FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Building a program for adaptation and resilience to climate change of Andean local communities and ecosystems in Peru

Country: Perú

Thematic Focal Area: Adaptation to climate change

Type of Implementing Entity: National Implementing Entity

Implementing Entity: PROFONANPE

Executing Entities: HELVETAS Swiss Intercooperation

Amount of Financing Requested: 4,746,620.00 (in U.S Dollars)

Letter of Endorsement (LOE) signed: Yes ☒ ☐ No ☐ ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐☒ This proposal has been submitted before including at a different stage (**concept**, fully-developed proposal)

☐☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

Project/Programme Background and Context:

The mountain ecosystems in Perú

The mountain ecosystems in Peru are in both sides of the Andes Mountains (Figure 1) covering 48 million hectares distributed in 19 departments[1], and they are part of the Hotspot of biodiversity Tropical Andes considered as the most biodiverse of the planet and that offers important ecosystem services such as the hydrological regulation (CEPF, 2021)[2]. Species of fauna that indicate the state of preservation of these ecosystems are the spectacled bear (*Tremarctus ornatus*), the mountain tapir (*Tapirus pinchaque*), the Andean condor (*Vultur gryphus*) and the suri (*Rea pennata*). The Andean ecosystems are also a source of forest genetic resources (*Polylepis* o *Podocarpus*, for example) and a great agrobiodiversity represented by grains, legumes, roots and tubers, vegetables, herbs, and fruits (CIP, 2021)[3]. The protected areas (PA) have an important role in ecosystem conservation and the adaptation to climate change. The target ecosystems of this proposal are located in the western slope of Andes Mountain called "Andean ecosystems". They cover an extension of 32.9 million hectares[1] and the Ministry of Environment in Peru (MINAM for its initials in Spanish) estimated an area of 316,566.49 hectares of damaged Andean ecosystems in 2020[4], considering the negative tendency of the net primary productivity or the change in the plant cover[5], although there is not a specific monitoring system for these ecosystems in Peru.

Figure 1. Location of mountain ecosystem in Perú

In chart 1, a type of Andean ecosystem is shown, as well as its extension and damaged surface in 2020.

Table 1. Andean ecosystems of Perú

Ecosystem	Area in 2018 (hectares)	PA Areas in 2020 (hectares)	Degraded areas in 2022 (hectares)	Threats
Dry puna grassland	4,887,184.29	560,379.40	22,747.86	● Agricultural expansion ● Livestock overgrazing ● Illegal extraction ● Groundwater drainage (in wetlands) ● Infrastructure
Wet puna grassland	11,981,918.13	517,838.03	112,977.54	
Jalca	1,340,320.57	177,392.62	14,733.18	
Bofedal	548,176.14	43,188.56	16,180.38	
Páramo	82,948.54	21,643.02	1,691.10	
Andean scrubland	10,304,035.93	232,718.67	86,768.19	
High-Andean relict forest (Queñoal trees and others)	156,972.02	19,265.83	640.98	
Western slope montane relict forest	90,703.86	13,674.80	4,805.91	

[1] Ministry of Environment, 2018. Map of Ecosystems of Perú (Ministerial Resolution 440-2018-MINAM).

[2] Critical Ecosystem Parnertship Fund, 2021. Tropical Andes Biodiversity Hotspot: Ecosystem Profile Update 2021. https://www.cepf.net/sites/default/files/tropical-andes-ecosystem-profile-2021-english.pdf

[3] International Potato Center. 2021. The Andean and the food for the future.

[4] https://geoservidor.minam.gob.pe/monitoreo-y-evaluacion/restauracion-de-areas-degradadas/

[5] Ministry of Environment, 2019. National Map of Degraded Areas in Terrestrial Ecosystems: Descriptive Memory. https://geoservidor.minam.gob.pe/wp-content/uploads/2020/02/Mapa-Nacional-de-%c3%81reas-Degradadas-Terrestres.pdf

Ecosystem	Area in 2018 (hectares)	PA Areas in 2020 (hectares)	Degraded areas in 2022 (hectares)	Threats
Meso-Andean relict forest	24,964.55	18,838.72	85.32	● Mining ● Fire
Inter-Andean seasonally dry forest (Marañón, Mantaro, Pampas y Apurímac)	535,867.36	8,906.79	41,078.88	
Periglacial and Glacial Landscape	2,959,578.37	676,985.37	19,410.75	
Total	**32,912,669.76**	**2,290,831.81**	**321,120.09**	

Source: National Map of Ecosystems (MINAM; 2018)[1]; MINAM Map Server (2021)[2]; SERNANP (2020); MINAM (2021)[6].

The importance of these Andean ecosystems in Peru is reflected on the provision of the hydrological regulation service: the Pacific slope gets the waters from the western side of the Andes mountains, and though it only concentrates 2.18% of the water volume of the country, it is the home of 65.98% of the population of the country (more than 16.3 million people) and it is the area where 80.4% of the national GDP is produced (INAIGEM, 2021)[7]. 80% of the river basins of the country are located in the Protected Areas (PA), and the protection of the main headwaters of the basins is an important task performed by the Peruvian government. In the country, at least 16 PA provide water of good quality to 12 service provider companies (EPS for his initial in Spanish) who offer potable water to more than 4 million people, and about 61% of the hydroelectric energy is produced with water coming from the PA; for example, that situation occurs in Junín national reserve who supports the Mantaro interconnected system (Leon, 2007) [8]. In the ideal 2050 scenario of the prospective study of the biodiversity of Peru (DGDB-MINAM, 2020), mentioned that the effective management of PAs is a way of contributing to reducing the deterioration of the ecosystems.

Locally, people benefit from these ecosystems through economic activities (commercial productive chains, as well as crops and breeding for self-consumption) linked to forest products (wood and non-wood), agrobiodiversity, raising of Andean camelid animals and tourism. The local population are mainly organized in rural communities, formally recognized by the Government[9], of which 96.6% are located in mountain ecosystems (INAIGEM, 2021)[4], and are in the medium and high poverty levels, according to the National Institute of Statistics and Informatics (INEI for its acronyms in Spanish) [10].

Climate risk to Andean ecosystems of Peru

In America, the climate change is affecting the biodiversity at genetic, species and ecosystem level and it will continue to do so, therefore it is important to broaden the monitoring systems to increase the knowledge about these trends (IPBES, 2018) [11] and get to know the limits of the adaptive capacity of the ecosystems and the socio-ecological systems in the mountains, especially under conditions of glacial retreat. On the other side, the regional climatic situation in South America shows the increase in the frequency of fires, especially in the south of Peru, as well as the reduction of the flow of the rivers due to the glacier loss (IPCC, 2021) [12]. The main challenges for the sustainable management of mountain

[6] Ministry of Environment. 2021. National Plan of Climate Change Adaptation of Peru: a supply for the update of the National Strategy before the Climate Change

[7] National Institute of Research on Glaciers and Mountain Ecosystem (INAIGEM), 2021. Design of the National Policy of Glaciers and Mountain Ecosystem: https://inaigem.gob.pe/web2/politicas-importancia/

[8] León, F. 2007. The Contribution of the Natural Protected Areas to the National Economy. National Institute of Natural Resources. Lima. Lima

[9] Government of Perú. 1992. Law Nº 24656. General Law of Rural Communities. Lima, Perú

[10] National Institute of Statistics and Informatics. 2021. Evolution of monetary poverty 2009-2020. Technical Report. https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/pobreza2020/Pobreza2020.pdf

[11] IPBES (2018): The IPBES regional assessment report on biodiversity and ecosystem services for the Americas. Rice, J., Seixas, C. S., Zaccagnini, M. E., Bedoya-Gaitán, M., and Valderrama N. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 656 pages.

[12] Arias, P.A. et al. 2021. Technical Summary. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/report/ar6/wg1/#TS

ecosystems include land-use changes caused by intensive agriculture and mining, the growing threat of water scarcity due to glacial retreat (IPBES, 2021) [13], and the need to generate and strengthen effective mechanisms of social participation and institutionalization of relevant local knowledge for adaptation (Dupuits, 2021)[14]. One of the main reasons of the vulnerability of mountain ecosystems to climate change is the richness in biodiversity and endemism in the Andes (Botero, 2015) [15], with more risk of extinction in higher latitudes and on tops of the mountains (Herzog, S.K. et al, 2010[16]; Martinez, Jørgensen, P. M., & Tiessen, 2012[17]), where a vertical migration of the species is expected and it is imperative to preserve microclimate refuges to attenuate this tendency (Cuesta et al, 2017)[18].

Concerns regarding the Andean ecosystems in Peru linked to the climate change include: (i) increased flow variability and significant reductions in watershed regulation capacity and water yield due to human intervention regardless of the hydrological conditions of the original biome in the case of Andean moor, Andean wetlands and Andean grassland (Ochoa-Tocachi et al, 2016[19]; Planas-Clarke et al, 2020[20]; Cervantes et al, 2021[21]), (ii) the increase risk of disasters due to mass movements of mass caused by the deglaciation and the erosion that affects the hydraulic, hydroenergetic and potable water infrastructure (MINAM, 2021[5]; López Gonzales et al, 2020[22]), and the generation of natural sources of polluting effluents such as the Acid Rock Drainage due to loss of glaciers (INAIGEM, 2021)[6].

According to the National Plan of Adaptation to the Climate Change of Peru (MINAM, 2021)[5], the climate scenarios for 2030 and 2050, show a higher increase of low and high temperatures in the andes, and regarding the total rainfall show that for the horizon 2030, in the andes, it is reduced up to 30% in the western, central and southern slope; however, the rest of the mountains shows an increase up to 30% and for the horizon 2050, part of the central and southern andes register a higher reduction in the rainfall up to 45%. Figure 2 shows a percentage change of the maximum temperature (above) and minimum temperature (below) for 2030 (left) and 2050 (right), and in figure 3, the maps of variation of the total annual rainfall in 2030 (left) and 2050 (right).

[13] Pörtner, H.O. et al. 2021. IPBES-IPCC co-sponsored workshop report on biodiversity and climate change; IPBES and IPCC. DOI:10.5281/zenodo.4782538

[14] Dupuits É. 2021. Status of the policies about climate change and the adaptation strategies in the Andes: a multisectoral look from the mountains. Quito: CONDESAN-COSUDE.

[15] Uribe Botero, E. (2015). The climate change and its effects on biodiversity in Latin America. https://www.cepal.org/es/publicaciones/39855-cambio-climatico-sus-efectos-la-biodiversidad-america-latina

[16] Herzog, S.K., P.M. Jørgensen, R. Martínez Güingla, C. Martius, E.P. Anderson, D.G. Hole, T.H. Larsen, J.A. Marengo, D. Ruiz Carrascal, H. Tiessen (2010). Effects of the climate change on the biodiversity of the tropical Andes: the status of the scientific knowledge. Summary for decision makers and responsible for the formulation of public policies. Instituto Interamericano para la Investigación del Cambio Global (IAI), São José dos Campos, Brasil

[17] Martinez, R., Jørgensen, P. M., & Tiessen, H. (2012). Climate Change and biodiversity in the Tropical Andes. S. K. Herzog (Ed.). MacArthur Foundation.

[18] Cuesta, F., Muriel, P., Llambí, L. D., Halloy, S., Aguirre, N., Beck, S., ... & Gosling, W. D. (2017). Latitudinal and altitudinal patterns of plant community diversity on mountain summits across the tropical Andes. Ecography, 40(12), 1381-1394.

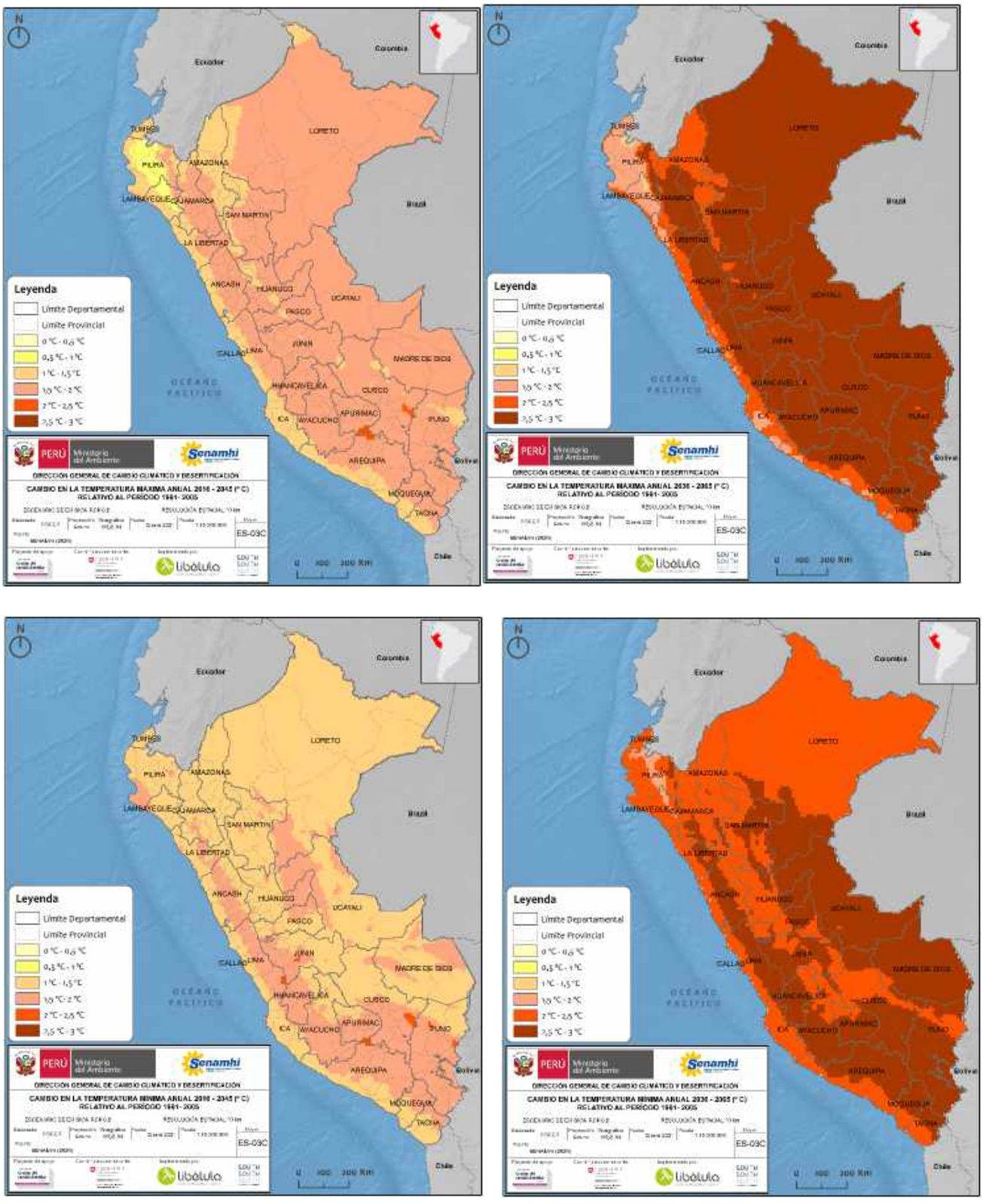
[19] Ochoa-Tocachi, B. F., Buytaert, W., De Bievre, B., Célleri, R., Crespo, P., Villacís, M., ... & Arias, S. (2016). Impacts of land use on the hydrological response of tropical Andean catchments. Hydrological Processes, 30(22), 4074-4089.

[20] Planas-Clarke, A.M., Chimner, R.A., Hribljan, J.A. et al. The effect of water table levels and short-term ditch restoration on mountain peatland carbon cycling in the Cordillera Blanca, Peru. Wetlands Ecol Manage 28, 51–69 (2020). https://doi.org/10.1007/s11273-019-09694-z

[21] Cervantes, R., Sánchez, J.M., Alegre, J., Rendon, E., Baiker, J.R., Locatelli, B., & Bonnesoeur, V. (2021). Contribution of the high-Andean ecosystems of the hydric regulation ecosystem service. Ecología Aplicada, 20(2).

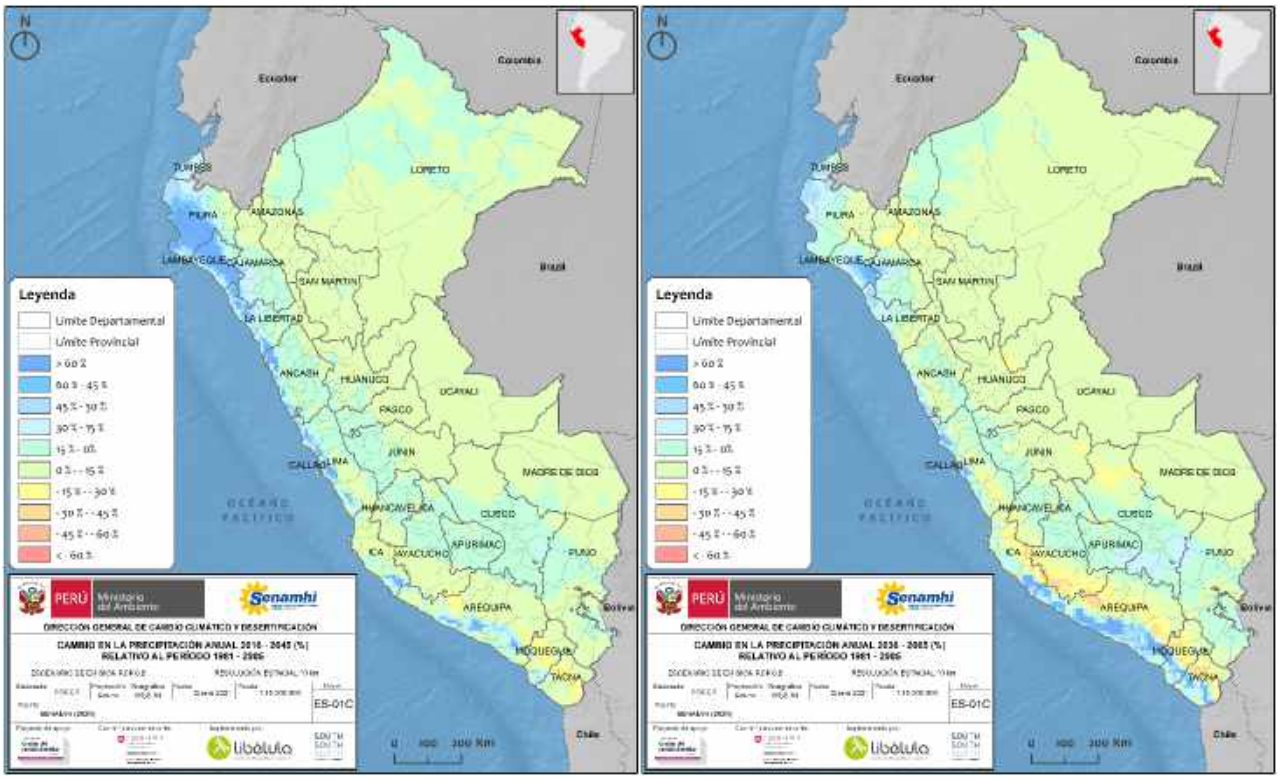
[22] López Gonzales M, Hergoualc'h K, Angulo Núñez Ó, Baker T, Chimner R, del Águila Pasquel J, del Castillo Torres D, Freitas Alvarado L, Fuentealba Durand B, García Gonzales E et al. 2020. What do we know about Peruvian peatlands? Occasional Paper 210. Bogor, Indonesia: CIFOR

Figure 2. Percentage change of the maximum and minimum temperature for 2030 and 2050.



Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

Figure 3. Maps of total annual precipitation variation in Perú for 2030 and 2050.



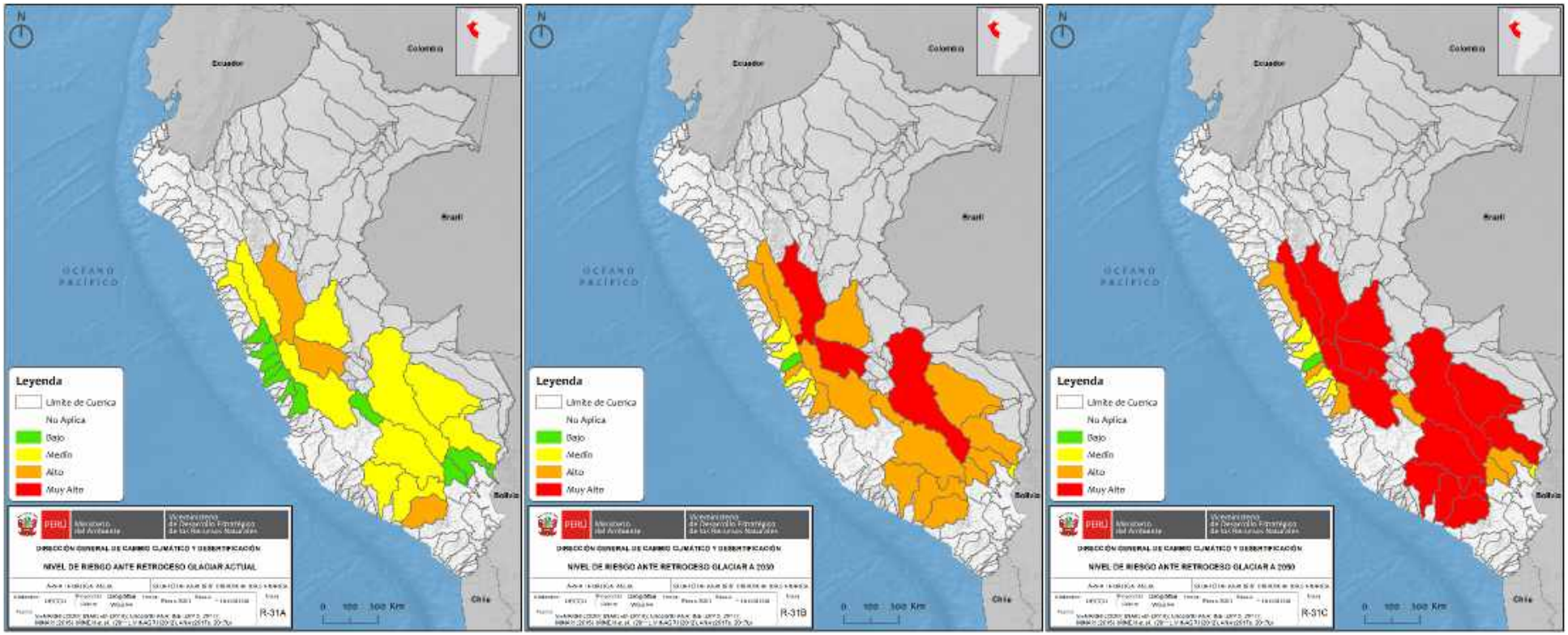
Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

Changes in climate averages and climate variability generate a series of hazards, of which Peru have focused on four: mass movements, floods, change in the aridity conditions and glaciar retreat. This prioritization reflects the conceptual framework of the National Adaptation Plan (NAP)[5], which is based on the risk management of the impact of climate change on the socioeconomic and ecological systems in five thematic areas: Water, Agriculture, Forests, Fishing and Aquaculture and Health.

These hazards were quantitatively characterized in the risk analysis considering the climatic scenarios developed by the National Service of Meteorology and Hydrology of Peru (SENAMHI by its acronyms in Spanish) under the RCP 8.5 emissions scenario and considering as a main climate agent the average total rainfall. An adaptation of this methodology proposed by the IPCC was used in its fifth report of evaluation (AR5) aligned with the Regulation of the Framework Law on Climate Change of Peru, considering 1981-2005 as a reference period and 2006-2065 as the future period. The correction of the systematic mistake was made to the results of the climate modeling of 12 km and 16 km, taking into consideration the data provided by Peruvian Interpolated Data of SENAMHI's Climatological and Hydrological Observations (PISCO), and after that, an average of the three simulations was estimated getting the climate situations to 10 km for Peru.

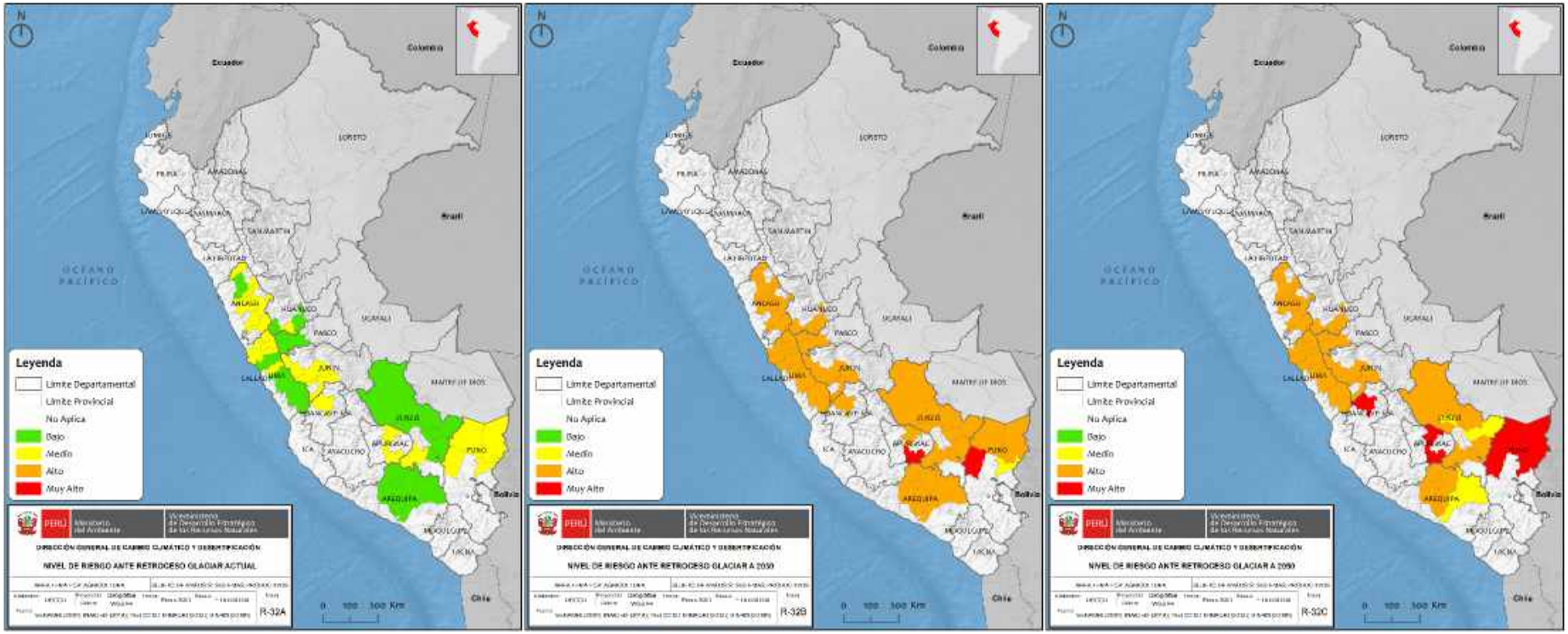
The results of this climate risk analysis for the thematic areas prioritized by the project (water, forests, and agriculture) and for the major hazards for the Andean ecosystems (mass movements, change in aridity conditions or glacial retreat) are shown in the Figures 4 to 7.

Figure 4. Probable trend in the level of risk for water availability, by glacial retreat and by basin: currently, 2030 and 2050.



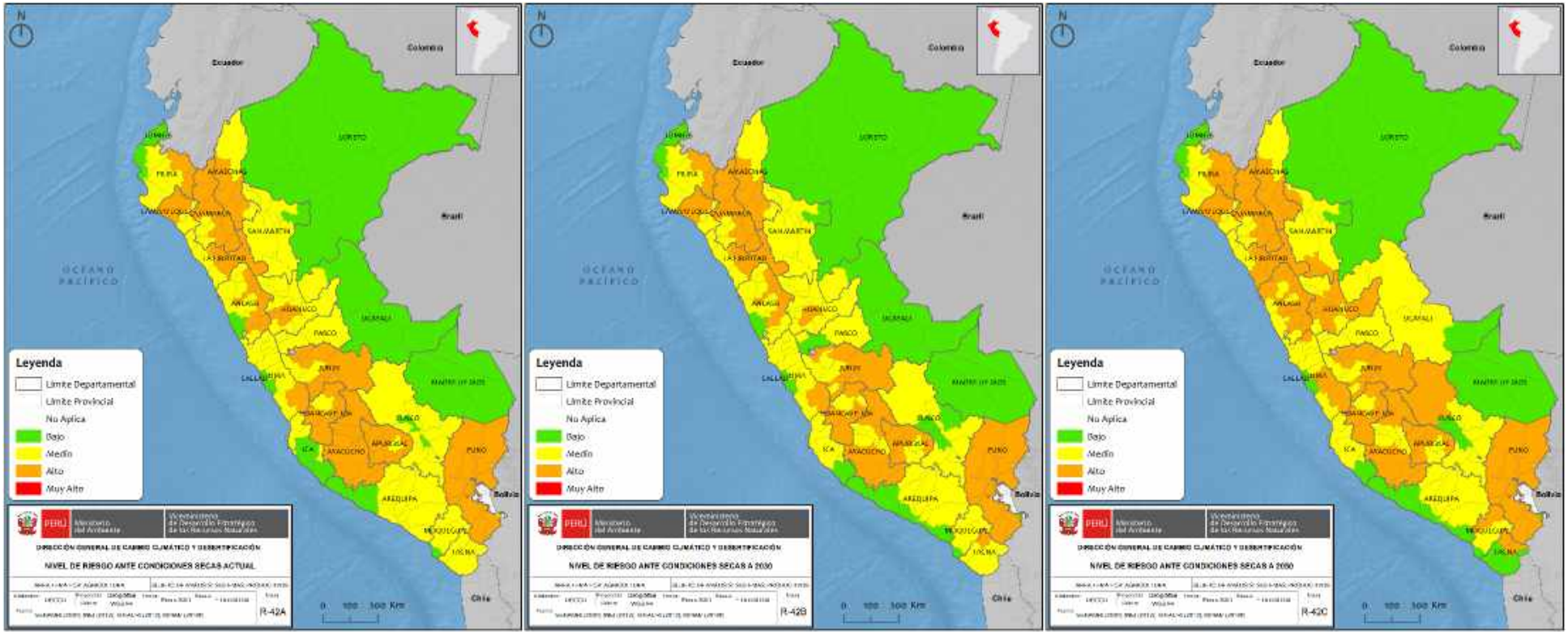
Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

Figure 5. Probable trend in the level of risk to agriculture systems, by glacial retreat and by department: currently, 2030 and 2050.



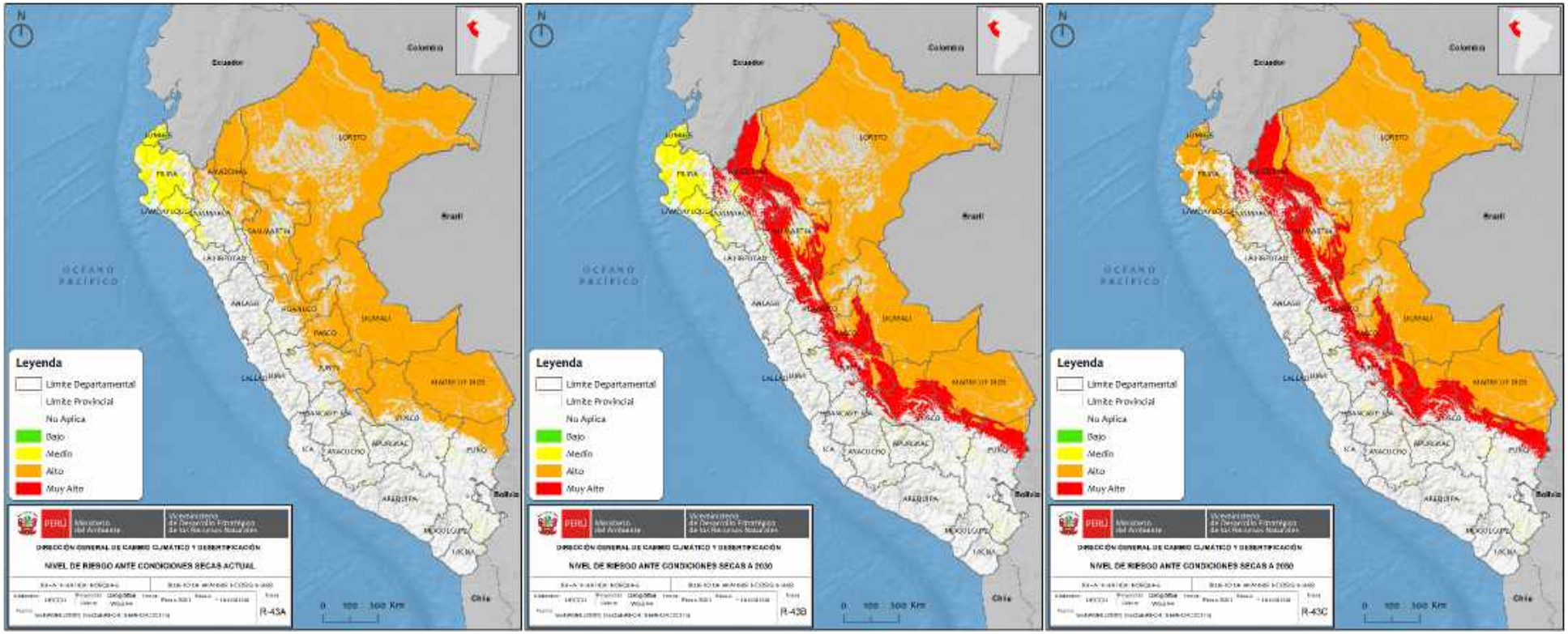
Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

Figure 6. Probable trend in the level of risk to agriculture systems, by change of aridity conditions and by department: currently, 2030 and 2050.



Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

Figura 7. Probable trend in the level of risk for forest ecosystems (seasonally dry and amazonian), by aridity conditions and by department: currently, 2030 and 2050.



Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

Mountain populations and climate change

The analysis in the NAP doesn't specifically include Andean forests or other Andean ecosystems of interest for the project (Andean moor, Andean wetlands and grasslands), only mountain forests of the western slope (Andean Amazonian), however; those located in the northern extreme of Peru are essential for the crops of agro-export in the coastal area of Piura and Lambayeque and they are of interest to the project. In the central Andes and, specially, the southern Andes are significantly less humid than the northern Andes, and a long history of wildfire and increasing drought periods are reported.

In this scenario, the main people affected are the rural Andean communities and their productive systems (mainly rainfed agriculture and livestock grazing) that depend directly on changes in climate, which, together with environmental damage and land-use change (affecting the biophysical component on which they depend), increase the risk of food insecurity and the reduction of the current and potential economic livelihoods of vulnerable populations. For this reason, it is necessary to consider the local population as the main axis for the design of adaptation actions in Andean ecosystems.

The current condition of preservation of the Peruvian Andean ecosystems is the result of a long process of transformation of the landscape by occupation and productive use (agriculture, sustainable livestock, mining, fires) and by the biophysical and climate characteristics typical to these ecosystems (Postigo, 2019) [23].

The capacity of adaptation and resilience before the pressure and threats to these ecosystems depends on its integrity as well as the capacity of the local population to reduce the effects of the climate change (Vasquez Jara, et al., 2017)[24]. The Andean ecosystems offer contributions to the people especially those referred to the service of hydric regulation, and they will be affected by the variations on the climate: its dynamic, composition and distribution will change with the rise of the temperature which will have an effect on the use of soil (migration of crops to proper agroclimatic areas) and the priorities of conservation (migration of species to higher latitudes, changes in the phenology, prioritization of environmental services). Also, in the last decades, droughts have been registered more frequently and with more intensity, which would worsen the intensity of fires, though these ones directly depend on the bad agricultural practices that are implemented in the dry season of the Andes. Therefore, it is necessary not just to improve the early alert systems, but also strengthen the local equipment and capacity for the early and timely answer.

At the national level, 28.1% of the population lives in the Andean zone (INEI, 2017), where there is a negative average annual growth rate of -0.6%. On the other hand, 20.7% of the national population lives in rural areas, however, in the area of intervention of the project this percentage is similar or higher: Cajamarca (64.6%), Apurimac (54.2%), Cusco (39.3%), Ancash (36.6%), La Libertad (21.1%) and Piura (20.7%). On the other hand, according to the Census of Peasant Communities (INEI, 2017) there are differences in relation to the percentage of men and women in the three intervention sites of the project: in the north and south the percentages between both groups are similar (50%) and in the center the percentage of men is higher (53%). In the case of the population under 18 and over 65, in the center and south they represent between 40% and 45% and in the north about 60%.

The INEI (2022)[25] established that the gender inequality index at the national level in 2021 stood at 0.364 (the value closest to zero indicates a higher level of inequality). This index is calculated based on the combined loss in reproductive health, empowerment and labor force participation achievements. The figures show the persistence of inequalities between men and women in the access to services essential for their autonomy. For example, the illiteracy rate in persons over 15 years of age in women reached 28.5% in rural areas (versus 8.1% in men). Another important indicator is economic independence: in rural areas this figure reaches 43.1% for women and 12.2% for men. These patterns are repeated in other aspects such as the digital divide (access to the internet) and gaps in access to agricultural credit. On the other hand, statistics indicate that 28.6% of Peruvian women of childbearing age and rural areas

[23] Postigo, J. 2019. Diagnosis of mountain ecosystems as a supply for the formulation of the national policy of glaciers and mountain ecosystems – Final Report. Andean Forests Programme

[24] Vásquez Jara, R., Tovar Narváez, A., Palma Pecho, A., Mercado Curi, W. y Gómez Moncada, H., (2017). Vulnerability of forests and other Andean ecosystems of Saywite–Choquequirao–Ampay to the climate change and the human-induced pressures. Lima: HELVETAS Swiss Intercooperation y el Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN).

