (*Mazama chunyi*) (VU), Andean fox or culpeo (*Lycalopex culpaeus*) (LC), mountain paca (*Cuniculus taczanowskii*) (NT) and Andean spectacled bear (*Tremarctos ornatus*) (VU). This will be achieved through a combination of i) support to PAs as refugia of intact habitat, through improved management effectiveness and reduction of external threats; ii) conservation of smaller habitat blocks in buffer zones and surrounding landscapes, through alternative PA models; iii) promotion of BD-friendly production systems in buffer zones and surrounding landscapes and iv) promotion of connectivity between PA and non-PA habitat blocks.

293. The project will focus in particular on improving the resilience of BD to the effects of climate change. For example, PAs will be spatially configured and managed in order to allow ecosystems and species to respond to the effects of the altitudinal movement of isotherms due to CC, by establishing and managing zones into which ecosystems can migrate, and connectivity zones to compensate the fragmentation of mountain-top ecosystems. The strengthening of PA management and enforcement will help to ensure the existence of core refugia for vulnerable species to help them survive changes in conditions in the broader landscape due to climate change; at the same time investments in improving the BD-friendliness of the broader landscape will help species to adapt to changes in conditions in natural ecosystems, migrating between the remnants as necessary.

294. Reductions in pressures on forest habitat blocks will contribute to the goals of the **SFM/REDD** focal area, as it will avoid the major carbon emissions (estimated at 3,708,000tC) that would result from the deforestation of these carbon sinks. The project will furthermore generate major benefits for the **land degradation** focal area through the promotion of sustainable, resilient production systems, such as sustainable ranching practices in high altitude camelid pastures, tree-rich agroforestry systems for annual crops and shade coffee. These benefits will consist of i) enhanced ecosystem functionality, including sustained hydrological and nutrient cycles and natural pest/control balances (for example in the case of coffee, requiring reduced inputs of polluting agricultural chemicals) and ii) enhanced ecosystem services, such as increased water infiltration due to the presence of the tree component, reduced rainfall impact and erosion of soils due to increased soil cover, and increased carbon sequestration (estimated at 253,000tC) in the large amounts of woody matter and healthy soils present in agroforestry systems.

295. The project will help to ensure the long-term integrity and sustainability of both natural ecosystems and the production landscapes which surround them. This will enable them to continue generating environmental goods and services on which local populations, at a range of levels, are dependent, for example:

- By supporting the sustainable, CC-resilient management of high altitude grazing areas in the puna ecoregion, it will help to sustain traditional livelihoods there. This will generate combined social and environmental benefits, as it will contribute to reducing the migration from the *altiplano* to middle and low altitude forest areas.
- By supporting culturally- and environmentally sustainable and CC-resilient management practices in middle and low altitude forest areas (such as shade coffee, sustainable management for timber, sustainable management of non-timber forest products and ecotourism), it will help to broaden and strengthen local livelihoods.
- Improved conservation of the puna and the yunga forests, under conditions of climate change, will help to ensure the continuity of water supplies to the inhabitants of the Andean slopes and foothills, given the importance of these ecoregions for aquifer recharge.

296. The project will also generate significant and sustainable benefits for local people, in a win-win situation. The sustainability and stability of the target landscapes are to a large degree dependent on the stability of their existing local inhabitants, and the sustainability of their livelihood support systems. A

large proportion of the stakeholders in the target areas are indigenous people, from a range of ethnic groups (see Table 14). Over most of the area, indigenous peoples have confirmed *de jure* rights over the territories which they have traditionally occupied and managed; in practice, however, their lands are subject to widespread encroachment from outside actors, principally colonist farmers of a range of scales and types. The promotion by the project of sustainable, climate-resilient production systems under Outputs 2.2 and 2.3, within a framework of landscape-wide planning and capacity development (through Output 2.1) will help these indigenous peoples to assert their occupancy of their traditional lands; at the same time, they will generate concrete economic benefits from them (see Box 1), which will constitute a social benefit in its own right but will also help further to motivate them to manage and protect their forests and other natural resources, contributing in turn to their sociocultural coherence and stability.

297. The project has specific potential for furthering the social and economic conditions of women, in accordance with the approaches set out in paragraphs 237-240 above. This will be achieved by promoting their active and effective participation in dialogue and decision-making processes, and in concrete terms, promoting opportunities for them to perceive economic and livelihood benefits from production options such as diverse small-scale agriculture, ecotourism and NTFP production. In addition to the generating immediate economic benefits, such options will help to increase their control over natural resources and factors of production, and to promote their social status within their communities.

298. Although indigenous peoples predominate in much of the target areas, and are among the most vulnerable stakeholder groups involved in the project, the project will also address the needs and conditions of non-indigenous stakeholders. They will be included in the target population of the project's actions in support of sustainable, CC-resilient natural resource management practices (Output 2.2 and 2.3), and the project will help to ensure that their interests are also adequately and equitably represented in planning and decision-making entities such as PA management committees. Support to sustainable NRM options among colonist farmers, particularly diverse agroforestry systems, will help to stabilize their production systems and enable them to consolidate rather than having to move progressively deeper into indigenous lands, as they do at present when the lands that they cultivate become exhausted (this approach will be applied with a landscape-wide, intercultural perspective in order to ensure that the respective rights of indigenous and non-indigenous peoples are equitably considered).

### Key indicators, risks and assumptions

Risk	Rating	Risk Mitigation Strategy
Institutional rigidity and resistance to inter-institutional collaboration	M	<p>The project will support SERNANP in raising awareness among diverse institutional stakeholders of the implications that the impacts of CC on BD and PAs will have for their institutional goals, and will actively promote and facilitate inter-institutional analyses of needs and mechanisms for cooperation.</p> <p>Inter-institutional collaboration will further be promoted through the integration of critical institutional stakeholders in instances of strategic decision-making. A wide range of actors will be included in the Project Board, including representatives of both MINAM (environment sectors) and MINAGRI (agricultural and forestry sectors), as well as indigenous and other local actors, through representatives of indigenous federations, PA management committees and/or ECAs.</p> <p>In all of the actions proposed under Output 2.1, strong emphasis will be placed on promoting inter-institutional collaboration, particularly in relation to the development of information systems and tools (2.1a), spatial, sector and development planning instruments (2.1b), mainstreaming of resilience considerations into strategic planning</p>

<b>Risk</b>	<b>Rating</b>	<b>Risk Mitigation Strategy</b>
		documents (2.1e), and integrated inter-institutional programmes for monitoring, evaluation and enforcement (2.1f).
Weak enforcement of land use stipulations in the landscape	M	The project will build on the considerable advances made to date by previous GEF projects in Peru with the strengthening and financing of PA management (including enforcement). This project will ensure that financial sustainability strategies take into account the additional requirements arising from issues and threats related to climate change, with the result that enforcement capacities will develop in parallel with the magnitude of threats. Additionally, the project will support local governance mechanisms under Output 2.1g, and under Output 1.2 it will promote and incentivise the active participation of local communities in governance and enforcement through conservation agreements; both of these strategies will allow limitations in State enforcement capacities to be compensated by complementary efforts of local communities.
Uncertainty in anticipated threat profiles: strengthening PA and BD resilience is the project's central focus, however there is a risk that rates of CC, and associated pressures on PAs and BD, will exceed the levels on which the adaptation strategies are based.	L	The project will apply principles of adaptive management, updating its assumptions and strategies regularly on the basis of the most recent models of climate change that are available (including that to be contained in the Third National Communication on CC), keeping abreast of the latest advances with scientific knowledge and experiences regarding best practices for adaptation and resilience, and supporting the development of systems for monitoring and evaluation of the effectiveness of its strategies under evolving conditions of climate change (Component 1).
Limited buy-in by regional governments, which is essential in the context of Peru's decentralization policies	L	Regional governments were fully involved in project design. They will be involved in project implementation through regional consultation committees that will complement and feed into the Project Board. Subject to final confirmation at project start up, regional level project staff may be physically based in the offices of regional governments in the target areas, enabling constant interchanges of ideas and technical inputs. The project will in addition seek to raise their awareness of the benefits of investing in ecosystem resilience, in terms of continued flows of ecosystem services of importance to their constituents.
Limited buy-in by local stakeholders	M	The project will work closely with indigenous and other stakeholder organizations and local, regional and national levels, ensuring that they are active participants in the implementation of project activities related to sustainable natural resource management, planning and governance. The precise site-specific nature of these interactions and support will be confirmed through participatory negotiations with these organizations at project start-up, building on the consultation processes carried out during the PPG phase. Buy-in will be promoted by the emphasis of the project, under Outputs 2.2 and 2.3, on "win-win" scenarios for natural resource management that, while generating global environmental benefits and contributing to ecosystem resilience, will also generate economic benefits for local people as well as promoting the sustainability and resilience of their production and livelihood systems.
Changes in social conditions among the target population	M	The project will apply an adaptive management approach to enable it to respond in an appropriate and timely manner to changes in its social context, that may arise directly or indirectly from factors such as climate change, cultural trends or macro-economic forces. To this end it will promote strong participation by local stakeholders in project



Risk	Rating	Risk Mitigation Strategy
		decision-making, including the presence on the Project Board of representatives of PA management committees and (as observers) indigenous organizations, and the participation of indigenous organizations in the <i>ad hoc</i> committee to advise on Component 2.
Price fluctuations of coffee and other crops with potential to yield environmental benefits.	M	The project will build on the advance made by the GEF/UNDP/Rainforest Alliance regional project on BD conservation in coffee, helping producers to access niche and stable prices through certified markets.

## Financial modality

**Table 31. Total Project Budget per Outcome**

Project Components	GEF Financing		Co-Financing		Total (\$)
	(\$)	%	(\$)	%	
1. Core PAs with increased resilience to CC	4,289,227	47.7	24,191,713	47.8	28,480,940
2. CC-resilient production landscapes buffering PAs	4,274,023	47.5	24,106,073	47.5	28,380,096
Project Management	428,164	4.8	2,414,892	4.8	2,843,056
<b>Total Project Costs</b>	<b>8,991,434</b>	<b>100.0</b>	<b>50,712,618</b>	<b>100.0</b>	<b>59,704,052</b>

## Cost-effectiveness

299. Cost-effectiveness will be promoted through a range of strategies, including the following:

- Working with existing organizations (especially NGOs) in the project areas, as delivery mechanisms for project support to local stakeholders. This will take advantage of the capacities that these partners have already installed in the target areas, and their established relations with local stakeholders and regional institutions, which will mean that the project will not have to invest from scratch in the establishment of these capacities and relations.
- Promoting the active and real participation of local stakeholders and their organizations, both in the project itself and in the resilience and NRM strategies that it will seek to establish, with an emphasis on the win-win of the project's interventions in support of ecosystem resilience. This will result in these stakeholders "pushing in the same direction" as the project rather than entering into a costly and unproductive adversarial relation in which conservation goals are viewed as externally imposed and contradictory to their needs and priorities.
- Wherever possible, developing the capacities of existing entities (such as PA management committees, ECAs and indigenous organizations/federations) and mainstreaming issues of CC resilience and GEBs into existing instruments and mechanisms (such as development and spatial plans), rather than developing new entities or instruments specifically aimed at these issues.
- Promoting inter-institutional collaboration and joint planning in order to realize opportunities for synergies and reduce inefficiencies associated with duplication of effort or contradictions in approaches.

### **Sustainability**

300. Specific provision is being made by the project to ensure the financial sustainability of its investments in improving the management of the target PA/landscape complexes, under Component 1. The project will develop financial sustainability strategies at system, institution and PA-specific levels for maintaining ecosystem resilience to climate change impacts in the long term, under different scenarios, emphasizing cost-effectiveness through the informed targeting of interventions, and the generation of funds from public and private sources in recognition of the potential economic impacts of non-action (in terms of foregone PA goods and services as a result of climate change). This will build upon and complement the mechanisms for financial sustainability developed through previous GEF-funded projects in Peru implemented by the World Bank. Institutional and social sustainability will be ensured by working through institutions that currently exist at central, regional, local, PA and community levels in support of PA management, land use planning and regulation; these include environmental and productive sector ministries and their dependencies and municipal governments, well-established and respected national and international NGOs, PA Management Committees, CC Technical Groups, REDD Platforms, Regional Environmental Committees and others.

## **PART II. MANAGEMENT ARRANGEMENTS**

### **Arrangements and responsibilities**

301. This 6 year project will be executed by under the National Execution modality, according to the standards and regulations for UNDP cooperation in Peru. The Implementing Partner (IP) of the project will be the Ministry of Environment (MINAM).

### **Figure 1. Organizational structure of the project**

Por confirmarse

### ***Project Board***

302. The duration of the project will be 6 years. Implementation of the project will be carried out under the general guidance of a *Project Board* (Steering Committee), specifically formed for this purpose. The composition, responsibilities and rules of operation of the Board will be confirmed during its first meeting. Subject to the decision of this meeting, it is proposed that the Board will be responsible for approving the operational plans and annual reports of the project as well as the terms of reference and appointments of key members of staff. The Board will meet at least two times per year and in addition could be convened extraordinarily by the Chair, on the request of individual members.

303. The Project Board will be responsible for making executive decisions for the project, in particular when guidance is required by the Project Coordinator. The Project Board will play a critical role in facilitating inter-ministerial coordination, project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It will ensure that required resources are committed and will arbitrate on any conflicts within the project or negotiate a solution to any problems with external bodies. In addition, it will approve the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan, the Project Board will also consider and approve the quarterly plans and will also approve any essential deviations from the original plans.

304. In order to ensure UNDP's ultimate accountability for the project results, Project Board decisions will be made in accordance to standards that shall ensure management for development results, best value

for money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the Board, the final decision shall rest with the UNDP.

305. The Board will consist of the following members:

- 1) **The Executive**, who will chair the Board. This role will be filled by a representative of SERNANP, as IP.
- 2) A representative of the **Senior Supplier**, who will provide guidance regarding the technical feasibility of the project. This role will be filled by UNDP.
- 3) **Senior Beneficiaries**, who will represent the interests of those who will ultimately benefit from the project and ensure the realization of project results from the perspective of project beneficiaries. The following beneficiaries will be represented on the Project Board:
  - MINAM, as the institution with overall responsibility for biodiversity conservation and climate change management.
  - A representative of the Management Committees of the target PAs (elected by the Management Committees)
  - AIDSEP and CONAP in representation of indigenous organizations and communities.

#### ***Project Director***

306. The project will be under the overall leadership of a National Project Director (NPD), who will be the Director of Protected Areas in SERNANP and will be responsible for orienting and advising the National Project Coordinator on Government policy and priorities. The NPD will also be responsible for maintaining regular communication with MINAM and with the lead institutions in the agriculture and livestock sectors and ensuring that their interests are communicated effectively to the National Project Coordinator.

#### ***Responsible Parties***

307. Subject to overall oversight by UNDP as GEF Agency and Senior Supplier (see paragraph 312 below), SERNANP (as lead entity for the SINANPE) will act as Responsible Party for Component 1 of the project (which focuses on the strengthening of the target PAs). In this role, SERNANP will be responsible for the selection, appointment and oversight of consultants and contractors, and for the procurement of other goods and services necessary under this component. In this context, UNDP's rules and regulations will be applied, based on an evaluation undertaken of the time frame established for project activities' execution; this will facilitate a timely provision of goods and services required to achieve the objectives of the Project.

308. UNDP will function as Responsible Party for Component 2 and for Project Management, and as such will be responsible for the selection, appointment and oversight of consultants and contractors, and for the procurement of other goods and services necessary under these components. For these services, a Letter of Agreement will be signed between UNDP and SERNANP, through which the National Project Director will request UNDP to put in place and directly oversee the Project Management Unit, and provide the services required for the implementation of activities indicated in Component 2 and Project Management. In this context, UNDP's rules and regulations will apply, regarding direct cost recovery; it will charge Direct Project Services (DPS) as shown in the Total Budget and Workplan in Section III.

#### ***Project Implementation Unit***

309. Project implementation will be the responsibility in practice of a Project Implementation Unit (PIU), led by a National Project Coordinator (NPC). The PIU and the NPC will ensure overall consistency of vision in the actions proposed under the different components, in coordination and with support from SERNANP (as Responsible Party for Component 1) and UNDP (as Responsible Party for Component 2).