[25] National Institute of Statistics and Informatics. 2022. Peru: Gender Gaps 2022. Progress towards equality between women and men. https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1879/libro.pdf

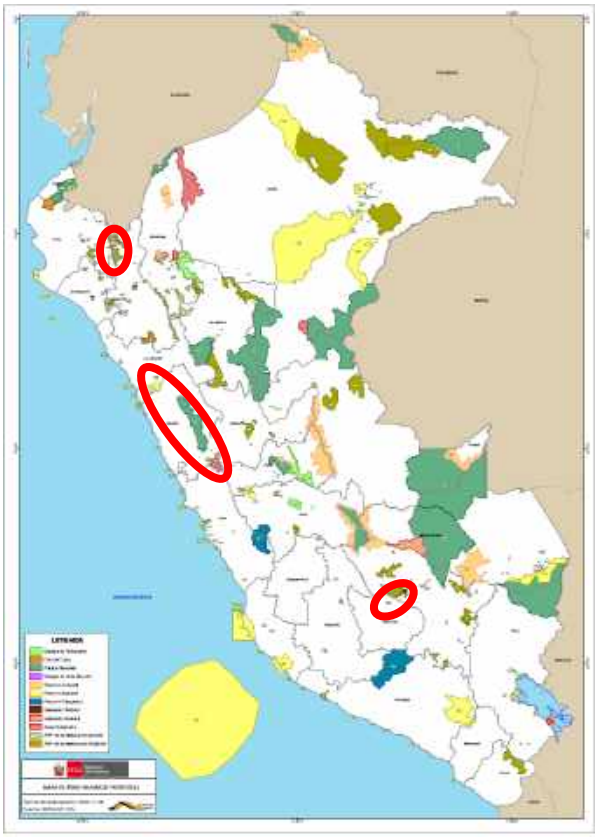
have suffered physical violence by their partner at some point in their lives. Likewise, the representation of women in decision-making spaces also shows a historical inequality.

Area of intervention of the project

The project intervention zone, three landscape mosaics of Andean ecosystems that include protected areas and their buffer zones, was identified based on the maps of probable risk level for the thematic areas of water, forest, and agriculture of the NAP Peru. These maps are based on the climate risk scenarios at the national level.

The three conservation mosaics are located in the north, central and south of Perú (Figure 8, based on the map of Protected Areas of Perú):

Figure 8. Location of project interventions areas



1. The first one in the north between the departments of Piura and Cajamarca. The Tabaconas Namballe National Sanctuary (31,143.08 hectares) is the core area for the intervention of the project. Around of this National Protected Area (NPA) three Private Conservation Areas (PCA) and two Regional Conservation Areas (RCA) have been established: PCA "Chicuate Chinguelas" (27,107.45 hectares), PCA "Páramos Bosques Montanos de San Miguel de Tabaconas", PCA "Bosques Montanos and Páramos de Huaricancha", RCA "Páramos y Bosques Montanos de Jaén y Tabaconas" and RCA "Bosques El Chaupe, Cunía y Chinchiquilla".

2. The second one in the central Andes between the departments of La Libertad, Ancash, Huanuco and Lima. It includes four protected areas: The Calipuy National Sanctuary (4,500 hectares), The Calipuy National Reserve (64,000 hectares), the Huascaran National Park (339,231.91 hectares), nucleus area of the Biosphere Reserve of the same name, and the Reserved Zone Cordillera Huayhuash (67,579.7 hectares).

3. The third one is in the south of Peru between the Apurimac and Cuzco regions. It includes three protected areas: The Ampay National Sanctuary (3,181.76 hectares), the Regional Conservation Area Choquequirao (103,814.39 hectares) and the Machupicchu Historic Sanctuary (28,943.15 hectares).

The progress and achievements of the project will contribute to the fulfillment of the PA Peru targets and will be reflected in the monitoring and evaluation system of Peru's NDC indicators. Section III.E shows the project goals, which will contribute directly to the NDCs shown in Table 2. At the beginning of the project, additional contributions to other NDCs in the forest sector will be identified in coordination with the National Forest and Wildlife Service (SERFOR).

Table 2. Project contributions to the adaptation measures of the PA Peru.

Thematic Area	Adaptation measures	Indicator	National Target to 2030
Water	Conservation and recovery of the natural infrastructure for the provision of hydrological ecosystem service in basins that are vulnerable to climate change (AGU24).	Area (ha) of conserved and recovered ecosystems that provide hydrological regulation and provisioning services, in watersheds vulnerable to climate change.	97,842.8 ha

Thematic Area	Adaptation measures	Indicator	National Target to 2030
Forests	Restoration of the ecosystems within the National System of Natural Protected Areas (SINANPE for its initials in English) to maintain landscape connectivity and reduce the impacts of climate change (BOS.2).	Number of hectares of Sinanpe's PAs with forest under restoration process reduces the impacts of extreme climate events.	19,630.0 ha
	Implementation of sustainable practices for the conservation of ecosystems in watersheds of Protected Areas vulnerable to extreme climate events (BOS.4)	Number of hectares of ecosystems in watersheds within the scope of the PAs with sustainable conservation practices to reduce vulnerability to extreme climate events.	312,000.0 ha
Agriculture	Management of natural grasslands to ensure sustainable livestock feed and reduce their vulnerability to climate change (AGRI.7).	Number of hectares of natural grasslands managed in areas vulnerable to climate change.	5,873,638.0 ha
	Implementation of adaptive technological innovation services for climate change in agricultural value chains (AGRI.15).	Number of agricultural producers with technical assistance for technological innovation adaptive to climate change in agricultural value chains.	10,978 local producers
	Implementation of business strategies that incorporate risk and opportunity management in the face of climate change (AGRI.17).	Number of agricultural producers with business plans incorporating climate change risk and opportunity management in value chains.	32,248 local producers

Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

The NAP[5], in agreement with Framework Law on Climate Change[26]., aims at anticipating and/or reducing the current risk and/or avoid the generation of future risks before the effects of the climate change, to reduce or avoid the potential damage, loss or alterations in the ecosystems, basin, territories, livelihoods, population, infrastructure, goods and services, as well as take advantage of the opportunities that offers the adaptation to the climate change for the sustainable development. In this way, the NAP has identified 92 regulations grouped in five thematic areas prioritized to focus on four specific problems.

The project will focus on two of these specific problems: low adaptive capacity of the population and high vulnerability of the ecosystems before the dangers associated with climate change. In this context, the project will contribute to 6 of the adaptation measures identified by NAP Peru in the thematic areas of Water, Forests and Agriculture. Also, contributing to the generation of enabling conditions will be supported to continue with the implementation of these adaptation measures, especially those referred to the interinstitutional articulation and the financing. One of the financing options identified by the NAP is the submission of proposals to the Adaptation Fund, which will serve as a basis for mobilizing public and private resources for its implementation.

[26] in particular with the principle of prevention established in article 2 of the Law 30754

Project/Programme Objectives:

Overall Project Objective

The project will contribute to increase the adaptive capacity of the socioecological and productive systems of the Andean rural communities and to reduce the vulnerability of the Peruvian Andean ecosystems (Andean forests, Andean moor and Andean wetlands) under an inclusive approach.

Specific Project Objectives

1. Development and implementation of a monitoring system for Andean ecosystems to determine relevant information about water and deforestation that will be used for decision making at a national and sub national level (regional governments).
2. Enhance resilience capacity of the Andean ecosystems in three conservation mosaics.
3. Enhance resilience capacity of productive activities in Andean rural communities of three conservation mosaics.

Project/Programme Components and Financing:

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Development and implementation of monitoring system for Andean ecosystems	1.1. Monitoring tools to measure hydrological ecosystem services on Andean ecosystem implemented. 1.2. Monitoring system of degradation and deforestation of Andean forests designed and piloted	**Expected Outcome 1** Mapping and monitoring Andean ecosystems to provide information about the water and climate and support decision making at a national and subnational level.	716,000.0
2. Implementation of best practices for landscape protection and restoration of Andean ecosystems in conservation mosaics.	2.1. Rural communities implement conservation and restoration practices in degraded areas inside and outside (buffer zones) of prioritized protected areas. 2.2. Incorporation of the climate change adaptation and disaster risk reduction approach in planning instruments of protected areas and regional and local governments of three conservation mosaics of Andean ecosystems. 2.3. Preliminary conditions prepared for the start of the "Natural Heritage Initiative of Peru – Andes", based on previously agreed upon conditions	**Expected Outcome 2** Enhancing the resilience capacity of Andean ecosystems in three prioritized conservation mosaics.	1,604,084.0
3. Increasing resilience and sustainability of local productive systems in rural communities in Andean ecosystem landscapes.	3.1. Rural communities with technical productive capacities to reduce vulnerability of value chains inside and outside (buffer zone) prioritized protected areas. 3.2. Design, evaluation, and implementation of adaptation measures of productive chains linked to the market.	**Expected Outcome 3** Enhancing the resilience capacity of productive activities in rural communities of the three prioritized conservation mosaics.	1,702,500.0

4. Project/Programme Execution cost	382,116.0
5. Total Project/Programme Cost	4,404,700.0
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)	341,920.0
Amount of Financing Requested	**4,746,620.0**

Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	August 2024
Mid-term Review (if planned)	August 2026
Project/Programme Closing	January 2028
Terminal Evaluation	May 2028

PART II: PROJECT/PROGRAMME JUSTIFICATION

A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

The project will focus on addressing two of the main problems identified by the NAP of Peru: (1) the low adaptive capacity of the population and (2) the high vulnerability of ecosystems to threats associated with climate change. The intervention will be developed around the protected areas of three conservation mosaics located in the north, center and south of Peru mentioned at the beginning of the project. The project will contribute to the following adaptation measures establish in the National Adaptation Plan:

- Conservation and recovery of the natural infrastructure for the provision of hydrological ecosystem service in basins that are vulnerable to climate change (AGU24).
- Restoration of the ecosystems within the National System of Natural Protected Areas (SINANPE for its initials in Spanish) to maintain landscape connectivity and reduce the impacts of climate change (BOS.2).
- Implementation of sustainable practices for the conservation of ecosystems in watersheds of Protected Areas vulnerable to extreme climate events (BOS.4)
- Management of natural grasslands to ensure livestock feed and reduce their vulnerability to climate change (AGRI.7).
- Implementation of adaptive technological innovation services for climate change in agricultural value chains (AGRI.15).
- Implementation of business strategies that incorporate risk and opportunity management in the face of climate change (AGRI.17).

It is important to mention that these protected areas have been prioritized because, according to the information shown in the project background and context section, it is vital to protect and recover the Andean ecosystems located in these areas in order to help communities and nature to face and adapt to climate change in the Andean region of Peru. These areas can buffer the impacts of extreme climate events and guarantee the provision of ecosystem services fundamental to human well-being, such as drinking water and food that cover part of basic needs. In this context, it is necessary to ensure their future conservation and integrate them into local development processes in coordination with local populations, municipalities and subnational governments.

Climate change and unsustainable management of production practices are degrading the ecosystems

of the Peruvian Andes (moorlands, wetlands, and grasslands) and the services they provide (provision and regulation of water; provision of forage, food and fiber; regulation of nutrients and carbon). In addition, the enormous carbon stocks stored in these ecosystems could be released into the atmosphere as they are increasingly degraded and lost through fires.

In general terms, the project will contribute with (i) strengthening of response, management and decision-making capacities of national institutions by providing support for the design and implementation of hydrological and degradation monitoring of mountain ecosystems, and in three prioritized mosaics (ii) increase the resilience of Andean ecosystems and their related population through the implementation of good practices for the conservation and restoration of mountain ecosystems involving the local population and the private sector, as well as (iii) enhance the resilience and sustainability of local productive activities by focusing on capacity building of local populations to increase the resilience of their productive activities under a market-based approach. ~~All this will be part of the inter-institutional alignment for the protection, restoration and sustainable management of Peru's Andean ecosystems~~.

According to Ostrom's framework of analysis for the sustainability of social-ecological systems (2009), positive or negative impacts of people on natural and non-natural resources (over exploitation or sustainable use) can increase or reduce local development opportunities. Under this approach, the project proposes interventions on ecosystems and people (who develop activities in them) to develop an intervention model for the conservation (protection, restoration and sustainable use) of high mountain ecosystems in Peru, which at the same time facilitates the articulation of the environment, agriculture and forestry sectors with this common objective.

The technical selection of restoration and conservation practices has considered the result of the consultation process, in which the ecological and economic importance of the proposed practices has been socialized and explained. For example, the endorsement of the population with sylvopastoral and sustainable livestock practices, the preference in the diversity of native forest species for forest restoration practices, participatory monitoring and the concern of the population for the care and management of water sources have been recorded.

Under this approach, the project will promote the implementation of Ecosystem-based Adaptation (EbA) measures (also considering the measures for the recovery of Andean ecosystems approved by the Peruvian government by ministerial resolution RM N°178-2019-MINAM) and the Nature-based Practices (NbP). The NbP refer to actions that contribute to protecting and managing ecosystems sustainably while recovering some ecosystem services using elements of the natural environment favorably. Conversely to the EbA measures, the NbP slightly modified the ecological or biophysical conditions of the area in which it is implemented to improve natural processes (United Nations University and CONDESAN, 2023).

Component 1. Development and implementation of monitoring system in Andean ecosystems

Outcome 1. Mapping and monitoring Andean ecosystems to support decision making at a national and subnational level

Peru has protocols for monitoring biomass and carbon, species biodiversity, climate, water and glacier dynamics, as well as changes in land use and socio-environmental dynamics that have been implemented in the various ecosystems of Peru and have managed to contribute to the measurement of the impact of these variables in the country, however, it is necessary to continue exploring new tools or instruments for monitoring the conservation of ecosystems and natural resources, and analyze the results and impacts generated by the process of occupation and use of the territory as well as the effect of climate change; and from this, propose measures or actions of a political or technical-regulatory nature that contribute to territorial management decisions.

The project will contribute to the improvement of the country's current hydrological and landscape degradation monitoring protocols through the design of an integrated system under a landscape and adaptive management approach for the Andean ecosystems of Peru. The data provided by these systems will allow impact assessment at regional and national levels, as well as providing relevant inputs for territorial planning, ecological restoration and improve their response capacity to the impacts of climate change.

Output 1.1 Monitoring tools to measure hydrological ecosystem services on Andean ecosystem

implemented.

Activity 1.1.1. Design of integrated monitoring system of Andean ecosystems

The monitoring strategy implemented with the project will be based on the Integrated Monitoring Strategy for High Mountain Ecosystems in Colombia designed within the framework of the SDC's Andean Forests Programme - Phase 1 (2014-2018). This strategy managed to address the main challenges posed by the articulation of an integrated system at a national scale, as a result of which a multi-scalar conceptual model was worked on of the main change-generating processes and the main response variables that could be monitored, from the national level to the level of ecosystems or plots.

The monitoring system ~~presented in this project~~ will be designed in collaboration with SERNANP, PNCB-MINAM, INAIGEM and SERFOR (National Forest and Wildlife Service) and will be linked to the early warning systems for forest fires (SERFOR and MINAM) and drought (SENAMHI).

This system will improve the decision-making capacities of the authorities of national governmental bodies in the management, planning and sustainable management of Andean ecosystems by providing timely information on water and degradation indicators through the implementation and improvement of the integrated monitoring system for Andean ecosystems, In this sense, if national institutions have this information on a regular basis, they will be able to improve their capacity to respond (decision-making) to ecosystem variations and implement policies related to the management and sustainable management of Andean ecosystems and the ecosystem services they provide.

The tasks scheduled for the achievement of this activity include:

- Elaboration of baseline of the state of knowledge and functioning of monitoring systems linked to Andean ecosystems in Peru.
- Workshops/Meetings of Multisectorial Working Group for development the Integrated System, including meetings with the Ministry of Economy and Finance to identify public financing opportunities within the framework of the budget programs of the agriculture, environment, forestry and wildlife, disaster risk management, sanitation sectors,
- Peru-Colombia exchanges (virtual and face-to-face) for technical assistance to design the monitoring system.
- Elaboration of a road map for the implementation and sustainability of the integrated monitoring system for high Andean ecosystems in Peru.

~~**Output 1.1. Monitoring tools to measure hydrological ecosystem services on Andean ecosystem implemented.**~~

Activity 1.1.2. Installation and monitoring of hydrological monitoring plots:

~~This output~~ The project will implement at least six hydrological monitoring plots in six different protected areas of the three previously defined mosaics, in order to monitor the flow of water sources. This will make it possible to quantify the contribution and dynamics of water flow and the water regulation capacity of the Andean ecosystems with regard to water security in the region (water availability for the city and agricultural areas).

To achieve the adaptation and implementation of hydrological monitoring tools in Andean ecosystems and to measure the impact of the services provided, we will work mainly in close coordination with SERNANP, INAIGEM and SENAMHI, as well as interacting with the Regional Initiative for Hydrological Monitoring of Andean Ecosystems (iMHEA), which is a network of organizations whose objective is to increase and strengthen knowledge about hydrology in the Andean region.

~~The data resulting from this system will serve as input for the analysis, by local municipality specialists, of the real situation of water security in the region in terms of water indicators such as flow, precipitation, among others, which will improve decision-making by the relevant authorities on the management of water resources and ecosystem services in the region.~~

The information generated by the monitoring plots (precipitation and flow) will increase SENAMHI's capacity to analyze the impact of climate on the provision of the ecosystem service of water regulation. On the other hand, it will strengthen decision making by the competent national authorities (National Water Authority, Municipalities and Regional Government) to improve water resources management at

the local level and increase resource mobilization to improve the protection, restoration and sustainable use of Andean ecosystems as providers of key ecosystem services for climate change adaptation: water regulation and habitat.

To ensure the best functioning of the hydrological monitoring tools and ensure their sustainability, technical assistance and practical sessions will be provided for the development and strengthening of capacities on the use of these tools in the field, involving the local population, specialists from the protected areas and the local municipalities and regional government, so it is expected that at the end of the sessions these actors will be able to collect information from the measurement of the plots and be able to socialize it in the municipality and with the local population as part of their reports in the monthly assemblies.

Likewise, SERNANP, as part of its intervention strategy and after coordination with the chiefs of each protected area, will proceed to include these monitoring systems within its technical field actions for each area, which will ensure the management of these tools over time.

A letter of commitment will also be signed with the municipal authorities, SENAMHI and INAIGEM ~~the Sanitation Service Providers~~ to ensure the support of all parties in the follow-up of the implementation of the monitoring system after the end of the project and thus guarantee the sustainability of the results achieved in this component. The replication, scaling and sustainability of the monitoring plots installed by the Project will be one of the activities to be included in the roadmap indicated in activity 1.1.1.

Likewise, in line with the Public Sector Budget Law for Fiscal Year 2024 and among the actions for the implementation and sustainability of the monitoring system, the project will seek to develop a pilot and training modules for regional authorities within the framework of the provided in the Budget Program Competitiveness and Sustainable Use of Forest and Wildlife Resources. In addition, a roadmap will be worked on with the Ministry of Economy and Finance to coordinate and articulate future actions that promote the sustainability of the monitoring system.[27]

The tasks to be carried out to achieve this activity are as follows:

- Institutional arrangements for hydrological monitoring: coordination meetings will be held with SERNANP, INAIGEM and SENAMHI to establish commitments on the process of installing plots and hydrological monitoring. Also, at the local level, agreements will be established with the communities and local population to support the installation of the plots, capacity building and protection of infrastructure and equipment.

- Capacity building for local actors: technical assistance will be provided by a local expert from the iMHEA network in Peru to support site selection, plot installation and capacity building at the local level with SERNANP, municipalities and local population.

- Site selection and installation of hydrological monitoring plots in protected natural areas: technical assistance and logistical facilities will be provided for the identification and selection of sites for the installation of the plots in coordination with SERNANP and the local population. For hydrological monitoring, an automatic rain gauge will be installed and a small weir will be built with a datalogger for flow measurement. The *Hydrological Monitoring System Design Guide for Water Ecosystem Service Compensation Mechanisms for Drinking Water Utilities* (SUNASS, 2020), which was developed based on the *iMHEA Methodological Guide for Hydrological Monitoring of Andean Ecosystems* (Célleri R., De Bièvre, B., & Ochoa, B., 2012), will be used.

- Strengthening the iMHEA network in Peru: Peru is one of the countries where the iMHEA network has the largest number of hydrological monitoring sites in the Andean region. By increasing the number of monitoring sites in Peru, the project will strengthen iMHEA's technical assistance capacities in Peru through a local expert, for the benefit of the network members and in the framework of a process of capacity building and collaborative networking with INAIGEM, which is complemented by annual iMHEA events in Peru.

- Exchange workshops and network learning of hydrological monitoring sites: the Project will support

[27] Ley de Presupuesto del Sector Público para el Año Fiscal 2024 - https://www.mef.gob.pe/es/por-instrumento/ley/32201-ley-n-31953/file

the organization in Peru of two annual events of the iMHEA network, facilitating the participation of local partners and international experts to develop training courses under the "train the trainers" approach.

- *Downloading, quality control and data processing, operation and maintenance of monitoring sites*: the Project will support with logistic expenses for the transfer of the national expert of the iMHEA network to the monitoring sites for the development of local capacities for data downloading and processing.

Output 1.2. Monitoring system of degradation and deforestation of Andean forests designed and piloted.

The need for accurate long-term monitoring data on the dynamics and role of high Andean ecosystems in hydrological regulation and the impact of their degradation on Andean landscapes and ecosystems is of utmost importance to understand the dynamics of these ecosystems and at the same time seek ways to reduce or prevent greenhouse gas emissions from the degradation and deforestation of Andean ecosystems and generate timely information about the impacts in the local productive activities prioritized by the population.

The SDC's Andean Forests Programme Phase 2 (2019-2021)[28] supported the PNCB-MINAM in the elaboration of a proposal for the design of a monitoring system for the degradation and deforestation of Andean forests. This proposal will be the basis for the design and operation of the Andean Forests Module of the PNCB which is the main activity to achieve output 1.2 under this project.

The design of this system is part of the PNCB-MINAM's Strategy 2030 which seeks to expand the coverage of Peru's national forest monitoring and mapping system, currently focused on Amazonian forests, and which will seek to comprehensively assess deforestation and degradation of Andean forests, and be part of the National Forest and Wildlife Information System under the responsibility of SERFOR and the National Environmental Information System - SINIA under the responsibility of MINAM. According to the PNCB's 2030 Strategy, the design of the Andean Forest module will begin in 2025.

As part of the operational process of the Andean forest monitoring module, the capacities of public officials (regional governments, municipalities, among others) in the project intervention areas will be strengthened in coordination with the PNCB-MINAM for the proper use of the tools provided under this system, which will contribute to adaptation measures aimed at reducing the exposure and vulnerability of socio-environmental systems, improve their adaptive capacity and generate co-benefits of adaptation and mitigation.

~~In that sense, the project will contribute the PNCB-MINAM's with the design of the Andean Forest module, implement pilots with the regional government and provide the respective technical support for this end. And with that the Ministry will have the enabling conditions for the implementation of the deforestation and degradation monitoring systems in Andean ecosystems on a national scale.~~

The activities and tasks to be carried out to achieve this output are as follows:

Activity 1.2.1. Conceptual design of the Andean Forests Module of the PNCB: the Project will provide technical assistance (through a local expert) and logistical support to facilitate and guide the reflections and discussions between the PNCB-MINAM, SEFOR, SERNANP and INAIGEM on the conceptual design of the Andean forests mapping and monitoring module of the PNCB-MINAM and in line with the modules for Amazonian forests and dry forests. The conceptual design includes the governance and sustainability of the module, as well as a roadmap for capacity building at the sub-national level.

Activity 1.2.2. Design and operation of the Andean Forests Module of the PNCB:

- Mapping and monitoring system design: technical assistance will be provided for the design of the system (information gathering methodology, software and hardware required by the PNCB-MINAM and the implementation of the pilot at the subnational level).

- Acquisition of software for monitoring system - PNCB: according to the requirements indicated in the

[28] Estrategia para el Monitoreo Integrado de los Ecosistemas de Alta Montaña en Colombia: https://condesan.org/recursos/construccion-una-estrategia-monitoreo-integrado-los-ecosistemas-alta-montana-colombia/

module design.

- Acquisition of hardware for monitoring system - PNBC: according to the requirements indicated in the module design.

- Acquisition software and hardware for pilot Regional Government: according to the requirements indicated in the module design.

- Technical support for pilot Regional Government: it is planned to develop capacities in at least two regional governments with Andean ecosystems and where tests and adjustments are carried out to validate the Andean Forest module and fully integrate it into the PNCB-MINAM forest mapping and monitoring system.

Component 2. Implementation of best practices for landscape protection and restoration of Andean ecosystems in conservation mosaics.

Outcome 2. Enhancing the resilience capacity of Andean ecosystems in three prioritized conservation mosaics.

This component is focused on contributing to increasing the resilience of Andean ecosystems through collaborative work with the local population to reduce pressures on them, and contribute to the maintenance of the ecosystem services they provide, one of the main ones being the water resource, also incorporating the approach of adaptation to climate change and disaster risk management in the planning and management of protected areas, and the mobilization of financial resources from the private sector for the effective and sustainable management of mountain ecosystems in Peru.

This will be achieved through the implementation of ecosystem-based adaptation measures (EbA), complemented with nature-based measures (NbP) and other interventions (soft measures) such as monitoring (component 1) and capacity building of the local population foreseen in component 1, 2 and 3.

Soft measures also include the incorporation of the climate change adaptation and disaster risk reduction approach in the planning instruments of natural protected areas, and the support to the design of the Andean phase of the "Peru-Andean Natural Heritage Initiative". The project has identified and prioritized the protection and restoration of the following ecosystem services: water provision and regulation, food and fodder provision, soil fertility and nutrient cycling and soil carbon storage and sequestration.

~~This will be achieved through the implementation of conservation and restoration practices in degraded areas of the prioritized protected areas (including buffer zones), the incorporation of the climate change adaptation and disaster risk reduction approach in the planning instruments of the selected areas, and the support to the design of the Andean phase of the "Peru-Andean Natural Heritage Initiative" through the elaboration of documents for the initiation of this phase.~~

The proposed activities will be carried out inside and outside of prioritized protected areas, which conserve representative samples of Andean forests, Andean moor, grassland, and wetlands. The natural protected areas prioritized in coordination with SERNANP are: in the north, the Tabaconas-Namballe National Sanctuary (and the Chicuate-Chinguelas private conservation area and the El Chaupe, Cunía and Chinchiquilla regional conservation area) in the department of Cajamarca; in the center the Calipuy National Reserve and the Calipuy National Sanctuary in the department of La Libertad, and the Huascarán National Park in the department of Ancash; in the south the Ampay National Sanctuary in the department of Apurímac and the Machupicchu Historic Sanctuary in the department of Cusco.

In the area of influence of the three selected mosaics, there are some precedents of successful experiences which serves a reference for the implementation of good ecosystem conservation and restoration practices which can be scaled up to other localities within the buffer zones of the same mosaics, and for which there is evidence of positive and proactive involvement of the communities which has been corroborated with interviews and outreach meetings with the population during the proposal formulation stage. Likewise, it is important to note that these activities will be developed based on the experience of ~~Andean forest Program in these areas~~ of several projects in these and similar areas (for

further details see Section II. F), as well as key regional actors.

An example of a successful experience in Andean ecosystems that belong to the chosen mosaics have been developed based on the restoration guidelines - R.D.E. Nº 083-2018-MINAGRI-SERFOR-DE, as is the case of the pilot project for the restoration of Andean forests in the rural community of Kiuñalla, the preparation of a public investment project profile for the restoration of 1000 hectares of Andean forests in Apurímac, and the implementation project to support the consolidation of MERESE in the Mariño micro-basin in Abancay, Apurímac. Also important are the experiences developed by the Mountain Institute of Peru through the project "Scaling Up Mountain Ecosystem-Based Adaptation: building evidence, replicating success, and informing policy" (Mountain EBA Peru).

Other restoration experiences is the “Quiroz Chira Water Fund”, located in the north of Peru, it is an experience led by the NGO Nature and Culture International, which consists of articulating the various actions distribution and use of water between communities, municipalities and irrigation boards in order to conserve and restore Andean forests and moorlands (www.faqch.com). In the center of the country, research is carried out to identify the main factors for wetland restoration (Planas et al, 2020)[29]. In the south, recent research is being carried out on constructed wetlands that show their contribution to the provision of ecosystem services (Monge et al, 2022)[30].

In that sense, the project will seek to gather the learnings of these previous experiences and work based on them, to achieve a broader scope and involving a larger population, in a more comprehensive manner and seeking the involvement and articulation of different levels of government and local and regional actors.

Output 2.1. Rural communities Implement conservation and restoration practices in degraded areas inside and outside (buffer zones) of prioritized protected areas.

In the protected areas of the three mosaics, local populations live inside and outside the area (buffer zones). These populations develop formal and informal economic activities that exert direct pressure on protected areas and affect the diversity and biological composition of Andean ecosystems. The existence of these activities is generated due to the lack of promotion and diversification of sustainable economic activities in the region, the poor development of technical capabilities and the little investment in work tools and instruments for productive activities.

Livestock, which is one of the most important livelihoods of high mountain populations, also depends on grasslands. We will work with communities to protect water, restore natural grasslands and sustainably manage livestock. These measures will help communities and ecosystems increase their resilience to extreme weather events. Healthy herds and grasslands make mountain people's sources of income more secure.

In this context, in close coordination with SERNANP, it has been prioritized for project intervention, the areas that have been most affected by productive activities, and at the same time work with communities with which need to strengthen relationships to achieve participatory management of the protected area.

In each of the protected areas, the existing pressures are different, but in general terms they are linked to the productive activities carried out by the population, with livestock being the most common and the activity that affected the most in the region. Due to the poor performance and organization of this activity in the region, as well as the lack of technical knowledge and investment in it.

In that sense, the project will promote sustainable livestock management actions through pasture improvement, haymaking, livestock rotation, animal health, among other actions in accordance with the ecosystem, and thus reduce the impact of this activity on the protected areas.

[29] Planas-Clarke, A.M., Chimner, R.A., Hribljan, J.A. et al. The effect of water table levels and short-term ditch restoration on mountain peatland carbon cycling in the Cordillera Blanca, Peru. Wetlands Ecol Manage 28, 51–69 (2020). https://doi.org/10.1007/s11273-019-09694-z

[30] María J. Monge-Salazar, Carolina Tovar, Jose Cuadros-Adriazola, Jan R. Baiker, Daniel B. Montesinos-Tubée, Vivien Bonnesoeur, Javier Antiporta, Francisco Román-Dañobeytia, Beatriz Fuentealba, Boris F. Ochoa-Tocachi, Wouter Buytaert, Ecohydrology and ecosystem services of a natural and an artificial bofedal wetland in the central Andes. Science of The Total Environment, Volume 838, Part 2 (2022). https://doi.org/10.1016/j.scitotenv.2022.155968

In addition, the project will promote and complement the restoration of Andean forests and grasslands, thanks to the installation of rustic water reservoirs (qochas in spanish) that will collect for their creation based on traditional knowledge about the practice of planting and harvesting water, aligned with the adaptation measures of the Ministry of the Environment in Andean areas of the country. Ecosystem-based adaptation (EbA) measures preliminarily identified include: Conservation and restoration of bofedales, Sustainable Grassland Management, Reforestation with native species, Crop diversification, Eco- and agrotourism and Integrated Soil Fertility Management. On the other hand, preliminarily identified nature-based measures (NbP) include: Qochas/Rustic micro-reservoirs, Irrigation management and Afforestation.

All activities will be carried out in coordination with SERNANP and in collaboration with local municipalities, regional governments, or the private sector, as appropriate, to increase the impact of the intervention. To this end, it is also planned to develop capacity-building activities with a gender focus (prioritizing the participation of women and youth) in management and restoration practices of Andean forests to reduce cases of forest fires.

For more details on the consultation process about this item and the settlement or peasant communities identified for the implementation of the activities for this output, please see section H of this proposal.

The activities planned for the achievement of this output are as follows:

- **Activity 2.1.1. GIS baseline of intervention areas**: technical assistance will be provided to prepare detailed maps of the project intervention zones, identifying areas degraded by livestock or agricultural activities inside and outside the protected natural areas, water recharge zones and land use. The identification and prioritization of intervention zones will be carried out in coordination with the head of the protected natural area and the local population, taking as a reference the zoning of the NPA and the agreements on direct use of resources established between the NPA and the community.

- **Activity 2.1.2. Technical assistance and capacity building for rural communities on good practices of ecological restoration**: in coordination with SERNANP, SERFOR, INIA, MIDAGRI, Municipalities and local communities, capacity building activities for the implementation of EbA and NbP measures will be designed and implemented. Previously, conservation agreements[31] will be established with the rural communities to establish management rules around the protected areas and to promote passive restoration of degraded areas. The conservation agreements will take as a reference the proposed directive indicated in SERNANP Working Document No. 33 (2019) and the experience of the local implementing partners (Nature and Culture International and The Mountain Institute). Training will include capacity building in seedling production with native species (sexual and vegetative propagation), reforestation techniques, Andean grassland restoration and wetland restoration practices. It will also include training on site selection, design and construction of Qochas for agricultural use by the local population, based on the Methodological Guide developed by SERFOR (2018).

- **Activity 2.1.3. Implementation of good restoration practices on 105 hectares inside and outside protected areas**: the project will implement EbA (Conservation and restoration of wetlands, Sustainable Grassland Management, Reforestation with native species and Eco- and agrotourism) and NbP measures (Qochas/Rustic micro-reservoirs, Irrigation management and Afforestation) according to the prioritization carried out in coordination with SERNANP and the local population. Likewise, conservation agreements will be established with the local population to avoid the entry of livestock into areas undergoing restoration and not to carry out productive activities in the prioritized areas, especially in water recharge areas. In accordance with the prioritization and guidelines established by SERFOR, reforestation and afforestation activities in Andean forests will be carried out with native species, mainly Qeuña (*Polylepis sp*) and Intimpa (*Podcarpus sp*). The construction of qochas will be carried out under the technical supervision of MIDAGRI. Coordination with Municipalities, Regional Governments, MIDAGRI (AGRORURAL and Sierra Azul Programme), SERFOR and private companies will be carried out to promote investments in the identified EbA and NbP measures and to expand the impact of the Project intervention.

[31] According to Presidential Resolution No. 183-2020 SERNANP, this mechanism aims to establish joint work alliances between SERNANP and the population neighboring the Natural Protected Area, to contribute to the conservation of biodiversity and ecosystem services of the natural protected area, through the strengthening of participatory monitoring, the development of sustainable economic activities (bio-business and commercial articulation), and cultural revalorization

- **Activity 2.1.4. Diagnosis and development of a livestock and equine management plan**: In order to contribute to reducing the impact of livestock farming (north and central mosaic) and the management of horses and mules used in tourism (south mosaic), a livestock census and diagnosis of livestock farming will be carried out in order to establish guidelines and recommendations for the sustainable management of livestock farming (EbA measure: Sustainable Grassland Management) and equine breeding linked to tourism (EbA measure: ecotourism).

- **Activity 2.1.5. Technical assistance and capacity building for livestock producers to reduce the impact on Andean ecosystems**: In coordination with SERNANP, INIA, MIDAGRI, Municipalities and local communities, activities will be designed and implemented for the development of local capacities in livestock management and management and improvement of livestock health. Capacity building will include aspects linked to improving the adaptation of livestock systems to climate change and mitigating greenhouse gas emissions.

- **Activity 2.1.6. Implementation of 21 plots of improved pasture**: As part of the livestock and equine management plan, seed plots of improved pasture suitable for high Andean soils will be installed in priority areas and in coordination with the Municipality, MIDAGRI, INIA and local people. Having improved pasture will reduce the mobilization of livestock and increase the possibilities of improving their management and the use of milk products. Coordination with Municipalities, Regional Governments, INIA, MIDAGRI, and private companies will be carried out to promote investments and expand the impact of the Project's intervention.

Output 2.2. Incorporation of the climate change adaptation and disaster risk reduction approach in planning instruments of three conservation mosaics of Andean ecosystems.

~~Currently, SERNANP is in the process of updating the Master Plan of the National System of Protected Natural Areas (SINANPE). This new Master Plan seeks to channel all efforts at the national level to achieve conservation results and contribution to the development of protected areas and thus contribute to compliance with the Global Biodiversity Framework, in addition to strengthening the protected areas as dynamic nuclei of sustainable territorial development.~~

~~Under this approach, it seeks to address problems such as poverty of local populations, inequalities and climate change, risk factors for the conservation of mountain ecosystems in Peru, and the project activities will contribute to this approach and promote their incorporation in the annual planning of the protected areas.~~

~~To this end, we will seek to apply the climate change and disaster risk management approach in the strategy and activities for the implementation of management instruments for the governance and conservation of protected areas such as the SINANPE Master Plan, protected areas Master Plan, annual operational Plan, water basin management Plan, among others that will be identified together with the heads and specialists of the areas, and local municipalities.~~

~~This will be complemented with the strengthening of management capacities and sustainable management of protected areas, the establishment and consolidation of alliances with local populations (organized through peasant communities or producer organizations) and the impact on the dynamics of territorial development through the protected area management committees, where a key actor for the promotion of local and economic development are the rural district municipalities that articulate the actions.~~

SERNANP is currently in the process of updating the Natural Protected Areas Director Plan (National Strategy). This new Director Plan seeks to canalize all efforts at the national level to achieve biodiversity conservation results and its contribution to local development, contributing to compliance with the Global Biodiversity Framework, and to strengthen protected areas as dynamic cores of sustainable territorial development.

Under this approach, the project seeks to address problems such as poverty among local populations, inequalities, and climate change, which are risk factors for the conservation of mountain ecosystems in Peru. Project activities will contribute to this approach and promote its incorporation into protected area planning instruments by expanding the concept and developing methodologies.

To this end, the sustainable landscape approach will be promoted in general terms, including the identification of risk factors such as climate change and natural disasters. This approach will promote territorial articulation between protected areas based on the concept of conservation mosaics. This approach should later be included in protected area planning instruments and especially in integrated water resource management instruments, considering the ecosystem services of water regulation and sediment control as strategic for Andean ecosystems.

This will be complemented with the strengthening of management capacities and sustainable management of protected areas, the establishment and consolidation of alliances with local populations (organized through peasant communities or producer organizations) and the impact on the dynamics of territorial development through protected area management committees, where a key actor for the promotion of local and economic development are the rural district municipalities that articulate the actions.