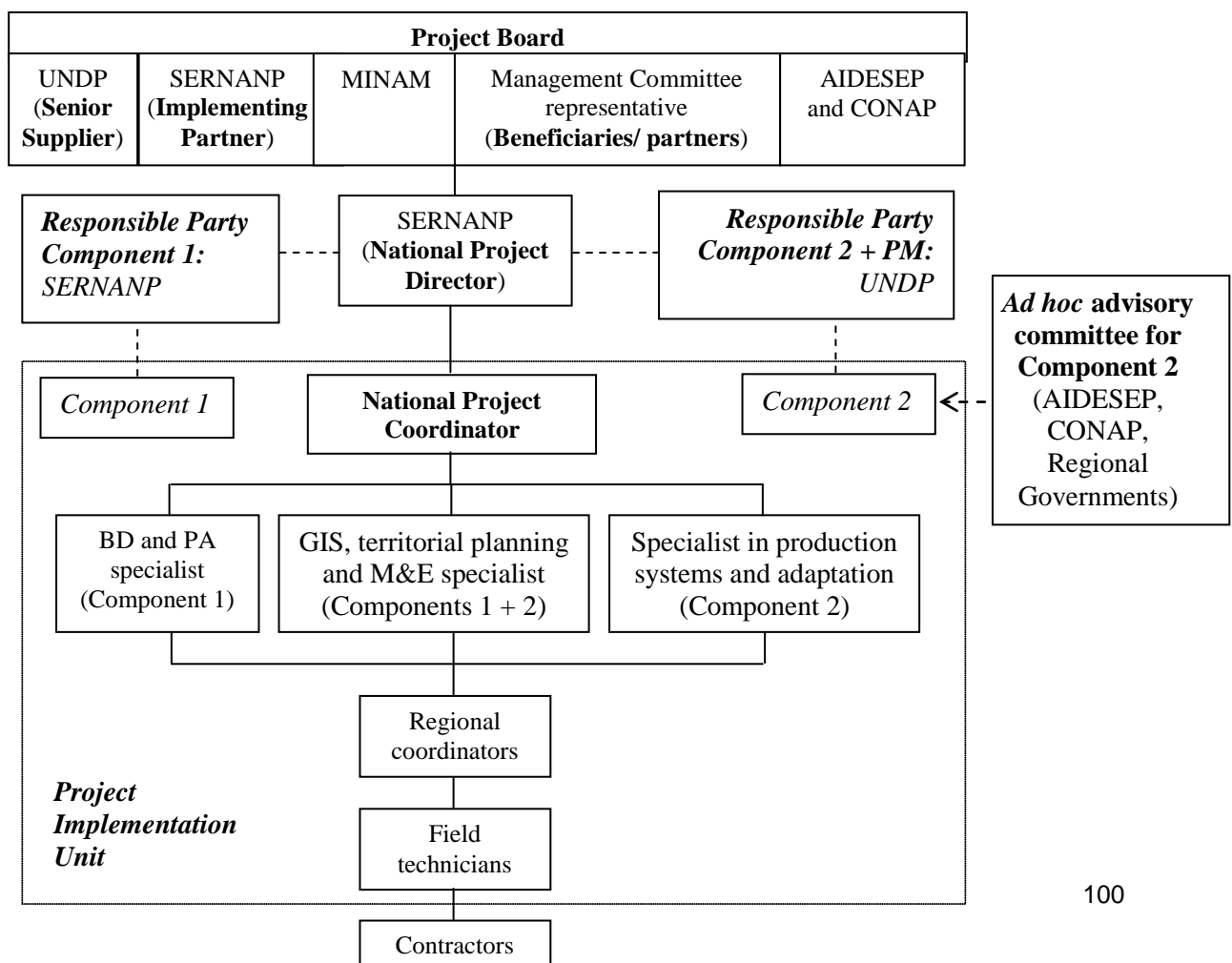
and Project Management). There will also be close coordination with MINAM, particularly in relation to Component 2, given the responsibilities of MINAM in relation to land use planning, biodiversity and climate change. Specifically, the NPC will:

- Be the signing authority of requests to UNDP for disbursements of project funds.
- Ensure the logistical, administrative and financial effectiveness of the IP in fulfilling its roles set out above
- To this end, provide monitoring, supervision and guidance to the technical teams based in the project areas
- Promote incidence in and coordination with MINAM, SERNANP and other key institutional stakeholders of the project, and the donor agencies that are supporting them
- Be responsible for overall conceptual, methodological, operational and strategic oversight of the project, ensuring the effective and timely delivery of the outputs.

310. The NPC will be supported by a team of three specialists at central level, who will be primarily responsible (directly and by supervising the actions of consultants and contractors) for ensuring the delivery of specific outputs and sub-outputs as shown in Table 32 (the specialists will also be responsible for providing cross-cutting advice in relation to their areas of expertise in support of the delivery of other outputs not under their primary responsibility).

311. Implementation of Component 2 will be supported by an *ad hoc* advisory committee composed of AIDSESP, CONAP, and representatives of regional governments. Recommendations of the advisory committee will be transmitted to the Project Board.

**Figure 2. Organizational structure of the project**



**Table 32. Division of responsibilities for output delivery between team members and consultants/contractors**

Outputs	Project team members (full time specialists)			Contractors	
	Protected areas and biodiversity	Production systems, NRM, CC adaptation	GIS, spatial planning, M&E	NGOs/ companies	Individual specialist consultants
1.1 Increases in areas under conservation	x			x	
1.2 Conservation agreements with local actors	x			x	
1.3a) Analyses of implications of climate change			x		x
1.3b) PA decision support systems			x		x
1.3c) Modified master plans	x				x
1.4 PA oversight and control capacities	x			x	
1.5 PA monitoring mechanisms	x				x
1.6 Financial framework for PA and landscape management	x				x
2.1a) Information systems for buffer zone management			x		x
2.1b) Mainstreaming resilience/adaptation into planning instruments at regional, local and community levels			x		x
2.1c) Updating of early warning systems			x		x
2.1d) Awareness raising and communication programme(s)				x	
2.1e) Strategic planning documents incorporating landscape approach to CC adaptation at regional, local and community levels		x			x
2.1f) Integrated inter-institutional programmes for monitoring, evaluation and enforcement			x		x
2.1g) Strengthened capacities and mechanisms for effective engagement by local stakeholders		x		x	x
2.2 Sustainable CC-resilient production systems		x		x	
2.3 CC-resilient forest management systems		x		x	
2.4 Capacities for development, transfer and application of CC-resilient production systems		x		x	x

### **UNDP Support Services**

312. UNDP will provide **Project Assurance**, supporting the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Government of Peru shall request UNDP to provide direct project services specific to project inputs according to its policies and convenience. These services –and the costs of such services- are specified in the Letter of Agreement in Part XIII. In accordance with GEF Council requirements, the costs of these services will be part of the executing entity's Project Management Cost allocation identified in the project budget. UNDP and the Government of Peru acknowledge and agree that these services are not mandatory and will only be provided in full accordance with UNDP policies on recovery of direct costs.

### **Collaborative arrangements with related projects**

313. The project will build on and complement a number of other GEF-funded projects aimed at strengthening PAs, which include aspects of community development, indigenous management and sustainable use. GEF/UNDP Full-Sized Project (3276) on Promoting Sustainable Land Management in Las Bambas will provide a valuable source of lessons for this project regarding the sustainable management of high altitude camelid pastures, as will the regional GEF/UNEP (1918) on Conservation of the Biodiversity of the Paramo in the Northern and Central Andes. At the same time, it will build on the achievements of the regional GEF/UNDP project on Biodiversity Conservation in Coffee (2371), which has succeeded in promoting uptake of BD-friendly shade coffee in the yungas ecosystem, through supporting producers' insertion into global markets that reward sustainability. The relevant initiatives with which the implementation period of the present project will coincide most closely, and with which it will establish the closest collaborative links, will be the GEF/IFAD Full-Sized Project (4773) on Conservation and Sustainable Use of High-Andean Ecosystems through Compensation of Environmental Services for Rural Poverty Alleviation and Social Inclusion in Peru (PPG approved), and the project on Ecosystem-based Adaptation in Mountain Ecosystems, funded by Germany's Federal Ministry of Environment, Nature Conservation and Nuclear Safety (BMU) and co-implemented by UNDP, UNEP and IUCN. The project will also complement a project on Integrated Management of Climate Change in Communal Reserves, funded by Germany's BMU and implemented by UNDP.

314. The project will add value to the extensive portfolio of projects funded by GEF and other agencies in relation to BD conservation (including the strengthening of the PA system) and sustainable land management, by introducing two innovative elements: i) a highly integrated "ridge to jungle" approach to natural resource management, which takes into account the biological, physical and productive interrelations between contrasting ecosystems spanning wide altitude gradients (most of the other projects in the current portfolio have focused on single ecosystems), and ii) the importance of ecosystem resilience as a critical requirement for the sustainable delivery of environmental benefits in the long term, under conditions of climatic, as well as economic and demographic change (most of the projects to date have been based on static assumptions regarding their biophysical contexts).

### **Prior obligations and Prerequisites**

N/A

### **Audit arrangements**

315. The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies. The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by a special and certified audit firm. UNDP will be responsible for making audit arrangements for the project in communication with the Project Implementing Partner. UNDP and the project Implementing Partner will provide audit management responses and the Project

Manager and project support team will address addit recommendations. As a part of its oversight function, UNDP will conduct audit spot checks at least two times a year.

**Agreement on intellectual property rights and use of logo on the project's deliverables**

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

### **PART III. MONITORING FRAMEWORK AND EVALUATION**

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

#### **Project start:**

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

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

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

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

#### **Quarterly:**

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



**Annually:**

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

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

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

**Periodic Monitoring through site visits:**

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

**Mid-term of project cycle:**

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

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

**End of Project:**

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

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

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

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

### **Learning and knowledge sharing:**

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

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

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

**Table 33. M& E workplan and budget**

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> <li>Project Manager</li> <li>UNDP CO, UNDP GEF</li> </ul>	Indicative cost: \$3,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> <li>UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul>	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> <li>Oversight by Project Manager</li> <li>Project team</li> </ul>	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> <li>Project manager and team</li> <li>UNDP CO</li> <li>UNDP RTA</li> <li>UNDP EEG</li> </ul>	None	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> <li>Project manager and team</li> </ul>	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> <li>Project manager and team</li> <li>UNDP CO</li> <li>UNDP RCU</li> <li>External Consultants (i.e. evaluation team)</li> </ul>	Indicative cost: \$30,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> <li>Project manager and team,</li> <li>UNDP CO</li> <li>UNDP RCU</li> <li>External Consultants (i.e. evaluation team)</li> </ul>	Indicative cost : \$30,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> <li>Project manager and team</li> <li>UNDP CO</li> </ul>	0	At least three months before the end of the

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
	▪ local consultant		project
Audit	▪ UNDP CO ▪ Project manager and team	Total indicative cost approx.. \$13,640	Yearly
Visits to field sites	▪ UNDP CO ▪ UNDP RCU (as appropriate) ▪ Government representatives	For GEF supported projects, paid from IA fees and operational budget	Yearly
<b>TOTAL indicative COST</b> Excluding project team staff time and UNDP staff and travel expenses		US\$ 76,640	

**Table 34. Impact Measurement Template**

Key Impact Indicator	Targets (Year 5)				Means of Verification	Sampling frequency	Location
<b>O1.</b> Reductions in the rates of loss of principal habitat types in buffer zones (Peruvian <i>yungas</i> (PY), South Amazonian moist forest (SAMF), and Central Andean Puna (CAP), generating benefits for BD and avoiding the loss of carbon sinks	<b>Habitat</b>	<b>Total loss over project period (with project)</b>	<b>Net avoided loss due to project</b>		Remote sensing (satellite imagery)	Mid term and end	Target buffer zones
			<b>(ha)</b>	<b>(tC)</b>			
	PY	53,784	5,976	1,204,762			
	SAMF	92,632	10,293	3,762,915			
	CAP	0	0	0			
	Total	146,416	16,269	4,967,677			
<b>O2.</b> Increases in ecosystem connectivity (measured by patch size, form and juxtaposition)	Values to be defined once capacities for analysis are developed				Remote sensing (satellite imagery)	Mid term and end	Target buffer zones
<b>O3.</b> Reductions in threat ratings for target PAs, as assessed in METTs	Reduction in average threat ratings from 23 to 17.3				METT assessments by PA managers	Mid term and end	Target PAs
<b>O4.</b> Reductions in levels of ecosystem affection by anthropic threats, as assessed through standard SERNANP methodology	Reduction in average threat ratings from 5.52 to 4.15				Assessments by PA managers	Mid term and end	Target PAs
1.1 Increase in PA management capacities, as assessed in METTs	Increase in average score from 57.2 to 71.7				METT assessments by PA managers	Mid term and end	Target PAs
2.2 Increase in the potential of tree-based production systems (coffee and cocoa) to buffer PAs against the direct and indirect implications of CC, in the target provinces bordering PAs	Areas remain stable, but in 10% of the area (7,222ha, including 5,771ha of coffee and 1,450ha of cocoa) management systems are applied that promote resilience to CC and the buffering of PAs, while contributing to the sustainability of local livelihoods and to gender equity, directly benefiting 18,050 poor people (of which 8,123 are women and 80% are indigenous)				Data from MINAGRI, local governments and producer organizations	Annual	Target buffer zones
2.3 Increase in the role of community-based forest management (CBFM) in motivating the protection of forests under conditions of CC, and reinforcing occupancy rights of local communities	Considerations of CC resilience are incorporated into management over 50% of the area covered by tourism plans (2,250ha) and included in the conservation concession (3,450ha)				Management instruments and reports, consultations with indigenous groups, field inspections	Annual	Target buffer zones

2.4 Increase in the contribution of agroforestry systems in buffer zones to the generation of GEBs, the stabilization of landscapes and resilience to CC	2,000ha additional area of agroforestry systems in buffer zones, resulting in a net total increase in carbon sinks of 176,920tC and a net total reduction in erosion of 208,000t, benefiting 20,000 poor people (80% are indigenous and 9,000 are women) in 4,000 families, through increased productivity and sustainability of production systems	Consultations with extension agencies and indigenous groups, field inspections	Annual	Target buffer zones
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## **PART IV. LEGAL CONTEXT**

332. This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

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

a) The implementing partner shall:

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

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

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

## SECTION II: STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENT

<b>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:</b>	
The State, with the participation of civil society, private sector, and academic and scientific institutions, will have designed, implemented and/or strengthened policies, programs, and plans, with a focus on environmental sustainability, for the sustainable management of natural resources and biodiversity conservation.	
<b>Country Programme Outcome Indicators:</b>	
<b>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one):</b>	
<b>Applicable GEF Strategic Objective and Program:</b> BD1, LD3, SFM-REDD1	
<b>Applicable GEF Expected Outcomes:</b> <ul style="list-style-type: none"> <li>BD-1 Outcome 1.1: Improved management effectiveness of existing and new PAs.</li> <li>LD-3 Outcome 3.1: Enhanced cross-sector enabling environment for integrated landscape management</li> <li>SFM-REDD-1 Outcome 1.3: Good management practices adopted by relevant economic actors.</li> </ul>	
<b>Applicable GEF Outcome Indicators:</b> BD1: <ul style="list-style-type: none"> <li>Output 1.1.1. New PAs (5, to be confirmed during PPG phase) and coverage of unprotected ecosystems (100,000 hectares).</li> <li>Output 1.1.3. Sustainable financing plans (9)</li> </ul> LD3: <ul style="list-style-type: none"> <li>Output 3.1.1. Integrated land management plans developed and implemented</li> <li>Output 3.2.1. INRM tools and methodologies developed and tested</li> </ul> SFM/REDD1 <ul style="list-style-type: none"> <li>Output 1.3 (a): Services generated in forests.</li> <li><b>Output 1.3 (b): Services generated in the wider landscape.</b></li> </ul>	

Output 1.3 (b): Services generated in the wider landscape.