The activities planned for the achievement of this output are as follows:

- **Activity 2.2.1. Conceptual design**: The project will provide technical assistance to the Strategic Development Direction of SERNANP for the conceptual development and implementation of the so-called "*conservation and sustainable development mosaics (functional landscape)*" indicated in the Director Plan for Natural Protected Areas. These mosaics integrate conservation dynamics (through protected areas) and productive and social dynamics in a particular territorial space and under the framework of analysis of socio-ecological systems should include aspects linked to climate change resilience, disaster risk management and the strengthening of local governance. The conservation mosaics where the project will be implemented will be used as pilots in high Andean ecosystems, considering that they are climatically different. Technical assistance will be provided through experts and workshops and meetings with professionals designated by SERNANP, MINAM, SERFOR and MIDAGRI.

- **Activity 2.2.2. Design of instruments or methodological tools**: the project will provide technical assistance to the Strategic Development Directorate of SERNANP to develop, incorporate into planning instruments and implement in the project intervention sites the concept of "*conservation and sustainable development mosaics (functional landscape)*" in landscapes of high Andean ecosystems. For the design of the instruments and methodological tools, landscape functionality (ecological integrity), resilience (response capacity) and good governance (landscape management arrangements) will be considered as attributes. Methodological tools and instruments developed by SERNANP will be used as a basis. Technical assistance will be provided through experts, facilitators and workshops and meetings with professionals designated by SERNANP.

- **Activity 2.2.3. Incorporation in protected area planning documents**: the project will provide technical assistance to the Strategic Development Direction of SERNANP to use as pilots of the "*conservation and sustainable development mosaics (functional landscape)*" in landscapes of high Andean ecosystems the intervention sites of the Project and the natural protected areas established in them. Technical assistance will be provided through experts, facilitators and workshops and meetings with heads of protected areas and members of the management committee.

Output 2.3 Preliminary conditions prepared for the start of the "Natural Heritage Initiative of Peru – Andes", based on previously agreed upon conditions

The Initiative "Securing the future of protected areas. National Parks: Natural Heritage of Peru" (PdP for its acronym in Spanish), recognized by R.P. 254-2015-SERNANP and declared of national interest by Supreme Decree 003-2019-MINAM[32] aims to consolidate the effective management of protected areas and their financial sustainability in the long-term.

The PdP Initiative is planned to be implemented in the three major biomes of Peru (Amazon, Marine - Coastal and Andes), and has begun its activities in the Amazon biome, whose objective is to consolidate the effective management of Sinanpe and the protected areas within a period of 20 years, in at least 19 million hectares, generating the enabling conditions for said management through the implementation of an articulated and extraordinary fundraising strategy and the development and implementation of economic mechanisms.

[32] https://www.gob.pe/institucion/minam/normas-legales/271078-003-2019-minam

In 2019, the "Peruvian Natural Heritage Initiative Transition Fund" was created, established to implement the Initiative in accordance with its governing documents, the Operations Manual of the PdP-Amazonia Initiative (MOP-Amazonia) and the Strategy of Implementation of the PdP-Amazonia Initiative (EI-Amazonia). Phase 1 of PdP contributes to counteract threats to the large forests conserved in these spaces, in relation to the Country's Commitments, reflected in the Nationally Determined Contributions. The Transition Fund is currently administered by PROFONANPE, and WWF, Fondo Andino Amazonia, GEF and KfW have contributed to its constitution, and its current objective is to improve the management of 38 protected areas in the Amazon.

It is key to understand that the management needs of protected areas cannot be seen in isolation, which is why they must be addressed simultaneously and complement each other. The aim of the initiative is the effective management of protected areas and contributing to financial sustainability to achieve such management at the system level, through the development of financial mechanisms to mobilize and leverage financial resources. In that sense, the Initiative seeks to contribute with the new SERNANP's conservation approach: "*conservation and sustainable development mosaics (functional landscape)*". ~~– that establishes that an effective management of these areas contributes to the conservation of biodiversity, which in turn leads to the conservation or maintenance of ecosystem services, which will consequently be reflected in benefits for the population.~~

Therefore, the present project will contribute to the expansion of the PdP Initiative in the Andean ecosystems of Peru, focusing its intervention in protected areas ~~that conserve representative samples,~~ including those administered by Regional Governments under the category of regional conservation area and those established in the territories of rural communities under the category of private conservation areas. Currently SERNANP, in the framework of the Project "Achieving 30x30 in Peru through Local Stewardship and Sustainable Financing of Landscapes and Seascapes" funded by the Moore Foundation through the World Wildlife Fund, is taking the first steps towards the elaboration of the concept note for the PdP-Andes. The project has established collaboration agreements with PdP Amazonía to contribute to the design of the PdP-Andes.

The outputs of component N°1 oriented to the implementation of hydrological and deforestation and degradation monitoring systems, and of component N°2 which implies the practice of productive activities that promote the restoration and conservation of ecosystems, will be added to the Andean PdP initiative as part of the actions of management of protected areas and promotion of the sustainable development approach of the Andean landscapes, which will be recognised as part of the action strategy of this initiative for the fulfillment of the enabling conditions.

Thus, this output will be added to the drafting of the proposal for the guiding document of the PdP-Andean Initiative; the structuring and constitution of the Trust Fund with the support of international cooperation, international NGOs working on mountain issues and the private sector (including the investment policy to support productive activities); the Operations Manual and the Implementation Strategy of the PdP-Andean Initiative.

The activities planned for the achievement of this output are as follows:

- **Activity 2.3.1. Conceptual design**: technical assistance will be provided through an expert and the organisation of workshops and/or meetings will be facilitated to (i) systematize lessons learned from the implementation of the PdP Amazonía (technical, administrative, management, governance and financial aspects), (ii) delimit the focus and scope of the PdP Andes initiative under the concept of "*conservation and sustainable development mosaics (functional landscape)*", (iii) establish objectives, targets and indicators, (iv) establish in institutional terms the articulation of both initiatives within the framework of the current Board of Directors of the PdP Amazonía, and (iv) the opportunity to mobilise public and private funds to constitute a new Financial Fund.

- **Activity 2.3.2. Operational design**: the project will provide technical assistance and facilitate working meetings to design the governance framework and institutional arrangements for the technical and administrative operativity of the PdP Andes and to ensure its financial and technical sustainability.

- **Activity 2.3.3. Structuring of the Trust Fund**: Technical assistance will be provided to SERNANP and MINAM in coordination with PROFONANPE to identify the best financial practices to design and

structure a financial fund (a mixture of investment fund and trust fund) for the protection, restoration and sustainable use of high Andean ecosystems under a landscape approach, and from which public investments can also be directed to promote sustainable productive activities. Likewise, operational models will be identified based on financial contribution opportunities for the creation of the Fund from international organizations (donations), international cooperation (donations, debt-for-nature swaps, etc.), the private sector (donations, royalties, etc.) and the public sector (for example, taking advantage of opportunities with Legislative Decree 1620, which approves the Law on Universal Potable Water and Sanitation Services).

- **Activity 2.3.4. Create of the Trust Fund**: Technical assistance will be provided and support will be given to the holding of working meetings to present the technical and financial operational design of the Fund to potential contributors, and rounds of negotiations will be held to set up the Fund. The target for the end of the project is to establish the financial fund and to have the PdP Andes in operation by the end of the project.

Component 3. Increasing resilience and sustainability of local productive systems in rural communities in landscapes of Andean ecosystems

Outcome 3. Enhancing the resilience capacity of productive activities in rural communities of the three prioritized conservation mosaics.

This outcome seeks to involve the local population in the management of protected areas (a process led by SERNANP) in the three prioritized conservation mosaics, and which is complemented by Output 2.1 of component 2, in which rural communities implement conservation and restoration practices in degraded areas of the buffer zones, in addition to promoting the sustainable management of Andean ecosystems and their resources that are essential for the well-being of local, national and global society.

The consultation process has included a participatory assessment of risks and threats to ecosystems, which has included the perspective of communities and has broadened that of specialists and chiefs of protected areas. This is how factors such as burning, the unsustainable use of timber and non-timber forest products, wildlife hunting, illegal mining and settlements, and contamination by solids and liquids have been identified. These factors will be included in the capacity building activities of output 2.1 and will be part of the knowledge management of the Project. It should be noted that this identification was made under gender-inclusive methodologies and has considered the perspective of both men and women.

The project has identified cattle farming throughout the mosaics as one of the main livelihoods (and source of family income), and at the same time one of the main drivers of ecosystem degradation. To address this problem, the project will promote climate-smart agriculture and livestock[33], the breeding of alternative sources of protein production (small animals and guinea pigs) and the optimization of livestock systems under a sustainable and regenerative livestock approach[34], in combination with value chain optimization measures for the reduction of losses and increase of productive efficiency and the application of conservation practices and restoration for water regulation, erosion control and soil fertility, so that together, the ecological footprint of the system is reduced compared to the initial situation

In this context, this component will mainly seek to strengthen the technical and practical capacities of local populations under a climate change adaptation approach and to articulate local productive activities to a wider market, to mobilize public and private financial resources, promote environmentally friendly practices and strengthen local businesses. Rising temperatures in high Andean areas, melting ice and droughts particularly affect food security, water security, habitat health and agricultural and livestock productivity in the Peruvian Andes, resulting in climate change-driven expansion of agricultural frontiers

[33] Climate-smart livestock is a productive approach that simultaneously seeks to sustainably increase livestock productivity and income, improve the resilience of livestock systems to climate change and reduce greenhouse gas emissions (FAO, 2020).

[34] According to the document "Sustainable Livestock: Practice Guide for the Northwest of Pichincha" (Cabezas *et al*, 2019) sustainable livestock is a production approach feasible to apply in the Andean context, which encompasses a series of practices that increase the profitability of livestock activity while favoring its sustainability over time and the conservation of the remaining forests along with their functions. It covers, for example, farm zoning and planning, improvement of grazing systems and inclusion of forest species, proper use and management of water and animal welfare. In the context of the Northwest of Pichincha in Ecuador, it has demonstrated a 300% increase in the carrying capacity of the farm and the reduction and / or elimination of purchases of surplus food and external fertilizers, while a notable improvement of soils, significant increases in flows and water sources that no longer dry up in summer.

to higher altitudes. In addition, the extent of grasslands and forests is decreasing, directly affecting biodiversity conservation and negatively impacting important ecosystem services that support local populations in the Andes: provisioning, regulating and maintenance services are the most important for food security. The EbA and NbP measures identified as part of capacity building include: Crop diversification, Eco- and agrotourism, Integrated Soil Fertility Management, Sustainable Grassland Management and Irrigation Management.

In addition, detailed evaluations of the activities will be obtained and will serve as a basis for designing an intervention strategy and form part of the protocols to be implemented by SERNANP in relation to the promotion of local businesses (produced by peasant communities), so that SERNANP can award the final products with the "Allies for Conservation" brand and contribute to improving the marketing channels of local businesses developed in and around protected areas. This information will also allow us to prepare a proposal for technical assistance from government programs and identify opportunities for the diversification of productive activities that are more resilient to climate change and more sustainable and friendly to the conservation of biodiversity and high Andean ecosystems.

The Project has identified other initiatives to which it can articulate and establish synergies, such as the Northern Andes Water Fund in the northern mosaic, and state programs for productive initiatives of PROCOMPITE, AGROIDEAS and AGRO RURAL, as well as projects promoted by local governments.

PROCOMPITE is a priority strategy of the State that constitutes a Competitive Fund to co-finance productive proposals (business plans). It aims to improve the competitiveness of production chains through the development, adaptation, improvement, or transfer of technology. The Law establishing Provisions to Support Productive Competitiveness (Law No. 29337) indicates that regional and local governments may authorize PROCOMPITE to use up to 10 percent of the resources budgeted for project expenditure, except for resources from sources of official credit operations and grants and transfers.

The Compensation Program for Competitiveness (AGROIDEAS) is an entity attached to the Ministry of Agrarian Development and Irrigation (MIDAGRI). The Program promotes the strengthening of business management and the adoption of environmentally sustainable agricultural technologies of small and medium organized agricultural producers in Peru, contributing to the improvement of their competitiveness and quality of life, through efficient and results-oriented management. It also formulates, lead, and supervises Agricultural Productive Reconversion Projects, initially prioritizing some crops considered sensitive due to different factors. Additionally, it also improves the capacity of small and medium producers, repowering production and marketing and capitalizing on it with new technologies.

The Rural Agricultural Productive Development Program (AGRO RURAL) is an entity attached to the Ministry of Agrarian Development and Irrigation. The program designs, promotes and manages rural agrarian development models that facilitate the articulation of public-private investments and that contribute to poverty reduction and the inclusion of rural families. The program seeks to improve the quality of life of rural families in Peru through the implementation of sustainable rural development plans and policies agreed with regional and local governments and other social actors.

It should be noted that, for each of the project components, it is expected to include activities aligned with knowledge management as indicated in section G below.

For more details on the consultation process about this item and the settlement or peasant communities identified for the implementation of the activities for this outcome, please see section H of this proposal.

<u>Output 3.1.</u> Rural communities have productive technical capacities to reduce the vulnerability of prioritized protected areas (buffer zone)

With this output ~~result~~, the project seeks to strengthen the technical and practical capacities of local populations under a climate change adaptation approach based on the productive activities carried out by the local population, prioritising the participation of women and young people, mainly in the sessions and workshops that will be held.

To this end, a consultation process was previously carried out during the project formulation stage to identify the main productive carried out in the three conservation mosaics. For more details on the consultation process about this item and the settlement or peasant communities identified for the

implementation of the activities for this output, please see section H of this proposal. The principal productive activities are:

- Northern mosaic: sustainable livestock, guinea pig breeding, bio-gardens.
- Central Mosaic: potato cultivation, guinea pig breeding, sheep breeding (for wool), crops
- Southern mosaic: tourism (equine breeding), guinea pig breeding, crops, non-forest product (tara).

Based on the productive activities identified, an evaluation will be made of the training offered by the government through the Ministry of Agriculture (MIDAGRI), the Ministry of Production (PRODUCE) and the Ministry of Development and Social Inclusion (MIDIS). This will serve to strengthen and integrate the efforts of the different government bodies and facilitate the attention of the populations involved in the project.

The topics prioritized for the design of the training modules will also be articulated with the training plan of the regional directorate of agriculture of the regional government and the economic development directorate of district municipalities (governmental bodies of which the local populations are part). With this cross-checking of information, the final version of the training modules for the population and local authorities will be available.

~~The development of these modules will promote the sustainability of productive activities under a prevailing climate approach, which will be achieved through the development and implementation of business plans for local productive activities, taking into account the management and conservation actions of the Andean ecosystems that will prevail in the selected protected areas.~~

The development and strengthening of capacities to increase the resilience and sustainability of local productive systems will be linked to the conservation objectives of the protected area and the key ecosystem services for the development of agricultural, livestock and tourism activities developed by the communities involved in the project. This product seeks to contribute to the development of the pilot implementation of the concept of "*conservation and sustainable development mosaics (functional landscape*)" established by SERNANP's Director Plan for Natural Protected Areas. Capacity building activities will prioritize the implementation of EbA and NbP measures preliminarily identified and in accordance with component 2.

The activities planned for the achievement of this output are as follows:

- **Activity 3.1.1. Diagnosis of MIDAGRI / PRODUCE / MIDIS training offer/services**: technical assistance will be provided to identify the supply of government technical assistance services (including public research institutes and academia) for agricultural, livestock and tourism activities in the project intervention areas, the capacity to support the population of the project intervention site and assess whether they consider adaptation to climate change of these productive activities as an issue. Regional governments and municipalities will be included in the diagnosis to assess their technical assistance capacity. Priority will be given to technical assistance linked to the EbA and NbP measures preliminarily identified.

- **Activity 3.1.2. Diagnosis of training needs (local population and municipalities)**: technical assistance will be provided to identify, based on the prioritised productive activities, the development and capacity building needs of local populations and technicians in the municipalities. Priority will be given to capacity building linked to the EbA and NbP measures preliminarily identified.

- **Activity 3.1.3. Articulation with Municipalities and/or Regional Government for training plan design**: collaboration agreements will be established with Municipalities and/or Regional Governments for the design (participation in workshops and meetings) and implementation (logistical support) of capacity building activities for local people.

- **Activity 3.1.4. Design of training modules**: Based on the diagnosis of the supply of technical assistance services and training needs, assistance will be provided through an expert for the design of training modules for promoters and local people (methodological guides and materials) and the implementation methodology, considering intercultural and gender aspects. Coordination with the sectors involved (MIDAGRI and MINAM) for the support with the development of the materials, considering native languages and prioritizing the training of local promoters. Priority will be given to the design of training modules based on the EbA and NbP measures preliminarily identified.

- **Activity 3.1.5. Training of municipal promoters**: In coordination with the district (or provincial) municipalities, the regional government and MIDAGRI, training workshops will be held for municipal technicians under the “train the trainers” format. The technicians will then accompany the MIDAGRI specialists to carry out the training with the local population.

- **Activity 3.1.6. Workshops/Training meetings for local people**: the project will support the implementation of training workshops in the communities in coordination and collaboration with municipal technicians and MIDAGRI specialists. Although the trainings are planned for the entire population and especially for those engaged in the prioritized productive activities, the training of local promoters (Yachachiq) will be promoted, and traditional knowledge will be incorporated to increase the climate resilience of productive activities in a process of co-creation (and innovation) and knowledge management of good local practices or documented in similar ecosystems. This activity constitutes the "theoretical" part of the development and capacity building of local people.

- **Activity 3.1.7. Implementation of good practices to reduce vulnerability of production chains**: The project will support capacity building by financing the implementation of best practices to increase the resilience of local productive activities in each of the sites prioritized by the project. The activities will be implemented with technical assistance from MIDAGRI specialists, trained municipal technicians and local promoters. Their evaluation and monitoring will be documented. The prioritized activities are detailed below and have prioritized the implementation of the preliminarily identified EbA and NbP measures:
  - North mosaic: good practices in livestock management, guinea pig breeding, self-consumption agriculture in the eastern (Namballe) and western (Huancabamba) boundaries of the Tabaconas Namballe National Sanctuary.
  - Center mosaic: good practices in livestock management, guinea pig breeding and potato cultivation in the area between Calipuy National Sanctuary and Calipuy National Reserve, and around the Chacas population center located on the central and eastern border of Huascarán National Park.
  - South mosaic: good practices in guinea pig breeding, agriculture, and tourism in the Ampay National Sanctuary and in the southeastern area of the Macchupichu Historic Sanctuary.

For more details on the consultation process about this item and the settlement or peasant communities identified for the implementation of the activities for this output, please see section H of this proposal.

Output 3.2. Design, evaluation, and implementation of adaptation measures of productive chains linked to the market.

The productive activities identified in product 3.1 are mainly subsistence activities and in other cases are linked to trade in local markets. This output will seek to articulate these activities to a much broader market such as the regional market and continue mobilizing financial resources, in addition to promoting the practice of more environmentally friendly activities directly related to the conservation of Andean ecosystems and their adaptation to climate change.

To this end, a series of activities will be developed to strengthen the productive chain of local businesses and as a starting point, a detailed analysis of these chains will be carried out to learn how it works, and to identify the critical points that hinder the development of sustainable productive activities and the advantages that promote it. This exercise will also make it possible to recognize and visualize the main barriers for the participation of local businesses and gaps in access to opportunities and resources that exist in the chains.

This analysis will be the basis for the development of a detailed diagnosis of productive activities with potential for scaling up to regional or national markets based on the identified demand. Then, a productive chain will be selected by mosaic to apply the identified articulation opportunities and technical assistance in the different stages of the productive chain in order to obtain the "Allies for Conservation" seal of guarantee granted by SERNANP as part of its conservation strategy.

In addition, these production chains will be linked to the guidelines of the MIDAGRI (AGRORURAL, AGROIDEAS and Sierra Azul Program) and/or PRODUCE and/or MIDIS programs that facilitate public technical assistant, research & development, and investment (in collaboration with private sector) for

similar production chains, and finally, productive diversification opportunities will be identified to promote partnership opportunities with local businesses.

For more details on the consultation process about this item and the settlement or peasant communities identified for the implementation of the activities for this output, please see section H of this proposal.

The activities planned for the achievement of this output are as follows:

- **Activity 3.2.1. Diagnostics of productive activities (including economic analysis)**: technical assistance will be provided to carry out detailed social, economic, and technological analyses of the productive activities and chains developed in each of the project intervention sites and with potential for access to other markets. The potential for market access can promote opportunities for associativity among producers, improve product quality and promote the implementation of sustainable and climate-smart production practices, which can translate into better incomes for local producers.

- **Activity 3.2.2. Identification of articulation/demand opportunities for chain prioritization**: based on the diagnosis and prioritization carried out in the previous activity, opportunities for articulation with demand outside the district/provincial production area will be identified, identifying opportunities with companies that implement sustainable production and marketing practices and that can promote the implementation of good practices and technological improvements at the local level. The articulation with these markets does not imply promoting the expansion of current agricultural or livestock activities and generating a negative impact on ecosystems and ecosystem services.

- **Activity 3.2.3. Identification of productive reconversion opportunities including economic analysis (ecobusiness and R&D promotion)**: based on the diagnosis made in activity 3.2.1, the opportunities for articulation to new markets, the identification of opportunities for the development of new products (value added) and needs for technological improvement of current products (in coordination with academia and PRODUCE) a proposal for the reconversion of Agri-Food local production systems and technological assistance will be elaborated. The proposal will include the environmental benefits and impacts (positive and negative) under the "functional landscape" approach indicated in the Master Plan for Natural Protected Areas of SERNANP.

- **Activity 3.2.4. Identification and implementation of opportunities for Associativity**: for current products with market potential, the associativity of producers will be promoted once the market and agreements with potential buyers have been defined and established.

- **Activity 3.2.5. Mobilization of public financing (MIDAGRI and/or PRODUCE and/or MIDIS programs)**: the proposal elaborated in activity 3.2.3 will be presented to the Provincial Municipality, the Regional Government, PRODUCE, MIDAGRI and the private sector to define its feasibility and the channeling of public and private financial resources for its implementation. In the first phase, priority will be given to investments in current products.

- **Activity 3.2.6. Diagnosis of training needs (local population and municipalities)**: technical assistance will be provided to identify: (i) training needs on ecosystem-based adaptation measures or natural based practice required by the prioritized productive activities and with market potential, (ii) the development and capacity building needs of local producers and technicians of the municipalities. The design of the training modules will be prioritized based on the EbA and NbP measures preliminarily identified.

- **Activity 3.2.7. Design of training modules**: based on the training needs, assistance will be provided through an expert for the design and/or adaptation of training modules on the implementation of specific adaptation measures for prioritized production chains (methodological guides and materials) aimed at municipal technicians and local producers. Likewise, the implementation methodology will be developed, considering intercultural and gender aspects. This activity will be complementary to the activities foreseen in Output 3.1. Priority will be given to the design of training modules based on the EbA and NbP measures preliminarily identified.

- **Activity 3.2.8. Implementation of adaptation measures to prioritized chains**: the project will support the implementation of EbA and NbP measures required by the prioritized productive activities and with the objective of increasing opportunities for access to sustainable markets. The activities will

be implemented with the technical assistance of specialists from MIDAGRI and PRODUCE and trained municipal technicians. The potential production chains in each of the mosaics are detailed below:

- North mosaic: adaptation measures for sustainable livestock and/or guinea pig breeding in the eastern (Namballe) and western (Huancabamba) boundaries of the Tabaconas Namballe National Sanctuary.
- Center mosaic: adaptation measures for guinea pig breeding and/or cultivation of native tubers in the area between Calipuy National Sanctuary and Calipuy National Reserve, and around the Chacas population center located on the central and eastern border of Huascarán National Park.
- South mosaic: Sustainable agriculture and/or ecotourism adaptation measures in the Ampay National Sanctuary and in the southeastern area of the Macchupichu Historic Sanctuary.

B. Describe how the project/programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

~~Consultations were carried out in July 2022 and June – July 2023 with the stakeholders directly involved in the management of protected areas in the prioritized conservation mosaics and representors of 17 settlements and peasant communities (see Annex 1 for a list of interviewed persons and participants of workshops). Based on that 24 settlements and communities were prioritized in the three conservation mosaics (see Annex 2 for details on these villages and communities), composed of rural families living in poverty and with subsistence economies mainly. The total population in these settlements and communities is estimated at approximately 9,431 people based on information from population censuses, censuses of native and peasant communities (INEI, 2017) and the direct consultation to local leaders carried out during the preparation of this proposal. This number is considered as the total indirect beneficiaries of the project. More detailed information regarding the consultative process is provided in section II.H of this proposal and Annex 3 contains the full report of the consultation process.~~

~~Although we do not yet have an exact number of beneficiaries defined by the proposed intervention, it has been defined that the main way to organize and convene the direct beneficiaries will be through the local committees and authorities identified by the consultation (Annex 2). This kind of organizations groups the families and individuals directly related to the core topics of the project (conservation, restoration, and potential value chains), including, for example, water committees, peasant communities' assemblies, productive associations, women organizations, surveillance, and conservation committees of the protected areas, among others. The Project will respect these formal authorities and establish agreements to intervene according to the local norms of convening.~~

~~The consultation included focalization and prioritization exercises, which has allowed to identify participatively the communities, settlement and groups directly related to the project. It was remarked that the management of protected areas (dependent on SERNANP) mainly considers "hard" indicators of biodiversity conservation (species, surface area and eventually ecosystem services), so there is limited work done with the engagement of local populations around the protected area, specifically on climate change adaptation issues. On the other hand, in those conservation areas established by agreement of the peasant communities in their territories (private conservation areas), and in consultation with them by the Regional Government in state-owned territories (regional conservation areas), the management of the areas does involve them directly. As in protected areas, the management of private (communal) and regional conservation areas needs to strongly incorporate a climate change adaptation approach. In this context, the identification of the population and organizations to be directly involved in the project serves as a useful reference for the project baseline, including the validation of their opinion regarding the project components, as well as the craft of an intervention strategy based on the specific priorities, background and needs of the populations that have been directly consulted.~~

Based on consultations carried out in 2023 with local populations involved in the management of protected areas in the conservation mosaics in the north, center and south of the country, 25 settlements and 3 peasant communities were prioritized for project intervention (see Annexes 1 and 2 for more details). It is estimated that the expected impact of the project will directly benefit 8,900 people in high Andean areas of Peru, who live in conditions of poverty and subsistence economies mainly. Likewise, it

is estimated that 36,300 people of the high Andean ecosystem landscapes located in the three conservation mosaics will benefit indirectly. The total population in these settlements and peasant communities is estimated on information from population and native and peasant communities' censuses (INEI, 2017) and with direct consultation to local leaders carried out during the preparation of this proposal (Annex 1).

The Annex 3 (Final report of consultation process) presents the characterization of the three prioritized conservation mosaics, covering specific location of the prioritized sites and sector within each mosaic, forms of organization, local authorities, ecosystems, degradation and deforestation drivers, preferences regarding the proposed conservation and restoration practices, ecosystem management history, local perception regarding their landscapes (considering gender particularities), livelihoods, local perspectives regarding their own vulnerability to climate change, gender and youth productive and organization aspects, and disposition to the activities and results proposed for those components of the project directly related to the population. This information has served as the basis for the design and validation of the activities of outputs 2.1, 3.1 and 3.2. ~~and component 3 in this proposal~~.

~~Project activities are not expected to have any negative effects on the natural or social capital of the intervention sites. Detailed assessments have been carried out for the formulation of this proposal to include the opinion of local stakeholders as main consideration to meet the environmental, social and gender policies and principles of the Adaptation Fund.~~

~~The proposed project is expected to have the social, economic, and environmental benefits described below.~~

~~Social benefits: The project will strengthen the capacity of the people to reduce their vulnerability to the impacts of the climate change, by improving the integrity of key Andean ecosystems that provide ecosystem services needed for the livelihoods and the attention of human needs, as water supply, erosion control, and cultural identity with the landscape. At the same time, the Project aims to build capacity and strengthen the participation of vulnerable groups (youth and women) in the decision-making and entrepreneurship, related to the use of the resources and services provided by the ecosystems. The project's actions will also contribute to reducing social conflicts, gender gaps, and maintaining the environmental conditions that sustain the livelihoods of the communities. In that regard, the Project´s intervention strategy aims to reinforce alliances and collaborations among stakeholders, such as SERNANP, local NGO´s, local authorities, and peasant communities, which have been already identified in the three mosaics (labor non-monetary matching agreement, communal workdays, conservation agreements, minor activity´s agreements, among others).~~

~~Economic benefits: The project will promote the participation of the local people (including youth, women, and other vulnerable groups) in business models based on biodiversity and strengthen the resilience and sustainability of productive systems of the population, increasing the possibilities to sustain the local economy and the livelihoods of man and woman in the face of changing climate conditions in the Andean ecosystem. To fulfill so, it has been deeply characterized the livelihoods and its vulnerability in all the sites prioritized by the project, considering gender realities, perspectives and preferences, as well it was proposed and consulted technical measurements for improving its resilience. In all cases, the heads of the protected areas in the intervention sites implement actions to formalize (through "conservation agreements") the economic activities developed by the local population inside and outside the zones. This relationship will serve as a basis for strengthening the process of equitable benefit sharing in the economic activities supported and developed by the project. By involving local governments (District or Provincial Municipalities), it will strengthen the promotion of rural economic development in the areas of intervention of the project.~~

~~Environments benefits: The environmental benefits of this project will be reflected in the maintenance of the contribution of the Andean ecosystems to the livelihoods of people living inside and close to these ecosystems, promoting restoration and ecological recovery actions, which will result in an increase of the adaptive capacity of the ecosystems. A larger scale, the protection and restoration of the ecosystem service of hydrological regulation of protected areas such as the Huascaran National Park or the Ampay National Sanctuary will benefit cities such as Huaraz (Ancash) and Abancay (Apurimac). Mountain water resources in the tropical Andes sustain both rural and urban water supplies, irrigated agriculture, hydropower generation and fragile high-elevation ecosystems. Most precipitation falls in the wet season between December and March, with glacier meltwater an important water source during the dry season~~

~~(May to September), and especially during droughts (Potter et al, 2023). The other hand, the project expects to contribute to reducing the occurrence of forest fires in the three conservation mosaics, thereby also reducing biodiversity loss.~~

The population of the sites prioritized by the Project lives above 2,800 m above sea level. The traditional form of local organization is the peasant community, which are organizations of public interest, with legal existence and legal status, made up of families that inhabit and control certain territories, linked by ancestral, social, economic and cultural ties (Law 24656 - General Law of Peasant Communities). According to the Indigenous or Original Peoples Database of the Ministry of Culture (https://bdpi.cultura.gob.pe/), the indigenous peoples located in the project intervention area (mostly in the central and southern mosaic) are Andean and known as Quechuas, whose mother tongue is Quechua in its different varieties (https://bdpi.cultura.gob.pe/index.php/pueblos/quechuas).

This population is characterized by vulnerabilities such as low levels of development, dependence on subsistence agriculture and livestock practices, limited economic opportunities, language (especially for adults), and generally high vulnerability to climate change. They are losing their traditional knowledge and abandoning ancestral practices, resulting in insufficient means and capacities to develop alternatives or adopt climate-resilient livelihoods. In terms of marginalization, these populations have limited access to government programmes on technical assistance and economic development, due to the distances to settlements, language and public budgets. According to the census of indigenous peoples and peasant communities (INEI, 2017), on average 35% of the population is under 18 years old and 11% over 65 years old, and on average 49% of the population is female.

To include the gender and vulnerable groups perspective, the consultative process has included a gender evaluation in peasant communities', that included the socioeconomic, cultural and politic context, regarding the project components (relationship, perspective and preferences of each gender group regarding ecosystems, livelihoods and value chains). As result, it has been identified, for instance, that women´s inclusion in local organizations and leadership positions has different levels among all the prioritized towns (for example, within the northern mosaic, female leadership is less evident in Pueblo Libre sector than in Chinguelas settlements in the northern mosaic), or that women and men have a different level of bonding with the different components of their own environment (for example, in Chupapata sector in the southern mosaic, women identify with less level of detail the ecosystemic elements compared with men, being the opposite regarding the cultural and agricultural elements). This kind of observations are further described in Annex 3 and allowed to craft site-specific strategies of interventions (Part II.H and Part III.C).

Consistent with the description of the activities indicated in Section II. A (implementation and promotion de EbA and NbP measures), the project has not anticipated negative social, economic, or environmental impacts. The potential impacts would be linked to the installation of the hydrological monitoring plots and the implementation of some of the EbA and NbP measures: conservation and restoration of wetlands, sustainable grassland management, reforestation with native species, qochas/rustic micro-reservoirs, irrigation management and afforestation. All activities consider the gender and intercultural approach (especially in relation to the local language). For more details see Section II. K

The project estimates the following environmental, social and economic benefits:

Environments benefits:

- Support the conservation process of approximately 670,000 hectares and the restoration process of 10,000 hectares in the Andean ecosystems of Peru: The Andean ecosystem is being directly impacted by climate change but it is also the key element for Ecosystem-based Adaptation measures to enhance water security and the resilience of the population.
- A larger scale, the protection and restoration of the ecosystem service of hydrological regulation of protected areas such as the Huascaran National Park or the Ampay National Sanctuary will benefit cities such as Huaraz (Ancash) and Abancay (Apurimac). Mountain water resources in the tropical Andes sustain both rural and urban water supplies, irrigated agriculture, hydropower generation and fragile high-elevation ecosystems.
- The project expects to contribute to reducing the occurrence of forest fires in the three conservation mosaics, thereby also reducing biodiversity loss.
- GHG emissions are avoided through the conservation and restoration of degraded ecosystems.

- Access to climate information services via SENAMHI, INAIGEM, and MIDAGRI´s platforms will support the planning, programming, and decision-making for further replication.

Social benefits:

- Health and well-being, food and water security: the focus is on water security, enhancing the availability and quality by conserving and restoring the water services provided by the Andean ecosystems. Most precipitation falls in the wet season between December and March, with glacier meltwater an important water source during the dry season (May to September), and especially during droughts (Potter et al, 2023)[35].
- The project will directly benefit 8,900 people (50 % women) and from settlements and peasant communities. Indirectly benefit 36,300 people in the conservation mosaic and more people in the middle and lower watersheds that will be quantified during project implementation.
- Communities and local leadership, including of women and youth, will be strengthened. Project activities will enhance living conditions and economic opportunities of women and youth Andean farmers through directed training on associative processes and business plan development (women and youth associations will be prioritized), integrating and gender issues in platforms of knowledge exchange for ancestral practices and increasing women and youth participation in watershed dialogue decision-making platforms.
- Improved social cohesion. The focus of the project on recuperating ancestral knowledge, technologies, tools, organizational structures and management practices, and the monitoring of the communities' own progress in vulnerability reduction will strengthen social cohesion and enhance the importance of ecosystem conservation to sustain current livelihoods. The promotion of associative processes and access to markets will strengthen high Andean farmers networks.
- The project will facilitate the coordination within MIDAGRI and MIDIS with other key sectors (Water and Sanitation) and actors in the territory.
- The project will help mobilize MERESE funds. The operationalization of the MERESE mechanism will contribute to channel funding for the conservation of Andean ecosystems and support smart climate productive activities.

Economic benefits**:**

- The project aims to transform vulnerable communities' businesses and their usual production system into more sustainable and climate-resilient production systems. This will be done by implementing EbA measures, while at the same time, seeking to increase productivity, secure water regulation, fodder provision, and carbon storage.
- Improved associativity and entrepreneurship. Direct support will be provided to communities, farmer associations and individual farmers in developing sustainable business models that focus on increased productivity, increased income, and value chain addition. Farmer associations will be trained in associative processes, business plan development, technification and increased participation in climate-sensitive value chains to be prepare for access to national and international markets.
- Climate innovation will be catalyzed through improved land management and sustainable business models in target value chains supported by public and private finance. The improved participation of vulnerable High Andean communities in these value chains will be promoted through sustainable ecosystem management practices, enhanced associative processes, climate-resilient agribusinesses, increased access to specialized markets, and improved access to finance and technical assistance.
- Locally generated and targeted innovation for market transformation. MIDAGRI´s funds from AGROIDEAS and private sector to strengthen local associations and their business ideas will be complemented by the project by technical support to develop business plans and apply to the program.
- The project has the potential of leveraging public and private financing towards EbA and NbP measures in the Andean ecosystem landscape. Through access to finance and capacity-building, project activities will support local employment and dynamize local economies via increased participation in the value chain and access to specialized markets.

C. Describe or provide an analysis of the cost-effectiveness of the proposed

[35] Potter, E.R., Fyffe, C.L., Orr, A. et al. A future of extreme precipitation and droughts in the Peruvian Andes. npj Clim Atmos Sci 6, 96 (2023). https://doi.org/10.1038/s41612-023-00409-z

project/programme.

The adaptation measures proposed in the project (ecosystem monitoring, strengthening of capacities, restoration activities, mobilization of financial resources), are cost-effective long-term solutions to develop resilience in the communities and conserve the functionality of Andean ecosystems, which implies continuing to provide contributions from nature to the local populations mainly.

The research builds upon several years of extensive study by the iMHEA network in different types of Andean ecosystems (Andean forests, Andean moor, grassland, and wetlands) to implement best practices and better decisions, show that watersheds with less land use change or intensity of use for sustainable livestock provide a better ecosystem service of water regulation (Ochoa-Tocachi B.F et al, 2016)[36].

The iMHEA network has hydrological monitoring sites in northern (Piura), central (Huaraz) and southern (Abancay) Peru. Recommendations derived from a review of the status of forestry impacts on water and soils in the Andes include (Bonnesoeur V., Locatelli B., Ochoa-Tocachi B.F., 2019)[37]: (i) to optimize hydrological services, forest landscape restoration initiatives should prioritize soils without vegetative cover, with compacted soils, and with soils in which organic matter has been depleted; (ii) local authorities and population should understand the advantages, disadvantages, and specify what is expected from afforestation (water or timber); (iii) decision makers sometimes assume that afforestation is key to watershed conservation or restoration, but the reality is that native Andean grasslands and Andean moor in good conditions provide excellent hydrological services; (iv) it is urgent to protect forests from degradation and deforestation, especially cloud forests, not only for their rich biodiversity but also for their contribution to hydrological and soil regulation; (v) landscape restoration and green infrastructure projects should invest in monitoring, and their results should be used in decision-making processes, and to guide and support the design, implementation and evaluation of conservation and afforestation projects.

The high Andean ecosystems constitute a continuum of humid grasslands (puna), wetlands and *Polylepis* forests. In an evaluation carried out in Apurímac between 3,900 and 4,635 masl (Cervantes et al, 2022)[38], the results show that the humid grasslands(puna) regulate 80%, the wetlands 17% and the *Polylepis* forest 3%, so the planning of protection, restoration and management activities should be approached from a landscape perspective.

An additional reference to be used for the design of activities is an evaluation of the cost-effectiveness of high Andean ecosystem management in water regulation compared to other regulation alternatives, such as the construction of rustic micro-dams, concrete dams and payment of the opportunity cost of the families living in the Mariño watershed (Cervantes, 2022)[39]. The cost-effectiveness threshold was estimated at \$0.05/m^3 of water, while the incremental cost-effectiveness ratio of the strategies evaluated were: i) ecosystem restoration through a public investment project (\$0.088/m^3), ii) construction of rustic micro-dams (\$0.47/m^3), iii) construction of a concrete dam (\$0.18/m^3) and iv) payment of the opportunity cost (\$0.01/m^3).

Furthermore, Quispe et al (2022)[40] in the same study area in Abancay, evaluated the contribution of agroecology to food security and against climate change in family farming. His results show that the application of agroecological practices improves food self-sufficiency and family income; it also reduces antagonisms or increases synergies between productivity and adaptation or mitigation. These results suggest that agroecology can help to simultaneously achieve the (often conflicting) objectives of Climate-Smart Agriculture.

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[36] Impacts of land use on the hydrological response of tropical Andean catchments. BF Ochoa-Tocachi, W Buytaert, B De Bievre, R Célleri, P Crespo, ... Hydrological Processes 30 (22), 4074-4089. https://onlinelibrary.wiley.com/doi/pdf/10.1002/hyp.10980

[37] Bonnesoeur, V., Locatelli, B., Ochoa-Tocachi, B.F. 2019. Impactos de la forestación en el agua y los suelos de los Andes: ¿Qué sabemos? Resumen de políticas. Lima, Peru: Forest Trends-Proyecto. https://www.cifor.org/knowledge/publication/7147/

[38] Ronal Cervantes, José Miguel Sánchez, Julio Alegre, Eric Rendón, Jan R. Baiker, Bruno Locatelli, Vivien Bonnesoeur. 2022. Contribution of highandean ecosystems in providing the water regulation ecosystem. Vol. 20 Núm. 2 (2021). https://doi.org/10.21704/rea.v20i2.1804

[39] Ronal Cervantes, 2022. Costo efectividad del manejo de ecosistemas altoandinos en la regulación hídrica de la unidad hidrográfica de Rontoccocha, Abancay, Apurímac. https://hdl.handle.net/20.500.12996/5180

[40] Yésica Quispe Conde, Bruno Locatelli, Améline Vallet, Raúl Blas Sevillano. 2022. Agroecología para la seguridad alimentaria y frente al cambio climático en Perú. Economía Agraria y Recursos Naturales. Vol. 22,1. (2022). pp. 5-29. https://polipapers.upv.es/index.php/EARN/article/view/14467/15117

Identifying the interests of the local population in the key ecosystem services for the project is the basis for achieving a high degree of ownership and commitment to continue supporting the protection, restoration and good land management (Hosftede, 2019). The experience of the Andes del Norte Fund in Piura (Albán, 2017)[41] demonstrates how local participation in the design of activities to protect and reduce pressures on ecosystems and technical assistance from the district municipality are good practices that can be replicated in other landscapes with similar issues. This is particularly important in the management of protected areas, where it is key to involve the local population and municipalities.

Vasquez et al (2017)[24], in an assessment conducted in Apurímac about the Andean ecosystem and population vulnerability, the following forest landscape management practices were identified as reducing vulnerability: protection of mammals, establishment of customary rules, honeybee production, restoration, protection of native forests, and reforestation. It also indicates that the capacities of local populations to cope with climate change vary from fair to poor, using for this analysis variables such as rights over natural resources, community capacity for economic diversification, community organizational capacity and presence of vulnerable groups. The Project will consider all these findings as a basis for identify the activities with the local population, to make its intervention more efficient and sustainable.

At the institutional level, the involvement of national-level sectorial governmental organizations with responsibilities in the implementation of the National Adaptation Plan will also contribute to the efficiency of the project: PNCB-MINAM, SERFOR and SERNANP, the three together in outcome 1, and SERNANP leading outcome 2 and 3. The involvement of the three institutions is key from a landscape approach and considering their complementary roles inside and outside the protected areas.

The project intervention will generate direct impact on: (i) at least 1.7 million hectares of Andean ecosystems in protected areas through a financial strategy to close the gap for the management of protected areas and incorporating the climate change adaptation approach (Output 2.3), (ii) will contribute to monitoring the impact of climate change and deforestation on the slightly more than 270,000 hectares of Andean relict forests (and up to 800,000 hectares in accordance with the PNCB-MINAM goals for 2030), (iii) will strengthen the capacities of the local population to develop productive activities around and within the conservation areas, and (iv) will facilitate the start of the intervention of the PNCB-MINAM in Andean relict forests through the design and implementation of the degradation mapping and monitoring system for this type of ecosystem. The PNCB-MINAM establishes agreements with peasant communities for the conservation of forests. Through these agreements, a grant of US$ 3.00/ha is provided, which can be used to promote productive activities linked to forest conservation.

Research carried out in the Apurímac region, that have managed to identify and make visible ancestral knowledge and differentiated participation of women and men in the communities around biodiversity, use of wild species, agroforestry practices and soil and water management. and conservation, recovery and protection of forests, fire prevention, family livelihoods, economic activities, among others (Mathez-Stiefel et al, 2016; Kometter and Huasquiche 2017; Kometter, 2018). Women play a fundamental role in the production of seedlings, construction of q'ochas (artificial wetlands), livestock, firewood collection, seed handling, planting, post-harvest handling and sale; while men are responsible for the transfer of seedlings, tools and supplies, soil management, house construction, tool making, harvesting and product transfer (ANFOR, 2019c and 2021; Mathez-Stiefel, 2016). Specific gender analysis to be carried out at the beginning of project execution will be an opportunity to guide and better define the intervention strategy, as well as to unify information on this subject in the protected areas of Perú.

D. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

~~The principal consistent of the Project with national strategies is with the National Adaptation Plan. In this~~

[41] Albán, L. 2017. The Fondo del Agua Quiroz Chira: a mechanism for the management for the Piura (Perú) ecosystem mountain. Andean Forest Programe and Nature and Culture International Perú. https://www.bosquesandinos.org/wp-content/uploads/2017/02/FAQCH-FINAL-WEB.pdf

~~context the Project will contribute to the following adaptation measures:~~

- ~~Conservation and recovery of the natural infrastructure for the provision of hydrological ecosystem service in basins that are vulnerable to climate change (AGU24).~~
- ~~Restoration of the ecosystems within the National System of Natural Protected Areas (SINANPE for its initials in Spanish) to maintain landscape connectivity and reduce the impacts of climate change (BOS.2).~~
- ~~Implementation of sustainable practices for the conservation of ecosystems in watersheds of Protected Areas vulnerable to extreme climate events (BOS.4)~~
- ~~Management of natural grasslands to ensure livestock feed and reduce their vulnerability to climate change (AGRI.7).~~
- ~~Implementation of adaptive technological innovation services for climate change in agricultural value chains (AGRI.15).~~
- ~~Implementation of business strategies that incorporate risk and opportunity management in the face of climate change (AGRI.17).~~

~~The national normative framework to which the project is linked to is the following:~~

- ~~*National Policy of the Environment*, approved by Supreme Decree 023-2021-MINAM.~~
- ~~*Framework Law on Climate Change (Law 30754)* and its regulations approved by Supreme Decree 013-2019-MINAM.~~
- ~~*National Strategy of Climate Change* approved by Supreme Decree 011-2015-MINAM, and currently in updating process[42].~~
- ~~*National Plan of Climate Change Adaptation of Peru*, approved by Ministerial Resolution 096-2021-MINAM.~~
- ~~The proposal of *National Policy of Glaciers and Mountain Ecosystems*[43].~~
- ~~*Action Plan in Gender and Climate Change – PAGCC Peru*[44] which includes as specific objectives the knowledge management and capacity building.~~
- ~~*Law on Equal Opportunities for Men and Women* (Law 28983)~~
- ~~*National Policy on Gender Equality* approved by Supreme Decree 008-2019-MIMP~~
- ~~*Regional Strategies of Climate Change*.~~
- ~~*Law of Mechanisms of Retribution Ecosystems Services (Law 30215)*, its regulations approved by Supreme Decree 009-2016-MINAM, and Amendment of the Regulations approved by Supreme Decree 033-2021-MINAM.~~
- ~~*Updated Action Plan of the National Biodiversity Strategy to 2021*, approved by Supreme Decree 004-2021-MINAM.~~
- ~~*General Dispositions for the multisectoral and decentralized management of the wetlands*, approved by Supreme Decree 006-2021-MINAM.~~
- ~~*Intervention Strategies for 2030 of the National Program of Forest Conservation*, approved by Resolution of Executive Coordination 026-2020-MINAM/VMDERN/PNCB.~~

~~At Andean regional level, the project is consistent with the *Andean Initiative of Mountains*[45] of which Peru is the Regional Coordinator Pro-Tempore currently, and with Declaration of Madrid worldwide (COP25) signed by Peru in the framework of the *Initiative 20x20*[46].~~

The project is fully aligned with the National Policy of the Environment (Supreme Decree 023-2021-MINAM), the Framework Law on Climate Change (Law 30754 and its regulations approved by Supreme Decree 013-2019-MINAM) and National Strategy of Climate Change (Supreme Decree 011-2015-MINAM) (39).

The project is fully aligned with the National Adaptation Plan (approved by Ministerial Resolution 096-

[42] https://www.gob.pe/institucion/minam/campa%C3%B1as/3453-estrategia-nacional-ante-el-cambio-climatico-al-2050

[43] https://inaigem.gob.pe/web2/politicas/

[44] https://cdn.www.gob.pe/uploads/document/file/374076/PLAN-G%C3%A9nero-y-CC-16-de-JunioMINAM_MIMP.pdf

[45] The Andean Initiative of Mountains is a platform integrated by the countries who share the Andes Chains of Mountains: Argentina, Bolivia, Colombia. Chile, Ecuador, Peru and Venezuela, and that, of their own accord, aim at strengthening the regional dialogue to promote and take action in order to preserve and encourage the sustainable development of the Andean mountains. https://iam-andes.org/

[46] Initiative 20x20 is a country-led effort that aims to change the dynamics of land degradation in Latin America and the Caribbean. https://initiative20x20.org/

2021-MINAM). The proposed adaptation activities will follow the approach laid out in Peru's NAP, focusing on ecosystems, hydrographic watersheds, restoration and conservation of ecosystems, recover traditional knowledge and territorial planning. The project will directly contribute to the implementation of six NDCs through outputs 2.1 and 3.1 and 3.2, as follows:

Thematic Area	Adaptation measures	Indicator	National Target to 2030
Water	Conservation and recovery of the natural infrastructure for the provision of hydrological ecosystem service in basins that are vulnerable to the climate change (AGU24).	Area (ha) of conserved and recovered ecosystems that provide hydrological regulation and provisioning services, in watersheds vulnerable to climate change.	97,842.8 ha
Forests	Restauration of the ecosystems within of the National System of Natural Protected Areas (SINANPE for its initials in English) to maintain landscape connectivity and reduce the impacts of the climate change (BOS.2).	Number of hectares of Sinanpe's PNAs with forest under restoration process reduce the impacts of extreme climate events.	19,630.0 ha
	Implementation of sustainable practices for the conservation of ecosystems in watersheds of Protected Natural Areas vulnerable to extreme climate events (BOS.4)	Number of hectares of ecosystems in watersheds within the scope of the PNAs with sustainable conservation practices to reduce vulnerability to extreme climate events.	312,000.0 ha
Agriculture	Management of natural grasslands to ensure livestock feed and reduce their vulnerability to climate change (AGRI.7).	Number of hectares of natural grasslands managed in areas vulnerable to climate change.	5,873,638.0 ha
	Implementation of adaptive technological innovation services for climate change in agricultural value chains (AGRI.15).	Number of agricultural producers with technical assistance for technological innovation adaptive to climate change in agricultural value chains.	10,978 local producers
	Implementation of business strategies that incorporate risk and opportunity management in the face of climate change (AGRI.17).	Number of agricultural producers with business plans incorporating climate change risk and opportunity management in value chains.	32,248 local producers

Source: National Plan of Climate Change Adaptation of Peru (MINAM; 2021)

In addition, the project is aligned with the following national plans and strategies:

- Law on Equal Opportunities for Men and Women (Law 28983) and National Policy on Gender Equality (Supreme Decree 008-2019-MIMP). These policies seek, among others, to guarantee women and men the exercise of their rights to equality, dignity, free development, well-being and autonomy, guarantee greater participation of women in decision-making positions, and guarantee the exercise of their economic and social rights, such as access to land ownership, credit, water and sewage services, technology, receive fair wages for the work they do, among others. Through outputs 2.1, 3.1 and 3.2 will promote the participation and capacity building of women and youth in conservation and restoration activities and productive activities.

- Intervention Strategies for 2030 of the National Program of Forest Conservation, approved by Resolution of Executive Coordination 026-2020-MINAM/VMDERN/PNCB. The project will directly contribute to the implementation of the module for mapping and monitoring deforestation and degradation of Andean forests (Output 1.2).

- National Agrarian Policy 2021-2030 (Supreme Decree 017-2021 MIDAGRI) which aims to improve access to markets for small farmers, improve natural resource management, improve technical and commercial capacities of agricultural producers and their incomes, promote producers' associativity and entrepreneurship. The project, through products 2.1, 3.1 and 3.2, will contribute to strengthening the capacities of high Andean residents and small producers for the implementation of Eba and NbP measures for adaptation to climate change in the management of natural resources and their productive activities.

E. Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

~~The project is in line with the cross-cutting (gender, intercultural and intergenerational) and human rights approaches established by NAP Peru in accordance with the Regulations of the Framework Law on Climate Change of Peru, as well with the principles and approaches established by the National Policy on Gender Equality and Law No. 28983, and by the Law on Equal Opportunities for Women and Men. Interventions in the conservation mosaics will respect the regulatory framework established by SERNANP for the development of activities in protected areas and their buffer zones, as well as regulations established by SERFOR for areas outside of protected areas, especially for restoration activities.~~

~~The project does not include any environmental or social risks and will generate benefits in both these dimensions by promoting monitoring and resilience to climate change in Andean ecosystems, as well as the sustainability of livelihoods and productive chains with a gender focus, without involving risks such as the displacement of vulnerable populations inside and outside protected areas.~~

~~To include the gender and vulnerable groups perspective, the consultative process has included a gender evaluation in peasant communities', that included the socioeconomic, cultural and politic context, regarding the project components (relationship, perspective and preferences of each gender group regarding ecosystems, livelihoods and value chains). As result, it has been identified, for instance, that women´s inclusion in local organizations and leadership positions has different levels among all the prioritized towns (for example, within the northern mosaic, female leadership is less evident in Pueblo Libre sector than in Chinguelas settlements in the northern mosaic), or that women and men have a different level of bonding with the different components of their own environment (for example, in Chupapata sector in the southern mosaic, women identify with less level of detail the ecosystemic elements compared with men, being the opposite regarding the cultural and agricultural elements). This kind of observations are further described in Annex 3 and allowed to craft site-specific strategies of interventions (Part II.H and Part III.C).~~

In general terms, no negative environmental or social impacts generated by the Project intervention have been foreseen. However, the main risks and relevant mitigation measures have been identified in accordance with the Environmental and Social Policy of the Adaptation Fund. For further details see Section II.K and Section III.C

The regulatory framework in Peru establishes that all activities or investment projects likely to generate environmental (and social) impact are evaluated within the framework of the National Environmental Impact Assessment System (SINIA) in accordance with Law 27446 - National Environmental Impact Assessment System Law. The SINIA is mandatory for national sectorial authorities and subnational authorities, according to their competences and functions.

The environmental risk of the activities to be implemented by the Project (EbA and NbP measures) is regulated by the Ministry of Agriculture (MIDAGRI). It has been verified that the Project activities are outside the established thresholds or exceptions of the List of Inclusion in the SEIA of the Agriculture and Irrigation Sector (MIDAGRI) approved by Ministerial Resolution No. 202-2019-MINAM.

Without prejudice to what is indicated in the previous paragraph, for the implementation of the activities for outputs 1.1, 2.1, 3.1 and 3.2 the project will be taken into account the follow:

- All activities within natural protected areas and their buffer zones require the obligatory opinion of

SERNANP, in accordance with the provisions of Presidential Resolution 057-2014-SERNANP, which approves the minimum requirements that must be included in any request for compatibility of a proposed activity overlapping a nationally administered Natural Protected Area and/or its Buffer Zones, or a Regional Conservation Area. Coordination will be made with SERNANP to ensure compliance with this regulation.

- Reforestation and afforestation activities require the preparation and approval of an Environmental Management Report (IGA), as indicated by the Environmental Management Regulations for the Agricultural Sector, approved by Supreme Decree No. 019-2012-AG and modified by Supreme Decree No. 013-2013-MINAGRI. Coordination will be made with MIDAGRI and SERFOR for compliance with this regulation.

- Reforestation, afforestation and grassland or wetland restoration activities to be carried out outside the scope of natural protected areas shall be implemented in accordance with the *Guidelines for the restoration of forest ecosystems and other wild vegetation ecosystems* (Executive Management Resolution No. 083-2018-MINAGRI-SERFOR-DE). In addition, for the case of wetland restoration will be considered the *Guide for the evaluation of the state of wetland ecosystems* (MINAM, 2019), in accordance with the methodology established in the Complementary Guide for Environmental Compensation: High Andean Ecosystems, approved with Ministerial Resolution 183-2016-MINAM.

- The installation of the hydrological monitoring plots will be carried out based on the *Guide for the Design of Hydrological Monitoring Systems for the Mechanisms of Retribution for Water Ecosystem Services of Drinking Water Service Providers* (SUNASS, 2020).

- The construction of qochas will be carried out based on the *Technical Manual for Water Planting and Harvesting* (FONCODES, 2015) of the Cooperation Fund for Social Development (FONCODES) of the Ministry of Development and Social Inclusion (MIDIS). Also, will be taken into consideration the *Methodological Guide for the Construction of Artisanal Reservoirs, Ditches and Drinking Troughs* (SERFOR, 2018). Coordination will be made with the Sierra Azul Program of MIDAGRI for the construction of the qochas, and if necessary, the provisions of Resolution 007-2015 of the National Water Authority that approves the Regulation of Administrative Procedures for the Granting of Water Use Rights and Authorization for the Execution of Works in Natural Water Sources will be considered.

For the management of the selected conservation mosaics, and especially of conservation areas, both SERNANP and the local organizations with which it works have established mechanisms for effective participation and involvement of the local population, local governments, and rural communities. In these, they coordinate their actions for protection, restoration and sustainable management of resources.

The stakeholders in each mosaic and protected area have a background of collaboration, in which they have developed and stablished both formal and informal modalities of synergies, agreements and collaboration in order to fulfill both the population needs and objectives of conservation, according to the cultural, social and ecological particularities of each sector and area. The current and successful modalities of collaboration in each protected area have been identified during the consultation process, which are going to be respected and strengthen by the Project, so it will not create any kind of conflict but, in the opposite, will improve the relationship among stakeholders:

Protected Area	Modality of Collaboration established with the population
Tabaconas Namballe National Sanctuary	Communal counterpart in labor for the days of reforestation or installation of live fences.
ACP Chicuate Chinguelas	Communal counterpart in labor for the days of restoration and conservation
Calipuy National Sanctuary	Obligatory communal counterpart (1 day per year per person) in labor for the days of restoration or delimitation of the protected area.
Calipuy National Reserve	Remuneration agreements for the provision of pasture, under the modality of registered surveillance committees Communal counterpart in labor for the days of surveillance, censuses, among others.
Huascarán National	Participation of the population in awareness-raising campaigns

Protected Area	Modality of Collaboration established with the population
Park	
Ampay National Sanctuary	Small activity and conservation agreements community forest fire brigades
Machupicchu Historic Sanctuary	Communal counterpart in labor for productive projects. Independent community organization for the days of restoration and water management in coordination with institutions (Huayllabamba sector).

On the other hand, in the three selected mosaics there is a history of successful local experiences in the implementation of good ecosystem conservation practices, with evidence of positive and proactive involvement of the communities, which can be replicated within and among the mosaics and are further described in the Annex 3.

Specifically, the consultation has allowed to identify the population directly involved in the activities for Output 2.1 and component 3, with a high level of detail for selection, such as the identification of prioritized settlements, the local authorities which are going to be convened during the initial phase of implementation (in order to establish agreements), the conservation and restoration practices of degraded areas most appropriate for the biophysical conditions of each mosaic and the preferences of the communities themselves for these purposes); as well as the selection of high potential productive chains to focus on strengthening the technical productive capacities of vulnerable groups (including women), for sustainability and resilience with high market acceptance.

F. Describe if there is duplication of project/programme with other funding sources, if any.

From the consultations carried out with SERNANP and MINAM, there is only one project currently under implementation that overlaps territorially with the concept note: the "Natural Heritage of Peru - Amazon" project, and as described below, this project does not plan to incorporate or develop actions on climate change adaptation. Additionally, there are two (2) initiatives in the design stage, which are expected to be completed in 2023 or 2024. In both cases, SERNANP or PROFONANPE are involved, and considering that both will be part of the project steering committee, it is ensured that duplication of actions among all projects is avoided: all interventions in protected areas must be reported to SERNANP, which ensures that the projects duplicate activities, and contribute in a complementary manner to cover the protected area's management gaps.

The projects or initiatives identified in the intervention zone of this proposal are listed below.

Project	Geographical Overlap	Status	Implications
Project “Patrimonio Natural del Perú – Amazonía”[47]	Tabaconas Namballe National Sanctuary	In execution: finances the update of the Tabaconas Namballe SN Master Plan. The intervention of this initiative in this protected area does not consider promoting actions to adapt to climate change.	This initiative aims to consolidate the effective management of protected areas in the Amazon biome by generating enabling conditions for such management (2019-2029) and ensuring their financial sustainability in perpetuity. Component 2 seeks to extend this initiative to the protected areas of the Andean ecosystems of the western slopes of the Andes. The initiative is led by SERNANP and promoted by PROFONANPE, thus ensuring the synergy and complementarity of the activities foreseen by output 2.3 of the project.
Project "Resilient Puna: Ecosystem-based	Protected areas the South Mosaic (Ampay and	The project was approved by the Green Climate Fund (2024) and will be implemented until 2030.	Resilient Puna is focused Apurimac, Cusco, Puno and Arequipa to identifying, putting into practice, and overseeing ecosystem-based

[47] https://profonanpe.org.pe/proyectos/fondo-de-transicion-de-la-iniciativa-patrimonio-del-peru-para-las-areas-naturales-protegidas-del-bioma-amazonico-2/

Adaptation for Sustainable High Andean Communities and Landscapes in Peru"[48]	Machupicchu)		adaptation (EbA) priorities aimed at improving the ownership and resources of indigenous Andean communities and local communities to strengthen their resilience to climate change. The initiative is led by GIZ and PROFONANPE, thus ensuring the synergy and complementarity of the activities foreseen by output 2.3, 3.1 and 3.2 of the project.
Project "Fund for Innovative Adaptation in vulnerable ecosystems in North of Perú. (Ancash, Cajamarca; Lambayeque, San Martin y Loreto)"	Huascarán National Park	The project was approved by the Adaptation Fund (2024) and will be implemented until 2028.	EDA-Peru Facility goal es increase the population's capacity to adapt to climate change through financing adaptation measures in the sectors of water regulation, agriculture and food security, and forest and forestry prioritized in the National Determined Contributions in selected vulnerable watersheds. In the Huascaran National Park is focused in the Santa Periglacial Watershed Ecosystem (Ancash). The initiative is led by ROFONANPE, thus ensuring the synergy and complementarity of the activities foreseen by the project.
Project "Restoration of high Andean ecosystems in Peru"	Huascarán National Park	Concept note in preparation. The Peru's Ministry of Environment will be submitted this note to the GEF 8 in April 2024 and will submit the full proposal in December 2024.	Coordination meetings are planned with MINAM and UNDP to avoid duplication and promote complementarity.

Project "Improvement of the Biodiversity Conservation Service of Huascarán National Park" (Unique code N° 2323856 - Public Investment Project)[49]	Huascarán National Park	According to the records of the Peruvian National Public Investment System, this project is only at the profile level, requiring public or private investment for the elaboration of the complete project. The financing commitment was transferred from the national level to the Regional Government of Ancash. To date, the GORE has not committed funding for the elaboration of the complete project a no there is no established date for this.	During the formulation of the final project, communication and exchange of information will be ensured to promote complementarity of activities. Considering that the project will be implemented within a protected area, SERNANP will be consulted for its elaboration and will participate in its execution. In this context, synergy and complementarity between the activities of the two projects is ensured, as long as the full proposal of the public investment project is elaborated.

There are projects in Colombia, Ecuador, Peru and Bolivia that aim to contribute to the adaptation of high Andean ecosystems, the populations living in them and their livelihoods. Among these projects we can mention the "Andean Forests Regional Programme" (2014-2021), the "Andes Resilient to Climate Change" project (Phase 1: 2020-2024), the Adaptation to Climate Change Impacts on Andean Water Resources - AICCA (2017 - to date) and "The Mountain Ecosystems-based Adaptation -EbA" program, being the basis of this proposal, the lessons learned, results and pending challenges of the "Andean Forests Regional Programme".

[48] https://www.greenclimate.fund/project/fp226

[49] https://ofi5.mef.gob.pe/invierte/consultapublica/consultainversiones

These projects are implemented by Helvetas Swiss Intercooperation, CONDESAN and the Mountain Institute, and there is a relationship of collaboration and coordination between them in the framework of these projects, and between the three organizations in the framework of the Technical Group on Mountains of the National Commission on Biological Diversity (CONADIB), led by the National Institute for Research on Glaciers and Mountain Ecosystems (INAIGEM). In this context, meetings for the exchange of lessons learned and experiences will be promoted as a basis for the final design of the proposal and its implementation. This type of exchange has been foreseen by the project, within the knowledge management elements and activities to be developed in each of its components.

This proposal is based on the previous experience of the Regional Andean Forest Program and uses as a reference several projects that have been developed in the Andean ecosystems of Peru, which are described below.

Project Title	Period of execution	Implementing Entity (in Perú)	Intervention site	overlapping or complementarity
Multiplying environmental and carbon benefits in high Andean ecosystems (ECOANDES)	2013-2018	CONDESAN	Ayabaca, Piura	Not overlapping Thematic Complementarity
Andean Forests Regional Programme (ANFOR / Bosques Andinos)	2014-2021	HELVETAS Swiss Intercooperation	Abancay, Apurímac	Partial overlapping Thematic Complementarity
Scaling Up Mountain Ecosystem-based Adaptation: Building Evidence, Replicating Success, and Informing Policy (Mountain EBA Perú)	2017-2020	The Mountain Institute – IUCN	Cañete, Lima	Not overlapping Thematic Complementarity
Natural Infrastructure for Water Security in Peru (NIWS)	2017-2022	Forest Trends, CONDESAN, SPDA	Piura, Lima, Arequipa, Cusco	Not overlapping Thematic Complementarity
Adaptation to Climate Change Impacts on Andean Water Resources (AICCA)	2017-2022	CONDESAN	Piura, Ancash, Cajamarca	Not overlapping Thematic Complementarity
Adaptation at Altitude: acting in the mountains	2020-2023	CONDESAN	Support the iMHEA Network (Lima)	Not overlapping Thematic Complementarity
Andes Resilient to Climate Change (Andes Resilientes)	2020-2024	HELVETAS Swiss Intercooperation	Cusco, Puno	Not overlapping Thematic Complementarity
Water for Abancay and Communities	2020-2024	HELVETAS Swiss Intercooperation	Abancay, Apurímac	Not overlapping Thematic Complementarity

The following lessons learned for the effective implementation of EbA measures were systematized by the United Nations University – Institute for Environment and Human Security and CONDESAN (2022) based on projects implemented in Nor Yauyos Cochas (UNEP, 2019), Sierra Azul (Varillas, 2019) and other EbA measures in mountain ecosystems in Peru (UNEP et al., 2014) and will be used as a reference for the implementation of the activities planned by the project.

In the EbA Project planning

- Adequate site selection considering ecological, socio-economic, cultural and operational criteria. For example, the percentage of the local population that depends on ecosystem services.
- Promote interactive and open dialogues between local traditional knowledge and external researchers.
- Establish multidisciplinary teams with local and external experts to diagnose social and environmental impacts.
- Follow a participatory approach that empowers and actively involves communities in the

project.
- Anchor the design, planning and further implementation of the measures with the communities' ancestral culture and ways of living.
- Involve and work coordinately with the different actors in the territory. Especially make partnerships with local governments that can sustain the measures in the future.
- The measure should generate concrete and tangible benefits in the area where they are implemented (e.g., local water and food security) to increase the measure's sustainability and local buy-in.
- Add value to the ecosystem by measures that support the value chains of products or services (e.g., ecotourism).

In the EbA project implementation
- Build trust and common understanding with local communities.
- Have an adaptive management approach that can adjust the project implementation as knowledge about the measure advances.
- Consult the community and its forms of organization permanently to secure the measures' implementation.
- Ensure local ownership of the EbA measure and build local capacity for its long-term implementation.
- Work with the local population following a learning-by-doing (action learning) approach.
- Harness local talents that facilitate the connection between technical knowledge and local knowledge.
- Set up easy-to-apply and simple monitoring systems.
- Promote a paradigm shift in managing natural resources toward an integrated view of the territory and revaluing the usefulness of nature-based solutions.

For replicating and scaling the EbA Project
- Implement the measures gradually, starting with a specific EbA measure toward more integrated actions in the territory.
- Encourage the replicability of measures through technical-scientific and testimonial evidence of the generated benefits.
- Interventions should be tailored to the reality of each context instead of an automatic replication of a measure.

Additionally, it is important to consider the lessons learned from the Project "Integrated Management of Climate Change in Communal Reserves in the Amazon-Peru (EBA Amazonía)", implemented by UNDP and SERNANP. Some of the lessons learned (Lopez, 2018) and of interest for the project include the following:

- Co-management: this is a fundamental process for the effective conservation of NPAs. The heads of the NPAs assume, in this modality, a facilitating and supporting role. This management modality fits solidly with the EbA approach, which is based on the use of biodiversity and ecosystem services as part of a larger strategy, such as Life Plans, Master Plans or Concerted Development Plans (of the Municipalities or Regional Governments), which help people adapt to climate change.
- Conservation agreements with communities are another type of co-management mechanism that offers good results. The agreements make it possible to specify conservation commitments and frame them in the management and planning documents of the Protected Area (the Master Plan) and to support them with sustainable economic activities that facilitate the fulfillment of the commitments.

- Sustainable Economic Activities Program (PEAS): this is a mechanism that allows proposals to emerge from local interest and motivation, according to their own analysis of the beneficial effects they identify. However, these are still maturing processes that will probably generate adaptations in the medium term. It is hoped that the SEAP will become a regular management instrument for the NPA; it could be replicated, taking the model with it, or scaled up if local dynamics of joint analysis of the possible effects are promoted and relevant adaptations are proposed for each context.

- Articulation with local governments: This issue merits its own strategy to be developed in a

specific component. It has become evident that the communities and their representatives need to understand the competencies of the different scales of government in territorial management and how they articulate with each other, taking advantage of public resources from different levels of government. In the same way, it is necessary to influence the municipalities and regional governments in their role as territorial managers. The heads of the NPAs should also be clear about the importance of this articulation and promote it from their support role.

- Role and capacities of SERNANP: It is highly strategic that SERNANP, through an implementing unit, strengthen itself integrally in conceptual, methodological, strategic and operational aspects in areas such as EbA, co-management of NPAs, institutionalization of territorial management, gender and interculturality. SERNANP is the key actor for providing continuity to the implementation of adaptation measures, both at the strategic and operational levels. It is recommended that it should accompany the productive cycles, further consolidate technical capacities, promote and guide participatory monitoring of the effectiveness of the measures in the communities themselves and also assume a support role for territorial articulation, facilitating links that allow access to markets for the products generated.

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The project will support the implementation of the Climate Change Adaptation Measures established in the NAP of Peru. In this context, knowledge management is proposed as a cross-cutting working approach, and resources from each of the components will be allocated for knowledge management activities. The following stages will be held during the initial phase of sensibilization in each one of the three mosaics:

Activity	Description
Analysis of capacity building needs	- Participatory analysis of needs of local populations, local government officials and protected area managers and specialists, especially to achieve the expected result of component 3 "Increased resilience of productive activities in rural communities in three prioritized conservation mosaics". - Identification of knowledge gaps among groups of gender or age, deepening the initial information collected during the consultation process, to identify specific needs of women and youth, regarding each group of practices and value chains to be implemented by the Project.
Capacity building	- Capacity building will be a core activity and strategy to successfully fulfill the goals of the Project and rightfully implement its activities, as part of the implementation of Output 2.1 and Component 3.
Knowledge management	- Promote discussion on knowledge management in participatory spaces such as management committees and regional platforms, where the participation of managers, academia and local population should be ensured. This ensures that the actions to be designed and implemented have the consensus of the strategic stakeholders in the territory.
Knowledge diffusion	- Systematization of processes and results, through guidelines established at the beginning of the project, to facilitate their dissemination. - Dissemination of information through the web portals of PROFONANPE, MINAM, SERNANP, INAIGEM and PNCB-MINAM, taking into consideration the strategic communication actions established by the NAP of Peru. - Dissemination of knowledge through appropriate communication channels to each type of target audience identified by the project: local population, municipal authorities, and the general public. Likewise, the dissemination of the project's experiences in global knowledge management web portals on climate change or mountain ecosystems such as WeADAPT or The Mountain Parnertship, and through the COPs on Climate Change and Biodiversity is also planned. - Linkage to the project's monitoring and evaluation system and to the institutional knowledge management strategy of the project counterparts (especially SERNANP), PROFONANPE and HELVETAS Swiss Intercooperation.

To include this element with a comprehensive approach, the Project planning will include the following set of activities is proposed:

- Specialized workshops to identify the specific capacity building needs and information gaps of the Project's stakeholders (regarding the Project components), during the first year of implementation stage.
- Capacity building activities, based on the stakeholder's deep analysis, related to the Project´s components and held during its implementation.
- Systematization of experiences and key information generated by the Project.
- Design and implementation of communication guidelines, aligned to the NAP Perú and the knowledge management strategies of the Project´s counterparties.
- Implementation of a monitoring and evaluation system, including indicators related to knowledge management outputs and a data base of knowledge management products.
- Mid-term and final workshops of strategic reflection with the participation of project implementers and main stakeholders (if needed), to identify lessons learnt, innovative elements, key knowledge management products, key messages to be transmitted, main outcomes and main impacts of the Project.

The proposed stages and activities, as well as methodological orientations for them, will be further described in the Knowledge Management Strategy, to be elaborated at the beginning of the project.

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

The results of the preliminary consultation process carried out in 2022 for the Conceptual Note served as the basis for the design of the consultation process carried out for the formulation of this proposal. Methodologically we used a "waterfall approach" that involved the following steps:

a) Focalization workshops with 16 Chiefs and specialists from each protected area with the aim of identifying priority sites and communities for the intervention of the Project.
b) In-depth interviews with 11 representatives of Chiefs, specialists and allies of each protected area to collect relevant information for the formulation of the complete proposal and identify relevant organized groups.
c) Interviews with 32 community leaders to validate and deepen diverse information[50].
d) Workshops in the three mosaics with population (313 people) to collect information regarding preferences and willingness to get involved in conservation activities, ecosystem restoration and strengthening of production chains preliminarily identified; as well as analyzing the differentiated perspective of each gender and age group (men, women, young people, others).

The total list of people consulted appears and the lists of attendance at workshops and meetings with the local population are in Annex 1.

The methodology of each of these activities included a gender assessment related to the proposed conservation and restoration practices for output 2.1 and the value chains of the site and basis for the intervention of component 3. The information collection methods were designed considering the use of inclusive language and specific instructions were provided to local partners to identify, convene and interview representatives of different gender and age groups, under an intersectional approach[51] (community leaders, representatives of producer organizations, water user management committees, women's organizations, vigilance committees, among others). In the case of the workshops, graphic methodologies (talking maps) were used to facilitate the flow of information in a dynamic way, and working groups were organized by gender to ensure that everyone can express themselves freely, as well as to

[50] Information on livelihoods, vulnerability to climate change; participation, organization, institutionality and aspects of equity and inclusion of women and youth, preferences and willingness to get involved in conservation activities, and strengthening of the value chains proposed in the Project.

[51] Considering as factors gender, age, and geographical location (all the population to participate in the Project lives in rural Andean areas)

collect differentiated perspectives, needs and priorities.

For the design of the information collection instruments, the specifications of the Guidance Document for Implementation Entities on Compliance with the Gender Policy of the Adaptation Fund[52] were considered, based on which information was collected in a participatory manner referring to:

General aspects	Output 2.1	Component 3
- Key statistics relevant to the Project (population, inequality index, literacy, economic independence, among others)[53] - Land tenure (communal or population centers). - Level of participation in community or local social and political life by young people and women (access to social and political capital). - Existence of female leadership. - Existence of women's and youth organizations. - Persistence of cultural norms that foster inequality (machismo). - Differentiated need for empowerment and capacity building. - Migrations and causes.	- Differentiated perception between gender groups regarding the environment and landscape elements. - Gender roles in conservation and restoration activities (access to natural capital). - Differentiated perception between gender groups regarding the main threats and factors of climate vulnerability in their environment and landscape elements.	- Gender division of domestic work (related to the availability of time for economic activities). - Gender roles in livelihoods and value chains. - Climate vulnerability of livelihoods. - Opportunities for women's economic empowerment (potential value chains of greatest interest to women)

It was considered that, in Peru, a consultative process is understood by many stakeholders and institutions as a special type of process that can generate expectations among the local population consulted. In this sense, interaction has been managed through representatives and key actors (for example: head of protected areas, support NGOs), respecting the channels of communication and convening accepted and formalized in each case (for example, letters addressed to formal representatives of organizations). Workshops and interviews with prioritized families or local groups were held once agreements had been established regarding which population centers and local organizations would be prioritized.