	Indicator	Baseline			Target				Source of Verification	Risks and Assumptions
<b>Objective:</b> to enhance the resilience of vulnerable ecosystems to the impacts of climate change in PAs and surrounding landscapes , and thereby to secure their biodiversity and ecosystem functionality and derivative ecosystem services including greenhouse gas sequestration and emissions reduction	<b>O1.</b> Reductions in the rates of loss of principal habitat types in buffer zones (Peruvian <i>yungas</i> (PY), South Amazonian moist forest (SAMF), and Central Andean Puna (CAP), generating benefits for BD and avoiding the loss of carbon sinks	Habitat	Annual loss (ha)	Total loss over project period (without project)	Habitat	Total loss over project period (with project)	Net avoided loss due to project		Remote sensing (satellite imagery)	No major changes in social, economic and climatic context (beyond projected CC trends)
							(ha)	(tC)		
		PY	11,952	59,760	PY	53,784	5,976	1,204,762		
		SAMF	20,585	102,925	SAMF	92,632	10,293	3,762,915		
		CAP	0	0	CAP	0	0	0		
	Total	32,537	162,685	Total	146,416	16,269	4,967,677			
	<b>O2.</b> Increases in ecosystem connectivity (measured by patch size, form and juxtaposition)	Values to be defined once capacities for analysis are developed			Values to be defined once capacities for analysis are developed				Remote sensing (satellite imagery)	
	<b>O3.</b> Reductions in threat ratings for target PAs, as assessed in METTs	PA		Rating	PA		Rating		METT	
		PNYCH		19	PNYCH		14		assessments by PA managers	
		RCY		23	RCY		17			
BPSMSC		39	BPSMSC		29					
RCES		26	RCES		20					
	PNM		26	PNM		20				

		PNAP	19	PNAP	14						
		RCP	14	RCP	11						
		RCA	23	RCA	17						
		SNM	18	SNM	14						
		Average	23	Average	17.3						
	O4. Reductions in levels of ecosystem affectation by anthropic threats, as assessed through standard SERNANP methodology	PA	Rating	PA	Rating	Assessments by PA managers					
		PNYCH	1.70	PNYCH	1.28						
		RCY	15.29	RCY	11.47						
		BPSMSC	13.36	BPSMSC	10.02						
		RCES	2.69	RCES	2.02						
		PNM	0.33	PNM	0.25						
		PNAP	7.55	PNAP	5.66						
		RCP	2.84	RCP	2.13						
		RCA	5.38	RCA	4.04						
		SNM	0.58	SNM	0.44						
		Average	5.52	Average	4.15						
		Outcome 1: Core PAs with increased resilience to CC	1.1 Increase in PA management capacities, as assessed in METTs	PA	Rating			PA	Rating	METT assessments by PA managers	Existing levels of Government financial and policy support to PAs are at least maintained
				PNYCH	55			PNYCH	69		
				RCY	60			RCY	75		
BPSMSC	47			BPSMSC	59						
RCES	57			RCES	71						
PNM	75			PNM	94						
PNAP	62			PNAP	78						
RCP	55			RCP	69						
RCA	44			RCA	55						
SNM	60		SNM	75							
Average	57.2		Average	71.7	SERNANP data	Continued buy-in by local communities to environmental governance and collaboration with Government (despite reservations about conventional PA models)					
1.2 Effectiveness of oversight and control in target PAs, as measured by numbers of personnel per unit area	150 PA staff covering 9 PAs with a total area of 5,966,203ha		195 staff covering 5,966,203ha of PAs and 100,000ha under alternative conservation modalities								
1.3 Level of local participation in oversight and control of PAs, as measured by the existence of conservation agreements whereby local communities complement SERNANP in actions of oversight and governance PA governance	No conservation agreements are currently active in the target PAs		At least one conservation agreement functioning in each target PA, resulting in increased participation by local communities in PA oversight and governance								
1.4 Degree of incorporation of CC resilience considerations into management instruments	None of the target PAs have specific analyses or master plans that incorporate CC considerations		All target PAs have specific analyses and master plans that incorporate considerations of CC and are reflected in PA management decisions								

	1.5 Increase in the coverage of areas under conservation, to protect key ecosystems	9 Natural Protected Areas (5,966,203ha), 2 Regional Conservation Areas (239,552ha) and 20 Private Conservation Areas (23,958ha) in the 10 target provinces		100,000ha are managed for the conservation of key ecosystems, through alternative modalities (other than SINANPE PAs).		Declaration instruments of new conservation areas	
	1.6 Availability of financial resources (US\$) for the management of the target PAs, taking into account the implications of climate change	Income (2014)	2,396,512	Income from existing sources	2,396,512	SERNANP financial data	
				Income from additional financial strategies <sup>53</sup>	5,400,000		
				Total income	7,796,512		
		Budget needs (basic management scenario)	4,398,771	Budget needs (basic management scenario), incorporating CC considerations <sup>54</sup>	5,718,403		
		Budget needs (optimum management scenario)	7,541,958	Budget needs (optimum management scenario), incorporating CC considerations	9,804,545		
		Balance (basic management scenario)	-2,002,259	Balance (basic management scenario) incorporating CC considerations	+2,078,109		
		Balance (optimum management scenario)	-5,145,445	Balance (optimum management scenario) incorporating CC considerations	-2,008,033		
<b>Componente 2.</b> CC-resilient production landscapes buffering PAs	2.1 Degree of incorporation of considerations of CC resilience in planning instruments in the target provinces bordering PAs	64% of the area of the 5 target regions is covered by ZEE, none of which make specific provision for CC resilience		Two of the target regions, and one province and one district in each, have ZEE instruments that make specific provision for CC resilience		Review of ZEE instruments	Recognition by GOREs of the importance of addressing CC
	2.2 Increase in the potential of tree-based production systems (coffee and cocoa) to buffer PAs against the direct and indirect implications of CC, in the target provinces bordering PAs	49,914ha of coffee <sup>55</sup> and 14,500ha of cocoa <sup>56</sup> under shade in La Convención target province; 7,804ha of coffee under shade <sup>57</sup> in Oxapampa target province.		Areas remain stable, but in 10% of the area (7,222ha, including 5,771ha of coffee and 1,450ha of cocoa) management systems are applied that promote resilience to CC and the buffering of PAs, while contributing to the sustainability of local livelihoods and to gender equity, directly benefiting 18,050 poor people (of which 8,123 are women and 80% are indigenous)		Data from MINAGRI, local governments and producer organizations	Continued competitiveness of agroforestry systems in terms of potential for livelihood support, relative to extensive low-BD production
	2.3 Increase in the role of community-based forest management (CBFM) in	15,833ha of forest under CBFM, of which 4,500ha are covered by tourism plans and 6,900ha are		Considerations of CC resilience are incorporated into management over 50% of the area covered by tourism plans (2,250ha) and		Management instruments and reports,	

<sup>53</sup> See Section IV Part VIII

<sup>54</sup> Under the assumption that the incorporation of CC considerations, involving the need for additional specialized staff to address these issues as well as increased enforcement staff to address CC-related increased in threat levels, will increase costs by an estimated 30%.

<sup>55</sup> [http://www.expocafeperu.com/archivos/2012/Alternativas\\_de\\_produccion\\_Sostenible\\_de\\_Cafe\\_Reiles\\_Zapata\\_Comercio\\_y\\_Cia.pdf](http://www.expocafeperu.com/archivos/2012/Alternativas_de_produccion_Sostenible_de_Cafe_Reiles_Zapata_Comercio_y_Cia.pdf)

<sup>56</sup> [http://www.minag.gob.pe/portal/download/pdf/herramientas/organizaciones/dgpa/documentos/estudio\\_cacao/4\\_5\\_2cuzco\\_informe\\_final.pdf](http://www.minag.gob.pe/portal/download/pdf/herramientas/organizaciones/dgpa/documentos/estudio_cacao/4_5_2cuzco_informe_final.pdf)

<sup>57</sup> [http://www.expocafeperu.com/archivos/2012/Alternativas\\_de\\_produccion\\_Sostenible\\_de\\_Cafe\\_Reiles\\_Zapata\\_Comercio\\_y\\_Cia.pdf](http://www.expocafeperu.com/archivos/2012/Alternativas_de_produccion_Sostenible_de_Cafe_Reiles_Zapata_Comercio_y_Cia.pdf)



	motivating the protection of forests under conditions of CC, and reinforcing occupancy rights of local communities	included in a conservation concession <sup>58</sup> , without specific consideration to the generation of global environmental benefits or resilience to CC	included in the conservation concession (3,450ha)	consultations with indigenous groups, field inspections	systems Continued security in practice of indigenous occupancy, tenure and use rights over areas in buffer zones
	2.4 Increase in the contribution of agroforestry systems in buffer zones to the generation of GEBs, the stabilization of landscapes and resilience to CC	20,685 ha of agroforestry systems <sup>59</sup> in buffer zones, containing a total of 3,092,200tC <sup>60</sup> and with average soil erosion rates of 2.64t/ha/year	2,000ha additional area of agroforestry systems in buffer zones, resulting in a net total increase in carbon sinks of 176,920tC <sup>61</sup> and a net total reduction in erosion of 208,000t, benefiting 20,000 poor people (80% are indigenous and 9,000 are women) in 4,000 families, through increased productivity and sustainability of production systems	Consultations with extension agencies and indigenous groups, field inspections	
	2.5 Increased participation by local communities in environmental governance in buffer zones	Community-based forestry oversight bodies ( <i>Veedurías Forestales Comunitarias</i> ) are operating in Ucayali, Atalaya and Oxapampa, and “Indigenous REDD+” platforms in Ucayali, Atalaya and Madre de Dios provinces, but do not addressing CC issues	Existing <i>Veedurías Forestales Comunitarias</i> and “Indigenous REDD+” platforms make specific provisions for addressing CC issues	Field visits to <i>Veedurías</i>	
	2.6 Degree of incorporation of CC resilience and BD considerations in rural extension programmes	No rural agriculture or forestry extension agencies currently address considerations of CC resilience and BD	18 extension agencies (ECAs/NGOs) throughout the target areas incorporate considerations of CC resilience and BD conservation	Review of extension programmes and instruments	

<sup>58</sup>Source: <http://www.queros.net/concesion-conservacion-comunidad-nativa-queros/>. The balance, 4,357ha, is covered by permits for timber and NTFP extraction (source: [http://dgffs.minag.gob.pe/pdf/estadistica\\_forestal/anuarios/ANUARIO\\_PERU\\_FORESTAL\\_2012.pdf](http://dgffs.minag.gob.pe/pdf/estadistica_forestal/anuarios/ANUARIO_PERU_FORESTAL_2012.pdf)). GEF funds will not be used to support timber extraction from native forests.

<sup>59</sup> 41,371 rural families in the 20 target districts meta, with 0.5ha of agroforestry systems per family

<sup>60</sup> Average 149.49 tC/ha. Source: Gonzales, F. y Chávez, J. (2010). Estimación del carbono almacenado en un sistema agroforestal de cacao (*Theobroma cacao*) comparado con un bosque secundario de tres edades. Tesis para optar el título de Ingeniero Agrónomo en la Universidad Nacional Agraria de la Selva (UNAS) Tingo María, Perú. (CACAO ASOCIADO)

<sup>61</sup> Agroforestry systems will have 149.49tC/ha and will be established in agricultural and grazing areas with an average of 61.03tC/ha, resulting in a net carbon gain of 88.46tC/ha. Soil erosion rates under agroforestry systems are estimated at 2.64t/ha/year, compared to 23.44t/ha/year for the agricultural and grazing areas which they will replace. Total avoided soil loss is calculated by multiplying the difference in rates between agroforestry and agricultural/grazing systems by the number of hectares converted and the number of years between the conversion of each hectare and the end of the project (although benefits will continue beyond the end of the project). [(23.44-2.64) t/ha/year x 2,000 ha x 5 year) = 208,000 t.

### SECTION III: TOTAL BUDGET AND WORKPLAN

<b>Award ID:</b>	00081013	<b>Project ID(s):</b>	00090480
<b>Award Title:</b>	Transforming Management of Protected Area/Landscape Complexes to Strengthen Ecosystem Resilience		
<b>Business Unit:</b>	Peru		
<b>Project Title:</b>	Transforming Management of Protected Area/Landscape Complexes to Strengthen Ecosystem Resilience		
<b>PIMS no.:</b>	5152		
<b>Implementing Partner (Executing Agency)</b>	SERNANP		

GEF Outcome/ Atlas Activity	Responsible party	Source of funds	ERP/ATLAS Budget Description/ Input	Atlas Code	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total	Note	
					US\$	US\$	US\$	US\$	US\$	US\$	US\$		
1		GEF	International Consultants	71200	16,767	16,767	13,413	6,707	6,707	6,707	67,068	1	
			Local Consultants	71300	13,995	13,995	11,196	5,598	5,598	5,598	55,980	2	
			Contractual Services - Individual	71400	411,631	411,631	411,631	411,631	411,631	411,630	2,469,785	3	
			Travel	71600	47,667	47,667	47,667	47,667	47,666	47,666	286,000	4	
			Contractual services - companies	72100	111,781	111,781	111,781	111,780	111,780	111,780	670,683	5	
			Equipment and Furniture	72200	10,863	10,863	8,691	4,346	4,345	4,345	43,453	6	
			Materials and Goods	72300	1,490	1,490	1,491	1,491	1,490	1,490	8,942	7	
			Supplies	72500	7,830	7,830	7,831	7,831	7,830	7,830	46,982	8	
			Rental and Maintenance - Premises	73100	7,333	7,333	7,334	7,334	7,333	7,333	44,000	9	
			Rental and Maintenance – other equipment	73400	8,250	8,250	8,250	8,250	8,250	8,250	49,500	10	
			Audio Visual&Print Prod Costs	74200	7,452	7,452	7,452	7,452	7,452	7,452	44,712	11	
			Miscellaneous Expenses	74500	9,166	9,167	9,167	9,167	9,167	9,166	55,000	12	
			Training	75700	74,520	74,520	74,521	74,521	74,520	74,520	447,122	13	
	GEF Subtotal Outcome 1					728,745	728,746	720,425	703,775	703,769	703,767	4,289,227	
			International Consultants	71200	13,324	13,324	10,659	5,330	5,330	5,330	53,297	14	
			Local Consultants	71300	18,466	18,466	14,775	7,386	7,386	7,386	73,865	15	
			Contractual Services - Individ	71400	217,250	217,250	217,250	217,250	217,250	217,250	1,303,500	16	
			Travel	71600	47,829	47,829	47,829	47,829	47,829	47,829	286,974	17	
			Contractual services - companies	72100	127,430	127,430	127,430	127,430	127,430	127,429	764,579	18	
			Equipment and Furniture	72200	13,363	13,363	10,692	5,345	5,345	5,345	53,453	19	
			Materials and Goods	72300	1,490	1,490	1,491	1,491	1,490	1,490	8,942	20	
			Supplies	72500	4,804	4,805	4,805	4,805	4,805	4,804	28,828	21	
			Grants	72600	191,615	191,616	191,616	191,616	191,616	191,616	1,149,695	22	

GEF Outcome/ Atlas Activity	Responsible party	Source of funds	ERP/ATLAS Budget Description/ Input	Atlas Code	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total	Note
					US\$	US\$	US\$	US\$	US\$	US\$	US\$	
			Rental and Maintenance - Premises	73100	7,333	7,333	7,334	7,334	7,333	7,333	44,000	23
			Rental and Maintenance – other equipment	73400	8,250	8,250	8,250	8,250	8,250	8,250	49,500	24
			Audio Visual&Print Prod Costs	74200	7,452	7,452	7,452	7,452	7,452	7,452	44,712	25
			Miscellaneous Expenses	74500	9,166	9,167	9,167	9,167	9,167	9,166	55,000	26
			Training	75700	59,616	59,616	59,617	59,617	59,616	59,616	357,698	27
	GEF Subtotal Outcome 2				727,388	727,391	718,367	700,302	700,299	700,296	4,274,043	
			International Consultants	71200				30,000		30,000	60,000	28
			Contractual Services - Individ	71400	45,671	45,671	45,671	45,670	45,670	274,024	29	
			Professional Services	74100	2,273	2,273	2,274	2,274	2,273	13,640	30	
			Direct Project Costs	74599	17,250	17,250	11,500	11,500	11,500	80,500	31	
	GEF subtotal project management				65,194	65,194	59,445	89,445	59,443	89,443	428,164	
	Total project management				65,194	65,194	59,445	89,445	59,443	89,443	428,164	
Totals					1,521,327	1,521,331	1,498,237	1,493,522	1,463,511	1,493,506	8,991,434	