For the prioritization of the sectors and population centers to be involved in the projects, the following criteria were considered[54], coordinated with the heads and/or specialists of the protected areas:

- ***Criterion 1: Areas degraded by different drivers:*** forest fires, land use change, advance of agricultural and livestock frontier, advance of urban areas, water deficit, among others.
- ***Criterion 2: Exposure to climate change***: irregular precipitation patterns, temperature increases, increased incidence of frost, others.
- ***Criterion 3: Vulnerability to climate change of population livelihoods:*** decrease in agricultural and livestock productivity, susceptibility to pests and diseases of crops and breeding, decrease in water supply, impact by frost, deterioration of access roads, landslides, alteration of agricultural calendar, among others.
- ***Criterion 4: Expected willingness of the population to implement restoration and conservation practices*** (output 2.1): communities with a history of willingness to enter into conservation agreements, participate in conservation and sustainability projects.

[52] Gender Guidance Document for Implementing Entities on Compliance with the Adaptation Fund Gender Policy (Updated in 2022): https://www.adaptation-fund.org/document/guidance-document-implementing-entities-compliance-adaptation-fund-gender-policy-2/

[53] There are no statistics at the local level for these factors, so data have been taken from the national level (best approximation to date) and a distinction has been made between the rural and urban reality, for the indicators that had this information.

[54] Two biophysical criteria related to component 2 (degraded areas and exposure to CC) and two social criteria related to both component 3 and the provisions of the environmental and social policy of the Adaptation Fund were identified. All criteria were agreed with the heads of the protected areas before the targeting workshop.

- ***Criterion 5: Expected willingness of the population to implement population measures in production and value chains*** (component 3): communities or associations of producers with a history of willingness to participate in chain strengthening and sustainability projects.

The consultation process collected specific information for each tile regarding:

- Location of the prioritized sectors, population centers and approximate population.
- Local organizations and relevant authorities.
- Characterization of ecosystems and drivers of degradation in the prioritized sectors, linked to the conservation and restoration practices identified by the Project (output 2.1)
- Background to ecosystem management initiatives
- Population perspective and gender issues related to ecosystems (roles, gender perspective regarding landscape elements and their drivers of degradation).
- Technical and strategic information for output 2.1 (conservation and restoration practices).
- Livelihoods and vulnerability
- Gender issues related to livelihoods and potential value chains.
- Prioritized value chains and proposed measures for their optimization and resilience.
- Technical and strategic information for component 3.

Because peasant communities and the population engaged in agriculture are the most vulnerable to the effects of climate change, the project contemplates their direct involvement in activities aimed at increasing their capacity for life and adaptation to the natural environment (specifically, products 2.1 Peasant communities implement conservation and restoration practices of degraded areas inside and outside (buffer zones) of prioritized protected areas and 3.1 - Peasant communities with productive technical capacities to reduce the vulnerability of value chains). Therefore, the consultation process had special emphasis on exploring their disposition and preferences regarding these products.

The settlements and organizations prioritized in the consultation process are detailed in Annex 2 and the results of the consultation process are extensively described in Annex 3. A summary of them, regarding output 2.1 and component 3 of the project, are shown below:

Consultation summary in North Mosaic:

a) Synthesis for output 2:

Protected Area	Settlement	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
Tabaconas Namballe National Sanctuary - SNTN	Pueblo Libre	Moors, podocarpus forests and "cascarilla" (*Cinchona sp*). Ecosystems providing water ecosystem services.	Livestock (progressively approaching the core zone of the SNTN), especially on the border with the ACR in the east, where there are cumulative threats, as there is progressive expansion of the agricultural frontier of coffee	Management of livestock activity with the exclusion of cattle from water sources. *Installation of live fences in areas with the presence of livestock.* Wastewater management and compost mills	They agree with the livestock management in silvopastoral plots and protection of water sources They ask for advice on coffee cultivation.
	Cataluco	Moors. Ecosystems providing water ecosystem services	Livestock, which comes to enter the buffer zone. There is confusion regarding the limit of the SNTN (the	Livestock management and exclusion of cattle in water springs.	The population is interested in reforesting with native species (alder, chontilla and romerillo) in the water

Protected Area	Settlement	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
			population indicates that the limit of the livestock area is the source of water upstream, within the SNTN). Fires in pastures due to agricultural mismanagement. Formal and informal mining, especially in the upper part of the Segundo y Cajas peasant community	*Note: SERNANP considers necessary an evaluation of the degradation caused by livestock.* Bio-gardens	sources
ACP Chicuate Chinguelas	Chinguelas	Moors and montane forests	Persistence of extensive cattle ranching by a focused group of villagers who enter cattle into the forest, which threatens the connectivity of the páramos ecosystem, especially in times of drought. Existence of an access road where there is transit of people and for the realization of economic activities	Restoration of moors and patches of montane forests (cinchona, Cinchona *sp*.). Livestock management	The population is interested in reforesting with native species (cinchona, cedar and romerillo) in live fences, silvopastures, riparian strips and water springs. They agree with the protection of water sources and harvesting of water in qochas (small rural dawns). Technical assistance for pasture improvement and livestock management and henification and silage techniques

b) Synthesis for component 3:

Protected Area	Settlement	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation with Population	Relevant organizations
Namballe Tabacona s National Sanctuary	Pueblo Libre	● Cattle farming ● Coffee ● Guinea pigs	● Livestock management as a productive measure with improvement of pastures and livestock housing.	Improvement of pastures, silage and livestock housing	Lieutenant governors, presidents of peasant patrols, water boards, children feeding committees, 02 coffee associations "Gallito de las rocas" and "Cuenca del Río Blanco"
	Cataluco	● Cattle farming (dairy)	● Livestock management as a productive measure with	Improvement of pastures, silage and livestock housing	Lieutenant governors, agent, president of Ronda Campesina, commission of

Protected Area	Settlement	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation with Population	Relevant organizations
		● Guinea pigs / hens ● Vegetables (broccoli and chard)	improvement of pastures and livestock housing. ● Strengthening of the organization and seal "allies for conservation"	Organic bio-gardens Organizational strengthening	irrigators, club of mothers. There are no productive associations
ACP Chicuate Chinguelas	Chinguelas	● Cattle farming (dairy) ● Sheep farming (tissues)	● Livestock management as a productive measure. ● Dairy processing	Improvement of pastures and silage. Management of sheep and alpaca breeding (fabric processing).	Management Committee of the ACP Chicuate Chinguelas Sapalache Cattlemen's Association Pulun Cattlemen's Association Peasant patrols Lieutenant Governor, Water Boards El Carmen de la Frontera District Women's Association (ADMUCAF) Association of Entrepreneurs La Sapalacheña Virgen del Carmen Mothers Club

Summary of consultation in Center Mosaic:

a) Synthesis for output 2.1:

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
Calipuy National Sanctuary - SNC	El Molle, Collayguida baja, El Quiguir, Cusipampa y Cachubamba. El Zaile y Monchugo	Grasslands, shrubs and wetlands. SERNANP has indications that before the area was dedicated to livestock exploitation there were forests of Lloque (Kageneckia	The core area is currently in recovery due to previous exploitation of agriculture and livestock, however, there are pressures for livestock in the buffer zone. Growth of illegal human settlements The drought or lack of rainfall that reduces the water	Protection of wetlands and pastures. Restoration of intervened ecosystems through reforestation with native plants and excluder	The population agrees with the proposed practices of restoration and protection of wetlands and degraded soils inside and outside the Sanctuary, through the construction of dikes (masonry) and infiltration ditches, as well as with reforestation with native plants. *The key actors also propose insertion of vicuñas.*

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
		lanceolata)	capacity of the wetlands and decreases the growth of grasslands.	fences[55]	
Calipuy National Reserve - RNC	Cortadera Sector (Cusipampa y Monchugo)	Lloque forests (*Kageneckia lanceolata*), shrubby scrub, coastal desert	In the past the reserve was degraded by illegal logging and overgrazing, so it is in the process of recovery, however, there are pressures for livestock in the buffer zone and remanence of feral cattle. It is currently managed with an organized cattle access quota (maximum of 15 heads per owner, with seasonal rotation) Climate change: droughts that directly affect the availability of water resources, added to mass movements (huaycos in spanish) in extreme events such as those caused by the El Niño phenomenon.	Reforestation with natives such as Lloque and Quishuar	● Reforestation with natives (Lloque and quishuar) ● Management of water sources through infiltration ditches and construction of dikes. ● Control and handling of feral cattle ● Installation of drinking troughs for guanacos ● Strengthen the capacities of the monitoring and research committee on the guanacos population.
	Carbonera Sector (El Quiguir, El Zaile y Llacamate)	Quishuar forests (*Budleja sp.*), shrub scrub, coastal desert			
Huascaran National Park - PNH	Chacas	*Polylepis sp forests,* grasslands and scrub.	Pressures for livestock and agriculture. Planting of exotic forest species (pines and eucalyptus). Forest fires Climate variation (frost and heavy rain)	*Reforestation with* Polylepis *sp.*	● Livestock rotation and exclusion in the HNP area. ● Reforestation with native species in areas degraded or affected by livestock and forest fires. ● Control and monitoring of excessive extraction of medicinal and aromatic plants
	Acochacas	Forests of *Polylepis sp*, wetlands,	Overgrazing Mining pollution	*Reforestation with* Polylepis *sp.*	● Cattle rotation. ● Restoration of degraded areas or

[55] The key actors (SERNANP and population) consider it important to complement these interventions with environmental awareness and education for the entire population and strengthening research related to ecosystems (puyas or caguas) and training/workshops for raising awareness among the population (environmental education).

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
		grasslands and scrub.	Forest fires Climate variation (frost, drought and heavy rainfall)		affected by frost and drought.

b) Synthesis for component 3:

Protected Area	Settlement or Peasant Community	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation process	Relevant organizations
Calipuy National Sanctuary – SNC	El Molle, Collayguida baja, El Quiguir, Cusipampa y Cachubamba. El Zaile y Monchugo	● Tubers (potato) ● Guinea pigs ● Fabrics (sheep wool)	● Technified guinea pig breeding ● Technified irrigation in tubers	The population expresses interest in: ● Breeding guinea pigs in modules, with improved pasture management, technified irrigation. ● Cattle improved in sheds, with improved pastures (in the ZA). ● Technified irrigation, installation of family micro-reservoirs to improve the distribution and management of water for drinking and irrigation. ● Improvement of agricultural seeds, phytotoldos and mills or equipment for the aggregate processing of tubers and cereals.	● Association of artisan weavers of the populated centers of El Quiguir, Cusipampa and others that can be formed. ● Creation of associations led by women in the breeding of guinea pigs. ● Association of potato producers of the town of Munchugo and others that can be formed.

Protected Area	Settlement or Peasant Community	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation process	Relevant organizations
				● Advice for the improvement of quality, quantity and technique of the fabric ● Commercial and technical strengthening	
Calipuy National Reserve - RNC	Cortadera Sector (Cusipampa y Monchugo) Carbonera Sector (El Quiguir, El Zaile y Llacamate)	● Tubers (potato) ● Cattle farming ● Guinea pigs ● Fabrics (sheep's wool)	● Technified irrigation ● Improved pastures ● Technified guinea pig breeding (modules)	The population agrees with: ● Efficient water management through technified irrigation and creation of family micro-reservoirs ● Management of improved pastures, henification, genetic improvement of livestock and sanitary control. ● Organizational strengthening (productive quality, marketing, financial management) ● Equipment for aggregate processing of tubers and cereals. ● Equipment for the technification of fabrics ● Creation of associations led by women in the breeding of guinea pigs.	● Association of artisan weavers of the populated centers of El Quiguir, Cusipampa. ● Association of potato producers of the town of Munchugo. ● Agricultural production associations from Calipuy to El Molle. ● Association of producers of derivatives.
Huascaran National Park - PNH	Chacas	● Tubers (potato) ● Guinea pigs ● Fabrics (sheep's wool)	● Technified irrigation ● Technified guinea pig breeding (modules)	The population proposes: ● Improved pastures for cattle. Genetic improvement and animal health. ● Canals, micro reservoirs and technified irrigation ● Technified guinea pig breeding ● Transformation of cereals and tubers into flour for	● CUPN. Potaca ● SERNANP – JPNH ● Conventional tourism agencies. ● Board of Irrigators JASS

Protected Area	Settlement or Peasant Community	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation process	Relevant organizations
				sale and family self-consumption. ● Advice for the improvement of quality, quantity and technique of the fabric. ● Organizational strengthening of women and producers.	
	Acochacas	● Vegetables ● Guinea pigs ● Tissues	● Technified irrigation	The population proposes: ● Improved pastures for cattle. Pasture rotation. ● Canals, micro reservoirs and technified irrigation. ● Technified guinea pig breeding ● Production of vegetables in greenhouses.	● CUP. of Cajavilca, Ruricocha and Ruripaccha ● Warmicocha peasant community. ● Board of irrigators. ● Association.

Summary of consultation in Mosaico Sur:

a) Synthesis for output 2.1:

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices suggested by SERNANP	Summary of the consultation with Population
National Sanctuary of Ampay - SNA	Peasant Community Chupapata Umaccata Ccorhuani	Andean forests and scrub. Relict of the species *Podocarpus glomerata.* *Areas providing water ecosystem services.*	Overgrazing (cattle not stabled) affecting vegetation cover and water sources. This problem generates conflict with agriculture due to soil compaction and water pollution. Forest fires due to poor agricultural practices. Currently the population is expanding its agricultural frontier, in the lands affected by the fires of the years 2021/2022. Extension of the agricultural frontier (especially since the pandemic).	Reforestation of scrub and forests with native species: *Podocarpus glomerata.* (prioritized by SERNANP for the core area) Protection of water sources (exclusion of livestock income)	The population expresses interest in reforesting in special use and agricultural areas with native species that can be exploited (alder, queuña and elderberry). In Ccorhuani there is provision for the plantation of *Podocarpus glomerata*, but only in the upper parts. A part of the population says they understand the need and agree with the exclusion of livestock in the upper parts.

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices suggested by SERNANP	Summary of the consultation with Population
Machupicchu Historic Sanctuary - SHM	Huayllabamba	Grasslands and forests of *Polylepis sp.*	Overgrazing by equine cattle used for tourism (not stabled). They do not have infrastructure of sheds for the ordering of the activity.	Exclusion of livestock from high water supply areas	They do not identify the need to exclude livestock from the highlands as a water management measure. They express the need to control forest fires.
	Peasant Community Piscacucho	Unca forests, scrub and grassland	Fires due to burning of stubble. *Note: Cattle farming has been recently managed and is not currently the main driver of degradation*	Don't burn Water management to supply water for fruit crops	Expresses interest in implementing water management measures, under technical studies. They show interest in reforestation with the queñua species
Choquequirao Regional Conservation Area - ACRCh	Sector Santa Teresa (Yanama, Totora y Ccolccapampa)	High Andean forests (queuñas) and grasslands ecosystem transitions	Fires due to traditional agricultural practices	Livestock management and silvopastoral systems. Forest restoration, subject to feasibility studies	It was not possible to carry out the consultation process with the population.

b) Synthesis for component 3:

Protected Area	Prioritized Sectors	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation with Population	Relevant organizations
National Sanctuary of Ampay - SNA	Peasant Community Chupapata Umaccata Ccorhuani	●Guinea pigs ●Rotational vegetables *Vulnerability due to water deficit*	●Breeding guinea pigs in modules. ●Strengthening of associativity and seal allies for conservation ●Technified irrigation (water scarcity)	The public expresses interest in the proposed chains and measures, in line with the protection of water sources proposed for output 2.1. They emphasize their interest in breeding guinea pigs.	- Chupapata Communal Assembly - Assembly of the population center of Umaccata - Committees of irrigators of Chupapata and Umaccata - Association of agricultural producers of Chupapata (*16 women)* - Federation of Women of Apurimac

Protected Area	Prioritized Sectors	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation with Population	Relevant organizations
Machupicchu Historic Sanctuary - SHM	Huayllabamba	●Equine livestock (linked to tourism) *Vulnerability due to water deficit*	●Semi-stybulated cattle with improved fodder	The population is not sensitized to the need to manage livestock. Expresses interest in the technified irrigation of self-consumption crops	- Communal Assembly - Reforestation Committee - Association of producers and artisans
	Peasant Community Piscacucho	●Tara and fruit trees *Vulnerability due to water deficit*	●Technified irrigation and seal allied for conservation	The population expresses interest in the proposed chains and measures, in line with the management of water sources proposed for output 2.1	- Assembly of the peasant group

During the beginning of the project, a Gender Plan will be developed for the implementation of the project, in line with the environmental, social and gender policy of the Adaptation Fund, and the three cross-cutting approaches (gender, intercultural and intergenerational) and human rights established by the National Adaptation Plan of Peru in accordance with the Regulation of the Framework Law on Climate Change of Peru, which also includes the National Policy on Gender Equality and Law No. 28983, Law on Equal Opportunities between Women and Men, and the provisions of the Gender and Climate Change Action Plan of Peru (PAGCC Peru).

For the Gender Plan of the project, the consultation process has managed to synthesize relevant aspects (including other aspects, such as youth), which are described below:

a) Summary of gender and youth considerations and recommendations North Mosaic

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
Pueblo Libre			
Little participation of women in meetings convened by institutions, due to cultural patterns shyness, added to incidence of gender violence. They participate more in forms of productive and communal organization, such as children caring, school committees, peasant rounds.	Weak representation of women in the SNTN management committee. High participation of young men in community policing	Women participate in productive activities and tasks in the field (livestock and agriculture). There are no productive experiences directed or inclusive with women. Interest in making fabrics.	● Strengthen capacities for the specific tasks of women in the livestock value chain. ● Consider sessions of female empowerment and awareness to the entire participating population. ● Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in participatory knowledge management activities, as a strategy to promote its valuation in society
Chinguelas			
Although most community leaders are men, there are female leaders, especially in the neighboring town of	Women are involved in conservation activities, especially in fine labour (nurseries, seeds). There is a youth group called the	Women participate in the milking of cows, "molting" or rotation of cattle for grazing and processing dairy products. Others:	● Establish formal agreements with identified women's and youth associations. Invite them to participate in output 2.1 activities

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
Sapalache.	ranger committees of the future.	weaving, raising small animals, domestic work, coffee cultivation tasks and mainly in the process of drying and processing sugar cane, planting and harvesting of vegetables and in weeding and crop harvesting activities. They are led by organizations such as the El Carmen de la Frontera District Women's Association (ADMUCAF), La Sapalacheña Association of Entrepreneurs and Virgen del Carmen Mothers Club	● Strengthen the identified female and youth leadership. ● Strengthen capacities for the specific tasks of women in the livestock value chain.
Pueblo Libre and Chinguelas			
	Both men and women value the conservation of forest and páramo areas because they identify water provision and regulation as the main service provided by these ecosystems. They equally identify threats and pressures to ecosystems, but women highlight the neglect of authorities.	Men identify more with the initial phase of production, and women project themselves in the phase of transformation of the raw material, such is the case of dairy products. Young people migrate in search of work and study opportunities.	● Strengthen the transformation phases in the livestock value chain (transformation), as a strategy for the empowerment of women and youth. ● Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities.

b) Summary of gender and youth considerations for Center Mosaic:

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
Calipuy National Sanctuary			
Women actively participate in agreed activities at community meetings, as do young people, to whom their parents have delegated the responsibilities of participation.	Women and youth often do not participate in decision-making related to pasture, water or other management. Both genders recognized the ecosystems of their area and the ecosystem service of water provision.	There are two organizations of women's artisans that are formally constituted: the "Association of artisans Conserving our biodiversity" and "Puya Raymondi Association". Women's participation in agricultural or livestock decision-making is lower than that of men; However, they show great interest in specific activities such as raising guinea pigs and chickens mainly, as well as a desire to participate in workshops and training on tissues. Young people, being involved in agricultural activities from an early age, are more frequently involved in decision-making. show interest in improving their agriculture through	● Establish formal agreements with identified women's associations. Invite them to participate in output 2.1 activities. ● Strengthen identified female leadership. ● Strengthen capacities for the specific tasks of women in the livestock value chain, raising small animals and sheep wool fabrics. ● Strengthen capacities of young people. ● Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
		technified irrigation and pasture management	management activities.
Calipuy National Reserve			
Macho patterns that limit the involvement of women in equal conditions. Young people, in both prioritized sectors, are linked to decision-making and activities from an early age.	High participation of young people in vigilance committees, while the participation of women is considerably lower, they do not usually participate in decision-making related to the management of pastures, water or others (it is a little higher in the Carbonera sector).	Women in priority sectors have high participation in the economic activities of agriculture (especially harvesting) and livestock, as well as in the manufacture of fabrics; However, they do not have an evident participation in productive organizational life. They show interest in weaving and raising small animals, especially in the peasant community of Llacamate. Young people are linked to decision-making and showing great concern for agricultural activity.	● Consider sessions of female empowerment and awareness to the entire participating population. ● Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities. ● Strengthen capacities for the specific tasks of women in the livestock value chain, raising small animals and sheep wool fabrics. ● Strengthen capacities of young people.
Huascarán National Park			
The participation of women in organizational decision-making (pasture committee) is limited in the Chacas sector but not in Acochacas, where there are women leaders and with managerial positions. There is accentuated machismo in families. The local female authorities (regidoras) support the gender approach, it is recommended to forge a network that allows to defend their proposals for social development. Young people at the end of high school migrate to the city to continue their studies at university or in search of a job.	Young people frequently participate as volunteers in the "Fans of Conservation" initiative, but not in the monitoring committees for migration for studies or work. Women, on the other hand, participate mainly in environmental education activities and tasks and clean-ups within the area, but not in user committees in which their presence and voice is restricted by patriarchal patterns. They show expertise about ecosystems and agricultural systems.	Women's participation in agricultural or livestock decision-making is lower than that of men, except when they are widows and/or single mothers. The activities in which women are engaged are mainly the raising of small animals (guinea pig, hen, etc.), agriculture (particularly sales), and herding animals. He has shown great interest in the breeding of guinea pigs and sheep wool fabrics. Young people from an early age are dedicated to supporting the father of the family in agricultural activities. This group shows interest in improving their agriculture through technified irrigation and pasture management.	● Consider sessions of female empowerment and awareness to the entire participating population. ● Strengthen the identified youth leadership. ● Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities. ● Strengthen capacities for the specific tasks of women in the livestock value chain, raising small animals and sheep wool fabrics. ● Strengthen capacities of young people.

c) Summary of gender and youth considerations for South Mosaic:

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
Chupapata/ Umaccata			
A peasant woman is president of the assembly, representative of the Federation of Women of Apurímac.	Women are more aware than men of the diversity of native forest species and much greater detail of the infrastructure built and	Males generally carry out more livestock activities, take advantage of forest resources, and manage the conduction of irrigation	● Establish formal agreements with identified women's associations. Invite them to participate in output 2.1 activities

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
Agreement that attendance at their meetings should have 50% representation of each gender. Young people and women get involved and participate in Water Boards, widows and young people who assume the roles of parents.	crops at the communal level. Men, on the other hand, represented more accurately their geographical scope, and with greater detail the different types of vegetation and water resources in the protected area. Both genders identified the main factors causing degradation and vulnerability in their area.	water. Domestic work and the care of agricultural plots (crops and irrigation) are carried out by women, who have a medium to low participation in the Irrigation Boards. The Association of Agricultural Producers of Chupapata, is conformed mainly by women. It notes that economic empowerment is a strategy to address the physical and psychological violence that is still experienced in many households, where the fact that women do not yet have their own income is a factor of discrimination	• Strengthen identified female leadership. • Strengthen capacities for women's specific tasks in agricultural and guinea pig value chains. • Strengthen capacities of young people. • Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities.
Ccorhuani			
There is insufficient representation of women in the decision-making bodies of the population centre (committees and assemblies).	Women clearly represented the areas of forest, lagoon, agricultural cultivation, animal husbandry and infrastructure, but men did so more clearly and accurately. Both genders identified degradation and vulnerability factors, but men did so in greater detail.	Males generally carry out more livestock activities, take advantage of forest resources, and manage the conduction of irrigation water. Domestic work and the care of agricultural plots (crops and irrigation) are carried out by women.	• Consider sessions of female empowerment and awareness to the entire participating population. • Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities. • Strengthen capacities for women's specific tasks in the agricultural value chain. • Strengthen capacities of young people.
Huayllabamba			
In communal assemblies, the most active group with the most voice are women.	Women clearly identify the diversity of landscape elements, especially fauna and flora at the community level. The men represented with less detail, but include in their scope the surrounding areas covered by the Inca trail. Both genders identified and showed concern about threats to their environment	The men are responsible for organizing equine breeding, hauling services and transportation for tourism. Women are responsible for self-consumption crops. In agricultural work, they perform fine work of sowing and weeding, crop irrigation, fertilization, among others; while men take care of the heaviest agricultural tasks. Women develop economic activities linked mainly to tourism (sale of chicha, food and snacks).	• Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities. • Strengthen capacities for women's specific tasks in the agricultural value chain. • Strengthen capacities of young people.
Piscacucho			
Little participation of women in community assemblies. Women are	Only men participated in the consultation process. They represented with	There are Committees of Vendors and Artisans, composed mainly of	• Establish formal agreements with identified women's associations.

General considerations	Considerations for Output 2.1	Considerations for Component 3	Recommendations
part of the irrigation committees and currently the lieutenant governor of the town center is a woman. In community tasks (reforestation, maintenance of irrigation canals, etc.) both women and men, young people and infants participate, although there is high migration of young people in search of study and employment opportunities.	great clarity and precision the elements of the environment (ecosystem and cultural) as well as the threats to them.	women, who organize the attention to tourists.	Invite them to participate in output 2.1 activities • Strengthen identified female leadership. • Strengthen capacities for women's specific tasks in agricultural value chains. • Strengthen capacities of young people. • Make visible the knowledge and differentiated contribution of each gender in the management of ecosystems and economic activities, in knowledge management activities.

I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

The project will focus on two of the specific problems identified by NAP Peru: the low adaptive capacity of the population and the high vulnerability of ecosystems to hazards associated with climate change. Thus, the Project will specifically contribute to the targets of seven adaptation measures for the water, forestry and agriculture sectors.

The project will implement the following EbA and NbP measures in prioritized areas of the three intervention mosaics: (i) Conservation and restoration of bofedales, (ii) Sustainable Grassland Management, (iii) Reforestation with native species, (iv) Crop diversification, (v) Eco- and agrotourism, (vi) Integrated Soil Fertility Management, (vii) Qochas/Rustic micro-reservoirs, (viii) Irrigation management and (ix) Afforestation. The project is allocating around 60% of the budget to activities on the ground to strengthen the resilience of ecosystems and the productive systems of local populations.

The project does not require co-financing; however, outputs 2.1, 3.1 and 3.2 will seek to expand project interventions with public funds from district and provincial municipalities, regional governments and MIDAGRI (Sierra Azul, AGRORURAL, AGROIDEAS), MIDIS (FONCODES) and SERFOR programs (Sierra Azul, AGRORURAL, AGROIDEAS).

In this context, the funds required from the Adaptation Fund (USD $4,746,649.0) are considered reasonable for the implementation of the project and achieving the expected results.

~~The main output of the Project is the implementation of the Andes PdP Initiative, which would finance future actions for the protection, restoration and sustainable management of mountain ecosystems in and around protected areas located in the Andean ecosystem of Perú.~~

The following description will provide a more detailed justification about the request fund: ~~for each of the planned adaptation measures~~.

Expected Concrete Outputs	Baseline (Without AF)	Additional (With AF)	Comments
Output 1.1. Monitoring system of hydrological ecosystem services in Andean ecosystem implemented.	Peru does not have an integrated monitoring system for Andean ecosystems	An integrated monitoring system for Andean ecosystems will be designed in coordination with SERNANP, INAIGEM, PNCB-MINAM and SERFOR	Contributes to the targets of the adaptation measure AGU24 of the NAP Perú: Conservation and recovery of the natural infrastructure for the provision of

Expected Concrete Outputs	Baseline (Without AF)	Additional (With AF)	Comments
	There is a 1 hydrological monitoring plot in a protected area	At least 6 monitoring plots will be installed in 6 protected areas	hydrological ecosystem service in basins that are vulnerable to climate change.
Output 1.2. Monitoring system of degradation and deforestation of Andean forests designed and piloted	The Platform for Monitoring Changes in Forest Cover in Peru (GEOBOSQUES) does not have a module for Andean forests	GEOBOSQUES module for Andean forests designed and in operation	Contributes to the goals of the National Forest Conservation Program of MINAM to expand the coverage of GEOBOSQUES at the national level.
Output 2.1. Rural communities implement conservation and restoration practices in degraded areas inside and outside (buffer zones) of prioritized protected areas.	**#** of settlements or peasant communities that implement conservation and restoration practices inside and outside protected areas	2 peasant communities and 10 settlements (100 families) that implement conservation and restoration practices	Contributes to the goals of the BOS2 adaptation measure of the NAP Peru: Restoration of the ecosystems within the SINANPE (for its initials in English) to maintain landscape connectivity and reduce the impacts of climate change. Contributes to the targets of the adaptation measure AGU24 of the NAP Perú: Conservation and recovery of the natural infrastructure for the provision of hydrological ecosystem service in basins that are vulnerable to climate change. Contributes to the targets of the adaptation measure AGRI7 of the NAP Perú: Management of natural grasslands to ensure livestock feed and reduce their vulnerability to climate change.
Output 2.2. Incorporation of the climate change adaptation and disaster risk reduction approach in planning instruments of three conservation mosaics of Andean ecosystems	SINANPE's Director Plan without a climate change adaptation and disaster risk reduction approach incorporated	SINANPE's Director Plan with a climate change adaptation and disaster risk reduction approach incorporated	Contributes to the targets of the adaptation measure BOS2 y AGU24 of the NAP Perú
Output 2.3. Preliminary conditions prepared for the start of the "Natural Heritage Initiative of Peru – Andes", based on previously agreed upon conditions	Peru's PdP Initiative does not currently include Andean ecosystems	Andean ecosystems incorporated into the PdP Initiative	Contributes to the targets of the adaptation measure BOS2, AGU24, y AGRI15 of the NAP Peru
Output 3.1. Rural communities with technical productive capacities to reduce	**#** of population centers or peasant communities that implement practices to improve the resilience of	2 peasant communities and 10 settlements (100 families) that improve the resilience of their production chains	Contributes to the targets of the adaptation measure AGRI15 of the NAP Perú: Implementation of adaptive

Expected Concrete Outputs	Baseline (Without AF)	Additional (With AF)	Comments
vulnerability of productive chain inside and outside (buffer zone) prioritized protected areas.	their production chains	around	technological innovation services for climate change in agricultural value chains
Output 3.2. Design, evaluation, and implementation of adaptation measures of productive chains linked to the market.	# of production chains that implement adaptation measures and are connected to the market	At least 3 production chains that implement adaptation measures and are connected to the market	Contributes to the targets of the adaptation measure AGRI17 of the NAP Perú: Implementation of business strategies that incorporate risk and opportunity management in the face of climate change

J. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.

The sustainability of the project's actions is guaranteed at the local level by the participation of the local population through the peasant communities and local groups, who are the owners of their territories and the main stakeholders interested in maintaining their livelihoods and productive chains, including their diversification (Outcome 3). In addition to SERNANP, other institutions and sectors are directly linked to the future sustainability of actions: the National Forest and Wildlife Service (SERFOR) and the Ministry of Agrarian Development and Irrigation (MIDAGRI). Both institutions will be involved in the implementation of project activities.

Component 3 of the project is based on the process led by SERNANP to involve settlements and peasant communities in the co-management of the protected areas in the conservation mosaics, in this case through the organization of productive activities carried out by the communities, the signing of the so-called "conservation agreements" and subsequently the signing of a SEAP (Sustainable Economic Activities) contract. This encourages productive activities to reduce their impact and increase opportunities for biodiversity use. Thus, SERNANP not only promotes the signing of these agreements, but through the "allies for conservation" brand, it hopes to contribute to improving the commercialization channels for the bio-businesses developed in and around protected areas.

In this context, the participation of communities in the planning of activities in their territories will be guaranteed, ensuring adequate representation of women and vulnerable groups at all stages, including consultations for project formulation, in accordance with the Gender Policies of the Adaptation Fund and the cross-cutting approaches (gender, intercultural and intergenerational) of the NAP Peru. The assessments detailed for gender-sensitive activities, such as productive and restoration activities, will serve as a basis for the appropriate design of the intervention strategy. It will be recommended that they become part of the protocols to be implemented by SERNANP in relation to the promotion of bio-businesses and productive activities with the communities.

The project will promote a user-centered, iterative, and open to innovation approach for the development of adaptation measures in local productive systems. The annual project implementation plans will be designed in a participatory manner, articulating their activities to those planned by the communities and local municipalities in the project intervention area. Likewise, a reasonable duration is considered for project implementation, to guarantee sufficient time for the consolidation of processes.

Community participation in decision-making on land management and rural development with a focus on climate change and risk management will be strengthened in the protected area management committees. In these, communities, municipalities, civil society and the private sector participate and plan the sustainable management of the conservation areas and their buffer zones (Outcome 2). At the sub-national level, coordination and participation spaces for the management of water resources (where they exist) and the departmental territory will also contribute to the sustainability of the project's actions, incorporating climate change in their planning instruments (Outcome 2).

At the national level, the sectoral governmental organizations involved in the proposal are responsible for the implementation of Peru's National Climate Change Adaptation Plan. This guarantees the long-term sustainability of monitoring actions (Outcome 1) and the closing of gaps for protected areas in Andean ecosystems (Output 2.2 and 2.3). At the sub-national level (regional governments), the linkage of project activities with regional climate change agendas and/or strategies (where appropriate) will promote the incorporation of actions in support of the implementation of the NAP Peru in the programmatic and budgetary planning instruments of regional governments.

The project will equally promote participation of and collaboration with academia and research centers in mountain ecosystems to take advantage of previously generated tools and knowledge that can be used by the project (Outcome 1, Output 2.1 and Outcome 3). This articulation will at the same time allow the involvement of academia in the mobilization of financial resources to support and expand the monitoring of Andean ecosystems. On the other hand, the generation of scientific knowledge on the impact of the activities will increase the evidence for monitoring the implementation of public policies on climate change.

Likewise, within the framework of the relationship actions that will be carried out with the project actors, mainly with SERNANP and the peasant communities, a Complaints and Claims Mechanism (MAQR) will be implemented, for which the current one will be taken as a reference. mechanism approved and implemented by PROFONANPE in its activities with local, regional and national actors.[56]. This mechanism is aligned with the environmental, social, gender and indigenous people's policies, performance standards and environmental and social safeguards of the GCF.

The mechanism establishes the process for the different stakeholders involved in the project to submit claims, grievance and/or concerns that may arise from the implementation of project activities, as well as to address the requirements of the affected population in a timely manner. Grievances or claims can be presented in person with the local team, at the project offices in the implementation sites or directly at the PROFONANPE office in Lima. Written communications can also be submitted to the Project offices at the local level or to the PROFONANPE office. On the other hand, complaints and claims can also be received by phone calls and digital messaging means (whatsapp, email, video and/or audio phone, text messages), through PROFONANPE's website (https://profonanpe.org.pe/en/quejas/) or its social networks (Facebook, Instagram, LinkedIn, X, etc.).

K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project/programme.