### Summary of Funds by Funding Source and Project Outcome

Source of Funds	Outcome 1	Outcome 2	Project Mngmt.	Total
Global Environment Facility	4,289,227	4,274,043	428,164	8,991,434
SERNANP	5,240,663	5,222,112	523,139	10,985,914
Regional Government of Madre de Dios Department	4,436,424	4,420,718	442,858	9,300,000
Belgian Cooperation	5,577,436	5,557,691	556,757	11,691,884
COSUDE (SIDA)	1,113,342	1,109,401	111,137	2,333,880
German Government	3,339,244	3,327,422	333,334	7,000,000
UNDP	4,484,604	4,468,729	447,667	9,401,000
<b>Total</b>	28,480,940	28,380,116	2,843,056	59,704,112

## Budget notes

Budget Note	Atlas Code	ERP/ATLAS Budget Description/ Input	Amount (US\$)	Description
<b>Component 1</b>				
1	71200	International consultants	67,068	International specialists (including DSA and travel) for: <ul style="list-style-type: none"> <li>- Methodological support on the expansion of PAs as a response to CC (output 1.1)</li> <li>- Methodological support on the analysis of the analysis of implications of CC scenarios (output 1.3a),</li> <li>- Advice on the design of monitoring systems (output 1.5)</li> <li>- Advice on PA finance, lobbying and capacity development (output 1.6)</li> </ul>
2	71300	National consultants	55,980	National consultants (including DSA and travel) for: <ul style="list-style-type: none"> <li>- Advice on the development of conservation agreements with local communities (output 1.2)</li> <li>- Analysis of the implications of CC (output 1.3a)</li> <li>- Advice on decision support systems (output 1.3b)</li> <li>- Advice on the modification of management plans (output 1.3c)</li> <li>- Advice on the development of capacities for control and oversight in PAs (output 1.4)</li> <li>- Development of plans for financial sustainability in specific PAs (output 1.6)</li> </ul>
3	71400	Contractual Services - Individ	2,469,785	<ul style="list-style-type: none"> <li>- Project coordinator (pro rata)</li> <li>- 2 regional coordinators (pro rata)</li> <li>- 9 field technicians (pro rata)</li> <li>- BD and PA specialist (outputs 1.1, 1.2, 1.3c, 1.4, 1.5, 1.6)</li> <li>- GIS, territorial planning and M&amp;E specialist (pro rata) (outputs 1.3 a y b)</li> <li>- Administrative staff</li> </ul>
4	71600	Travel	286,000	- Travel to field sites, regional offices and Lima by team members
5	72100	Contractual services - companies	670,683	Contracts with NGOs and companies for: <ul style="list-style-type: none"> <li>- Expansion of PAs as a response to CC (output 1.1)</li> <li>- Development of conservation agreements with local communities (output 1.2)</li> <li>- development of capacities for control and oversight in PAs (output 1.4)</li> </ul>
6	72200	Equipment and Furniture	43,453	Vehicles (pro rata) Software, computers etc. for: <ul style="list-style-type: none"> <li>- Analysis of the implications of CC (output 1.3a)</li> </ul>

Budget Note	Atlas Code	ERP/ATLAS Budget Description/ Input	Amount (US\$)	Description
				<ul style="list-style-type: none"> <li>- Advice on decision support systems (output 1.3b)</li> <li>- Development of monitoring systems for PAs</li> <li>- Logistical support and oversight for project actions (pro rata)</li> </ul>
7	72300	Materials and Goods	8,942	Satellite images and materials for monitoring of impact indicators
8	72500	Supplies	46,982	Fuel and office supplies (pro rata)
9	73100	Rental and Maintenance - Premises	44,000	Office rental (pro rata)
10	73400	Rental and Maintenance – other equipment	49,500	Vehicle maintenance (pro rata)
11	74200	Audio Visual&Print Prod Costs	44,712	Printing of communication and dissemination materials (pro rata)
12	74500	Miscellaneous Expenses	55,000	Vehicle and staff insurance, office utility costs (pro rata)
13	75700	Training	447,122	<p>Courses to develop capacities among institutional and community beneficiaries:</p> <ul style="list-style-type: none"> <li>- Capacities and systems for decision support in PAs (output 1.3)</li> <li>- Capacities for supervisión and control in PAs (output 1.4)</li> <li>- Monitoring mechanisms in PAs</li> </ul> <p>Dialogue and negotiation workshops:</p> <ul style="list-style-type: none"> <li>- Establishment of new conservation areas (output 1.1)</li> <li>- Conservation agreements (output 1.2)</li> <li>- Modified PA master plans (output 1.3)</li> </ul>
<b>Component 2</b>				
14	71200	International consultants	53,297	<p>International specialists (including DSA and travel) for advice on:</p> <ul style="list-style-type: none"> <li>- GIS and SEA (output 2.1a)</li> <li>- Management of environmental risks (output 2.1c)</li> <li>- Production systems and landscape management (output 2.2)</li> </ul>
15	71300	National consultants	73,865	<p>National consultants (including DSA and travel) for:</p> <ul style="list-style-type: none"> <li>- Generation of instruments for strategic and territorial land use planning (output 2.1b)</li> <li>- Documents for strategic planning and inter-institutional coordination/planning (output 2.1e)</li> </ul>

Budget Note	Atlas Code	ERP/ATLAS Budget Description/ Input	Amount (US\$)	Description
				<ul style="list-style-type: none"> <li>- Integration of programmes for monitoring, evaluation, control and oversight (output 2.1f)</li> <li>- Strengthening of local organizations (output 2.1g)</li> <li>- Non-forest production systems (output 2.2)</li> <li>- Forest production systems (output 2.3)</li> <li>- Technology transfer systems (output 2.4)</li> </ul>
16	71400	Contractual Services - Individ	1,303,500	<ul style="list-style-type: none"> <li>- Project coordinator (pro rata)</li> <li>- 2 regional coordinators (pro rata)</li> <li>- 9 field technicians (pro rata)</li> <li>- Specialist in production systems and adaptation (outputs 2.2, 2.3, 2.4)</li> <li>- GIS, territorial planning and M&amp;E specialist (outputs 2.1a, b, c y f)</li> <li>- Administrative staff</li> </ul>
17	71600	Travel	286,974	Travel to field sites, regional offices and Lima by team members
18	72100	Contractual services - companies	764,579	Contracts with NGOs/companies for: <ul style="list-style-type: none"> <li>- Generation of plan and instruments for awareness raising (output 2.1d)</li> <li>- Promotion of non-forest production systems (output 2.2)</li> <li>- Promotion of forest production systems (output 2.3)</li> <li>- Promotion of technology transfer systems (output 2.4)</li> </ul>
19	72200	Equipment and Furniture	53,453	Vehicles (pro rata) Software, computers etc. for: <ul style="list-style-type: none"> <li>- Information systems for manahgement of buffer zones (Output 2.1a)</li> <li>- Update of early warning systems (Output 2.1c)</li> <li>- Logistical support and monitoring of project actions (pro rata)</li> </ul>
20	72300	Materials and Goods	8,942	Satellite images and materiales for monitoring of impact indicators
21	72500	Supplies	28,828	Fuel and office supplies (pro rata)
22	72600	Grants	1,149,695	Donations for community-based buffer zone management activities in support of adaptation (\$150,000 per site, pro rata)
23	73100	Rental and Maintenance - Premises	44,000	Office rental (pro rata)
24	73400	Rental and Maintenance – other equipment	49,500	Vehicle maintenance (pro rata)

Budget Note	Atlas Code	ERP/ATLAS Budget Description/ Input	Amount (US\$)	Description
25	74200	Audio Visual&Print Prod Costs	44,712	Printing of communication and dissemination materials (pro rata)
26	74500	Miscellaneous Expenses	55,000	Vehicle and staff insurance, office utility costs (pro rata)
27	75700	Training	357,698	Courses to develop capacities among institutional and community beneficiaries, and dialogue and negotiation workshops for: <ul style="list-style-type: none"> <li>- Awareness raising and communication (output 2.1d)</li> <li>- Institutional framework for buffer zone management: capacities of local actors (output 2.1g)</li> <li>- CC-resilience production and management systems (output 2.2)</li> <li>- Sustainable forest management systems (output 2.3)</li> <li>- Capacities for recovery, generation and transfer of technologies with adaptation focus (output 2.4)</li> </ul>
<b>Project Management</b>				
28	71200	International consultants	60,000	Consultants for mid term and final evaluations
29	71400	Contractual Services - Individ	274,024	- National Project coordinator (pro rata) - Administrative staff at central and regional levels (pro rata)
30	74100	Professional services	13,640	External financial audits
30	74599	Direct Project Costs	80,500	Estimated UNDP Direct Project Service/Cost recovery charges to UNDP for executing services. In accordance with GEF Council requirements, the costs of these services will be part of the executing entity's Project Management Cost allocation identified in the project budget. DPS costs would be charged at the end of each year based on the UNDP Universal Price List (UPL) or the actual corresponding service cost. The amounts here are estimations based on the services indicated, however as part of annual project operational planning the DPS to be requested during the calendar year would be defined and the amount included in the yearly project management budgets and would be charged based on actual services provided at the end of that year.

## **SECTION IV: ADDITIONAL INFORMATION**

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### **PART I. Endorsement Letter**



## PART II. Process of selection of the target PAs

During the first PPG workshop in Lima, from 20th to 23rd August 2013, the PPG team in discussion with representatives of the Directorates of Climate Change and Biodiversity of MINAM, and the Directorates of Strategic Development and PA Management of SERNANP, identified 5 candidate PA complexes throughout the country to be considered for inclusion in the project. All of these presented a broad altitudinal range and a diversity of ecosystems, as well as vulnerability to the impacts of climate change. The 5 candidate complexes were as follows (the Yanachaga and Manu complexes were originally proposed in the PIF):

<b>Yanachaga Complex</b>	<b>Manu Complex</b>	<b>Yanachaga-Imiría Complex</b>	<b>Manu-Vilcabamba Complex</b>	<b>Cordillera Azul Complex</b>
Yanachaga National Park	Manu National Park,	Yanachaga National Park	Manu National Park	Cordillera Azul National Park
Yanesha Communal Reserve	Alto Purús National Park,	Yanesha Communal Reserve	Alto Purús National Park	Río Abiseo National Park
San Matías-San Carlos Protection Forest	Purús Communal Reserve,	San Matías-San Carlos Protection Forest	Purús Communal Reserve	Cerro Escalera Regional Conservation Area
El Sira Communal Reserve	Amarakaeri Communal Reserve,	El Sira Communal Reserve	Amarakaeri Communal Reserve	
	Megantoni National Sanctuary	Megantoni National Sanctuary	Megantoni National Sanctuary	
		Imiría Regional Conservation Area	Machiguenga Communal Reserve	
			Otishi National Park	
			Ashaninka Communal Reserve	

In a subsequent workshop on 23rd September 2013, representatives of MINAM and SERNANP defined a methodology for the objective prioritization of the candidate complexes, incorporating a range of biophysical, ecological, social, economic and political factors. The criteria defined in this workshop are shown in the following table:

### Criteria used for selection of the target complexes

Component	Criterion	Indicator	Source	Priority accorded to areas with:
Biophysical	Size	Area (ha)	Norms of creation of the PA or RCA	Largest area
	Ecological coverage	Ecoregions represented	CDC-UNALM. 2006	Peruvian yungas, Central Andean punas and moist forests of southeastern Amazonia
	Altitude range	Altitude difference (m)	PA and RCA Master Plans	Greatest altitude range
	Connectivity	Area connected (ha)	SERNANP, 2013 <sup>a</sup>	Greatest area connected without interruption
		Potential connectivity with priority conservation sites (ha)	SERNANP, 2013	Greatest potential for connectivity with sites prioritized for conservation
	Priority sites for conservation	Área prioritized for conservation (ha)	SERNANP, 2013 SERNANP, 2009 Key Biodiversity Areas IUCN, 2007 BirdLife International y CI 2005	Greatest area of sites prioritized for conservation
	Vulnerability	Threats to biodiversity	PA and RCA Master Plans	Greatest threats
		Physical vulnerability	MINAM, 2011	Greatest levels of physical vulnerability
		Landslide risk	CONAM, 2006	Greatest levels of landslide risk
		Climate scenarios to 2030	MINAM, 2010	Greatest probability of climate change
Social	Use of PA by local people	Use type of PA	Norms of creation of the PA or RCA	PAs where direct use is allowed
	Local participation in PA/RCA management	Level of local participation in PA/ACR management	Administration Contracts for PAs, Master Plans for PAs/RCAs	Greatest level of local participation in PA/RCA management
	Poverty levels	Percentage of population below the poverty level	INEI, 2009	Greatest percentage of the population below the poverty level
	Vulnerability	Human vulnerability to multiple climatic risks	MINAM, 2011a	Greatest human vulnerability to multiple climatic risks
		Human vulnerability to food insecurity	MINAM, 2011a	Greatest human vulnerability to food insecurity
Economic	Possibilities of cofinancing	Counterpart funding	SERNANP, 2013*	Greatest counterpart funding
	Vulnerability	Agricultural vulnerability to drought	MINAM, 2011a	Greatest agricultural vulnerability to drought
		Vulnerability of road infrastructure	MINAM, 2011a	Greatest vulnerability of road infrastructure
Political	Operative institutional strategy	Institutional priority	SERNANP, 2013*	Greatest institutional priority
	Regional capacities	Prioritized sites for regional conservation	SERNANP, 2013	GOREs with greatest areas prioritized for regional conservation
		Regional climate change strategy	Regional Governments	GOREs with regional climate change strategy
		Regional biodiversity strategy	Regional Governments	GOREs with regional biodiversity strategy

The candidate PAs were then assigned a value by the PPG team, ranging from 1 to 5 with respect to each of these criteria. The results of this exercise were validated in a meeting with representatives of the Directorate of Strategic Development of SERNANP on 17th October 2013.

## Results

### 1) Biophysical aspects

Criterion	PA Complex				
	Cordillera Azul	Yanachaga	Yanachaga-Imiría	Manu	Manu-Vilcanota
1. Size	3	1	2	4	5
2. Ecological coverage	1.33	0.5	1.5	1.5	1
3. Altitude range	3	1.5	1.5	4.5	4.5
4. Connectivity	3	1.25	1.75	4	5
4.1 Area connected (ha)	3	1.5	1.5	4	5
4.2 Potential connectivity with priority conservation sites (ha)	3	1	2	4	5
5. Priority sites for conservation	3	5	1.5	5	4.5
6. Vulnerability	4	3.375	2.875	2.125	2.625
6.1 Threats to biodiversity	3	4.5	4.5	2	1
6.2 Physical vulnerability	5	3.5	3.5	2	1
6.3 Landslide risk	3	4	2	1	5
6.4 Climate scenarios to 2030	5	1.5	1.5	3.5	3.5
<b>Average</b>	<b>2.89</b>	<b>2.10</b>	<b>1.85</b>	<b>3.94</b>	<b>4.44</b>

### 2) Social aspects

Criterion	PA Complex				
	Cordillera Azul	Yanachaga	Yanachaga-Imiría	Manu	Manu-Vilcanota
1. Use type of PA	1	2	3	4	5
2. Level of local participation in PA/ACR management	1	2.5	4	2.5	5
3. Population below the poverty level	2	5	3	4	1
4. Vulnerability	1.5	5	2.5	2	4
4.1 Human vulnerability to multiple climatic risks	2	5	3	1	4
4.2 Human vulnerability to food insecurity	1	5	2	3	4
<b>Average</b>	<b>1.38</b>	<b>3.63</b>	<b>3.13</b>	<b>3.13</b>	<b>3.75</b>

### 3) Economic aspects

Criterion	PA Complex				
	Cordillera Azul	Yanachaga	Yanachaga-Imiría	Manu	Manu-Vilcanota
1. Counterpart funding	2	5	5	5	2
2. Vulnerability	3.5	5	1.75	1.25	3.5
2.1 Agricultural vulnerability to drought	3	5	1.5	1.5	4
2.2 Vulnerability of road	4	5	2	1	3

infrastructure					
<b>Average</b>	<b>2.75</b>	<b>5.00</b>	<b>3.38</b>	<b>3.13</b>	<b>2.75</b>