The project is not expected to generate any negative environmental or social impacts. It's possible that some activities may represent a low risk, so the project will be preliminarily classified as Category B. At level of outputs the following table provides information about the risk level:

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	**X**	~~All project activities are expected to comply with the regulations established by the national regulatory framework: within the protected areas with the permits granted by SERNANP and outside the protected areas with the regulations established by SERFOR (restoration activities) or MIDAGRI and/or MINAM and/or PRODUCE (productive activities).~~ PROFONANPE will ensure compliance with all relevant national legislation and international laws. Therefore, it will not imply a risk. Section II.E presents the sectorial technical standards that

[56] https://profonanpe.org.pe/wp-content/uploads/2020/11/Mecanismo-de-Atencion-de-Quejas.pdf

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		apply to the different EbA and NbP measures proposed in the project.
Access and Equity	**X**	~~**Low risk**~~ ~~Project´s component N° 2 and 3 involve the participation of local people and intend to improve their access and provide sustainability to their use of natural resources. To avoid negative impacts over the equity conditions or increase possible current gaps, the process of design of the activities related to outputs 2.1., 3.1. and 3.2., has taken into consideration the characterization of each one of the three mosaics and the final result of the consultative process, regarding the current use of resources and level of access of each group of population to sociopolitical and organization structures. That, to consider the most ideal mechanisms and strategies to maximize the sustainable and equal access of families to the benefits of ecosystem services and the sustainable use of natural resources (value chains, payment for ecosystem services, etc.), as well as avoid overcharges in women´s and other vulnerable group´s use of time.~~ The project will maintain the communities' access to essential health, drinking water and sanitation, energy, education, housing, safe and decent working conditions, and land rights.
Marginalized and Vulnerable Groups	**X**	**Low risk** ~~To achieve that properly, the design of activities and selection of practices and strategies, has taken into consideration the results of the consultative process and the Knowledge Management elements proposed, especially the identification of knowledge gaps and analysis of capacity building needs of local populations, local government officials and protected area managers and specialists. Has also taken in consideration the preferences and priorities of stakeholders regarding sustainable practices and value chains. In addition, current gaps (regarding labor assignation, money access, social platform access, etc.) among groups of gender, has been identified to avoid the project to intensify them, or eventually contribute to address them~~ The proposed activities for the outputs 2.1., 3.1 and 3.2 are expected to improve the ability of all, including marginalized and vulnerable groups, to adapt to the adverse effects of climate change. However due to diverse barriers to participation such as physical access, age, gender, language and other circumstances, vulnerable groups could be excluded from its benefits. The activities will be require providing the criteria and the means to identify project beneficiaries by close coordination with local social services, social programs, municipalities and other sources to address the

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		participation gaps. In addition, the project is required to design and implement a communication plan that includes workshops and the use of local media to present the project objectives to a large audience that engage the stakeholders.
Human Rights	**X**	All activities will respect and adhere to national legislation and international conventions on human rights including access to basic needs such as water.
Gender Equality and Women's Empowerment	**X**	**Low risk** General guidelines for inclusive capacity building activities, technical assistances and other activities will be designed, including specific gender and youth considerations, based in the analysis of the level and patterns of participation into the organizations and sociopolitical dynamics, the preferences of each group about productive livelihoods, practices and value chains, and the relation of each group with specific natural resources and ecosystem services. That, to promote positive impacts, to reduce gender gaps and to avoid the exacerbation of current situations of gender inequity In the Peruvian Andean, the indicators of women's participation are very low and the gaps are still broad; in this sense, the project will have a gender action plan so that women can have more opportunities to benefit from the project, seeking to reduce barriers (language, means of participation, leadership skills, among others) and be effectively involved. Through targeted consultation, project design and implementation will ensure that gender considerations are integrated into every activity. The project implementation strategy will also promote women's leadership and decision-making and ensure to increase women's participation in activity 1.1.2 and outputs 2.1, 3.1 and 3.2. PROFONANPE will also ensure Gender-sensitive indicators are incorporated where applicable and are monitored and tracked as part of M&E.
Core Labour Rights		The proposed project will adhere to core labor laws and the rights of all parties. ~~To avoid exploitation during field activities, the following will be settled and implemented: prohibition of hiring minors, analysis of labor implied during the implementation practices and the distribution among family members, constant coordination, and monitoring with community authorities. Young people and children might be involved only in capacity building activities~~.
Indigenous Peoples	**X**	**Low risk** ~~Nevertheless, is highly likely that the mayor part of rural communities and villages linked to the project~~

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		~~identify themselves with the Andean culture (probably quechua speakers), so their set of values, norms, traditional knowledge, and preferences will be considered to avoid negative impacts over them. Specially, the selection of practices and supplies to plan conservation, restoration and value chains will be carried out in the frame of an open dialogue and in a participatory way, so traditional knowledge is reflected in the decision making.~~ The design of activities will ensure that the local communities and indigenous peoples are consulted and benefit from the interventions according to their needs. All project activities will be coordinated with local authorities of the settlements and peasant communities in the intervention area. During project implementation, the AF policy on indigenous people will be followed and complemented with PROFONANPE´s indigenous people´s policy[57].
Involuntary Resettlement	**X**	The outputs of the proposed project do not include involuntary resettlement.
Protection of Natural Habitats	**X**	**Low risk** ~~The project is not expected to have a negative impact on natural habitats, including those that are legally protected or recognized as protected areas. However, a final evaluation of the areas involved in the project will be carried out in accordance with the AF's environmental and social policy to observe the minimum negative impact that will be inherent to the activities carried out.~~ The project is not expected to have a negative impact on natural habitats. However, considering that the project will be implementing EbA and NbP measures in the buffer zone of the NPA, some activities will be planned in the Environment and Social Management Plan to avoid there being no effect on the natural habitats.
Conservation of Biological Diversity	**X**	**Low risk** ~~The interventions of the project are in protected areas and buffer zones and implemented with SERNANP according to the management plans of these areas.~~ The project will promote the conservation of biological diversity and natural habitats, through the restoration and protection of Andean ecosystems, therefore an inadequate implementation or maladaptation of EbA or NbP measure or productive activity support by the project can generate a negative impact.
Climate Change	**X**	The proposed project will contribute to climate change adaptation actions provide in the NDCs ~~at the country level~~. Furthermore, the proposed

[57] https://profonanpe.org.pe/wp-content/uploads/2021/03/Política-de-Pueblos-Indígenas-1.pdf

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		project is in no way intended to increase greenhouse gas emissions or contribute to drivers of climate change.
Pollution Prevention and Resource Efficiency	**X**	**Low risk** ~~The project will promote good climate-smart agricultural and livestock practices based on the traditional knowledge of local populations. These practices prioritize the conservation of ecosystem services such as water regulation, erosion control and soil fertility. In general terms, the ecological footprint of project activities will be reduced as much as possible, considering the fragility and vulnerability of high Andean ecosystems.~~ The activity 1.1.2 and outputs 2.1, 3.1 and 3.2 will be implemented in remote areas of the Andean ecosystems. The project will ensure also avoid any potential pollution and direct production of design materials. However, there is the possibility that certain contaminating particles inherent to the scheduled activities will be produced.
Public Health	**X**	No risks are anticipated in terms of public health concerns, rather it is intended to improve livelihoods through climate-resilient practices and alternative income-generating activities.
Physical and Cultural Heritage	**X**	~~The project will strongly promote not only the preservation of the cultural heritage (ancestral knowledge) but also the physical heritage of the territory, as there are no plans to develop activities that promote land use change and it´s no expected to threat or generate any impacts on areas of archaeological value. In addition, the project activities will be aligned to the management plans of the protected areas, which have been considering the reduction of negative impacts over the natural and cultural heritage.~~ The proposed activities will not harm the physical and cultural heritage in the intervention areas.
Lands and Soil Conservation	**X**	~~The proposed project is intended to conserve natural lands and soil through the protection of key ecosystems that are threatened by unsustainable practices.~~ The proposed project is ensuring the conservation and restauration of Andean landscapes that are threatened by unsustainable practices.

PART III: IMPLEMENTATION ARRAGEMENTS

A. Describe the arrangements for project/programme implementation.

The project will be implemented through a simple and efficient structure that will facilitate the active participation and coordination of all project stakeholders as presented in Figure 9.

PROFONANPE will serve as the National Implementing Entity (NIE) responsible for the oversight of the project. In its role, PROFONANPE will contribute to the preparation, implementation and monitoring of the project, through its headquarters and country office in Peru. These will include among others the following activities: (i) support project preparation and evaluation, (ii) guide the definition of monitoring and evaluation arrangements including outcome and output indicators, (iii) contribute building local capacity through specialized training/workshops on fiduciary and procurement-related aspects of project execution in accordance with PROFONANPE's policies and guidelines, (vi) provide support on technical and quality assurance issues in accordance to PROFONANPE's policies. The Republic of Peru will be the Beneficiary of the project and will be represented by MINAM and SERNANP in the Project Steering Committee (PSC).

PROFONANPE in coordination with the Executing Agency (EA) established the Project Steering Committee (PSC). The PSC will be composed by senior-level representatives from the Ministry of the Environment (MINAM - Vice-Minister of Strategic Natural Resources Development), the Peruvian National Service of Protected Areas (SERNANP - DIrector), the Peruvian National Service of Forest and Wildlife (SERFOR - Director), and PROFONANPE (IE). The PSC will be presided by MINAM and SERNANP will assume the role of Technical Secretary of the PSC. The PSC have the following responsibilities: (i) serving as forum for the analysis of policy implications, political feasibility and building consensus for policy and regulation implementation among project stakeholders; (ii) maintaining, through its Technical Secretary regular communication among its members and ensuring that their interests are addressed and communicated effectively to project stakeholders; (iii) provide sectorial policy advisory as requested, (iv) provide strategic orientations for the correct implementation of the Project and in accordance with national policies on climate change, (iv) ensure effective inter-institutional and inter-sectoral coordination (v) approved the Project Operations Manual (POM) and required updates or modifications, and (vi) approved the Annual Budget and Annual Operational Plan and the Technical and Financial Annual Report. The PSC will meet at least 2 times a year and more frequently, when necessary.

HELVETAS Swiss Intercooperation will be the **Executing Agency (EA)** responsible for the execution of the project in its administrative and accounting aspects. The EA will execute the project in accordance with the purposes and activities agreed upon with PROFONANPE, following its policies and procedures. The EA will carry out its responsibilities in coordination with SERNANP and PNCB-MINAM, and the local partners of the project: **Nature and Culture International Perú** in the northern zone; **The Mountain Institute Perú** in the central area; and **CEDES Apurímac** in the southern zone. EA will host a **Project Coordination Team (PCT)**, financed through the project.

PROFONANPE, HELVETAS Perú, SERNANP and SERFOR will be conform the **Project Management Committee (PMC)**. SERNANP and SERFOR will designate the technical focal points for the project that will be part of the PMC. The principal role for the PMC is overseeing and coordinating the project's execution and ensuring its implementation within the designated territory and provide regular reports to the Steering Committee. The PMC will additionally be responsible to: (i) ensure compliance with project management directives, guidelines, and information flow among EA and local partners, (ii) coordinate and ensure the timely implementation of activities and promoting a common understanding among government institutions and local partners regarding the adaptation approach across all project activities, (iii) supervise the implementation and compliance with Social and Environmental Safeguards and Gender policies, (iv)support, within the framework of its competencies, with the management of the corresponding permits for the implementation of EbA or NbP measures inside and outside the natural protected areas at local level, (v) facilitate coordination, as pertinent, with the Heads of the natural protected areas and Heads of the Forestry and Wildlife Technical Administrations of the project intervention sites; (vi) to facilitate the participation of specialists from SERNANP and SERFOR Headquarters in the project activities linked to outputs 1. 2 and 2.2, (vii) provide opinions and recommendations on the project's annual operational plans, (viii) provide opinions and recommendations on the terms of reference for contracting goods and services in areas within its competence. The PMC will meet at least 4 times a year and more frequently, when necessary.

The **Project Coordination Team** consists of a group of professionals hired by the EA that includes a project coordinator, technical assistant, monitoring and evaluation specialist, administrative and accounting support and technical advisor. The responsibilities and functions of each of the PCT members are described as follows:

- **Project Coordinator**: is the lead of the PCT and will oversee progress of technical project

components, including day-to-day operations of the project, and the overall operational and financial management and reporting. PC's core functions include:

- Lead the preparation and execution of the POM and present it to PROFONANPE and PSC for its approval.
- Leading the preparation of the annual operating plan and present it to PROFONANPE and PSC for its approval.
- Hold quarterly coordination meetings with PROFONANPE to monitor the progress of the project, (iv) coordinate with SERNANP and PROFONANPE the organization of biannual meetings of the PSC.
- Support SERNANP in its role as Technical Secretary of the PSC.
- Prepare terms of reference for contracting goods and services in coordination with local partners and request approval from PROFONANPE according to its administrative procedures.
- Review and approve project disbursement requests to be presented to PROFONANPE.
- Compliance with monitoring and evaluation protocols established in the POM to be designed following PROFONANPE´s procedures.
- Lead the preparation of technical and financial semiannual and annual reports of project status and present to the PSC and PROFONANPE.
- Contracting external annual audits and preparing required documentation for this purpose in coordination with PROFONANPE.
- Lead the preparation of project's final evaluation.
- Serve as the liaison between the project and other national, regional or local activities that could complement or generate synergies with the objectives of the project.

- **Technical assistant**: is responsible for:
  - Supporting the elaboration and implementation of the annual work plans.
  - Supporting the elaboration of the semi-annual and annual technical reports of the project.
  - Supporting the elaboration of the terms of reference for the contracting of goods and services of the project in coordination with the local partners, SERNANP (chief of national protected areas) and PNCB-MINAM.
  - Supervising the implementation of the project activities in coordination with the local partners, SERNANP ((chief of national protected areas), PNCB-MINAM and iMHEA.
  - Supporting the compliance of the M&E system of the project.

- **M&E specialist**: provides technical assistance to the project coordinator and technical assistant for the successful implementation of the project's monitoring system.

- **Administrative and accounting support**: Provides administrative and accounting assistance to the project coordinator. Its responsibilities include:
  - Supporting the preparation of the project POM.
  - The contracting of project goods and services according to the procedures established by PROFONANPE and the POM.
  - Keeping the project's accounting and financial records.
  - Support the preparation of requests for disbursement of funds.
  - Support the contracting external annual audits and preparing required documentation for this purpose in coordination with PROFONANPE.
  - Support the preparation of financial reports semiannual and annual project.

- **Technical advisor**: is a focal point of Helvetas Swiss Intercooperation Perú for the project and Responsible for providing technical assistance on climate change to the project coordinator and suggesting improvements and adjustments for the correct implementation of the activities.

Figure 9. Project Governance

B. Describe the measures for financial and project/programme risk management.

PROFONANPE will support the TCP and EA in monitoring and mitigating risks; results should be monitored and reported as agreed with PROFONANPE. Risks should also be systematically monitored as part of the Monitoring & Evaluation (M&E) Plan by PROFONANPE staff carrying out the oversight related tasks. Reporting on risks and mitigation strategies should take place as part of the semi–annual reports. In addition to this and keeping with PROFONANPE practices, a dedicated budget line exists for M&E, to ensure that the necessary resources are allocated to execute such a framework.

The correct and ongoing management of risk will not eliminate risks but will help improve the probability of satisfactorily achieving project results and impacts. For this reason project risk management will include the following principles: (i) integrated approach, (ii) on-going process that takes into account all of the information that is created during periodic evaluations and decisions adopted, (iii) decisions taken during the risk management process must be documented, (iv) inclusion of effective communication with interested parties in all aspects of the process, (v) guarantee of integrity of risk evaluation process, (vi) regular assessment of quality risk management standards and procedures becomes an integral part of project's supervision and monitoring tasks.

Potential risks for the development of the proposed project and measures to control them have been defined in the following table.

#	Type	Risk	Classification	Mitigating Measures
1	Institutional	Continuity due to political instability and changing authorities	Medium	PROFONANPE and HELVETAS maintain solid relationships with SERNANP and MINAM, thanks to the involvement of these organizations from the beginning of the construction of the joint proposal, and subsequently in the implementation of the activities for the management of the protected areas and the adaptation measures to the climate change. This approach will allow the development of project activities to continue and guarantee its sustainability despite future changes at the governmental and institutional level.
2	Financial	The exchange rate for the PEN/USD is not holding above 3.55	Low	Exchange rate projections will be monitored on a quarterly basis. In case of significant negative impact, the EA in consensus with PROFONANPE will prioritize the measures with the greatest positive effect and the agreements for prioritizing activities on eligibility will be respected.
3	Financial	There may be insufficient financial resources for the sustainability of the project activities once the grant financing the project is spent.	Medium	The fundraising capacity of EA and PROFONANPE to access private sector funds and international cooperation will be strengthened for the design of the PdP-Andes Initiative and especially for the creation of its Trust Fund. The participation of MINAM in this process will be promoted. The EA will take advantage of current and future public and private financing opportunities for climate change adaptation, biodiversity conservation, risk management, food security and rural development, to provide sustainability and scale up the adaptation measures

#	Type	Risk	Classification	Mitigating Measures
				put in place during the project. These opportunities will be reinforced at national sectoral level with MIDAGRI, PRODUCE and MIDIS.
4	Financial	Complexity of financial management and contracting. Some administrative processes could delay the implementation of project activities.	Low	All arrangements for financial and administrative management shall be clearly established during the preparation and inception phase of the project. The control framework of PROFONANPE and the EA, in accordance with the financial rules and regulations of the AF will ensure the documentation of clearly defined roles and responsibilities for management, internal auditors, the governing body, personnel management and coordination with local partners. The acquisitions and approval of expenses will be carried out by the EA as agreed in the Cooperation Agreement with PROFONANPE
5	Technical - cultural	Limited participation of local population in project activities	Low	Local partners have a respected image in the project intervention areas. The livelihood practices proposed by the project for output 2.1 have been successfully tested and are known to the local population. The impact of climate change on their productive activities (especially those related to water scarcity) has been recognized in the consultation process and capacity building is planned prior to the implementation of the activities linked especially to component 3. To reduce the risk of cultural barriers, the gender and intercultural recommendations indicated in Part III-C will be considered. From the beginning of the project, direct contact will be made with local authorities and alliances will be sought for their consolidation.
6	Operational	Few and limited instances of coordination and communication do not guarantee the proper design and implementation of project activities.	Low	Ensure local participation and consultation through workshops and meetings during the preparation, introduction, implementation and evaluation phases of the project. Ensure the operability of the coordination and governance spaces of the project to inform, validate and implement the actions planned by the project in a participatory manner.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

The risk category of the project is B because the activities can have potential limited adverse environmental or social risks and/or impacts that are few, generally site-specific, largely reversible, and readily addressed through a Social and Environment Management plans.

A social and environmental risk analysis has been carried out based on the PROFONANPE classification methodology for the 15 policies of the Adaptation Fund, activating 5 policies for which an environmental and social management plan is proposed.

PROFONANPE Risk severity classification		
Severity	**Classification**	**Description**
Critical	5	Significant adverse impacts on populations and/or the environment. Adverse impacts over a large spatial extent (e.g., large geographic area, often outside the scope of the intervention, affecting a significant number of people, with transboundary impacts, cumulative impacts) and often long-term and irreversible; affecting areas of high biodiversity sensitivity and conservation value; adverse impacts on indigenous peoples' rights, lands, resources, and territories; displacement or resettlement; and may result in significant social conflict.
Severe	4	Adverse impacts on people and/or the environment of medium to large magnitude. Less spatial and temporal extent than critical level risks and impacts. Risks and impacts are considered predictable, mostly temporary and reversible
Moderate	3	Risks and impacts considered moderate to low magnitude. Impacts are limited in scale (site-specific) and duration (temporal), can be avoided and/or mitigated by relatively simple and generally accepted measures.
Slight	2	Risks and impacts are minimal in terms of magnitude (e.g., small, affected area, small-scale activities, very low number of people affected) and duration (short, e.g., only during construction phase), and risks and impacts can be easily avoided and/or mitigated.
Negligible	1	Negligible or no risks and impacts on communities, individuals and/or the environment

Probability of occurrence	**Classification**	**Description**
Expected	5	The risk is almost certain to occur very frequently (< once a week).
Highly likely	4	Risk is very likely to occur frequently (> once a week and < once a month).
Moderate likely	3	The risk is likely to occur during the implementation of the intervention (> once a month and < once a year).
Less likely	2	The risk is unlikely to occur. If it does occur, it will be infrequent (> once a year and < once every 05 years).
Unlikely	1	It is very rare or impossible for the risk to occur (> once every 05 years).

Risk=Probability x Severity		**Severity of impact**				
		Negligible	**Slight**	**Moderate**	**Severe**	**Critical**
Probability of occurrence		**1**	**2**	**3**	**4**	**5**
Expected	5	5				
Highly likely	4	4	8			
Moderate likely	3	3	6	9		
Less likely	2	2	4	6	8	
Unlikely	1	1	2	3	4	5

Risk	**Score**	**Risk Mangement**
Critical	10 to +	Requires previous actions and restructuring of the project
Severe	7 to 9	It requires specialized action at the technical, managerial and political levels.

Moderate	4 to 6	Requires specialized action at the technical level
Slight	2 to 3	Routine procedural action required
Negligible	1 to 2	No action required.

Measures for environmental and social risk management

Environmental & Social Policies (AF)	Potential Risk	Risk Level (Severity)	Probability of occurrence	Risk Score	Risk Management Action
Marginalized and Vulnerable Groups	Due to diverse barriers to participation such as physical access, age, gender, language and other circumstances, vulnerable groups could be excluded from project benefits.	Moderate (3)	Moderate and likely (3)	6	● Close coordination with local authorities (settlement and peasant communities), district municipalities and social programs and other sources to identify vulnerable population. ● Ensure that local partners include staff fluent in native language or have translators available. ● Ensure that all project documents related to activities with the local population have a Quechua version.
Marginalized and Vulnerable Groups	Concentration of project benefits in a few most advanced groups	Moderate (3)	Moderate and likely (3)	6	● The implementation of the project contemplates several activities that provide material and immaterial benefits, which should be distributed equitably among participants, their families, and critical stakeholders of the pilot sites that meet the project conditions. Therefore, the beneficiary identification process should contemplate establishing concrete conditions, as detailed and explicit as possible, for achieving the project and contributing to local Adaptation ● Prepare an internal communication strategy to present the project objectives to a large audience according to the Field Entrance Protocol of PROFONANPE[58] ● Review list of participants periodically. ● Establish criterion for identification of beneficiaries
Gender Equality and Women's Empowerment	Women and indigenous organizations excluded due to technicalities in climate information, hydrology indicators.	Moderate (3)	Moderate and likely (3)	6	● Ensure that local partners include staff fluent in Quechua or have translators available ● Ensure prior training on gender policies and soft skills of technicians and experts who will provide technical assistance to local populations.
Gender Equality and Women's Empowerment	Overload due to the demand placed by community works, especially on women.	Moderate (3)	Moderate and likely (3)	6	● Preparation of engagement plan (EP) This activity involves the elaboration of a work plan at the level of local site and for each group. The EP must contain a roadmap and a timetable, with assigned responsibilities for all members. To this end, a series of working meetings should be held to achieve four aspects: i) to fully understand the activity and its implications, in terms of time and resources. ii) to define their expectations at the local level. iii) to prioritize the most strategic activities/tasks, iv) establish arrangements to facilitate participation in project

[58] https://profonanpe.org.pe/wp-content/uploads/2021/03/Protocolo-de-Ingreso-a-Campo_.pdf

					activities, including mobilization to the sites where they are implemented. Activities planning will consider the communities' rainfall and crop cultivation calendars.
Gender Equality and Women's Empowerment	Activities for output 2.1, 3.1 and 3.2 do not reflect the demands of women. Or the technology proposed are not suitable for Women	Moderate (3)	Moderate and likely (3)	6	● Additional consultation meetings with settlement and peasant communities with the following objectives: i) Presentation of the complete project and its benefits ii) To express the expectations of the communities iii) Share a work schedule and work it together with stakeholders. iv) Preparation of documents proving the ownership of the land on which the works are to be carried out. v) Agreements on community collaborative work (if any). vi) Standards of behaviour of outside workers (if any). vii) Identify the mechanisms for handling complaints and claims
Indigenous Peoples	indigenous people excluded due to language	Moderate (3)	Moderate and likely (3)	6	● Ensure that local partner hire key project personnel who speak the local language and has experience working with indigenous people. ● Regular use of translators must be included in the budget activities for outputs 1.1, 2.1, 3.1 and 3.2
Indigenous Peoples	Indigenous organizations excluded due to lack of formality	Moderate (3)	Moderate and likely (3)	6	● Support for the formalization through technical assistance of indigenous associations and organizations.
Indigenous Peoples	Activities for output 2.1, 3.1 and 3.2 do not reflect the demands of indigenous communities. Or the technology proposed are not suitable for communities.	Moderate (3)	Moderate and likely (3)	6	● Additional consultation meetings with settlement and peasant communities with the following objectives: i) Presentation of the complete project and its benefits ii) To express the expectations of the communities ii) Share a work schedule. iii) Preparation of documents proving the ownership of the land on which the works are to be carried out. iv) Agreements on community collaborative work (if any). v) Standards of behavior of outside workers (if any). vi) Identify the mechanisms for handling complaints and claims
Indigenous Peoples	Conflicts between communities due to: - Participation in the project (direct or indirect benefits) - water use - ownership and use of protection and restoration sites	Moderate (3)	Moderate and likely (3)	6	● The people who will participate directly in project activities will be designated by the community under clear and transparent criteria. ● The prioritization of sites, apart from technical criteria, is done with the local population and the head of the protected natural area. ● Identify and confirm landowners and land users. ● Establish documented communal or individual agreements or approvals for the implementation of activities in the prioritized sites.

					● Inform all parties, including stakeholders outside the intervention site and the communities involved, about the activities to be implemented and potential impacts. ● Inform all parties about the project's grievance mechanism.
Conservation of Biological Diversity	Protective or exclusion fences block wildlife migration.	Moderate (3)	Moderate and likely (3)	6	● Participatory assessment of wildlife presence. ● Ensure that perimeter barriers prevent livestock entry, but facilitate the migration of other wildlife species between bofedales. ● Maintenance requirements should be planned and implemented. ● Biological monitoring will be implemented in the future.
Conservation of Biological Diversity	Unexpected damage to wetlands due to erroneous assessment of the situation	Moderate (3)	Moderate and likely (3)	6	● Bofedales restoration plans should identify and attempt to correct the root causes of degradation at the watershed level and restore original hydrological flows and conditions. ● Proper identification of restoration sites and measures to be implemented
Conservation of Biological Diversity	Introduction of exotic species in protected natural areas due to reforestation or afforestation and installation of improved pastures.	Moderate (3)	Moderate and likely (3)	6	● Comply with the provisions of the current “Action Plan on Invasive Alien Species in Peru in Peru” in force, including the use of invasive alien species to improve pasture productivity, reforestation and/or improvement of pasture productivity, reforestation and/or afforestation.
Protection of Natural Habitats	Unexpected damage due to inadequate design and installation of hydrological monitoring plots in natural protected areas.	Moderate (3)	Moderate and likely (3)	6	● Strong coordination with the iMHEA Initiative ● Proper identification of plot sites ● Appropriate use of the guide for the design and installation of hydrological monitoring plots
Protection of Natural Habitats	Risk of overgrazing	Moderate (3)	Moderate and likely (3)	6	● The grazing capacity of natural pastures will be evaluated and considered in pasture management planning. ● Adequate selection of grazing sites ● Increase capacity building of local people for monitoring and evaluation of grazing areas
Protection of Natural Habitats	Construction of qochas: - Affecting the availability of water for other users - Erosion and landslides	Moderate (3)	Moderate and likely (3)	6	● Strong coordination with the National Water Authority (ANA), MIDAGRI's Sierra Azul Program or AGRORUAL and approval of water use if necessary. ● Ensure that qochas are not built on sloping areas. ● Interventions should also be evaluated and designed with a watershed approach to prevent qochas from affecting water availability in the surrounding area and/or downstream. ● Ensure removal of access or controls if nearby sensitive areas are at risk.
Protection of Natural Habitats	Reforestation with non-native species can introduce pests	Moderate (3)	Moderate and likely (3)		● Reforestation activities only include the planting of native species. ● Include local knowledge about the native species of local

	and diseases or negative impacts on soil and water.				populations in the planning of activities.
Pollution Prevention and Resource Efficiency	Construction of qochas: or monitoring hydrological plots access of equipment and materials may affect or degrade sensitive areas.	Moderate (3)	Moderate and likely (3)	6	● Ensure removal of access or controls if nearby sensitive areas are at risk. ● Establish access agreements with local people and farming communities. ● Remove all waste materials used in the construction of qochas and the installation of monitoring plots. ● Establishing waste management protocols
Pollution Prevention and Resource Efficiency	Risks from the use of prohibited chemicals, pesticides and generates water and soil contamination.	Moderate (3)	Moderate and likely (3)	6	● The project will actively seek to promote and provide technical assistance to develop agroecological practices and ensure that pesticides are not applied. ● Develop capacities and alternatives to the use of pesticides.

Social and gender risks:

The risks identified to the principles of access and equity; marginalized and vulnerable groups; Gender equity and empowerment of women and indigenous population are low. No risks have been identified in terms of human rights, labour rights, involuntary resettlement, public health and physical and cultural heritage. However, the design and future implementation of the project is considering the following strategies:

- The technical selection of restoration and conservation practices has considered the result of the consultation process, in which the ecological and economic importance of the proposed practices has been socialized and explained. For example, the endorsement of the population with sylvopastoral and sustainable livestock[59] practices, the preference in the diversity of native forest species for forest restoration practices, participatory monitoring and the concern of the population for the care and management of water sources have been recorded.

- The knowledge management strategy will include the identification of knowledge gaps, particularly among vulnerable population groups such as women, youth and people living in rural areas. For that purpose, gender and youth aspects previously described will be taken in account in order to guide the identification of knowledge and capacity gaps (*Summary of gender and youth considerations, Section II.H)*.

- The project's Gender Plan will consider the results of the consultation process (presented in section II.H.) and the specificities of each sector and mosaic. For example, having already identified in several sectors an empowerment gap in the participation of women in organizational and political life, this management instrument will consider among its first programmed activities the development of awareness, leadership and empowerment workshops for women leaders and women to identify themselves as direct beneficiaries of output 2.1 and component 3. Likewise, it has identified those productive organizations, economic activities, and stages of the value chains (especially the transformation, production of small animals, irrigation, among others) in which women are more related, information that will be taken into account to emphasize the activities of knowledge management, capacity building and organizational strengthening of component 3.

- The Project has identified the main ways, forms of organization and modalities of collaboration between the institutions in charge of the management of protected areas (SERNANP and local NGOs) with the population, which have been described in section II.E. and will be considered as the main ways and parameters for the establishment of agreements. Likewise, the local productive organizations with which agreements will be established for the implementation of component 3 have been identified (detailed information in Section II.H).

- The project has identified the main causes of climate vulnerability for the main livelihoods of the population (mainly the increasing incidence of droughts, frosts, irregular precipitation patterns and rising temperatures). Likewise, weaknesses of associativity and commercialization have been identified. Consistent with this information, optimization and resilience measures have been proposed for the most potential value chains in the mosaics.

- The value chains and resilience measures selected for component 3 of the project consider the preferences and roles identified in marginalized and vulnerable groups such as women and youth. Such is the case of the production of guinea pigs, sheep's wool (fabrics) and dairy products.

- In the selection and implementation of practices and in the knowledge management strategy, the set of norms, values, traditional knowledge and preferences of the population will be considered, recognizing their identification with the Quechua and Andean culture. This, under a constructive pedagogical approach, which starts from the previous knowledge of the participant, paying attention and promoting the recovery of cultural-local knowledge. This cultural-local knowledge is conditioned by gender, which, in the case of Andean ecosystems, specifically grasslands, relict forests and agroecosystems, women demonstrate knowledge of particular details in contrast to their male peers.

[59] For example, the combination of improved pasture use and silage as a measure of economic sustainability of livestock management practice.

The identification and public recognition of women's knowledge as part of the project´s gender strategy should be considered as for individual and collective empowerment of the most vulnerable population such as women at all ages.

Environmental risks:

The risks identified for the principles of protecting natural habitats, preventing pollution and resource efficiency are low. No risks to biodiversity conservation, climate change and soil and land conservation have been identified. The design and future implementation of the project is considering the following strategies:

- The consultation process has included a participatory assessment of risks and threats to ecosystems, which has included the perspective of communities and has broadened that of specialists and chiefs of protected areas. This is how factors such as burning, the unsustainable use of timber and non-timber forest products, wildlife hunting, illegal mining and settlements, and contamination by solids and liquids have been identified. These factors will be included in the capacity building activities of output 2.1 and will be part of the knowledge management of the Project. It should be noted that this identification was made under gender-inclusive methodologies and has considered the perspective of both men and women.

- The project has identified cattle farming throughout the mosaics as one of the main livelihoods (and source of family income), and at the same time one of the main drivers of ecosystem degradation. To address this problem, the project will promote climate-smart agriculture and livestock[60], the breeding of alternative sources of protein production (small animals and guinea pigs) and the optimization of livestock systems under a sustainable and [61] regenerative livestock approach, in combination with value chain optimization measures for the reduction of losses and increase of productive efficiency and the application of conservation practices and restoration for water regulation, erosion control and soil fertility, so that together, the ecological footprint of the system is reduced compared to the initial situation.

- The Project has identified other initiatives to which it can articulate and establish synergies, such as the Northern Andes Water Fund in the northern mosaic, and state programs for productive initiatives of PROCOMPITE, AGROIDEAS and AGRO RURAL, as well as projects promoted by local governments.

  PROCOMPITE is a priority strategy of the State that constitutes a Competitive Fund to co-finance productive proposals (business plans). It aims to improve the competitiveness of production chains through the development, adaptation, improvement, or transfer of technology. The Law establishing Provisions to Support Productive Competitiveness (Law No. 29337) indicates that regional and local governments may authorize PROCOMPITE to use up to 10 percent of the resources budgeted for project expenditure, except for resources from sources of official credit operations and grants and transfers.

  The Compensation Program for Competitiveness (AGROIDEAS) is an entity attached to the Ministry of Agrarian Development and Irrigation (MIDAGRI). The Program promotes the strengthening of business management and the adoption of environmentally sustainable agricultural technologies of small and medium organized agricultural producers in Peru, contributing to the improvement of their competitiveness and quality of life, through efficient and results-oriented management. It also formulates, lead, and supervises Agricultural Productive Reconversion Projects, initially prioritizing some crops considered sensitive due to different factors. Additionally, it also improves the capacity of small and medium producers, repowering production and marketing and capitalizing on it with new technologies.

[60] Climate-smart livestock is a productive approach that simultaneously seeks to sustainably increase livestock productivity and income, improve the resilience of livestock systems to climate change and reduce greenhouse gas emissions (FAO, 2020).

[61] According to the document "Sustainable Livestock: Practice Guide for the Northwest of Pichincha" (Cabezas *et al*, 2019) sustainable livestock is a production approach feasible to apply in the Andean context, which encompasses a series of practices that increase the profitability of livestock activity while favoring its sustainability over time and the conservation of the remaining forests along with their functions. It covers, for example, farm zoning and planning, improvement of grazing systems and inclusion of forest species, proper use and management of water and animal welfare. In the context of the Northwest of Pichincha in Ecuador, it has demonstrated a 300% increase in the carrying capacity of the farm and the reduction and / or elimination of purchases of surplus food and external fertilizers, while a notable improvement of soils, significant increases in flows and water sources that no longer dry up in summer.

~~The Rural Agricultural Productive Development Program (AGRO RURAL) is an entity attached to the Ministry of Agrarian Development and Irrigation. The program designs, promotes and manages rural agrarian development models that facilitate the articulation of public-private investments and that contribute to poverty reduction and the inclusion of rural families. The program seeks to improve the quality of life of rural families in Peru through the implementation of sustainable rural development plans and policies agreed with regional and local governments and other social actors.~~

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund.

The Monitoring & Evaluation (M&E) Plan will be conducted in accordance with PROFONANPE standard procedures. The Results Framework defines execution indicators for project implementation as well as the respective means of verification. The monitoring and evaluating system for the Project will be established based on these indicators and means of verification. Monitoring activities will seek progress of processes and project milestones completion, while the evaluation will focus on the achievement of results and overall project impact based on the stated objective.

Monitoring and evaluation at the project level, including the day-to-day monitoring of project activities, will be the responsibility of the project coordinator, with support from the monitoring and evaluation specialist. Periodic monitoring of implementation progress will be undertaken by PROFONANPE through meetings with the project coordinator, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

Resources targeted for M&E are represented in a portion of the time of the Project Coordinator, Procurement specialist, administrative assistant and the technical staff from the participant institutions working in the various components, this is estimated at one quarter of their work time. Dissemination of project progress is part of the estimated communication and information dissemination plan. An external financial audit will be performed each year by a firm approved by PROFONANPE, which will be contracted by the Executing Agency and paid by the project.

The project will have a Project Implementation Plan (PIP) to support project management through a multi-year proposal for the execution of the entire project. The PIP is based on the results matrix and includes the activities and responsibilities throughout the project timeframe. A proposed Annual Operating Plan (AOP) will be developed at the middle of each year of project execution and approved by the PSC. A Project Initial Report will include a detailed description of first year's AOP execution, divided in quarterly sections, related budget, and progress indicators to guide the project implementation during the first year.

The M&E Plan.

MINAM and SERNANP will be part of the project's evaluation activities and will be informed of the progress of the monitoring process. Annual Progress Reports (APR), as well as the Mid-Term and Final Evaluations (including lessons learned and good practices) will be presented to the PSC, and shared with other relevant stakeholders (i.e. government, civil society and participating organizations or beneficiaries). In the APRs comparison between the baseline and the indicators will be carried out.

The monitoring system be based on a digital system and / or database that includes at least the following data:

Component or transverse element	Data
Component 1	• Mosaic • Protected Area • Type of administration of the ANP • Place • Type of site (watershed / ZA / Core Zone / Special Use Zone / community area) • Number of people participating differentiating men / women / young people

Component or transverse element	Data
	• Type of practice: forest monitoring, hydrological monitoring • Dates or deadline in which the field activities were implemented (differentiating stages) • Contribution to NDC
Output 2.1	• Mosaic • Protected Area • Type of administration of the ANP • Place • Type of site (watershed / ZA / Core Zone / Special Use Zone / community area) • Area of direct intervention (in hectares) • Area of indirect intervention (in hectares) • Peasant community or settlement • Number of people participating differentiating men / women / young people • Type of practice: conservation/ecological restoration/productive restoration (SAF, silvopastoral, agroecology, other) • Dates or deadline in which the field activities were implemented (differentiating stages) • Contribution to NDC
Component 3	• Mosaic • Protected Area • Type of administration of the ANP • Place • Peasant community or populated center • Number of people participating differentiating men / women / young people • Value chain • Adaptation measure promoted • Dates or deadline in which the field activities were implemented (differentiating stages) • Contribution to NDC
Participatory and capacity-building activities	• Type of activity • Place • Peasant community or populated center • Number of people participating differentiating men / women / young people • Type of audience • Beneficiary organizations • Year • Date • Theme • Component • Responsible institution • Collaborating institutions
Methodological instruments and/or tools, knowledge management products and communications	• Title • Type • Date • Year • Theme • Responsible institution • Collaborating institutions • Others (emphasis on gender, youth, etc.)

Initial evaluation

- The Project Inception Workshop (PIW) will be held within the first 2 months of project start-up with all stakeholders. The IW is crucial to build ownership of the project results and to plan the first-year annual operating plan. A fundamental objective of the IW will be to present the modalities of project implementation and execution, document mutual agreement for the proposed execution arrangements amongst stakeholders and assist the PCT to understand and take ownership of the project's goals and objectives. Another key objective of the IW will be the introduction of the PCT which will support the project during its implementation. An IW Report will be prepared and shared with participants to

formalize the various agreements taken during the meeting.

- Within the first six months of the project, the Project Coordinator will also be responsible for consolidating all baseline information required for the indicators identified in the results framework.

Progress Monitoring

- Quarterly Reports will be prepared by the PCT and verified by the PROFONANPE.