#### 4) Policy/institutional aspects

Criterion	PA Complex				
	Cordillera Azul	Yanachaga	Yanachaga-Imiría	Manu	Manu-Vilcanota
1. Institutional priority	3	5	4	5	2.5
2. Regional capacities	2.67	1.83	2.17	2.33	3.00
2.1 Prioritized sites for regional conservation	3	1.5	1.5	4	5
2.2 Regional climate change strategy	0	1	1	2	2
2.3 Regional biodiversity strategy	5	3	4	1	2
<b>Promedio</b>	<b>2.67</b>	<b>1.83</b>	<b>2.17</b>	<b>2.33</b>	<b>3.00</b>

#### Final result

PA Complex	Aspect				Total
	Biophysical	Social	Economic	Political/institutional	
Cordillera Azul	2.89	1.38	2.75	2.83	9.85
<b>Yanachaga</b>	<b>2.10</b>	<b>3.63</b>	<b>5.00</b>	<b>3.42</b>	<b>14.15</b>
Yanachaga-Imiría	1.85	3.13	3.38	3.08	11.44
<b>Manu</b>	<b>3.94</b>	<b>3.13</b>	<b>3.13</b>	<b>3.67</b>	<b>13.85</b>
Manu-Vilcabamba	4.44	3.75	2.75	2.75	13.69

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### PART III. Protected areas in the target PA complexes

#### 1) Ecosystems

PA	Tropical and subtropical broadleaved moist forest								Grasslands and montane scrub		Total area (ha)	Control: Total PA according to official declaration
	Moist forest of South West Amazonía		Peruvian Yungas		Amazon River and flooded forests		Ucayali moist forests		Central Andean Puna			
	ha	% of national area of ecosystem	ha	% of national area of ecosystem	ha	% of national area of ecosystem	ha	% of national area of ecosystem	ha	% of national area of ecosystem		
Complejo Yanachaga	0	0	633,103	4.64	20,836	0.15	253,612	2.58	0	0	907,558	918,976
Yanachaga Chemillén NP	0	0	96,672	0.71	0	0	13,768	0.14	0	0	110,441	122,000
Yanesha Communal Reserve	0	0	10,845	0.08	0	0	20,776	0.21	0	0	31,621	34,745
San Matías-San Carlos Protection Forest	0	0	105,378	0.77	0	0	43,700	0.44	0	0	149,079	145,818
El Sira Communal Reserve	0	0	420,208	3.08	20,836	0.15	175,368	1.78	0	0	616,417	616,413
Manu Complex	4,250,831	17.88	761,083	5.58	2,546	0.02	1,172	0.01	16,501	0.13	5,035,567	5,047,227
Manu NP	1,193,883	5.02	488,184	3.58	0	0	0	0	16,501	0.13	1,698,577	1,716,295
Alto Purús NP	2,512,154	10.57	0	0	2,546	0.02	0	0	0	0	2,514,711	2,510,694
Purús Communal Reserve	202,592	0.85	0	0	0	0	0	0	0	0	202,593	202,033
Amarakaeri Communal Reserve	337,002	1.42	66,807	0.49	0	0	0	0	0	0	403,811	402,336
Megantoni National Sanctuary	5,200	0.02	206,092	1.51	0	0	1,172	0.01	3,411	0.03	215,877	215,869
Total	4,250,831	17.88	1,394,186	10.22	23,382	0.17	254,784	2.59	19,912	0.16	5,943,125	5,966,203

## 2) Creation dates and political units

PA	Creation		Area (ha)	Political location		
	Legal basis	Date		Region	Province	District
Yanachaga Complex						
Yanachaga – Chemillén NP	D.S. N° 068-86-AG	29-08-86	122,000.00	Pasco	Oxapampa	Oxapampa, Pozuzo, Villa Rica
Yanesha CR	R.S. N° 193-88-AG/DGFF	28-04-88	34,744.70	Pasco	Oxapampa	Palcazú
San Matías - San Carlos Protection Forest	R.S. N° 101-87-AG/DGFF	20-03-87	145,818.00	Pasco	Oxapampa	Palcazú, Puerto Bermúdez, Villa Rica
El Sira Communal Reserve	D.S. N° 037-2001-AG	22-06-01	616,413.41	Huánuco	Puerto Inca	Tournavista, Puerto Inca, Yuyapichis, Honoria
				Pasco	Oxapampa	Puerto Bermúdez
				Ucayali	Atalaya	Raymondi, Tahuanía
				Coronel Portillo	Iparía	
Manu Complex						
Manu NP	D.S. N° 644-73-AG	29-05-73	1´716,295.22	Cusco	Paucartambo	Kosñipata
				Madre de Dios	Manu	Fitzcarrald, Manu
Alto Purús NP	D.S. N° 040-2004-AG	18-11-04	2´510,694.41	Ucayali	Purús	Purús
				Madre de Dios	Tahuamanu	Iñapari
					Tambopata	Tambopata
Purús CR	D.S. N° 040-2004-AG	18-11-04	202,033.21	Ucayali	Purús	Purús
				Madre de Dios	Tahuamanu	Iñapari
Amarakaeri CR	D.S. N° 031-2002-AG	09-05-02	402,355.62	Madre de Dios	Manu	Madre de Dios
Megantoni NS	D.S. N° 030-2004-AG	17-08-04	215,868.96	Cusco	La Convention	Echarate

## 3) Regional Conservation Areas in the project's intervention areas

Name	Legal basis	Date of establishment	Area (ha)	District	Province	Region
Imiría	DS 006/2010-MINAM	15-06-10	135,737.52	Masisea	Coronel Portillo	Ucayali
Choquequirao	DS 022/2010-MINAM	23-12-10	103,814.39	Santa Teresa and Vilcabamba	La Convention	Cusco
<b>Total</b>			<b>239,551.91</b>			

Source: SERNANP, 2013. <http://www.sernanp.gob.pe/sernanp/contenido.jsp?ID=10>

#### 4) Conservation and Tourism Concessions in the project's intervention areas

Region	Number of concessions	Area (ha)
<b>Conservation Concessions</b>		
Cusco	1	6,975.99
Madre de Dios	7	164,567.99
Ucayali	1	12,599.91
<b>Sub-Total</b>	<b>9</b>	<b>184,143.89</b>
<b>Ecotourism Concessions</b>		
Cusco	1	2,000.00
Madre de Dios	18	37,122.88
Ucayali	1	5,375.31
<b>Sub-Total</b>	<b>20</b>	<b>44,498.19</b>
<b>Total</b>	<b>29</b>	<b>228,642.08</b>

Source: MINAGRI, 2013. <http://dgffs.minag.gob.pe/index.php/ordenamiento-y-manejo-ffs/mapas-tematicos-ffs?id=62>

#### 5) Visions of the targets PAs in the Yanachaga and Manu complexes

PA	Current Master Plan	Vision
<b>Yanachaga Complex</b>		
Yanachaga – Chemillén National Park	2005-2009	Yanachaga Chemillén NP is recognized nationally and internationally for the maintenance of its natural status and of a representative sample of the central yungas forests of Peru, which are home to high levels of biodiversity, provide important environmental services and have particular landscape richness, as a result of the commitment by the local population and responsible institutions to promote the sustainable development of the region within the context of the proposed Biosphere Reserve
Yanesha Communal Reserve	2011-2016	By the year 2020, Yanesha Communal Reserve should constitute a model of comanagement between the State and beneficiary communities, have strategic allies and sources of finance assured, as well as broad and permanent local participation, as well as the knowledge and ancestral practices of the Yanesha communities.
San Matías - San Carlos Protection Forest	-	-
El Sira Communal Reserve	2009-2013	By the year 2020, the reserve will constitute a model of comanagement between the State and ECOSIRA, that will meet its objectives with responsibility, strategic allies and sources of finance assured, as well as broad and permanent local participation, guaranteeing the conservation of biological diversity and cultural values of the communities through the sustainable development of its buffer zone.
<b>Manu Complex</b>		
Manu National Park	2013-2018	By 2033, the conservation of biodiversity and the historical-cultural heritage of Manu NP al 2033, has been achieved through the development of research, environmental education, tourism, participatory management and the promotion of sustainable activities in the buffer zone, consolidating its role as World



PA	Current Master Plan	Vision
		Heritage Site and Biosphere Reserve.
Alto Purús National Park	2012-2017	By 2032, the Alto Purús NP maintains the continuity of ecological processes for the conservation (protection and ancestral use) of its high biodiversity and the protection of the area inhabited by indigenous peoples in voluntary isolation and initial contact, with support from local populations who conserve the area due to its importance.
Purús Communal Reserve	2012-2017	By 2032, the Purús CR is an example of comanagement between SERNANP and ECOPURÚS; maintains its 4 types of tropical moist forest, guaranteeing the sustainable use of its natural resources; promotes the insertion of some products in production chains for economic and social development; and consolidates its role as a buffer zone for Alto Purús NP.
Amarakaeri Communal Reserve	2008-2012	By the year 2020 the Amarakaeri Communal reserve is recognized nationally and internationally. The State and the ECA are consolidated in the administration of the RCA and the sustainable management of natural resources for the development of beneficiary communities, in harmony with the local population.
Megantoni National Sanctuary	2007-2011	By the year 2015, Megantoni NS is integrated into local, regional and national development strategies; is known internationally for conserving in its natural state a continuous corridor between the <i>puna</i> and the lowland forest, which houses considerable biodiversity, provides significant environmental services and offers important scenic richness, which has allowed the improvement of the quality of life of local populations, through economic activities that are compatible with the objectives of its creation. At the same time, it has the organization and equipment necessary for its efficient management, in which organized local populations participate, with trained and awareness of issues of environmental conservation, respecting the rights of local and voluntarily isolated populations.

## 6) Ecoregions

PA	Altitude (m)		Central Andes		Sechura Desert		Páramos		South Western Amazon Moist Forests		Peruvian Yungas		Other Ecoregions		Total by PA	
	Min	max	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Manu NP	300	4,000							1,206,292	70.3	493,343	28.7	16,661	1.0	1,716,295	100
Calipuy National Reserve	400	4,000	46,559	72.7	17,441	27.3									64,000	100
Calipuy National Sanctuary	3,500	4,200	350	7.8			4,150	92.2							4,500	100
Yanachaga-Chemillén NP	400	3,600									106,776	87.5	15,224	12.5	122,000	100
San Matias San Carlos Protection Forest	300	2,200									103,012	70.6	42,806	29.4	145,818	100
Yanesha Communal Reserve	300	1,600									11,980	34.5	22,765	65.5	34,745	100
Total by Ecoregion															2,087,358	100

## 7) Drainage basins

PA	Alitude (m)		Madre de Dios (UH 46649)		Santa (UH 1376)		Huamansaña (UH 13771)		Pachitea (UH 4992)		Perené (UH 49954)		Total by PA	
	Min	max	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
<b>Manu NP</b>	300	4000	1,716,295,22	100.0									1,716,295.22	100
<b>Calipuy National Reserve</b>	400	4000			58,753.47	91.8	5,246.53	8.2					64,000.00	100
<b>Calipuy National Sanctuary</b>	3500	4200					4,500.00	100.0					4,500.00	100
<b>Yanachaga-Chemillén NP</b>	400	3600							118,988.83	97.5	3,011.17	2.5	122,000.00	100
<b>San Matias San Carlos Protection Forest</b>	300	2200									145,818.00	100.0	145,818.00	100
<b>Yanesha Communal Reserve</b>	300	1600							34,744.70	100.0			34,744.70	100
<b>Total</b>													<b>2,087,357.92</b>	<b>100</b>

## 8) Objects of conservation

PA	Object of conservation
<b>Yanachaga Complex</b>	
Yanachaga – Chemillén National Park	<ol style="list-style-type: none"> <li>1. Andean bear (<i>Tremarctos ornatus</i>).</li> <li>2. Stands of ulcumano and diablo fuerte (<i>Podocarpáceas</i>).</li> <li>3. Dwarf forests.</li> <li>4. Moist grassland.</li> <li>5. Cloud and transition forests.</li> <li>6. Hill and terrace forests.</li> <li>7. Montane hydrological systems.</li> </ol>
Yanesha Communal Reserve	<ol style="list-style-type: none"> <li>1. Wild fauna for human consumption.</li> <li>2. headwaters of tributaries on the left portion of the Palcazú river catchment.</li> </ol>
San Matías - San Carlos Protection Forest	<ol style="list-style-type: none"> <li>1. Upper part of the drainage basins of the Pichis and Palcazú rivers.</li> <li>2. Cultural values of the Ashaninka and Yanesha peoples.</li> </ol>
El Sira Communal Reserve	<ol style="list-style-type: none"> <li>1. Habitat for endemic and rare fauna in the Pachitea sector (<i>Pauxi unicornis</i>, <i>Atelopus siranus</i>, <i>Lagotrix sp</i>)</li> <li>2. Ecological communities in the northern part of the reserve (7 life zones).</li> <li>3. Shinambillal dwarf forest of the Gran Pajonal, hábitat of the Andean bear.</li> <li>4. Onkawo Lagoon, of importance for indigenous cosmovision.</li> <li>5. Headwaters of the tributaries of the Pichis, Pachitea and Ucayali rivers, hábitat of the Andean bear.</li> </ol>
<b>Manu Complex</b>	
Manu National Park	<ol style="list-style-type: none"> <li>1. Terrestrial ecosystems: piedmont forest of the southwestern Amazon, sub-Andean evergreen forest of the southwestern Amazon and upper montane <i>Polylepis</i> humid yunga forest.</li> <li>2. Water/land interface ecosystems: palm swamp forest of the alluvial plains of the southern Amazon, flooded forests of the alluvial plains of the south of the Amazon, and moist puna peatlands (headwaters of Andean watersheds).</li> <li>3. Priority species: birds and large mammals with low population densities and hardwood trees (<i>Cedrela sp.</i>). Jaguar (<i>Panthera onca</i>), Andean bears (<i>Tremarctos ornatus</i>), <i>Melanosuchus niger</i>, <i>Pteronura brasiliensis</i>, <i>Podocnemis unifilis</i>, <i>Tayassu pecari</i>, <i>Ateles chamek</i>, <i>Lagothrix cana</i>.</li> </ol>
Alto Purús National Park	<ol style="list-style-type: none"> <li>1. Headwaters of rivers and tributaries, indigenous rainwater harvesting systems (<i>cochas</i>) and parrot and macaw earth feeding sites (<i>collpas</i>).</li> <li>2. Drainage basin (independent of the Andes range).</li> <li>3. Mammal populations including <i>Pteronura brasiliensis</i>, short-eared dog (<i>Atelocynus microtis</i>), <i>Panthera onca</i>, Harpy eagle (<i>Harpia harpya</i>), <i>Anhima cornuta</i>, <i>Phaetornis ruber</i>.</li> <li>4. Mahogany (<i>Swietenia macrophylla</i>)</li> </ol>
Purús Communal Reserve	<ol style="list-style-type: none"> <li>1. Paiche (<i>Arapaimas gigas</i>).</li> <li>2. Mahogany (<i>Swietenia macrophylla</i>)</li> </ol>
Amarakaeri Communal Reserve	<ol style="list-style-type: none"> <li>1. River system: catchments of the Madre de Dios (Eori) and Colorado (Karene) rivers.</li> <li>2. Stands of <i>Mauritia flexuosa</i> and other palms.</li> <li>3. Cultural heritage and sacred sites</li> </ol>
Megantoni National Sanctuary	<ol style="list-style-type: none"> <li>1. Ecological communities (10 life zones).</li> <li>2. Special groupings of ecological communities: headwaters of the Timpía and Ticumpinía rivers, unusual fish fauna, pristine aquatic environments, dwarf forests, bamboo forests, pristine expanses of puna.</li> </ol>

PA	Object of conservation
	<p>3. Mammals: <i>Panthera onca</i>, <i>Puma concolor</i>, <i>Tremarctos ornatus</i>, <i>Tapirus terrestris</i>, <i>Lontra longicaudis</i>, <i>Alouatta seniculus</i>, <i>Cebus albifrons</i>, <i>Cebus apella</i>, <i>Lagothrix lagothericha</i>, <i>Saguinus fuscicollis</i>; vulnerable species such as <i>Dinomys branickii</i>, <i>Leopardus pardalis</i>, <i>Myrmecophaga tridactyla</i> and <i>Priodontes maximus</i>.</p> <p>4. Landscape units: Maenique canyon (of major importance for the Machiguenga people).</p>

Source: PA master plans

## 9) Objectives of creation

<b>Yanachaga Complex</b>	
Yanachaga-Chemillén National Park	<ol style="list-style-type: none"> <li>1. Conserve ecosystems with high floral and fauna diversity, some in danger of extinction such as the otter <i>Pteronura brasiliensis</i> and other vulnerable, indeterminate and rare species.</li> <li>2. Contribute to the protection of the drainage basins located in the slopes of Yanachaga Mountain, thereby assuring land stability and the quantity and quality of water supplies for human settlements and agricultural development.</li> <li>3. Promote recreation and increase tourism flows through landscape tourism.</li> </ol>
Yanesha Communal Reserve	<ol style="list-style-type: none"> <li>1. Conserve wildlife in benefit of the neighbouring native communities of the Yanesha ethnic group, who traditionally depend on it for food.</li> <li>2. Maintain and develop the cultural values of Yanesha native communities, located in the Palcazú valley.</li> <li>3. Complement the system for the protection of the renewable natural resources of the Palcazú valley, made up of the Yanachaga-Chemillén NP and the San Matías-San Carlos Protection Forest.</li> </ol>
San Matías San Carlos Protection Forest	<ol style="list-style-type: none"> <li>1. Conserve the upper part of the watersheds of the Pichis and Palcazú rivers, to protect roading and other infrastructure, population centres and agricultural lands against the destructive effects of water erosion and flash floods.</li> <li>2. Regulate the hydrological and climatic cycle of the zone, avoiding the sedimentation of rivers and maintaining navigation quality and aquatic ecosystems.</li> <li>3. Maintain and develop cultural values of the campa and amuesha native communities, as well as promote national and international tourism and serve as an area of recreation and education for the population of the Central Forest.</li> </ol>
El Sira Communal Reserve	<ol style="list-style-type: none"> <li>1. Conservation of biodiversity in benefit of native communities of the asháninka, yanesha and shipibo-conibo ethnic groups neighbouring the PA.</li> </ol>
<b>Manu Complex</b>	
Manu NP	<ol style="list-style-type: none"> <li>1. Protect a representative sample of biodiversity, as well as the landscapes of the lowland forest, <i>ceja de selva</i> and the Andes of southeastern Peru.</li> <li>2. Promote tourism and contribute to its development in the park and its areas of influence, based on criteria of ecological sustainability and cultural compatibility.</li> <li>3. Promote and facilitate investigation, education and recreation.</li> <li>4. Contribute to the recognition and protection of cultural diversity, as well as the autodetermination of the indigenous peoples of the area, in accordance with the other objectives of the Park.</li> <li>5. Contribute to the preservation of the archaeological heritage of the Park.</li> <li>6. Develop adequate capacities for management that includes the participation of the diverse social actors involved in the park.</li> </ol>
Alto Purús NP	<ol style="list-style-type: none"> <li>1. To conserve a representative sample of the moist tropical forest and transitional life zones, the evolutionary processes that determined their development, as well as endemic and threatened species of flora and fauna, such as the otter (<i>Pteronura brasiliensis</i>), the charapa (<i>Podocnemis expansa</i>), the Harpy eagle (<i>Harpia harpya</i>) and the blue-headed green macaw (<i>Ara couloni</i>)</li> <li>2. To protect the area inhabited by indigenous people in voluntary isolation and/or initial or sporadic contact in each PA, in order to protect their physical and cultural integrity.</li> </ol>

	<p>3. To protect watercourses in the PA, which in addition to providing environmental values and services function as corridors for migratory species and for genetic interchange.</p> <p>4. To develop biodiversity conservation, education and tourism activities in certain areas.</p> <p>5. To preserve the landscape richness and beauty of the zone, which has high tourism potential.</p>
Purús Communal Reserve	<p>1. To conserve the biodiversity of the area and the sustainable management of resources in benefit of the local populations in the area of influence.</p> <p>2. To strengthen local capacities for the management of the area and for other actions contributing to the conservation of the biodiversity of its interior and in the areas of neighbouring local communities.</p> <p>3. To function as the buffer zone of Alto Purús NP.</p>
Amarakaeri Communal Reserve	<p>1. To contribute to the protection of the drainage basins of the Eori (Madre de Dios) and Karene (Colorado) rivers, ensuring the stability of lands and forests and maintaining the quality and quantity of water, ecological equilibrium and an adequate environment for the development of the Harakmbut native communities.</p> <p>2. To maintain and develop the cultural values of the Harakmbut native communities.</p>
Megantoni National Sanctuary	<p>1. To conserve untouched the ecosystems of the Megantoni mountains, including 10 life zones with intact forests, water sources such as the headwaters of the Limpia and Ticumpinía rivers and high cultural and biological values including the Pongo de Maenique (a sacred place for the Machiguenga people), species under threat of extinction including the spectacled bear <i>Tremarctos ornatus</i>, the otter <i>Lontra longicaudis</i>, the monkey <i>Ateles belzebuth</i> and the blue headed green macaw <i>Propyrrhura couloni</i>, species with limited range and species new to science, keeping intact the highly important corridor between the Manu NP and the Vilcabamba PA complex.</p> <p>2. To protect the area inhabited by indigenous people in voluntary isolation for their exclusive use, safeguarding all of their rights including their ancestral territories.</p> <p>3. To provide a zone for special use for the Sababantiari indigenous group, which allows them to continue their current use of the forests, to monitor the impacts of hunting and, if necessary, to manage the zone together with the communities.</p> <p>4. To provide strict protection for an isolated peninsula of puna.</p> <p>5. To ensure possibilities for research in intact puna habitats along the southern edge of the area, leading eventually to the recovery and management of degraded puna in nearby sites.</p> <p>6. To maintain intact the headwaters of the basins of the Yoyato, Kirajateni and Taperashi rivers, safeguarding the acquired rights of the inhabitants of the area, at the same time harmonizing the use of the forests and soils in accordance with the spirit of the area. It is a viable alternative to relocate current inhabitants who have not generated significant impacts due to their recent arrival.</p> <p>7. To provide a zone of low impact tourism around the pongo and other possible entry points (e.g. to the north of the road to Estrella) in benefit of neighbouring communities.</p> <p>8. To generate mechanisms for the participation of neighbouring populations in the protection and management of the new PA.</p> <p>9. To accelerate the process of physical/legal clarification of the rights of the neighbouring population and those located in areas fit for agricultural activity.</p>

## PART IV. Private Conservation Areas in the target regions of the project

Name	Legal basis	Date	Area (ha)	District	Province
<b>Cusco</b>			<b>29,620.02</b>		
Abra Málaga	RM 229/2007-AG	09-03-07	1,053.00	Huayopata	La Convention
Bosque Nublado	RM 032/2008-AG	15-01-08	3,353.88	Kosñipata	Paucartambo
Abra Málaga Thastayoc-Royal Cinclodes	RM 005/2009-MINAM	16-01-09	234.88	Ollantaytambo	Urubamba
Sele Tecse-Lares Ayllu	RM 072-2010-MINAM	06-05-10	974.22	Lares	Calca
Mantanay	RM 073-2010-MINAM	06-05-10	365.57	Urubamba	Urubamba
Choquechaca	RM 074-2010-MINAM	06-05-10	2,076.54	Ollantaytambo	Urubamba
Qospocahuarina	RM 089-2011-MINAM	28-04-11	1,827.00	Ollantaytambo	Urubamba
Pillco Grande-Bosque de Pumataki	RM 299-1011-MINAM	22-12-11	271.62	Challabamba	Paucartambo
Japu-Bosque Ukumari Llaqta	RM 301-2011-MINAM	22-12-11	18,695.75	Paucartambo	Paucartambo
Pampa Corral	RM 090-2011-MINAM	28-04-11	767.56	Ollantaytambo	Urubamba
<b>Huánuco</b>			<b>13,294.50</b>		
Jirishanca	RM 346/2007-AG	24-04-07	12,172.91	Queropalca	Lauricocha
San Marcos	RM 133-2011-MINAM	16-06-11	985.99	Umari	Pachitea
Panguana	RM 300-2011-MINAM	22-12-11	135.60	Yuyapichis	Puerto Inca
<b>Madre de Dios</b>			<b>372.58</b>		
Habana Rural Inn	RM 156-2010-MINAM	06-09-10	27.79	Tambopata	Tambopata
Kérenda Homet	RM 157-2010-MINAM	06-09-10	35.40	Tambopata	Tambopata
Bahuaja	RM 158-2010-MINAM	06-09-10	5.57	Tambopata	Tambopata
Tutusima	RM 159-2010-MINAM	06-09-10	5.43	Tambopata	Tambopata
Inotawa 2	RM 013-2012-MINAM	24-01-12	15.59	Tambopata	Tambopata
Inotawa 1	RM 016-2012-MINAM	24-01-12	58.92	Tambopata	Tambopata
San Juan Bautista	RM 035-2012-MINAM	24-02-12	23.14	Inambari	Tambopata
Boa Wadack Dari	RM 079-2012-MINAM	26-03-12	22.88	Inambari	Tambopata
Nuevo Amanecer	RM 081-2012-MINAM	26-03-12	28.38	Tambopata	Tambopata
El Gato	RM 185-2012-MINAM	16-07-12	45.00	Tambopata	Tambopata
Bosque Benjamín 1	RM 244-2012-MINAM	13-09-12	28.41	Tambopata	Tambopata
Camino Verde Baltimore	RM 346-2012-MINAM	28-12-12	21.07	Inambari	Tambopata
Bosque Benjamín 2	RM 185-2013-MINAM	21-06-13	29.00	Tambopata	Tambopata
Bosque Benjamín 3	RM 213-2013-MINAM	16-07-13	26.00	Tambopata	Tambopata
<b>Pasco</b>			<b>75.80</b>		
Sagrada Familia	RM 1437/2006-AG	23-11-06	75.80	Pto Bermúdez	Oxapampa
<b>Total</b>			<b>43,362.90</b>		

Source: SERNANP (2013) <http://www.sernanp.gob.pe/>



**PART V. Other (non-targeted) PAs located in the project's intervention areas**

<b>Name</b>	<b>Legal basis</b>	<b>Date of establishment</b>	<b>Area (ha)</b>	<b>Region</b>
Tingo María National Park	Ley 15574	14-05-65	4,777.00	Huánuco
Bahuaia Sonene National Park	DS 012-96-AG	17-07-96	1,091,416.00	Madre de Dios and Puno
Otishi National Park	DS 003-2003-AG	14-01-03	305,973.05	Cusco and Junín
Huayllay National Sanctuary	DS 0750-74-AG	07-08-74	6,815.00	Pasco
Machupicchu Historical Sanctuary	DS 01-81-AA	08-01-08	32,592.00	Cusco
Junín National Reserve	DS 0750-74-AG	07-08-74	53,000.00	Pasco and Junín
Tambopata National Reserve	DS 048-2000-AG	04-09-00	274,690.00	Madre de Dios
Ashaninka Communal Reserve	DS 003-2003-AG	14-01-03	184,468.38	Cusco and Junín
Machiguenga Communal Reserve	DS 003-2003-AG	14-01-03	218,905.63	Cusco and Junín
<b>Total</b>			<b>2,172,637.06</b>	

## **PART VI. ECAs and Administration Contracts in Target PAs**

### **Yanachaga-Chemillén NP**

The Yanachaga-Chemillén NP has a total administration contract for a period of 20 years issued to DRIS (Desarrollo Rural Sustentable), an NGO founded in 1998 that seeks to promote the socio-economic and productive development of high Andean and Amazon/Andean zones through actions based on a concern for the conservation and adequate use of biodiversity, which at the same time require the strengthening of local organizations through a participatory approach with a gender focus and in the framework of organic production aimed primarily at food security.

The management of the PA is carried out in accordance with the following premises ([www.drisperu.org](http://www.drisperu.org)):

- A vision of efficient management for the PA incorporates conservation and development.
- PA management instruments are efficient to the extent that they are based on participatory planning.
- There is a wide range of diversity and heterogeneity in the communities and other local stakeholders.
- Consideration should be given to the development of local organizations and institutional strengthening as instruments for development.
- Construction of the social base of the programme.
- Incorporation of the tasks of environmental management and conservation in the decentralization, regionalization and local development agendas.
- Consider and promote conservation and PAs in function of national and international markets.
- Application of a cost/benefit approach in conservation and development.
- The importance of demand and market economy.
- The current dynamics of management of SERNANP and PAs linked to the development of local and regional territories.

### **San Matías-San Carlos Protection Forest**

The Consortium of DESCO (Centre for Study and Promotion of Development) and CANPRODEM (National chamber for Production and Entrepreneurship) has a 20 year total administration contract for the area.

### **El Sira Communal Reserve**

ECOSIRA was founded in 2005 and entered into the administration contract for for El Sira Communal Reserve in 2006. It participated actively in the participatory process for the development of the 2009-2013 Master Plan. ECOSIRA is made up of 68 Native Communities of the Ashaninka (31), Asheninka (18), Shipibo-Conibo (13), Yanesha (1), Cocama (1) and Ashaninka-Yanesha (4) peoples of the departments of Ucayali, Pasco and Huánuco.

It has had positive experiences with projects improving organic coffee in the Gran Pajonal zone and with reforestation with bolaina in the middle and upper Ucayali; negative experiences have been reported for the zones of Pichis and Pachitea, with the production of fish and with reforestation of timber and non-timber species (due to inadequate site selection and lack of technical support).

Curently ECOSIRA has an office in the city of Pucallpa and has technical and financial support from GTZ and KfW.

### **Yanesha Communal Reserve**

The Association for the Conservation and Management of the Yanesha Communal Reserve (AMARCY) was the first ECA to be established; it has an administration contract since 2006. It has participated actively in the production of the 2011-2016 Master Plan. It is made up of 10 native communities and 6 annexes.

#### Amarakaeri Communal Reserve

The Amarakaeri ECA (ECA-RCA) was officially established in 2005 and signed the Administration Contract in 2006. It participated actively in the participatory process for the development of the 2008-2012 Master Plan.

The ECA-RCA is made up of representatives of two native federations and eight native communities with an estimated population of 1,644, belonging to three indigenous peoples: Harakmbut, Yine and Machiguenga.

#### Purús Communal Reserve

ECOPURUS was recognised in 2006 and signed the Administration Contract for the Communal Reserve in 2007. The 12 communities associated with ECOPURÚS belong mainly to the Cashinahua, Sharanahua and Yine indigenous groups, with an estimated population of around 1,000.

Currently ECOPURÚS has an office in Puerto Esperanza and receives technical and financial support from WWF.

The PAs of the Yanachaga and Manu complexes have operational Management Committees.

## PART VII. Principal productive activities in the Yanachaga and Manu complexes

PA	Productive acivities
Yanachaga Complex	
Yanachaga – Chemillén NP	- Agriculture: coffee, cocoa, squash, rocoto, garlic, caigua, sugar cane, maize, plantain, pineapple, pomegranate, oranges, palta, cassava, potato, beans and achiote.
Yanesha Communal Reserve	- Livestock: cattle and small animals.
San Matías - San Carlos Protection Forest	- Beekeeping: honey, pollen and royal jelly.
	- Timber extraction: cedro, tornillo, diablo fuerte, ishpingo, mahogany.
	- Reforestation: pine, eucalypt and native species.
	- Hunting: deer, armadillos, sajino, huangana, sachavaca, majaz o zamaño, cutpe or misho, coto monkey, paujil and perdices.
	- Fishing: boquichico, sábalo, corvina, zúngaro, doncella, lisa, carachama.
	- NTFP extraction: humiro or palmiche, palmito, pijuayo, guaraná, papaya, uvilla, ungurahui, caimito, aguaje, almendras, medicinal plants such as chuchuhuasi, sangre de grado, aceite de copaiba, jebe silvestre, tamshi:, ornamental plants (orchids and tree ferns).
	- Tourism: in Oxapampa, Pozuzo, Villa Rica, Palcazú.
	- Fish farming: trout, gamitana, paco.
El Sira Communal Reserve	- Agriculture: maize and coffee
	- Fishing: fasaco, boquichico, caracahama and bagre in summer; paco, doncella, palometa and corvina in winter.
	- Livestock: cattle, sheep and poultry.
	- Timber extraction: moena, lagarto caspi, catahua, lupuna, cumala, copaiba, tornillo, cedro, estoraque, quillobordón, bolaina.
	- Artisan gold mining.
Manu Complex	
Manu National Park	- Timber extraction: mahogany, cedro, ishpingo, lagarto caspi, bolaina, capirona, catahua, copaiba, cumala, lupuna, moena, shihuahuaco, palo rosa, requia and tornillo.
Alto Purús NP	
Purús Communal Reserve	- Agriculture: cassava, maize, peanuts, rice, cotton, beans, sachapapa, limes, pineapple, watermelon, plantain, papaya, sweet potato, sugar cane.
	- Livestock: cattle, pigs, sheep, poultry.
	- Fishing: boquichico, carachama, yambina, corvina, cunche, piraña, mota, fasaco, doncella, branquilla and raya.
	- Tourism: communal tourism hostels.
	- Hunting: sajino, huangana, deer, , sachavaca, majaz, paujil, taricaya, charapa, lagarto blanco, black cayman, yacumama
Amarakaeri Communal Reserve	- Gold mining.
	- Timber extraction.
	- Hunting: fresh, salted or smoked bushmeat of picuro, deer, sajino, huangana.
	- Fishing
	- Gathering: uvilla, pama, chimicua, anonilla, pacae, shimbillo, ungurahui, aguaje, castaña, bulbos, fungi, snails, insect larvae, turtle eggs, crabs, shrimp. leaves, medicinal plants, ropes, tamshi, pona, yarina, cashapona, shapaja, bijao, shebón.
	- Agriculture: cassava, plantain, coconut, oranges, lemons, limes, beans, sugar cane, pijuayo, pineapple
	- Livestock: cattle, poultry
Megantoni	- Agriculture: coffee, cocoa, achiote, cassava, papaya, pineapple, plantain.