- An Annual Progress Report (APR) will be prepared by the Project Coordinator and shared with all stakeholders. The APRs will include progress against set goals, objectives and targets, lessons learned, risk management and detailed financial disbursements. APRs will be prepared to monitor progress made since project start and for the previous reporting period. The APRs will include, but are not limited to, the following:

  - ✓ Progress made toward project objectives and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative); information related to product indicators will be collected mainly through documentation and records within institutional stakeholders, as well as through the review of meeting reports and agreements of the Steering Committee.
  - ✓ Project outputs delivered per project Outcome (annual);
  - ✓ Lessons learned/good practices;
  - ✓ Annual expenditure reports;
  - ✓ Risk management, and a critical assessment of project administration, coordination and execution
  - ✓ Effectiveness of project and individual component design including progress in inter institutional coordination and execution.
  - ✓ Government authorities, the PCT and/or Technical Assistant, and PROFONANPE staff will conduct regular field visits to project sites based on the agreed schedule in the project's Inception Report/Annual Operating Plan to assess first hand project progress.

Mid Term Evaluation

The project will undergo an independent Mid-Term Evaluation (MTE) at the mid-point of project implementation. The MTE will determine progress made toward the achievement of outcomes and will identify corrective actions 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 in a Mid-term Report.

The mid-term evaluation carried out when 40% of the AF resources are disbursed, or twenty-four months after the project contract goes into effect (whichever comes first), will determine progress towards results' achievement, the level of stakeholder participation, any positive changes in beneficiaries' practices due to the intervention, as well as identify necessary changes to be made.

Financial monitoring

The Project Coordinator Team will provide PROFONANPE with certified periodic financial statements, and with an Annual Audit of the financial statements relating to the status of fund´s execution according to the established procedures set out in PROFONANPE´s Operations Manual. PROFONANPE as the entity responsible for the management of resources granted by third parties, has zero tolerance policies for fraud, corruption, financial mismanagement, and any other form of malpractice as well as a policy on conflicts of interest. All policies in this regard can be consulted on the website, in the integrity and transparency section: https://profonanpe.org.pe/integridad/ .

The audit will be conducted in accordance with PROFONANPE financial regulations and rules and applicable audit policies on PROFONANPE projects by a legally recognized auditor of the government of Peru, or by a commercial auditor engaged by the Government of Peru.

Final evaluation

- A final external evaluation will be conducted three months before project closure (three months before the project steering committee meets for the last time) and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at the impact and sustainability of project results.

The budgeted M&E plan, which is included in the PEC costs, is presented in the following table, and the break-down of how Implementing Entity's fees will be utilized in the supervision of the M&E function is included in Part III, Section G.

#	Type of M&E activity	Responsible	Budget US$	Time frame
1	Inception workshop and report	EA PROFONANPE Project Steering Committee	$ 5,000	Within first two months of project start up in one of the pilot areas Report within one month of the IW
2	Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	Project Coordinator	None	Annually
3	Quarterly Reports	Project Coordinator (EA) PROFONANPE	None	Quarterly
4	Annual Progress Reports	PCT (EA) PROFONANPE	None	Within two months of the next year.
5	Meetings of the Project Steering Committee (PSC)	Project Coordinator (EA) PROFONANPE	None	
6	External Mid-term evaluation	PCT PROFONANPE External consultants	$ 25,000	At the mid-point of project implementation
7	Late-term Workshop and report	PCT PSC PROFONANPE External consultants	$ 7,500	Six months before the end of project implementation, in one of the pilot areas report within one month of the workshop
8	External Final Evaluation	PCT PROFONANPE	$ 25,000	Three months before the end project implementation
9	Final Report	PCT PROFONANPE	None	At least one month before the end of the project
10	Audits	PCT PROFONANPE	$ 32,000	Annually - following PROFONANPE procedures
11	Manual of environment and social safeguards implementation Training workshop aimed to PC and local partners	PCT PROFONANPE	$ 20,000	
12	Monitoring Visits to Field Sites	PCT PROFONANPE	$ 20,000	To be determined annually by PCT and PROFONANPE
TOTAL				**US$ 134,500**

E. Include a results framework for the project proposal, including milestones, targets and indicators, including one or more core outcome indicators of the Adaptation Fund Results Framework, and in compliance with the Gender Policy of the Adaptation Fund.

Project Strategy	Objectively Verifiable Indicators				
	Indicator	Baseline	Target	Means of Verification	Risks/Assumptions
GOAL: Contribute to increase the adaptive capacity of the productive systems of the Andean rural communities and to reduce the vulnerability of the Peruvian Andean ecosystems (Andean forests, Andean moor and Andean wetlands).	No. of risk-exposed Andean people	45,200 people	8,900 people	(See below)	(See below)
	No. of hectares conserved and/or under restoration process	321,120 ha degraded[62]	10,000 ha under restoration process		
COMPONENT 1: Development and implementation of monitoring system for Andean ecosystems	No. of integrated monitoring systems designed for Andean ecosystems	0	1	Document supporting the integrated monitoring system	(See below)
	No. of public officials trained in Andean ecosystem monitoring	0	60	List of participating in training courses	
	No. of local people trained in Andean ecosystem monitoring	0	60	List of participating in training courses	
	% of women trained in Andean ecosystem monitoring	0	30%	List of participating in training courses	
	% of young people trained in Andean ecosystem monitoring	0	30%	List of participating in training courses	

[62] MINAM (2022): annual estimate of degradation at national level (https://geoservidor.minam.gob.pe/monitoreo-y-evaluacion/restauracion-de-areas-degradadas/)

Project Strategy		Objectively Verifiable Indicators				
		Indicator	**Baseline**	**Target**	**Means of Verification**	**Risks/Assumptions**
OUTCOME 1. Mapping and monitoring Andean ecosystems to support decision making at a national and subnational level.	**OUTPUT 1.1.** Monitoring tools to measure hydrological ecosystem services on Andean ecosystem implemented.	No. of PAs with plots installed for monitoring of water regulation in Andean ecosystems	1	6	Plots Reports of evaluation	SERNANP has no interest in installing monitoring plots.
	OUTPUT 1.2. Monitoring system of degradation and deforestation of Andean forests designed and piloted	MINAM's National Forest Conservation Program with operational monitoring system for Andean forests	0	1	Monitoring system	MINAM's PNCB has no interest in development monitoring system for Andean forests
COMPONENT 2: Implementation of best practices for landscape protection and restoration of Andean ecosystems in conservation mosaics.		No. of hectares under restoration process	321,120 ha degraded	10,000 ha under restoration process	SERNANP´s Monitoring report	SERNANP does not have the capacity to carry out assessments of the state of ecosystems in PAs.
		No. of peasant communities / settlements that implement conservation and restoration practices.	0	2 PC 10 settlements	Agreements signed	Local population not interested in participating in the project
OUTCOME 2. Enhancing the resilience capacity of Andean ecosystems in three prioritized conservation mosaics.	**OUTPUT 2.1.** Rural communities implement conservation and restoration practices in degraded areas inside and outside (buffer zones) of	No. of peasant communities / settlements that implement conservation and restoration practices	0	2 PC 10 settlements	Agreements signed	Local population not interested in participating in the project
		No. of families directly involved in the project	0	100 families	List of participating	Local population not interested in participating in the project
		No. of persons directly involved in the project	0	500 persons		
		No. of women directly involved in the project	0	100 persons		

Project Strategy		Objectively Verifiable Indicators				
		Indicator	**Baseline**	**Target**	**Means of Verification**	**Risks/Assumptions**
	prioritized protected areas.	No. of young people directly involved in the project	0	100 young people		
	OUTPUT 2.2. Preliminary conditions prepared for the start of the "Natural Heritage Initiative of Peru – Andes", based on previously agreed upon conditions	No. of Andean ecosystem PAs included in the Natural Heritage Initiative of SERNANP	0	At least 6	Proposal document supporting the "Peru's Natural Heritage Initiative – Andes"	SERNANP and MINAM have no interest in extending the initiative to Andean ecosystems NGOs and Cooperation International have not interest to support a creation of Fund Trust for Andean ecosystem PAs
	OUTPUT 2.3. Incorporation of the climate change adaptation and disaster risk reduction approach in planning instruments of three conservation mosaics of Andean ecosystems	SINANPE Director Plan with a climate change adaptation and disaster risk reduction approach incorporated	0	1	Proposal document supporting the incorporation of the approach in SINANPE's Director Plan.	SERNANP has no interest in incorporating the approach in SINANPE´s Director Plan
COMPONENT 3: Increasing resilience and sustainability of local productive systems in rural communities in Andean ecosystem landscapes.		No. of peasant communities / settlements that implement practices to improve the resilience of productive chains	0	2 PC 25 settlements	Agreements signed	Local population not interested in participating in the project
OUTCOME 3. Enhancing the resilience capacity of productive activities in rural communities of the	**OUTPUT 3.1.** Rural communities with technical productive capacities to reduce vulnerability	No. of families receiving technical assistance to reduce vulnerability in productive chains	0	100 families	List of participating	Local population not interested in participating in the project Municipalities and/or regional government not
		No. of women receiving technical assistance to reduce vulnerability in productive chains	0	150 woman		

Project Strategy		Objectively Verifiable Indicators				
		Indicator	Baseline	Target	Means of Verification	Risks/Assumptions
three prioritized conservation mosaics.	of the productive chain inside and outside (buffer zone) prioritized protected areas.	No. of young people receiving technical assistance to reduce vulnerability in productive chains	0	150 young people		interested in support the activities of the project National companies not interested in doing business with local producers/associations
		No. of local woman farmers/associations with business plans	0	3 woman associations	Agreements signed	
		No. of local young farmers/associations with business plans	0	3 young people associations		
	OUPUT 3.2. Design, evaluation, and implementation of adaptation measures of productive chains linked to the market.	No. of production chains strengthened with market-linked adaptation measures	0	3 prodution chains	Agreements signed	

F. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s) [63]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Increase the adaptive capacity of the productive systems of the Andean rural communities and to reduce the vulnerability of the Peruvian Andean ecosystems (Andean forests, Andean moor and Andean wetlands)	Number of hectares under restoration process	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability induced stress	1,604,084.0
Increase the adaptive capacity of the productive systems of the Andean rural communities and to reduce the vulnerability of the Peruvian Andean ecosystems (Andean forests, Andean moor and Andean wetlands)	Number of risk-exposed Andean communities protected through adaptation measures	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.	6.2. Percentage of targeted population with sustained climate resilient alternative livelihoods	1,702,500.00
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1 Mapping and monitoring Andean ecosystems to support decision making at a national and subnational level.	No. of integrated monitoring systems designed for Andean ecosystems. No. of PAs with plots installed for monitoring of water regulation in Andean ecosystems. MINAM's National Forest Conservation Program with operational monitoring system for Andean forests	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	716,000.00
Outcome 2 Enhancing of the resilience capacity of Andean ecosystems	No. of hectares under restoration process No. of peasant	Output 5: Vulnerable ecosystem services and natural	5.1. No. of natural resource assets created, maintained or	1,604,084.0

[63] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

in three prioritized conservation mosaics.	communities / settlements that implement conservation and restoration practices.	resource assets strengthened in response to climate change impacts, including variability	improved to withstand conditions resulting from climate variability and change (by type and scale)	
Outcome 3 Enhancing the resilience capacity of productive activities in rural communities of the three prioritized conservation mosaics.	No. of peasant communities / settlements that implement practices to improve the resilience of productive chains	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies. 6.2.1. Type of income sources for households generated under climate change scenario	1,702,500.00

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

Detailed activities

Component/Outcome/Output Activities/Task		UNIT	QTY.	UNIT COST (USD)	TOTAL (USD)	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total Amount (USD)
Component 1. Mapping and monitoring of forests and other andean ecosystems to support decision making at a national and subnational level										
Outcome 1. Mapping and monitoring of forests and other andean ecosystems to support decision making at a national and subnational level										
Output 1.1. Monitoring tools to measure hydrological ecosystem services on Andean ecosystem implemented.	**Activity 1.1.1: Design of integrated monitoring system of Andean ecosystems**									
	Integrated System Design	▪ Consultants ▪ Learning & Innovation	Global	40,000.0	40,000.0	20,000.0	20,000.0	0.0	0.0	**$40,000.0**
	Workshops/Meetings Multisectorial Working Group	Meetings	12	250.0	3,000.0	1,500.0	1,500.0	0.0	0.0	**$3,000.0**
	Peru-Colombia exchanges: virtual and face-to-face	▪ International Travels ▪ Meetings	Global	5,000.0	5,000.0	2,500.0	2,500.0	0.0	0.0	**$5,000.0**
	Activity 1.1.2: Installation and monitoring of hidrological monitoring plots									
	Identification of hydrological monitoring sites	▪ Consultant ▪ National and local travel	Global	3,000.0	3,000.0	3,000.0	0.0	0.0	0.0	**$3,000.0**
	Implementation of hydrological monitoring sites in paired basins	▪ Consultant ▪ National and local travels ▪ Equipment ▪ Materials and transport ▪ Installation cost	10	10,000.0	100,000	0.0	100,000.0	0.0	0.0	**$100,000.0**

	Institutional arrangements for hydrological monitoring	▪ Consultant ▪ National and local travel	6	2,500.0	15,000.0	0.0	15,000.0	0.0	0.0	**$15,000.0**
	Develop of capacity building for local actors	▪ Consultant ▪ National and local travel ▪ Meetings	8	1,000.0	8,000.0	0.0	8,000.0	0.0	0.0	**$8,000.0**
	Technical assistant for strengthening the iMHEA network in Peru	▪ Consultant ▪ Meetings ▪ National and local travel	1	30,000.0	30,000.0	10,000.0	10,000.0	10,000.0	0.0	**$30,000.0**
	02 Exchange workshops and network learning of hydrological monitoring sites	▪ Workshops ▪ National travel	2	10,000.0	20,000.0	6,666.7	6,666.7	6,666.7	0.0	**$20,000.0**
	Downloading, quality control and data processing, operation and maintenance of 8 monitoring sites	▪ Consultant ▪ National and local travel	8	6,000.0	48,000.0	0.0	24,000.0	24,000.0	0.0	**$48,000.0**
OP1.2 Monitoring system of degradation and deforestation of Andean forests designed and piloted	**Activity 1.2.1. Conceptual design of the Andean Forests Module of the PNCB**									
	Conceptual design	▪ Consultant ▪ International, national and local travel ▪ Workshops	Global	45,000.0	45,000.0	22,500.0	22,500.0	0.0	0.0	**45,000.0**
	Activity 1.2.2: Design and operation of the Andean Forests Module of the PNCB									
	Mapping and monitoring system design	▪ Consultant ▪ National and local travel	1	150,000.0	150,000	0.0	100,000.0	50,000.0	0.0	**150,000.0**

		▪ Meeting ▪ Workshops								
	Acquisition software for monitoring system	▪ Software for PNCB-MINAM	1	57,000.0	57,000.0	0.0	57,000.0	0.0	0.0	**57,000.0**
	Acquisition Monitoring System Hardware	▪ Hardware for PNCB-MINAM	1	14,000.0	14,000.0	0.0	14,000.0	0.0	0.0	**14,000.0**
	Acquisition Software and Hardware for pilot Regional Government	▪ Hardware and software for Regional Government	1	60,000.0	60,000.0	0.0	0.0	60,000.0	0.0	**60,000.0**
	Technical support for pilot Regional Government	▪ National and local travel ▪ Meetings	1	15,000.0	15,000.0	0.0	0.0	15,000.0	0.0	**15,000.0**
Knowledge Management	Knowledge Management Products	▪ National consultant ▪ Design of documents	4	10,000.0	40,000.0	10,000.0	10,000.0	10,000.0	10,000.0	**40,000.0**
M&E travel	Quarterly M&E	▪ National travel	30	500.0	15,000.0	3,750.0	3,750.0	3,750.0	3,750.0	**15,000.0**
Communication	Design communication material **(16)**	▪ National consultant ▪ Material design and printing	1	10,000.0	10,000.0	10,000.0	0.0	0.0	0.0	**10,000.0**
Start and close Project Event	Organization and development of 02 events	▪ National Event	2	5,000.0	10,000.0	5,000.0	0.0	0.0	5,000.0	**10,000.0**
M&E	Project M&E Activities (See Section III.D)	▪ Global	1	28,000.0	28,000.0	7,000.0	7,000.0	7,000.0	7,000.0	**$28,000.0**
TOTAL COMPONENT 1						**$101,916.7**	**$401,916.7**	**$186,416.7**	**$25,750**	**$716,000.0**
Component 2. Implementation of best practices for landscape protection and restoration of Andean ecosystems in conservation mosaics.										
Outcome 2. Enhancing of the resilience capacity of Andean ecosystems in three prioritized conservation mosaics.										
Output 2.1 Rural communities	**Activity 2.1.1. GIS baseline of intervention areas**									

Implement conservation and restoration practices in degraded areas inside and outside (buffer zones) of prioritized protected areas.	GIS baseline of intervention areas	▪ Local consultants ▪ Local travel ▪ Meetings	7	6,000.0	42,000.0	42,000.0	0.0	0.0	0.0	**$42,000.0**
	Activity 2.1.2. Technical assistance and capacity building for rural communities on good practices of ecological restoration									
	EbA and NbP training workshops	▪ Local consultants ▪ Materials ▪ Local and Communities meetings	200	1,042.0	208,400.0	69,466.7	69,466.7	69,466.7	0.0	**$208,400.0**
	Activity 2.1.3. Implementation of good restoration practices on 105 hectares inside and outside protected areas									
	Restoration activities	▪ Local consultants ▪ Restoration Materials ▪ Monitoring	105	2,606.0	273,630.0	91,210.0	91,210.0	91,210.0	0.0	**$273,630.0**
	Activity 2.1.4. Diagnosis and development of a livestock and equine management plan									
	Diagnosis and management plan livestock and equine	▪ Local consultants ▪ Local travel ▪ Meetings	4	10,000.0	40,000.0	40,000.0	0.0	0.0	0.0	**$40,000.0**
	Activity 2.1.5. Technical assistance and capacity building for livestock producers to reduce the impact on Andean ecosystems									
	Acquisition of Vet First Aid Kit for livestock farmers	▪ First Aid Kit	15	2,084.0	31,260.0	10,420.0	10,420.0	10,420.0	0.0	**$31,260.0**
	Activity 2.1.6. Implementation of 21 plots of improved pasture									
	Implementation of improved grass plots	▪ Local consultants ▪ Plots Materials	21	16,007.8	336,163.8	112,054.6	112,054.6	112,054.6	0.0	**$336,163.8**

		▪ Monitoring								
	Conservation agreements	▪ Local consults ▪ Communities' meetings	15	1,042.0	15,630.0	15,630.0	0.0	0.0	0.0	**$15,630.0**
	Fuel	▪ Local site mobilization of local partners	3	24,000.0	72,000.0	24,000.0	24,000.0	24,000.0	0.0	**$72,000.0**
Output 2.2. Incorporation of the climate change adaptation and disaster risk reduction approach in planning instruments of three conservation mosaics of Andean ecosystems	**Activity 2.2.1. Conceptual design**									
	Conceptual design	▪ National or International Consultants ▪ Meetings	1	30,000.0	30,000.0	15,000.0	15,000.0	0.0	0.0	**$30,000.0**
	Activity 2.2.2. Design of instruments or methodological tools									
	Design of instruments or methodological tools	▪ National or International Consultants ▪ Meetings ▪ National training meetings	1	40,000.0	40,000.0	0.0	40,000.0	0.0	0.0	$40,000.0
	Activity 2.2.3. Incorporation in protected area planning documents									
	Incorporation in protected area planning documents	▪ Local training meetings ▪ Local Workshops	3	20,000.0	60,000.0	0.0	0.0	40,000.0	20,000.0	**$60,000.0**
OP2.3. Preliminary conditions prepared for the start of the "Natural Heritage Initiative of Peru	**Activity 2.3.1. Conceptual design**									
	Conceptual design	▪ National Consultants ▪ Meetings	1	10,000.0	10,000.0	10,000.0	0.0	0.0	0.0	**$10,000.0**
	Activity 2.3.2. Operational design									

– Andes", based on previously agreed upon conditions	Operational design	▪ National and International Consultants ▪ National and International meetings	1	50,000.0	50,000.0	0.0	50,000.0	0.0	0.0	**$50,000.0**
	Activity 2.3.3. Structuring of the Trust Fund									
	Structuring of the Trust Fund	▪ National Consultants ▪ National and International meetings	1	75,000.0	75,000.0	0.0	0.0	75,000.0	0.0	**$75,000.0**
	Activity 2.3.4. Create of the Trust Fund									
	Create of the Trust Fund	▪ National Consultants ▪ National and International meetings	1	60,000.0	60,000.0	0.0	0.0	60,000.0	0.0	**$60,000.0**
Communication	Local communicator	Local consultant	3	20,000.0	60,000.0	15,000.0	15,000.0	15,000.0	15,000.0	**$60,000.0**
	Communication products for national and local level (mosaics)	Design and printing communications materials for site	3	20,000.0	60,000.0	15,000.0	15,000.0	15,000.0	15,000.0	**$60,000.0**
Knowledge Management	Knowledge Management Products **(35)**	Local consultants	3	15,000.0	45,000.0	0.0	15,000.0	15,000.0	15,000.0	**$45,000.0**
Travel	M&E trimestral	National and local travel	30	1,000.0	30,000.0	7,500.0	7,500.0	7,500.0	7,500.0	**$30,000.0**
M&E	Project M&E Activities (See Section III.D)	Global	1	65,000.0	65,000.0	10,000.0	15,000.0	20,000.0	20,000.0	**$65,000.0**
TOTAL COMPONENT 2						**$477,281.3**	**$479,651.3**	**$554,651.3**	**$92,500.0**	**$1,604,084.0**
Component 3. Increasing resilience and sustainability of local productive systems in rural communities in Andean ecosystem landscapes.										
Outcome 3 Enhancing the resilience capacity of productive activities in rural communities of the three prioritized conservation mosaics.										
Output 3.1 Rural communities with technical productive	**Activity 3.1.1. Diagnosis of MIDAGRI / PRODUCE / MIDIS training offer/services**									
	Diagnosis of training offer/services	▪ National and local consultants	Global	10,000.0	10,000.0	10,000.0	0.0	0.0	0.0	**$10,000.0**

capacities to reduce vulnerability of value chain inside and outside (buffer zone) prioritized protected areas.		▪ Meetings								
	Activity 3.1.2. Diagnosis of training needs (local population and municipalities)									
	Diagnosis of training needs	▪ National and local consultants ▪ National and local travels ▪ Meetings	Global	30,000.0	30,000.0	30,000.0	0.0	0.0	0.0	**$30,000.0**
	Activity 3.1.3. Articulation with Municipalities and/or Regional Government for training plan design									
	Articulation with actors	▪ National and local travels ▪ Meetings	Global	30,000	30,000.0	30,000.0	0.0	0.0	0.0	**$30,000.0**
	Activity 3.1.4. Design of training modules									
	Design of training modules	▪ National and local consultants ▪ Meetings ▪ Design, printing and distribution of training materials.	Global	50,000.0	50,000.0	50,000.0	0.0	0.0	0.0	**$50,000.0**
	Activity 3.1.5. Training of municipal promoters									
	Training for municipal promoters	▪ Local consultants ▪ Workshops and/or meetings	60	1,000.0	60,000.0	30,000.0	30,000.0	0.0	0.0	**$60,000.0**
	Activity 3.1.6. Workshops/Training meetings for local people									

	Workshops/Training	▪ Local consultants ▪ Workshops and/or meetings	60	1,000.0	60,000.0	0.0	40,000.0	20,000.0	0.0	**$60,000.0**
	Activity 3.1.7. Implementation of good practices to reduce vulnerability of production chains									
	Implementation of good practices in livestock management, guinea pig breeding, self-consumption agriculture in the North Mosaic	▪ Local consultants ▪ Local travels of government technicians or experts ▪ Workshops and/ or local meetings ▪ Materials for good practices ▪ Local travel for experience exchange	Global	200,000	200,000	0.0	133,333.3	66,666.7	0.0	**$200,000.0**
	Implementation of good practices in livestock management, guinea pig breeding, potato cultivation in Center Mosaic	▪ Local consultants ▪ Local travels of government technicians or experts ▪ Workshops and/ or local meetings ▪ Materials for good practices ▪ Local travel for experience exchange	Global	200,000	200,000	0.0	133,333.3	66,666.7	0.0	**$200,000.0**
	Implementation of good practices guinea pig breeding, agriculture, tourism in the South	▪ Local consultants ▪ Local travels of	Global	200,000	200,000	0.0	133,333.3	66,666.7	0.0	**$200,000.0**

	Mosaic	government technicians or experts ■ Workshops and/ or local meetings ■ Materials for good practices ■ Local travel for experience exchange								
Output 3.2 Design, evaluation, and implementation of adaptation measures of productive chains linked to the market.	**Activity 3.2.1. Diagnostics of productive activities (including economic analysis)**									
	Diagnostics of productive activities	■ National and local consults ■ National and local travels ■ Materials for local diagnostics ■ Meetings	Global	70,000.0	70,000.0	35,000.0	35,000.0	0.0	0.0	**$70,000.0**
	Activity 3.2.2. Identification of articulation/demand opportunities for chain prioritization									
	Identification of articulation/demand opportunities for chain prioritization	■ National and local consults ■ National and local travels ■ National, subnational and local meetings	Global	30,000.0	30,000.0	15,000.0	15,000.0	0.0	0.0	**$30,000.0**
	Activity 3.2.3. Identification of productive reconversion opportunities including economic analysis (ecobusiness and R&D promotion)									
	Identification of productive reconversion opportunities including economic analysis	■ National and local consults ■ National and local travels ■ National, subnational and local meetings	Global	27,000.0	27,000.0	13,500.0	13,500.0	0.0	0.0	**$27,000.0**

	Activity 3.2.4. Identification and implementation of opportunities for Associativity									
	Identification and implementation	■ National or local consults ■ National and local travels ■ National and local meetings	Global	9,000.0	9,000.0	4,500.0	4,500.0	0.0	0.0	**$9,000.0**
	Activity 3.2.5. Mobilization of public financing (MIDAGRI and/or PRODUCE and/or MIDIS programs)									
	Mobilization of public financing	■ National and local travels ■ National and local meetings	Global	8,500.0	8,500.0	4,250.0	4,250.0	0.0	0.0	**$8,500.0**
	Activity 3.2.6. Diagnosis of training needs (local population and municipalities)									
	Diagnosis of training needs	■ National and local consultants ■ National and local travels ■ Meetings	Global	22,500.0	22,500.0	0.0	22,500.0	0.0	0.0	**$25,000.0**
	Activity 3.2.7. Design of training modules									
	Design of training modules	■ National and local consultants ■ Meetings ■ Design, printing and distribution of training materials.	Global	30,000.0	30,000.0	0.0	30,000.0	0.0	0.0	**$30,000.0**
	Activity 3.2.8. Implementation of adaptation measures to prioritized chains									
	Adaptation measures for sustainable livestock and/or guinea pig breeding in North Mosaic	North Mosaic	Global	128,000	128,000	0.0	42,666.7	85,333.3	0.0	**$128,000.0**
	Implementation of adaptation measures for guinea pig breeding and/or cultivation of native tubers in Center	Center Mosaic	Global	128,000	128,000	0.0	42,666.7	85,333.3	0.0	**$128,000.0**

	Mosaic									
	Implementation of practice for sustainable agriculture and/or ecotourism adaptation measures in South Mosaic	South Mosaic	Global	128,000	128,000	0.0	42,666.7	85,333.3	0.0	**$128,000.0**
Communication	Local communicator	Local consultants	3	20,000.0	60,000.0	15,000.0	15,000.0	15,000.0	15,000.0	**$60,000.0**
	Communication products for national and local level (mosaics)	Design and printing communications materials for site	3	35,000.0	105,000	26,250.0	26,250.0	26,250.0	26,250.0	**$105,000.0**
Knowledge Management	Knowledge Management Products	Local consultants	3	20,000.0	60,000.0	15,000.0	15,000.0	15,000.0	15,000.0	**$60,000.0**
Travel	M&E trimestral	National and local travel	30	500.0	15,000.0	3,750.0	3,750.0	3,750.0	3,750.0	**$15,000.0**
M&E	Project M&E Activities (See Section III.D)	Global	1	41,500.0	41,500.0	5,000.0	10,000.0	15,000.0	11,500.0	**$41,500.0**
TOTAL COMPONENT 3						**$287,250.0**	**$792,750.0**	**$551,000.0**	**$71,500.0**	**$1,702,500**
Project Activities Cost						$866,447.9	$1,674,317.9	$1,292,067.9	$189,750.0	**$4,022,584**
Project Execution Cost						$109,176.0	$109,176.0	$109,176.0	$54,588.0	**$382,116**
Implementing Entity Fees						$73,648.0	$142,317.0	$109,826.0	$16,129.0	**$341,920**
Total Finance Request						$1,049,271.9	$1,925,810.9	$1,511,069.9	$260,467.0	**$4,746,620**

Implementing Entity management fee use

Description	Profonanpe services	Estimated Cost of Profonanpe Services (USD)	%
Development and Preparation	• Provide technical support for Project preparation. • Detailed screening against technical, financial, social and risk criteria. • Assist in the determination of Implementation Arrangements and negotiation with other sectors. • Assist in verifying complementarity with other projects. • Verify quality of preparation. • Obtain clearances from Adaptation Fund • Respond to information requests, arrange revisions, etc.	$ 17,096.00	5
Implementation and Supervision	• Provide technical and operational support for Project team. • Technical support in preparing TORs and verifying expertise for technical positions. • Regular reporting. • Verify technical validity of all reports. • Support and follow-up to project procurements • Project financial follow-up • Carry-out supervision missions and field visits. • Receipt, allocation and reporting to the AF of financial resources. • Oversight and monitoring of AF funds. • Participate as necessary during Project activities.	$ 256,440.00	75
Final Evaluation and Closing	• Undertake technical analysis, validate results and compile lessons. • Disseminate technical findings. • Support and follow-up to project procurements. • Project financial follow-up.Final evaluation and Implementation Completion and Results Report.	$ 68,384.00	20
TOTAL		**$ 341,920.00**	**100**

Execution costs

Item	UNIT	QTY.	UNIT COST	TOTAL	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total Amount (USD)
Project Coordinator (60%)	Month	42	$ 4,555	$ 114,786	$ 32,796	$ 32,796	$ 32,796	$ 16,398	$ 114,786
Technical Coordinator (70%)	Month	42	$ 3,500	$ 102,900	$ 29,400	$ 29,400	$ 29,400	$ 14,700	$ 102,900
M&E Assitant (12%)	Month	42	$ 3,500	$ 17,640	$ 5,040	$ 5,040	$ 5,040	$ 2,520	$ 17,640
Administrative /Accounting (60%)	Month	42	$ 3,500	$ 88,200	$ 25,200	$ 25,200	$ 25,200	$ 12,600	$ 88,200
Technical Advisor (50%)	Month	42	$ 911	$ 19,110	$ 5,460	$ 5,460	$ 5,460	$ 2,730	$ 19,110
Office (rent, material, running cost, bank costs)	Month	42	$ 940	$ 39,480	$ 11,280	$ 11,280	$ 11,280	$ 5,640	$ 39,480
TOTAL				**$ 382,116**	**$109,176**	**$109,176**	**$109,176**	**$ 54,588**	**$ 382,116**

H. Include a disbursement schedule with time-bound milestones.

Item	Upon signature of Agreement*	One Year after Project Start**	Year 3	Year 4	Total
Scheduled date	August 24	August 25	August 26	August 27	
Project Funds	$ 975,624	$ 1,783,494	$ 1,401,244	$ 244,338	$ 4,404,700
Implementing Entity Fees	$ 73,648	$ 142,317	$ 109,826	$ 16,129	$ 341,920
Total	**$ 1,049,272**	**$ 1,925,811**	**$ 1,511,070**	**$ 260,467**	**$ 4,746,620**

* Use projected start date to approximate first year disbursement
** Subsequent dates will follow the year anniversary of project start

Item	Year 1	Year 2	Year 3	Year 4
Disbursement	1st disbursement – upon agreement signature	2nd disbursement – One Year after project start ▪ Upon First Annual Report Upon financial report indicating disbursement of at least 70% of funds	3rd disbursement - Two years after project start ▪ Upon Second Annual Report Upon financial report indicating disbursement of at least 70% of funds	4th disbursement – Third Year after Project Start ▪ Upon Third Annual Report Upon financial report indicating disbursement of at least 70% of funds
Milestone (by end of the year)	● Installation and monitoring of hydrological monitoring plots- 25% ● Conceptual design of the Andean Forests Module of the PNCB – 25% ● Design and operation of the Andean Forests Module of the PNCB – 0% ● Conservation and Restoration Practices – 25% ● PdP Andes – 20% ● Good practices to reduce vulnerability of productive activities – 20% ● Production chains linked to sustainable markets – 20%	● Installation and monitoring of hydrological monitoring plots- 50% ● Conceptual design of the Andean Forests Module of the PNCB – 100% ● Design and operation of the Andean Forests Module of the PNCB – 50% ● Conservation and Restoration Practices – 50% ● PdP Andes – 50% ● Good practices to reduce vulnerability of productive activities – 50% ● Production chains linked to sustainable markets – 50%	● Installation and monitoring of hydrological monitoring plots- 100% ● Design and operation of the Andean Forests Module of the PNCB – 75% ● Conservation and Restoration Practices – 75% ● PdP Andes – 100% ● Good practices to reduce vulnerability of productive activities – 80% ● Production chains linked to sustainable markets – 80%	● Design and operation of the Andean Forests Module of the PNCB – 100% ● Conservation and Restoration Practices – 100% ● Good practices to reduce vulnerability of productive activities – 100% ● Production chains linked to sustainable markets – 100%

A. Record of endorsement on behalf of the government[64]

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

(Enter Name, Position, Ministry)	Date*: (Month, day, year)*

[64] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (……list here…..) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Name & Signature Implementing Entity Coordinator	
Date: *(Month, Day, Year)*	Tel. and email:
Project Contact Person:	
Tel. And Email:	

Lima, 08 de agosto de 2022

LETTER N° 00101-2022-MINAM/VMDERN/DGCCD

Merssrs.
The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@adaptation-fund.org
Fax: 202 522 3240/5

Subject : Endorsement letter for the concept note "Building a program for the adaptation and resilience to climate change of the andean ecosystems and populations of Peru".

The Ministry of the Environment of Peru is the governing body of the National Climate Change Strategy of Peru and is the ministry in charge of informing the United Nations Framework Convention on Climate Change on the commitments of Nationally Determined Contributions (NDC). Within this framework, the concept note "Building a program for the adaptation and resilience to climate change of the andean ecosystems and populations of Peru" has been evaluated, to be presented to the Adaptation Fund. In this sense, the proposal contributes to increasing the adaptive capacity of the productive systems of rural Andean peasant communities and to reducing the vulnerability of the Peruvian Andean ecosystems (Andean forests, moors and wetlands).

In this vein, I am pleased to endorse the concept note mentioned above with support from the Adaptation Fund. If approved, we will ensure that the project is aligned to our climate change adaptation targets, and that is duly coordinated between the Ministry of Environment and Profonanpe.

We appreciate your attention very much, and thank you for your kind consideration.