PA	Productive activities
National Sanctuary	- Fish farming: paco, gamitana.

Source: PA Master Plans.

### Local natural resource management initiatives in buffer zones of the target PAs (2010-2012)

Management group	Project name
<b>PNYCH buffer zone</b>	
San Alberto Agricultural Services Association	Forestry plantations for the recovery of degraded lands and the establishment of tourism products in the San Alberto microcatchment, Yanachaga Chemillén NP Buffer Zone
Primera Etapa San Pedro de Herrería Agrarian Producers Association	Recovery of degraded soils through agroforestry systems and reforestation, in San Pedro de Herrería - Huancabamba
Alto Navarra Agroecological Producers Association (APAN)	Participatory Development of Apiculture, Forestry Plantations and Capacity Strengthening in the Río Palcazú Microcatchment
Grapanazú Organic Farmers Association	Recovery of degraded soils through agroforestry systems and apiculture development in Grapanazú village – Huancabamba
Yanachaga Alto Papachacra Agroforestry Producers Association	Agroforestry and Reforestation in Yanachaga Chemillén NP buffer zone, Navarra sector
Quebrada Muerta Chacos Agricultural Producers Association	Agroforestry and apiculture in Yanachaga Chemillén NP buffer zone, Quebrada El Muerto, Chacos
La Colmena Agricultural Producers Association	Generation of economic income through controlled trout breeding and the recovery of gallery forest in Grapanazú catchment, Huancabamba
<b>Yanesha Communal Reserve Buffer Zone</b>	
Cohuen Moeorr- Buenos Aires Agroecological, Fish Farming and Tourism Producers Association	Development of fish farming activities for conservation and biodiversity in Buenos Aires community
Valle de Palcazú Farmers and Ranchers Association	Utilization of water bodies for fish farming activities in the buffer zone
Mome Nueva Aldea Mothers Club Association	Rehabilitation of integrated forestry and fish farming activities in the surroundings of the RCY NP
CHAHUAR Agroecological, Tourism and Ranching Association	Installation of agroforestry systems with achiote and cocoa for conservation of the biodiversity of the Yanesha Communal Reserve
<b>El Sira Communal Reserve</b>	
San Pedro and San Pablo Agricultural Association – ASAPESP	Strengthening of Fish Production of ASAPESP - Puerto Inca
Valladolid Agricultural Producers Association.	Cocoa Project of Alto Ucayali
“Rey David Puerto Sira” Ltda. Communal Company for Agricultural, Ranching and Forestry Services (ECOMUSA “Rey David”).	Strengthening of the installation of cocoa growing among the members of ECOMUSA of Puerto Sira
	Construction and improvement of bird production systems in Puerto Sira
	Installation of cocoa in Puerto Sira and Santa Teresa native

	community
San José de Pintuyacu Fish Farmers, Agricultural Producers and Ranchers Association	Integrated Amazonian fish production Project in San José de Pintuyacu
Association of Reforesters and Wild Fauna and Flora Conservationists Nuevo Edén	Strengthening of the installation of organic cocoa growing
	Strengthening of the installation of cocoa growing in Santa Clara
Perea Fish Farming Association – ACUIPER	Production of Amazonian fish in Churuyacu - Puerto Inca
Río Pichis Association of Rubber Producing Families – AFAPROCAP	Improvement of the supply of achiote in (8) communities in Pichis sector
	Improvement of the supply of Shiringa Divisoria and Puerto Davis native communities in the El Sira buffer zone
Cayena Lisa Pineapple Producers Association	Strengthening of the production of Golden pineapple in Puerto Bermúdez
Cahuapanas Agroforestry and Fish Farming Association - "APAAC"	Installation of cocoa growing associated with pacae and plantain in the El Sira Buffer Zone
Alto Ucayali Sector Agroforestry Producers Association "ASOPASU"	Installation of agroforestry plots for the production of achiote and the recovery of degraded areas in Alto Aruya community of El Sira Buffer Zone
Intercultural Association of Agricultural, Forestry and Fish Farming Producers "AIPAFAG".	Establishment and management of agroforestry plantations with the objective of conserving community forests in Galilea community (Iparía District, Coronel Portillo Province, Ucayali)
<b>Manu National Park Buffer Zone</b>	
Palotoa Teparo Native Community	Communal forest management with ecotourism objectives
Various native communities	Forest management through reforestation, agroforestry and/or forest enrichment
<b>Alto Purús National Park and Purús Communal Reserve Buffer Zones</b>	
Laureano Native Community	Management of mahogany seed
Monterrey Native Community	Management of mahogany seed
Gastabala Native Community	Management of mahogany seed
Santa Margarita Native Community	Management of mahogany seed
Pozo San Martín Native Community	Management of mahogany seed
<b>Megantoni National Sanctuary Buffer Zone</b>	
Timpía Native Community	Communal forest management with aims of ecotourism, reforestation and agroforestry
Poyentimari Native Community	Forest management plan for timber: reforestation and agroforestry
Sababantiari Native Community	Reforestation and agroforestry
Matoriato Native Community	Reforestation and agroforestry
Yoquiri Native Community	Reforestation and agroforestry

Fuente: Memorias 2012 de las ANP. Entrevistas con Jefes ANP.

FAO, 2012. Iniciativa de la FAO en apoyo al desarrollo de capacidades para el manejo forestal comunitario en la Amazonía peruana. Documento de trabajo.

**PART VIII. Financial projections over the project period**

Source of funding	Complejo Yanachaga				Complejo Manu					
	PNYCH	BPSMSC	RCY	RCS	PNM	RCA	SNM	PNAP	RCP	
a) Funds from local and regional governments and mancommunities, through SNIP projects	5,500,000	3,500,000	3,500,000	2,500,000	7,500,000	2,500,000	6,000,000	2,000,000	2,000,000	<b>35,000,000</b>
b) Alliances with other Government ministries and programmes	850,000	650,000	710,000	650,000	700,000	120,000	1,500,000	450,000	150,000	<b>5,780,000</b>
c) National Government:	1,300,000	1,300,000	700,000	700,000	2,300,000	1,300,000	2,300,000	300,000	200,000	<b>10,400,000</b>
d) Competitive research funds with universities that have access to levies paid by petroleum companies.	600,000	300,000	200,000	200,000	1,600,000	300,000	1,600,000	500,000	300,000	<b>5,600,000</b>
e) Social and environmental responsibility schemes of extractive companies:	200,000	500,000	200,000		500,000	4,000,000	700,000			<b>6,100,000</b>
f) Bilateral and multilateral donations from international cooperation and NGOs	700,000	600,000	450,000	450,000	1,000,000	500,000	300,000	400,000	400,000	<b>4,800,000</b>
i) Indigenous REDD+			150,000		400,000	1,000,000				<b>1,550,555</b>
<b>TOTAL</b>	<b>9,150,000</b>	<b>6,850,000</b>	<b>5,910,000</b>	<b>4,500,000</b>	<b>14,000,000</b>	<b>9,720,000</b>	<b>12,400,000</b>	<b>3,650,000</b>	<b>3,050,000</b>	<b>69,230,000</b>

## PART IX. Opportunities for synergies with other projects in each site

Name of Project/Activity	Description/objective	Budget	Institution	Source of funds
<b>Manu National Park (MNP)</b>				
Forest Protection and Natural Resource Management in the MNP (ProBosque Manu)	Reduction of forest and biodiversity loss through community participation in forest protection and natural resource management	€2,450,000	Frankfurt Zoological Society (FZS)	International Climate Initiative (ICI) of German Federal Environment Ministry (BMU) and FZS
Agreement with San Diego Global Zoo (SDZG).	Mutual cooperation for the development of activities aimed at the promotion of research (infrastructure, basic services etc. for the use of researchers).	US\$1,220,000	San Diego Global Zoo (SDZG).	San Diego Zoo Global (SDZG)
<b>Amarakaeri Communal Reserve (ACR)</b>				
Integrated management of climate change in communal reserves of Amazonía	Reduction of vulnerability to CC in indigenous communities, increasing their resilience through the incorporation of community-based adaptation (CBA) and ecosystem-based adaptation (EBA) strategies in the sustainable management of comunal reserves.	€3,000,000	UNDP	BMU
Management of secondary forests through agroforestry systems related to indigenous cosmovision in the buffer zone of the reserve	Strengthening of traditional knowledge of indigenous people regarding forest management through agroforestry systems aimed at the restoration of secondary forests, for the conservation of biodiversity, the preservation of sociocultural heritage and the sustainable management of the reserve.	\$35,000	FENAMAD-COHARYIMA	Belgian Government/Indigenous Fund
ACR Master Plan Implementation Project – Lot 76 Fund	Implementation of activities programmed in the ACR Master Plan, strengthening of the ACR ECA, communal oversight, updating of master plan, etc.	\$27,000	SERNANP, Amarakaeri ECA	PROFONANPE Lot 76 Fund
Strengthening of capacities for sustainable and participatory management of the ACR and its buffer zone - Madre de Dios. DRIS	Contribution to the conservation of the ACR and sustainable management of the native and colonist communities of the buffer zone, and strengthening the management capacities of the reserve.	€49,500	DRIS/Sustainable Rural Development	Flemish Fund for Tropical Forests and BOS+ (Belgium)
<b>Megantoni National Sanctuary</b>				



Name of Project/Activity	Description/objective	Budget	Institution	Source of funds
Patrolling and oversight for the protection of Natural Protected Areas		PS354,283	SERNANP	
Maintenance of goods, equipment and infrastructure, funding of PA staff, strengthening of local organizations,		PS211,351	TGP-AVISA FZS-SERNANP	
<b>Alto Purús National Park</b>				
Conserving the headwaters of the Purús-Manu corridor	Implementation of master plan for environmental education, strengthening of management committees, financial sustainability, improvement of management and promotion of natural resource management	PS7,240	Consortium between WWF, Propurus, AIDSEP, Pronaturaleza, FZS and CARE Peru	USAID - ICAA
<b>Purus Communal Reserve</b>				
Conserving the headwaters of the Purús-Manu corridor	Implementation of master plan for environmental education, strengthening of management committees, financial sustainability, improvement of management and promotion of natural resource management	PS7,240	Consortium between WWF, Propurus, AIDSEP, Pronaturaleza, FZS and CARE Peru	USAID - ICAA
Ecopurús	Strengthening capacities, control and oversight, development of management plans.	PS17,960	Ecopurús	WWF - Propurús
<b>Yanachaga-Chemillén National Park</b>				
Administration contract with DRIS/Sustainable Rural Development for 20 years.		To be defined	DRIS and allies (including Desco, SEPAR, IBC)	BMZ, Fondoempleo, UNDP, Fund for the Americas
PRODERN II	Sustainable economic development and strategic management of natural resources in the regions of Apurímac, Ayacucho, Huancavelica, Junín and Pasco (Prodern II)	To be defined	Co-management (MINAM and Belgian Development Agency CTB)	Belgian Government
Trinational Project	Improvement of the management effectiveness of national PA systems of Colombia, Ecuador and Perú for adaptation to CC.	To be defined	SERNANP	BMZ
Missouri Botanical Garden	Inventories of fauna and monitoring of climate	To be defined	Missouri	Missouri Botanical

Name of Project/Activity	Description/objective	Budget	Institution	Source of funds
	change.		Botanical Garden	Garden
Benefits from environmental goods and services reducing poverty in high biodiversity areas of the Peruvian Andean Amazon.	Contribution to poverty reduction and environmental degradation in high biodiversity areas of the Andean Amazon, through the generation of capacities and policy, technical and entrepreneurial conditions for the development of successful experiences of sustainable use of ecosystem goods and services	To be defined	SERNANP-MINAM	European Union
<b>San Matias – San Carlos Protection Forest</b>				
Agreement-contract for total administration with DESCO-CAMPRODEM for 20 years.		To be defined	DESCO	DRIS and strategic allies, BMZ, Fondoempleo, UNDP etc.
PRODERN II	Sustainable economic development and strategic management of natural resources in the regions of Apurímac, Ayacucho, Huancavelica, Junín and Pasco (Prodern II)	To be defined	Co-management (MINAM and Belgian Development Agency CTB)	Belgian Government
<b>Yanesha Communal Reserve</b>				
Administration agreement – contract with AMARCY	Administration contract for comanagement of conservation and development actions	To be defined	AMARCY	AMARCY and its strategic allies, DRIS, JBM, DESCO, CONAP, FECONAYA.
PRODERN II	Sustainable economic development and strategic management of natural resources in the regions of Apurímac, Ayacucho, Huancavelica, Junín and Pasco (Prodern II)	To be defined	Co-management (MINAM and Belgian Development Agency CTB)	Belgian Government
Premium FSC communities (Alto Iscozacín, Shiringamazu, Nueva Esperanza, San Pedro de Pichanaz - Piloto Reserva Comunal Yanesha. DRIS)	Pilot combined FSC certification and ecosystem services in four Yánesha native communities, through agreement with AMARCY.	To be defined	DRIS-FSC	FF: IICA-MFS
<b>El Sira Communal Reserve</b>				

Name of Project/Activity	Description/objective	Budget	Institution	Source of funds
Biodiversity conservation with co-management in comunal reserves of Amazonia (Co-Gestión Amazonía Perú).	Improvement of the protection and conservation of biodiversity and sustainable use of forest resources in communal reserves and their buffer zones in the Peruvian Amazon with an approach of co-management.	€7,500,000	GIZ	BMU-SERNANP (€5,000,000 BMU, €2,500,000 SERNANP)
Perú Bosques (USAID).	Contribution to the updating of the master plan through the contracting of a team of consultants and logistics required for the implementation of the actions foreseen.	PS127,000	USAID Perú Bosques, SERNANP, Ecosira	USAID
Sustainable financial innovations to improve profitability in the use of forest goods and services in indigenous communities of the Communal Reserve.	Design and implementation of financial mechanisms and timber/NTFP production chains to allow an effective and sustainable management of the Reserve and its buffer zone, through the participation of public and private actors and indigenous organizations, to contribute to the sustainability of forest-based businesses and environmental services, as well as mechanisms for good governance in the reserve.	To be defined	Asesorandes/ Ecotribal- Ecosira	IICA-MFS
Framework agreement for interinstitutional cooperation between SERNANP and the National University of Ucayali (UNU).	Improvement of knowledge of the values of the PA, increasing human resources dedicated to research.	To be defined	UNU - Sernanp	UNU - Sernanp
Framework agreement for interinstitutional cooperation between SERNANP and the Regional Government of Ucayali (Goreu).	Management of PAs in the Ucayali region	To be defined	Goreu-Sernanp	Goreu-Sernanp
Yuyapichis Altitudinal Transect	Monitoring of climate impacts on biodiversity in the Reserve where human intervention is minimal.	To be defined	Sernanp - Red de Monitoreo	Sernanp - Red de Monitoreo

## **PART X. Stakeholder participation plan for the implementation phase**

Key strategies and mechanisms to be used to optimise stakeholder participation in project implementation will include the following:

### **1) *Direct involvement in execution***

Given the geographical scale and logistical challenges posed by the target areas, the delivery in practice of the project's outputs at field level will be achieved in large part through collaborative arrangements with existing organizations active in the field locations. Wherever possible, preference will be given in this regard to grassroots organizations that include and represent the community-level beneficiaries themselves. These entities will therefore be, on the one hand, beneficiaries of project support, in the form of institutional strengthening in relation to their roles in the planning and management of PAs and buffer zones (under Outputs 1.3, 1.4, 1.5 and 2.1); and contractors (under the modality of contractual services – companies) by virtue of their established capacities for providing technical and organizational support to their constituents (especially in relation to Outputs 2.3 and 2.4).

Particular attention will be paid to involving the following types of local and regional entities in this way:

- Indigenous organizations and federations, individually and/or through umbrella organizations such as AIDSESEP and CONAP (a balance will be sought between involving local and national indigenous organizations, in order to ensure that local variations in concerns and interests are adequately taken into account;
- Executors of Administration Contracts or ECAs (see paragraph 180), which are directly responsible for PA management;
- Regional and Local Governments, particularly in relation to land use planning (Output 2.1a, paragraph 274): the project will support the development of capacities, but the GOREs and GOLOs themselves will be responsible for the development of land use plans and the incorporation of considerations of BD conservation and PA resilience.

### **2) *Inception workshops***

The formal national inception workshop proposed in Section I Part III will be followed by regional inception workshops in the two target regions (additional workshops may be held, if logistical considerations make them necessary to achieve adequate stakeholder representation). These workshops will have the following aims:

- Socialization of the project with all key stakeholders (following up the socialization and discussions held during the PPG phase)
- Validation of specific design details (although core elements of project design will not be negotiable)
- Airing of stakeholder concerns and definition of a route map and mechanisms for taking them into account
- Confirmation of provisions for stakeholder participation in decision making and implementation
- Definition of first year work plans and targets.

### **3) *Project Board***

At national level, the Project Board will include representatives of local stakeholders, in the form of a representative of the Management Committees of the target PAs, and also a representative of the indigenous organization AIDSESEP, as observer. AIDSESEP will also form part of an *ad hoc* advisory committee for buffer zone activities under Component 2.

### **4) *Regional Steering Committees***

In addition to the national-level Board, the project will propose the establishment of Regional Steering Committees (RSCs) in each of the two target regions, which will provide the opportunity for the discussion of more locally-specific issues of project execution and the definition of regionally-specific

plans within the overall planning framework of the project. Issues discussed and proposals formulated in the RSCs will be communicated to the national Project Board for consideration and, as appropriate, approval. The composition of the RSCs will be similar in principle to that of the national Project Board, but with the participation of regional rather than national actors. Subject to the suggestions of the regional inception workshops, the RSCs are likely to include the managers of the PAs represented in the region, representatives of PA Management Committees and ECAs, and Regional and Local Governments.

**5) *PA Management Committees***

Project staff will participate wherever possible in meetings of PA Management Committees, and will request them to include as a standard agenda item discussion of progress and plans of the project, and any stakeholder concerns.

**6) *Existing coordination mechanisms***

Project team members will participate in existing multi-stakeholder coordination mechanisms, which will provide them with the opportunity to interact with project stakeholder also represented in these mechanisms, and for stakeholder observations regarding the project to be aired. These mechanisms, described in more detail in paragraphs 214-227, will include the following:

- REDD Platforms
- Regional Indigenous REDD+ Platforms
- Technical Commissions for Ecological Economic Zoning and Territorial Planning (ZEE-OT)
- Regional Environmental Commissions (CAR)
- Municipal Environment Commissions (CAM)
- Forestry Platforms.
- Civil Defence Committees.

## **PART XI. Terms of References for key project staff and main sub-contracts**

### **Project Coordinator**

Under the overall supervision of the National Project Director (NPD), the Coordinator will have the following responsibilities:

- Coordination of project actions, in compliance with Annual Work Plans and Budgets (APWBs).
- Supervision of the activities of the technical members of the Project Implementation Unit (PIU), thereby ensuring their relevance, effectiveness and efficiency.
- Preparation of terms of reference for external consultants contracted by the project, supervision and coordination of their work, and review and approval of their products.
- Ensuring that the project is implemented with the full participation of local actors and that functioning mechanisms exist that ensure that their interests are taken into account, communicated and reflected in the implementation of the project.
- Promotion of the coordinated participation of Government institutions and NGOs, at central and local levels, in project implementation.
- Realization of continuous and periodic monitoring of project impacts, in relation to the achievements foreseen in the APWBs and the impacts foreseen in the project results framework.
- In communication with the NPD, ensuring that the project is implemented in accordance with the policies and plans of MINAM, as Executing Agency.
- In communication with the Programme Official of UNDP, ensuring that the project is implemented in accordance with the United Nations Development Assistance Framework (UNDAF) in Peru.
- Identification and promotion opportunities for actions by other agencies of the UN system in the project areas.
- Ensuring that a cross-cutting gender focus is incorporated into the actions of the project.
- Together with UNDP, preparation of Periodic Implementation Reports (PIRs), detailing project progress, to be presented to GEF.
- Together with UNDP and the project team and in discussion with local stakeholders, preparation of APWBs for approval by the NSC and the GEF.
- With support from the project administrative team, ensuring efficient and transparent execution of financial and physical resources, in conformity with the rules of the Government, GEF and UNDP.
- Design and implementation of professional development plans for the members for the PIU.
- Identification of risks that could affect the achievement of the foreseen impacts of the project, and the definition and application of corresponding mitigation strategies.
- Support to the functioning of the PSC, through the provision of advice and logistics.
- Preparation and oversight of the implementation of the operational manuals for the implementation of the project.
- Organization and support of external evaluations of the project.

## PART XII. Stakeholder participation during the PPG phase

Place and date	Participants				Agenda/Programme
	Profile	M	W	Total	
Lima, 20 Aug 2013	Director DDE: 1 Director DDB: 1 Specialist DDE: 1 Specialist DGANP: 2 Specialist DDB: 2 Specialist DGCCCDRH: 1 Specialist OCTI: 1 Technical team UNDP: 4	7	6	13	- Programme and objectives of the misión - Discussion of the approach and priorities of the project - GEF logical framework approach - The PPG phase: stages, key dates and products - The specific logic of the project - Comments received on the PIF
Lima, 21 Aug 2013	Director DEE: 1 Specialist DDE: 1 Specialist DGANP: 2 Specialist DDB: 2 Specialist DGCCCDRH: 5 Specialist OCTI: 1 Technical team UNDP: 4	7	9	16	- Information needed to back up and expand the ProDoc - Indicators - Monitoring
Lima, 22 Aug 2013	Specialist DDE: 1 Specialist DGANP: 1 Specialist DDB: 1 Specialist DGCCCDRH: 1 Technical team UNDP: 4	3	5	8	- Review of ProDoc and information needs - GEF tracking tools. - Participation strategies - Social and environmental screen (ESS).
Lima, 23 Aug 2013	Director DDE: 1 Director DDB: 1 Specialist DDE: 1 Specialist DGANP: 2 Specialist DDB: 1 Specialist DGCCCDRH: 1 Specialist OCTI: 1 Technical team UNDP: 4	6	6	12	- Cofinancing, implementation arrangements - Needs and strategies for prior informed consent - Agreements on next steps, timing and responsibilities
Lima, 23 Sep 2013	Director DDE: 1 Director DGANP: 1 Director DDB: 1 Specialist DDE: 1 Specialist DGANP: 1 Specialist DGCCDRH: 1 Specialist DDB: 2 UNDP: 1 Technical team UNDP: 3	5	6	11	- Criteria for selection of target sites
Lima, 17 Oct 2013	Director DDE: 1 Specialist DDE: 1 Technical team UNDP: 1	3	0	3	- Validation of proposed target sites
Lima, 22 Oct 2013	Specialist DGANP: 1 PA heads: 5 Directors of ECAs: 4 Technical team UNDP: 3	12	1	13	- Presentation of technical team - Information on PPG - Planning of meetings with local actors - Information needs for PPG drafting
Cusco, 12 Nov 2013	PA heads and teams: 17 PA Management Committees: 5	12	2	14	- Presentation of Project proposal - Identification of stakeholder roles in Project implementation - Analysis of potential impacts of the Project on indigenous peoples - Identification of complementary initiatives - Identification of options for increasing PA
Quillabamba, 13 Nov 2013	ECAs: 6 Regional Governments: 9	6	6	12	
Puerto Maldonado, 15 Nov 2013	Provincial Governments: 2 District Governments: 2 Indigenous organizations: 5	10	3	13	

Place and date	Participants				Agenda/Programme
	Profile	M	W	Total	
Pucallpa, 18 Nov 2013	Allied NGOs 12 Others: 16	19	6	25	coverage - Identification of most vulnerable sites and populations to climate change
Oxapampa, 20 Nov 2013	Technical team UNDP: 2	15	3	18	
Lima, 9 Jan 2014	Representative AIDESEP: 1 Representative CONAP: 1 UNDP: 1 Technical team UNDP: 1	4	0		- Information on the process and presentation of advances to indigenous organizations - Questions, contributions, comments and suggestions from indigenous organisations
Lima, 21 Jan 2014	Director DDE: 1 Director DGANP: 1 Director DDB: 1 Specialist DDE: 2 Specialist DGANP: 1 Specialist DDB: 2 Specialist DGCCDRH: 1 Specialist OCTI: 1 UNDP: 1 Technical team UNDP: 3	8	6	14	- Sharing of advances - Validation of products and logical framework - Agreement of presentations for national actors
Lima, 22 Jan 2014	Director DDE: 1 Director DGANP: 1 Specialist DDE: 1 PA heads: 8 ECA: 6 Indigenous organizations: 2 Regional Governments: 3 MINAM: 1 International Cooperation: 3 NGO: 4 UNDP: 2 Technical team UNDP: 3	24	11	35	- Presentation of proposed logic and structure of the project - Studies and consultations carried out during the PPG phase - Main findings of the PPG phase and aspects to be defined - Working groups: complementarity and coordination with other initiatives and institutions, PA management, NRM options, financial sustainability, biological and environmental monitoring
23 Jan 2014	Director DDE: 1 Specialist DDE: 1 Specialist DGANP: 1 Specialist DDB: 2 Specialist DGCCDRH: 1 UNDP: 1 Technical team UNDP: 3	7	3	10	- General elements of the budget - Cofinancing - Needs for institutional strengthening
24 Jan 2014	Director DDE: 1 Directora DGANP: 1 Director DDB: 1 Specialist DDE: 2 Specialist DGANP: 1 Specialist DDB: 2 Specialist DGCCDRH: 2 Specialist OCTI: 1 UNDP: 1 Technical team UNDP: 4	8	8	16	- Institutional strengthening - Review of ESSP and next steps with indigenous actors - Review of tracking tools - Proposal of team structure - Main Budget elements - Cofinancing per output - Proposals of financing strategies - Gender - Information gaps to be filled

DDE : Directorate of Strategic Development of SERNANP  
DGANP : Directorate of PA Management in SERNANP  
DGCCDRH : General Directorate of Climate Change, Desertification and Water Resources in MINAM  
DDB : Directorate of Biological Diversity in MINAM  
OCTI : Office of International Technical Cooperation in MINAM



**Part XIII: Letter of Agreement**  
**STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT OF PERU FOR THE PROVISION OF SUPPORT SERVICES**

Dear Mr. Gamboa,  
Chief  
Servicio Nacional de Areas Naturales Protegidas (SERNANP)

1. Reference is made to consultations between officials of the Government of *Peru* (hereinafter referred to as “the Government”) and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
  - (a) Identification and/or recruitment of project and programme personnel;
  - (b) Identification and facilitation of training activities;
  - (c) Procurement of goods and services;
  - (d) Administration of travel.
4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP Resident Representative and the designated institution.
5. The relevant provisions of the Country Programme Action Plan (CPAP) and its supplementary provisions, signed between the Government of Peru and the United Nations Development Programme in Peru in Lima on 30 March, 2012 including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to this Letter of Agreement.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the CPAP and its corresponding clauses.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above are specified in the CPAP and detailed in the annex to this document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office three signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

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Signed on behalf of UNDP Peru

*Rebeca Arias*

*Resident Representative*

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For the Government  
Pedro Gamboa Moquillaza  
Chief  
SERNANP

## Attachment

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### DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

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1. Reference is made to consultations between SERNANP, the institution designated by the Government of Peru and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project “Transforming Management of Protected Area/Landscape Complexes to Strengthen Ecosystem Resilience”, “the Project”.

2. In accordance with the provisions of the letter of agreement signed on *[insert date of agreement]* and the project document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

Support services* (insert description)	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Payments, disbursements and other financial transactions	During project implementation	Universal Price List or the actual corresponding service cost	Support Services
2. Recruitment of staff, project personnel, and consultants	During project implementation	Universal Price List or the actual corresponding service cost	Support Services
3. Procurement of services and equipment, and disposal/sale of equipment	During project implementation	Universal Price List or the actual corresponding service cost	Support Services
4. Organization of training activities, conferences, and workshops, including fellowships	During project implementation	Universal Price List or the actual corresponding service cost	Support Services
5. Travel authorizations, visa requests, ticketing, and travel arrangements	During project implementation	Universal Price List or the actual corresponding service cost	Support Services
6. Shipment, custom clearance, vehicle registration, and accreditation	During project implementation	Universal Price List or the actual corresponding service cost	Support Services
7. Publications of procurement processes in national/international media, as needed	During project implementation	Universal Price List or the actual corresponding service cost	Support Services

#### 4. Description of functions and responsibilities of the parties involved:

This project will be executed under the National Execution modality, according to the standards and regulations for UNDP cooperation in Peru. The Implementing Partner (IP) of the project will be the National Protected Areas Service (SERNANP), and with the support of UNDP as a GEF Implementing Agency.

Project implementation will be the responsibility in practice of a Project Implementation Unit (PIU), led by a National Project Coordinator (NPC). The PIU and the NPC will ensure overall consistency of vision in the actions proposed under the different components, in coordination and with support from SERNANP (as Responsible Party for Component 1) and UNDP (as Responsible Party for Component 2 and Project Management). There will also be close coordination with MINAM, particularly in relation to Component 2, given the responsibilities of MINAM in relation to land use planning, biodiversity and climate change. Specifically, the NPC will:

- Be the signing authority of requests to UNDP for disbursements of project funds.
- Ensure the logistical, administrative and financial effectiveness of the IP in fulfilling its roles set out above
- To this end, provide monitoring, supervision and guidance to the technical teams based in the project areas
- Promote incidence in and coordination with MINAM, SERNANP and other key institutional stakeholders of the project, and the donor agencies that are supporting them
- Be responsible for overall conceptual, methodological, operational and strategic oversight of the project, ensuring the effective and timely delivery of the outputs.

Implementation of the project will be carried out under the general guidance of a Project Board (Steering Committee), specifically formed for this purpose. The composition, responsibilities and rules of operation of the Board will be confirmed during its first meeting. Subject to the decision of this meeting, it is proposed that the Board will be responsible for approving the operational plans and annual reports of the project as well as the terms of reference and appointments of key members of staff.

UNDP will provide technical and operational support necessary for the implementation of activities and the results of this project, with constant support from the PIU. The UNDP office will ensure that all consultant contracts, purchase orders and contracts for company services are in compliance with UNDP standards and procedures. In those cases in which the UNDP Resident Representative has to sign the contracts mentioned above, UNDP will participate in the processes for selection and recruitment. UNDP will also provide advances payments to the project to make direct payments and maintain accounting and financial control of the project.

The project authorities will carry out the procurement and contracts for all purchases less than USD\$ 2,500. These minor operations shall comply with rules and procedures contained in the National Implementation Manual. The Manual can be viewed at the website of UNDP Peru: <http://www.pe.undp.org>.

UNDP will assist in the administration of funds provided by GEF and UNDP itself. UNDP will be able to assist in the management of any other additional fund for co-financing this project. These arrangements will be included in the relevant Memorandum of Understanding. Contributions will be subject to internal and external audits established in UNDP rules and financial regulations.