Sincerely yours,

Milagros Sandoval Diaz
Head of the General Directorate of Climate Change and Desertification
Ministry of the Environment
Designated Authority

web: https://ecodoc.minam.gob.pe/verifica/view e ingresando la siguiente clave: **4dff6a**

File Number: 2022043179

ANNEX 1: List of participants in the consultation process

Focalization workshops (virtual)

Mosaic	Date	Participants	Position
North	12/06/23	● Carolina Guevara Molina ● Auner Medina ● Katty Carrillo ● William Ortiz Herrera ● Armando Inga Astete	● Head of the Tabaconas National Sanctuary – Namballe (SERNANP) ● Coordinator of the "Andes del Norte" Mosaic of Nature and Culture International Peru (NCI) ● Specialist of the Mosaic "Andes del Norte" of Nature and Culture International Peru (NCI) ● Head of the Regional Conservation Area El Chaupe (Regional Government of Cajamarca) ● Cajamarca Coffee Multi-Stakeholder Platform
Center	07/06/23 and 12/06/23	● Fredy Abanto ● Elbert Zavaleta ● William Martinez ● Elvert Puse	● Head of Calipuy National Reserve (SERNANP) ● Head of Calipuy National Shrine (SERNANP) ● Head of Huascarán National Park (SERNANP) ● Huascarán National Park Specialist (SERNANP)
South	09/06/23 and 23/06/23	● Jorge Ramos ● Jessica Moron ● Jaime Valenzuela ● Mily Sanchez ● Cesar Camacho	● Head of the Historic Sanctuary of Machupicchu (SERNANP) ● Specialist of the Historic Sanctuary of Machupicchu (SERNANP) ● Head of Ampay National Sanctuary (SERNANP) ● Ampay National Sanctuary Specialist (SERNANP) ● Ampay National Sanctuary Specialist (SERNANP)

Interviews with protected area specialists (virtual and face-to-face)

Name	Gender	Institution	Geographical area	Interview date
Carolina Guevara Molina	Female	SERNANP	North Mosaic: Tabaconas Namballe National Sanctuary	15/06/23
Katty Carrillo	Female	Nature and Culture International	North Mosaic	17/06/23 and 19/06/23
Auner Medina	Male			
Vidal Rondan	Male	The Mountain Institute Perú – Project Coordinator	Mosaic Center	06/06/23 and 15/06/23
Elvert Puse	Male	SERNANP	Mosaic Center: Huascarán National Park	13/06/23
Fredy Abraham Abanto Terrones	Male		Mosaic Center: Calipuy National Reserve	14/06/23
Elberth Zavaleta Zavaleta	Male		Mosaic Center: Calipuy National Sanctuary	12/06/23
Jaime Valenzuela	Male		South Mosaic: Ampay National Sanctuary	13/06/23
Jorge Ramos	Male		South Mosaic: Machupicchu Historic Sanctuary	26/06/23
Emilene Vizcarra	Female			
Israel Aragon	Male	Regional Government of Cusco	South Mosaic: Choquequirao Regional Conservation Area	07/07/23

Interviews with community leaders (face-to-face)

Name	Gender	Leadership time	Organization and position	Geographical area	Interview date
Samuel Jimenez Velasco	male	4 years as Lieutenant Governor	Lieutenant Governor of the Caserío Pueblo Libre	North Mosaic	29/06/2023
Jose Maria Zurita Moreto	male	11 years	Communal vigilance Caserío Pueblo libre	North Mosaic	29/06/2023
Bartolo Zurita Renteria	male	1 year		North Mosaic	29/06/2023
Jose Pintado Granda	male	2 years	President of the Vigilance Committee of Pueblo Libre	North Mosaic	29/06/2023
Alfredo Guerrero Huaman	male		Chair of the ACR Committee	North Mosaic	29/06/2023
Jesus Aponte Morales	male	5 years		North Mosaic	29/06/2023
Rosa Maria Adrianzen Jimenez	female	Does not hold office	Does not hold office Leader of the Pueblo Libre	North Mosaic	29/06/2023
Diana Renteria Jimenez	female	1 year	Round base of the hamlet Pueblo Libre	North Mosaic	29/06/2023
Mirian Esperanza Flores Granda	female	28 years village leader	Does not hold office	North Mosaic	29/06/2023
Eulalia Pozo Ramos	female		Former leader Caserío Pueblo Libre	North Mosaic	29/06/2023
Felipe Ojeda Cruz	Male	1 year and a half	Municipal Agent of Tayapampa	North Mosaic	04/07/23
Jose Santos Garcia Calderon	Male	1 year as lieutenant governor, 30 years of experience as a leader in different positions	Lieutenant Governor of Caserío Comenderos Alto	North Mosaic	04/07/23
Hilario Roja Guerrero	Male	4 years as community president and 20 years as leader	President of the “Segundo y Cajas” peasant community	North Mosaic	02/07/23
Marcelino Rivera Neira	Male	4 years	Head of the Management Committee of Chicuate Chinguelas Private Conservation Area Caserío Cajas el Alumbre	North Mosaic	04/07/23
Ana Yulexcy Chanta Ojeda	Female	2 years	President of the “Glass of Milk” Committee of Tayapampa	North Mosaic	04/07/23
Florian Huaman Peers	Male	2 years	President – Sanitation Administrative Board	Mosaic Center: CNS	06/07/23
Percy Miguel Fernandez	Male	2 years	Secretary – Sanitation Administrative Board	Mosaic Center: CNS	6/07/23
Joel Coronel Infantes	Male	1 year	Lieutenant Governor	Mosaic Center: CNS	6/07/23
Yolsi Velasquez Vasquez	Male	3 years (re-elected)	Municipal Agent – C.P. The Zaile	Mosaic Center: CNS	5/07/23

Name	Gender	Leadership time	Organization and position	Geographical area	Interview date
Francisco Mozo Rodriguez	Male	2 years as president (no definite cessation date)	President – Vigilance Committee belonging to the Committee of Users of Natural Pastures of Cusipampa	Mosaic Center: RNC	7/06/23
Modesta Rodriguez Alcantara	Female	2 years	Treasurer – Vigilance Committee belonging to the Committee of Users of Natural Pastures of Munchugo	Mosaic Center: RNC	7/06/23
Santos Rodriguez Enriquez	Male	2 years	Secretary – Vigilance Committee belonging to the Committee of Users of Natural Pastures of Munchugo	Mosaic Center: RNC	7/06/23
Domitila Vasquez Tolentino	Female	2 years	President – Association of Artisan Woman "Valuing my biodiversity"	Mosaic Center: RNC	8/06/23
Norma Pedraza Palomino	Female	2 years as president (no definite cessation date)	President - Association of agricultural producers of Chupapata (Breeding of guinea pigs and vegetables)	South mosaic: SNA	23/06/23
Florentino Garcia Serrano	Male	2 years as president (ceases in August 2023)	President – Chupapata Peasant Community	South mosaic: SNA	23/06/23
Jose Gonzales Aymara	Male	2 years (no definite cessation date)	Lieutenant Governor - Umaccata	South mosaic: SNA	23/06/23
Cristina Huaylla Carbajal	Female	8 years (no definite cessation date)	President – Umaccata Representative of the Federation of Women of Apurimac (zone 3)	South mosaic: SNA	23/06/23
Santiago Cruz Huillca	Male	Recently re-elected (resignation in 2025)	President of the Umaccata Irrigators Committee	South mosaic: SNA	23/06/23
Victor Arredondo Palomino	Male	2 years (no definite cessation date)	Ccorhuani Irrigation Users Board	South mosaic: SNA	24/06/23
Aurelia Tito	Female	(does not hold office)	Pampacahuana peasant group (Huayllabamba annex)	South mosaic: SHM	27/06/23
Jose Palomino Mendoza	Male	06 months (cessation in 2025)	President of the peasant community of Piscacucho	South mosaic: SHM	28/06/23
Pedro Gordillo Ramos	Male	2 years (no definite cessation date)	President of the Experiential Tourism Association	South mosaic: SHM	28/06/23

Participants in workshops with the local population (face-to-face).

Mosaic and Protected Area	Sector / Settlement	Number of men	Number of women	Date	Feedback
North Mosaic – Tabaconas National Sanctuary – Namballe / ACR El Chaupe	Pueblo Libre	16	08	29/06/23	Workshop facilitated by NCI[57] and Head of the Tabaconas Namballe National Sanctuary
	Cataluco	09	03	02/07/23	Workshop facilitated by NCI
	Tayapampa	07	11	02/07/23	Workshop facilitated by NCI
North Mosaic – ACP Chicuate Chinguelas	Sapalachian	03	07	30/06/23	Workshop facilitated by NCI
Mosaic Center – Calipuy National Shrine	Auguinate Surveillance Post	04	02	05/07/23	Workshop with SERNANP staff
	Auguinate Surveillance Post	13	03	06/07/23	Workshop facilitated by IM[58]
Mosaico Centro – Calipuy National Reserve	El Quiguir - Monchugo	05	08	07/07/23	Workshop facilitated by IM
	Monchugo	07	01	07/07/23	Workshop facilitated by IM
	The Zaile	06	04	07/07/23	Workshop facilitated by IM
	Cusipampa	22	03	08/07/23	Workshop facilitated by IM
	The Quiguir	13	04	08/07/23	Workshop facilitated by IM
	Llacamate	18	13	08/07/23	Workshop facilitated by IM
Mosaico Centro – Huascarán National Park	Sector Acochacas (Local Yacuywarmi)	10	06	29/06/23	Workshop facilitated by IM
	Sector Acochacas (II.EE. Weconcrococha)	09	26	29/06/23	Workshop facilitated by IM
	Chacas Sector (Jambón Community Premises)	04	10	29/06/23	Workshop facilitated by IM
South Mosaic – Ampay National Shrine	ANS control and surveillance post	03	04	21/06/23	Workshop with SERNANP staff
	Chupapata / Umaccata	15	08	23/06/23	Co-facilitated workshop Helvetas / SERNANP
	Ccorhuani	07	04	24/06/23	Co-facilitated workshop Helvetas / SERNANP
South Mosaic – Machupicchu Historic Sanctuary	Huayllabamba	03	10	27/06/23	Co-facilitated workshop Helvetas / SERNANP
	Piscacucho	04	-	28/06/23	Co-facilitated workshop Helvetas / SERNANP

[57] NCI: Non-Governmental Organization Nature and Culture International Peru

[58] IM: Non-Governmental Organization The Mountain Institute Peru

List of participants of Workshops in Mosaico Norte

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Cataluco Fecha:

Facilitadores/ responsables: Katty Carrio - Zaira Gallardo

Organizaciones a cargo del taller: Nature and Culture International

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
01	Salomon Qunaique qui	X		Comision de regante	
02	Vilma Alvarado melendr		X	〃 〃	
03	Silvestre Armijos Cano	X		〃 〃	
04	Regnalda Julca Chinchay		X	〃 〃	
05	Eradio Zorita Chinchay	X			
06	Walmer Bermeo Jaramillo	X		〃 〃	
07	Victor Zorita Guerrero	X		〃 〃	
08	moises Campos Julca.	X		Comite de Ronda	
09	Fernali Herrera Garcia	X		〃 〃	
10	nestor Chasquero Surita	X		〃 〃	
11	Alejandro Neira Cano	X			
12	Floriselda Julca Campos		X	Comisión regantes	

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Sapalache Fecha: Viernes 30 de junio 2023

Facilitadores/ responsables: Katty Carrillo - Zaira Gallardo

Organizaciones a cargo del taller: Nature and Culture International

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
01	Yanet García Cruz		X	Asoc. La Sapalacheña	
02	Petronila Neira Ibañez		X	Asoc La Sapalacheña	
03	Carmen Victoria Altamirano Torres		X	Asoc La Sapalacheña	
04	Verderiz Velasco Chanta		X	Asc La Sapalacheña	
05	Ahdibami Velasco chanta		X	Club de Madres PVL	
06	Ana Maria Guerrero Torres		X	Asc ADMUCAF	
07	Artidoro Zurita Peña	X		Asecon Romero Pingula	
08	David Togas Julca	X			
09	Jose Herman Velasco Neira	X		Presidente de Ronda C.U.D.R.C.D.C.A.S.	
10	Alfonso Adrianzen Peña	X		Asociación de Ronderos Comando de los Frontera	
11	Angie Melendres Velasco		X		

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Pueblo Libre — Fecha: 29 de junio del 2023

Facilitadores/ responsables: Auner Medina Rafael y apoyo

Organizaciones a cargo del taller: NCI (Naturaleza y Cultura Internacional)

N°	Nombre y Apellidos	Sexo: Hombre	Sexo: Mujer	Organización / Comité	Firma
1	Jesus Maria Herrera Peña		x	No pertenece a una asociación	[huella]
2	Nasario Montalvan Garcia	x		Cooperativa 322	
3	Evelio Lozada Ocupa	x		No pertenece alguna asociación	[illegible]
4	Eulalia Pozo Ramos		x	ACR - SERNANP	[illegible]
5	Miriam Esperanza Flores Granda		x	ACR - Organización de cafés	[illegible]
6	Edita Cardoso Larrategui		x	ACR - SERNANP	[illegible]
7	Diana Renteria Jimenez		x	No pertenece a una asociación	[illegible]
8	Rosa Maria Adrianzen Jimenez		x	ACR - SERNANP	[illegible]
9	Jose Pintado Granda	x		ACR - Agro Rural	[illegible]
10	Jose Bartolo Zurita Renteria	x		ACR - SERNANP	Jose DZR
11	Fernando Cordova Garcia	x		Gallito de las Rocas	[illegible]
12	Jesus Aponte Morales	x		ACR - SERNANP	[illegible]
13	Jose Maria Zurita Maceto	x		Gallito de las Rocas	[illegible]

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Pueblo Libre — Fecha: 29 de junio del 2023

Facilitadores/ responsables: Auner Medina Rafael y apoyo.

Organizaciones a cargo del taller: NCI (Naturaleza y Cultura Internacional)

N°	Nombre y Apellidos	Sexo: Hombre	Sexo: Mujer	Organización / Comité	Firma
14	Samuel Jimenez Velasco	x		ACR - SNTN	SJV
15	Enrique Flores Granda	x		ACR - Cooperativa 323	[illegible]
16	Alexander Ramirez Mesones	x		SERNANP - SNTN	[illegible]
17	Jolver Pintado Flores	x		Teniente gobernador del caserío	[illegible]
18	Alfredo Guerrero Huaman	x		ACR - SNTN	[illegible]

List of participants of Workshops at Mosaico Centro

HELVETAS PERU — *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Puesto de control Auganate — Fecha: 05.07.23

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre, Leysi Huayanca

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
1	Elbert Lovaton Zavaleta	X		S.N. Calipuy - SERNANP	
2	Ovier Vasquez Tarrales	X		Guardaparque / SNCA.	
3	IRIS ELENA REGAZA CASTILLO		X	Guardaparque / SNCA	
4	Ivan Melgarejo Layza	X		SN. Calipuy – SERNANP	
5	Reiner Sánchez Torres	X		Guardaparque / SNCA	
6	Claire Bernard		X	Guardaparque voluntaria / SNCA	

HELVETAS PERU — *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Puesto de Control Auganate — Fecha: 06.07.23

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre, Leysi Huayanca

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
01	Antony Seampers Chavez Contreras	X		SNCA / Gdp. V.	
02	Vejarano Bocanegra Leysi Talia		X	el Molle	
03	Eugenio E. Vásquez Rodriguez	X		Callayquida Baja	
04	IRIS ELENA REGAZA CASTILLO		X	SNCA Guardaparque	
05	Ivan Melgarejo Layza	X		SNCA / Especialista	
06	Dayi Rojel Chavez	X		SNCA / Guardaparque	
07	Ovier Vásquez Tarrales	X		SNCA / Guardaparque	
08	Claire Bernard		X	SNCA / Gdp. V.	
09	Reiner Sánchez Torres	X		SNCA / GP.	
10	Omar Paulos Castañadoi	X		SNCA / GP.	
11	Domingo Vásquez Rodrigo	X		SNCA	
12	Wilson Bustamante -	X		El Faile.	
13	Dante Vasquez Talentino	X		El Quiguir	

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: El Quiquir - Munchugo Fecha: 07/06/2023

Facilitadores/ responsables: Vidal Rondon, Kiara Aguirre, Leysi Huayanca

Organizaciones a cargo del taller: Institutu Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
	Paredes María		X	El Quiquir	
	Merdedes Ibañes		X	El Quiquir	
	Sanita Ernesta Jaico Vazquez		X	El Quiquir	
	Francisca Moya Rodriguez	X		CV. Cusipampa - RMC	
	Paula Juviza Pereda Vasquez		X	CU. Cusipampa - RMC	
	Juan Manfilo Espileta Sanchez	X		CV. Munchugo	
	Audencio Rubiños Rodriguez Alcantara	X		CV. Munchugo	
	Wilder Espileta Pereda	X		CU. Cusipampa	
	Enriques Rodriguez Santos	X		CV. Munchugo	
	Jovita Aguilar Vásquez		X	CV. Munchugo	
	Meliza de la cruz enriquez		X	CV. Munchugo	
	Flor Enriquez ROJAS		X	CV. Munchugo	
	María Rodríguez Russo		X	CV. Munchugo	

HELVETAS PERU — *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Monchugo Fecha: 07/07/2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre, Leysi Huayanca

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
01	Pedro Paulino Enriquez Benites	X		C.V. Monchugo	
02	Enrique Espeleta Sánchez	X		C.V. Monchugo	
03	Andrés Enriquez Rodriguez	X		C.V. Monchugo	
04	Gregorio Enriquez Rodriguez	X		C.V. Monchugo	
	Yleysi Espeleta Espeleta		X	CV. Monchugo	
	Eusebio Mateus Soto	X		SERNANP/RNC	
	Bimer Vasquez Paredes	X		SERNANP/RNC	
	[illegible]	X		[illegible]	

HELVETAS PERU — *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: EL ZAILE Fecha: 07/07/2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre, Leysi Huayanca

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
01	FIORELA YAMELI GONZALES J.		X	CV-ZAILE - RNC	
02	ANA MELBA IBAÑEZ R.		X	CV. ZAILE - RNC	
03	SANTOS VASQUEZ P.		X	CV. ZAILE - RNC	
04	ZOILA CLORILDE VELASQUEZ		X	CV. ZAILE - RNC	
05	DELACRUZ IBAÑEZ JUAN	X		CV ZAILE - RNC	
06	VIDAL VASQUEZ JOSE	X		CV ZAILE - RNC	
07	PASCUAL VELASQUEZ MARTIN	X		CV ZAILE - RNC	
08	WILDER VIDAL VASQUEZ	X		CV. Zaile - RNC	
09	CARLOS AGUILAR IVAÑEZ	X		CV. Zaila - RNC	
10	HILDER VASQUEZ FERNANDEZ	X		CV. El Guaigin - RNC	
11					
12					
13					

HELVETAS PERU

Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Caserío de Cusipampa Fecha: 08/09/2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre, Leysi Mayanca.

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
14	Santos Rodriguez Enriquez	H		Munchuz	[illegible]
15	Jorge Tolentino Quispe	H		Cusipampa	[illegible]
16	Walter Rodrigez Miguel	H		Cusipampa.	[illegible]
17	Santos Veluegas Dabila.	H		Cusipampa	[illegible]
18	Francisco Rodriguez Miguel.	H		Cusipampa.	[illegible]
19	[illegible] Mozo	H.		Cusipampa	[illegible]
20	Martinez Miguel Rosso	H		Cusipampa	[illegible]
21	Juan Miguel Tolentino	H		Cusipampa	[illegible]
22	Emiliano Mateo Sopla	H		RNC/SERNANP.	[illegible]
23	[illegible] Vasquez Paredes	H		SERNANP/ RNC	[illegible]
24	Vilmer Baranzen Cuevera	H		RNC /SERNANP	[illegible]
25	Amaro Benites Castillo	H		RNC/ SERNANP	[illegible]
26	FREDY ROBAZIP TERRONES	H		RNC - SERNANP	[illegible]

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Caserío de Cusipampa Fecha: 08/07/2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre, Leysi Huayanca.

Organizaciones a cargo del taller: Instituto Andino de montaña

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
1	Pedro Paulino Enriquez Benites	H		Munchugo	[firma]
2	Pablo Espeleta Rojas	H		Cusipampa	[firma]
3	Jovita Aguilar Vasquez		M	Munchugo	[firma]
4	Yulesi Espeleta Espeleta		M	Munchugo	[firma]
5	Maria Rodriguez Rosso		M	Munchugo	[firma]
6	Avelino Rubiños Rodriguez A.	H		Munchugo	[firma]
7	Catalina Garcia Paredes	H		Cusipampa	[firma]
8	Andres Enriquez Rodriguez	H		Munchugo	[firma]
9	Wilder Agapito Espeleta Pereda			cusipampa	[firma]
10	Enrique [illegible] Espeleta Sanchez	H		munchugo	[firma]
11	José Rodriguez Jaúo	H		Cusipampa	[firma]
12	Juan Espeleta Sanchez			Monchugo	[firma]
13	Carlos Felipe Mego	H		Cusipampa	[firma]
	Flora Pereda Quispe	F		Llacamate	[firma]

NOM
Catal
Rosa
Leoni
Franc
Polon
Rodri
Andr
AN
Allen
Arse
Pered
Garci
OMA
Mich
Ghia
Jesu
Jafu
Mariel
Abel

Beder Huaman Horna	HOMBRE	C.V. El Quiguir	[firma]
Hilder Vasquez Fernandez	HOMBRE	C.V. El Quiguir	[firma]
Eber Vasquez Tapia	HOMBRE	C.V. El Quiguir	[firma]
Nison Vasquez Garcia	HOMBRE	C.V. El Quiguir	[firma]

HELVETAS PERU *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Centro Poblado Jumbón – Chacas Fecha: 29/06/2023

Facilitadores/ responsables: Vidal Rondán, Kiara Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
01	Teodora Paola Gargate		X	CUPN- Pelaca	
02	Fernanda Lobo Blas		X	CUPN- Pelaca	
03	Ines Carbajal de Paola		X	Comunidad	
04	Rocio Asencios Salvatierra		X	CUPN - Pelaca	
05	Rubina Salas Mascco		X	Comunidad	
06	Yole Garcia Espinoza		X	Comunidad	
07	Juana Julia Huerta Cerda		X	CUPN- Pelaca	
08	Adela Blas Zegarra		X	CUPN - Pelaca	
09	Apolinario Cruz Silva	X		CUPN - Pelaca, vocal	
10	Pablo León Blas	X		CUPN - Pelaca	
11	Juan Aguirre Sanchez	X		CUPN - Pelaca, tesorero	
12	Victor Antonio Flores Bravo	X		CUPN - Pelaca	
13	Karina Esperanza Milla		X	CUPN-Pelaca	

HELVETAS PERU *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Centro Poblado Jumbón – Chacas Fecha: 29/06/2023

Facilitadores/ responsables: Vidal Rondán, Kiara Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
14	Jacinta Salas Milla		X	CUPN - Pelaca	

HELVETAS PERU *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Caserío Yanuyhuarmi – CC.PP Warmicocha – Acochaca Fecha: 29 de junio 2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
1	Victor Colonio Luna	x		CUP CAJAVILCA	
2	Fidencio Julka Valeriano	x		CUP Catabikoor	
3	Alicia Silva Melgarejo		x	CUP Cajavilca	
4	Gabriela Mariya Gonzales		x	CUP Cajavilca	
5	Guillermo Silva Cerna		x	Comunidad Campesina Warmicocha	
6	Warmi Martha Obregon Dolan		x	Comunidad Campesina Warmicocha	
7	Celia Paulina Gonzales Huaman		x	Comunidad Campesina Warmicocha	
8	Maria Silva Vieya		x	CUP Cajavilca	
9	Tafur Huaman Manuela		x	Comunidad Campesina Warmicocha	
10	Marisol Silva Laurenano		x	Comunidad Campesina Warmicocha	
11	Sara Colonio Luna		x	Comunidad Campesina Warmicocha	
12	Lucila Hortega Espinoza		x	Comunidad Campesina Warmicocha	
13	Anali Colonio Luna		x	Comunidad Campesina Warmicocha	

HELVETAS PERU *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Caserío Yanuyhuarmi – CC.PP. Warmicocha – Acochaca Fecha: 29/06/2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
14	Miriam Luna Valencia		x	Comunidad Campesina Warmicocha	
15	Nanuita colonio luna		x	Comunidad campesina warmicocha	
16	Dina luna lopez		x	Comunidad campesina warmicocha	
17	Cesar Ramirez Domingo		x	Comunidad campesina warmicocha	
18	Humberto Luna Tafur	x		CC. Warmicocha	
19	Felix Colonio Luna	x		CC. Warmicocha	
20	Cerapina Tafur Luna		x	CC. Warmicocha	
21	Sonia Laurenano Luna		x	CC. Warmicocha	
22	Esteban Huaman Laurenano	x		CUP Cajavilca	
23	Juan Silva Melgarejo	x		CUP. Cajavilca	
24	Rodolfo Luna Tafur	x		Comb. Warmicocha	

HELVETAS PERU — *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Caserío Yanahuarmi - CCPP Wecrococha - Acochaca Fecha: 29/06/2023

Facilitadores/ responsables: Vidal Rondan, Kiluia Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
25	Delicia Rosario Espinoza		x	CUPN-Cajavilca	[firma]
26	Efrain Rosario Huaman	x		CUPN-Cajavilca	[firma]
27	Mario Rigoberto Rosario	x		CUPN-Cajavilca	[firma]
28	Pamela Huaman Obregon		x	Comunidad	[firma]
29	Victoria Obregon Tafur		x	CUPN-Cajavilca	
30	Olimpia Agüedo Laveriano		x	CUPN-Cajavilca	[firma]
31	Axela Luna Tafur		x	CUPN-Cajavilca	[firma]
32	Marta Carrión Obregon		x	Comunidad	[firma]
33	Delfina Luna Tafur		x	Comunidad	[firma]
34	Ilana Huaman Durán		x	Comunidad	[firma]
35	Magna Silva Laveriano		x	Comunidad	[firma]

HELVETAS PERU — *Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú"* — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Centro Poblado Wecrococha - Acochaca Fecha: 29/06/2023

Facilitadores/ responsables: Vidal Rondan, Kiluia Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
01	Miguel Gregorio Laveriano Justiniano	x		Colegio Maestro Divino	[firma]
02	Kelly Bertha Obregon Gonzales		x	"	[firma]
03	Yonel Yemer Huaman Silva	x		"	[firma]
04	Gladis Melissa Solorzano Agustin		x	"	[firma]
05	Dan Laveriano Cerna	x		"	[firma]
06	Antony Huaman Cabrita	x		"	[firma]
07	Monica Silva Huaman Obregon		x	"	[firma]
08	Eugenio Laveriano Saavedra	x		CUP. Ruricocha	[firma]
09	Teodorcio Laveriano Campomanes	x		CUP. Ruricocha	S.F.
10	Rafael Laveriano Saavedra	x		CUP. Ruricocha	[firma]
11	Juan Obregon Tafur	x		CUP. Ruricocha	[firma]
12	Juan Laveriano Saavedra	x		CUP. Ruricocha	[firma]
13	Edwin Arellan Manrique	x		CUP. Ruricocha	[firma]

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Centro Poblado Wecroncocha - Acochaca   Fecha: 29/06/2023

Facilitadores/ responsables: Vidal Rondan, Kiara Aguirre

Organizaciones a cargo del taller: Instituto Andino de Montaña

N°	Nombre y Apellidos	Sexo: Hombre	Sexo: Mujer	Organización / Comité	Firma
14	Eugenia Cerna Saavedra		x	CUP. Cajanitca	
15	Mayra Cerna Saavedra		x	CUP. Runicocha	
16	Rosa Loreliana Saavedra		x	CUP. Runicocha	S.F

List of participants of Workshops in Mosaico Sur

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Puesto de Control Cinturón - SN Ampay   Fecha: 21/06/23

Facilitadores/ responsables: Natalia Ruiz-Giraldo

Organizaciones a cargo del taller: Helvetas Perú / SERNANP

N°	Nombre y Apellidos	Sexo: Hombre	Sexo: Mujer	Organización / Comité	Firma
	Constantino [illegible]	X		SNA SERNANP Guardaparque	
	Graciela Hilario Arena		X	S.N.A - SERNANP - Guardaparque	
	Rubén Domínguez Ramos	X		SN Ampay SERNANP GP	
	[illegible] Cahuana Inca		X	SN Ampay Guardaparque Voluntario	
	Erika Carbonelli Solís		X	SN - AMPAY Guardaparque Voluntario	
	César Caminha Huamani	X		S.N.A	
	Mily Jelke Sánchez Cahuana		X	SNA - SERNANP	

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Piscacucho – Santuario Histórico Machupicchu Fecha: 23/06/23

Facilitadores/ responsables: Natalia Ruiz-Guevara / Luis Acosta / Emilene Vizcarra / Jorge Ramos

Organizaciones a cargo del taller: Helvetas Perú / SERNANP – SHM

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
1	Camilo Gallegos Courtgman	X		Comunero	
2	Baltazar Huaypa Cuadros	X		Comunero	
3	Pedro Gonzalo Ramos	X		Presidente Asociación Saloquito / Establecimiento	
4	José Valentino Mendoza	X		Presidente Comunidad Campesina Piscacucho	

[illegible]

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Wayllabamba / Santuario Histórico Machupicchu Fecha: 27/06/23

Facilitadores/ responsables: Natalia Ruiz-Guevara / Luis Acosta / Emilene Vizcarra / Jorge Ramos

Organizaciones a cargo del taller: Helvetas Perú / SERNANP – Santuario Histórico Machupicchu.

N°	Nombre y Apellidos	Sexo		Organización / Comité	Firma
		Hombre	Mujer		
1	Casiano Herrera Sequeiro	X		Comunero	
2	Moisés Arao Huamán	X		Comunero	
3	Wilfredo Alarcón Dávalos	X		Comunero	
4	Casiana Alarcón Escobedo		X	Comunera.	
5	Marlene Herrera Huamán		X	Comunera	
6	Geovanna Justiniani Alarcón		X	Comunera	
7	Liliana Saico Zúñiga		X	Vaso de leche – Presidenta	
8	Lourdes Huillca Huaman		X	Comunera	
9	Jimena Alarcón Ayala		X	Comunera	
10	Janet Saico Cortez		X	Comunera	
11	Abraham Huaman Rojo		X	Comunero	
12	Aurelia Tito Huaman		X	Comunera – Pampacahuana	
13	Rosmila Alarcón Dávalos		X	Comunera	

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Chupapata / Humaccata   Fecha: 23/06/2023

Facilitadores/ responsables: Natalia Ruiz-Guevara / Mily Sanchez / César Cornejo

Organizaciones a cargo del taller: Helvetas / SERNANP – Ampay

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
1	Benita Camacho Vargas		X	Ñacchero	[illegible]
2	Rosa [illegible] Velarde Salas		X	Chupapata	[illegible]
3	[illegible] Avalos		X	Umaccata	[illegible]
4	Juan Hugo Huaylla	X		Ñaccchero	[illegible]
5	Victoria Mansilla Carbajal		X	Umaccata	[illegible]
6	Cristina Huaylla Carbajal		X	Umaccata	[illegible]
7	Paulina Challco Valcarcel		X	Umaccata	[illegible]
8	Faustina Gonzales Ayamarca		X	Umaccata	[illegible]
9	Aurelio Huaylla Rojas	X		Chupapata	[illegible]
10	Juan Gonzales Ayamarca	X		Umaccata	[illegible]
11	Aurelio Gutierrez Ayamarca	X		Umaccata	[illegible]
12	Germán Silvera Huaylla	X		Umaccata	[illegible]
13	Samuel Salas Silvera	X		Umaccata	[illegible]

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Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Humaccata – Chupapata (Rosario Sur)   Fecha: 23/06/23

Facilitadores/ responsables: Natalia Ruiz-Guevara / Mily Yell Sánchez / César Cornejo

Organizaciones a cargo del taller: Helvetas / SERNANP – SUA

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
14	Gustavo Mendoza Camacho	X		Umaccata	[illegible]
15	Juan Salas Silvera	X		Umaccata – Chupapata	[illegible]
16	Florentino García Sirreno	X		Chupapata	[illegible]
17	Daniel Chipa Ramos	X		Umaccata	[illegible]
18	Santiago Cruz Huillca	X		Umaccata	[illegible]
19	Luis Taliclo Peña	X		Umaccata	[illegible]
20	Ernesto Guevara Pedraza	X		Chupapata	[illegible]
21	Florentino Zevallos Carrialla	X		Ñacchero	[illegible]
22	Bonifacio Salas Silvera	X		Chupapata	[illegible]
23	Norma Pedraza Palomino		X	Umaccata	[illegible]

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Ccolcuani Fecha: 24/06/23

Facilitadores/ responsables: Natalia Ruiz Guevara / Jaime Valenzuela / César Carrasco

Organizaciones a cargo del taller: Helvetas Perú / SERNANP – SNA

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
	Ninora Huillcahua Barreto		X	Ccolcuani	
	Vilma Silva Zuniga		X	Ccolcuani	
	Gladys Saavedra Flores		X	Ccolcuani	
	Carlos Feliciano Ramos Arce	X		Pte Riego Ccolcuani	
	Isaac Huayllo Cebrquen	X		Ccolcuani	
	Catalina Puma Rosa		X	Ccolcuani – Junta	
	Paulino Llerena Arredondo	X		JASS Ccolcuani	
	David Zevallos Vidal	X		Ccolcuani	
	Feliciano Arredondo Rivas	X		Vice Pte Junta Riego Ccolcuani	
	Jire Arredondo Palomino	X		Ccolcuani	
	Crisito Chura Quispe	X		Ccolcuani	

HELVETAS PERU — Proceso de consulta y elaboración de la Propuesta de Proyecto "Construyendo un programa para la adaptación y resiliencia al cambio climático de los ecosistemas y poblaciones andinas en Perú" — Profonanpe

Taller de Diagnóstico y Consulta – Lista de Asistencia

Centro poblado/ Localidad: Oficinas SERNANP – Cusco Fecha: 26/06/23

Facilitadores/ responsables: Natalia Ruiz-Guevara / Luis Acosta

Organizaciones a cargo del taller: Helvetas – SERNANP

N°	Nombre y Apellidos	Sexo Hombre	Sexo Mujer	Organización / Comité	Firma
1	Jorge Luis Ramos Chique	X		SERNANP – SHM	
2	Emilene Vizcarra Nuñez		X	SERNANP – SHM	
3	Natalia Ruiz-Guevara		X	SERNANP – SHM	
4	Luis A. Acosta J.	X		Consultor Helvetas	

ANNEX 2: Settlements and/or Peasant Communities and approximate population in prioritized sites

North Mosaic

Protected Area	Sectors Prioritized	Populated Centers and approximate population	Relevant organisations and authorities
Namballe Tabaconas National Sanctuary (SNTN)	Pueblo Libre Sector (east, SNTN border with El Chaupe, Cunia and Chinchiquilla Regional Conservation Area)	Pueblo Libre (*116 families, 18 of which live inside the sanctuary*).	- Lieutenant governors, presidents of peasant patrols, water boards, glass of milk committees - 02 coffee associations "Gallito de las rocas" and "Cuenca del Río Blanco"
	Cataluco sector (west of SNTN)	Cataluco (*130 families*) Tayapampa (*70 families*) Comenderos Altos (*90 families /400 people*)	- Lieutenant governors, agent, president of Vigilance Committee, irrigation gruop, club of mothers. - There are no associations
ACP Chicuate Chinguelas	Chinguelas sector (border with the SNTN)	Sapalachian (*519 families*)	- Management Committee of the ACP Chicuate Chinguelas - Sapalachee Cattlemen's Association - Pulun Cattlemen's Association - Vigilance Committee - Lieutenant Governor, Water Boards - El Carmen de la Frontera District Women's Association (ADMUCAF) - Association of Entrepreneurs “La Sapalacheña” - “Virgen del Carmen” Mothers Club

Mosaic Center

Protected Area	Prioritized Sectors	Settlements and approximate population	Relevant organisations and authorities
Calipuy National Sanctuary (SNC)	Southern Sector of the Buffer Zone	Settlements: El Molle, Collayguida baja, El Quiguir, Cusipampa and Cachubamba. *El Zaile and Monchugo also have a link of organization and direct alliance with the leadership of the Sanctuary.* The approximate total population: 1401 people	- Administrative Boards of Service and Sanitation (JASS) of the Settlements El Molle, Collayguida baja, El Quiguir, Cusipampa and El Zaile - Irrigation Committees of the JASS and Pushabara – La Lamball - Woman Association of Artisans and Weavers of the Settlements of El Quiguir, Monchugo and Cusipampa. - Municipality of the Minor Populated Center of Calipuy - District Municipality of Chao and Santiago de Chuco - Provincial Municipality of Santiago de Chuco y Virú - Regional Government of La Libertad (Environment Management and GERCETUR).
Calipuy National Reserve	*Cutting Sector*	Cusipampa and Monchugo (coincide with the CNS) *Total approximate*	

Protected Area	Prioritized Sectors	Settlements and approximate population	Relevant organisations and authorities
		population: 725	- 5 vigilance committees and committees of pasture users and irrigators (Cusipampa, Munchugo, El Quiguir, El Zaile, Llacamate, Calipuy and Chagabal) - Associations of Agricultural Producers (potatoes and guinea pigs)
	Coal Sector	El Quiguir, El Zaile and Llacamate (the first two coincide with CNS) *Total population: 391 people*	
Huascarán National Park	Sector Chacas	Huallin (approximately 250 inhabitants). Jambón (57 inhabitants).	- Potaca Pasture Users Committee (47 users). - Administrative Board of Drinking Water Services (JASS) and Irrigators Committee (Potaca – Jambón) - Raymondi peasant community. - Head of Huascarán National Park. - Provincial Municipality of Asunción. - Lieutenant Governor of Jambón - Religious Congregation Mato Grosso
	Sector Acochacas	Wecroncocha (approximate population of 189 inhabitants). Paccha (91 inhabitants). Yacuyhuarmi (79 inhabitants). Sapcha (254 inhabitants).	- Committee of Users of Pastures of Cajavilca (30 users). - Ruricocha Pasture Users Committee (49 users). - Ruripaccha Pasture Users Committee (31 users). - Raymondi peasant community. - Provincial Municipality of Asunción.

South Mosaic

Protected Area	Sectors Prioritized	Settlements and approximate population	Relevant organisations and authorities and #de associated families
Ampay National Shrine	Chupapata/Umaccata sector. *Polygon of 859 hectares of intervention area of the Project (priority areas affected by forest fires and surroundings of q'ochas)*	Peasant Community Chupapata (*30 registered families and 50 families*) Settlement Umaccata (*65 families)*	- Chupapata Communal Assembly - Assembly of the population center of Umaccata - Irrigation Board of Chupapata and Umaccata (*51 users*) - Administrative Boards of Service and Sanitation (JASS) - Association of agricultural producers of Chupapata (*18 families*) - Federation of Women of Apurimac
	Sector Ccorhuani *Polygon of 320 hectares of intervention area of the Project (priority areas affected by forest fires and surroundings of q'ochas)*	Settlement Ccorhuani (*78 families*)	- Irrigation board (*56 families*) - Administrative Boards of Service and Sanitation (JASS) - Development Committee - Lieutenant Governor of the town
Machupicchu Historic Sanctuary	Sector Piscacucho *445 hectares prioritized*	Peasant community of Piscacucho (*87 families*)	- Communal Assembly - Reforestation Committee - Producers' association

Protected Area	Sectors Prioritized	Settlements and approximate population	Relevant organisations and authorities and #de associated families
	by the community for afforestation and 60 hectares for agricultural use		- Association of artisans - 03 Irrigation Committees (Piscacucho, Chaco and Inca Canal)
	Sector Huayllabamba	Huayllabama peasant group (*70 families*) Pampacahuana (7 *families*) Palccay (5 *families*)	- Assembly of the peasant group
Choquequirao Regional Conservation Area	Sector Santa Teresa	Settlement Yanama, Totora and Ccolccapampa (80 families approx)[59]	- Alto Salcantay Cooperative

[59] It was not possible to consult with the population in the sector prioritized in the Choquequirao ACR, since the management of the area has not yet been implemented by the Regional Government of Cusco and does not have a Headquarters that articulates initiatives with the population. Therefore, it was only possible to delimit those sectors and population centers with which the Regional Government has begun the dialogue, there is a significant level of organization (Salcantay Cooperative) and considers it more likely to articulate the Project.

ANNEX 3: Detailed report of consultation and collection of technical information in prioritized sites for the Project "Building a program for adaptation and resilience to climate change of Andean local communities and ecosystems in Peru"

1. ACTIVITIES CARRIED OUT AND PARTICIPANTS

Information was collected through the following procedures:

Targeting workshops:

Four workshops were held, with the objective of identifying the priority sites and communities for the intervention of the Project based on targeting criteria linked to the objectives and components of the Project and generating information for the definition of goals and the determination of the baseline of indicators of the Project. Four targeting criteria were used:

- ***Criterion 1: Areas degraded by different engines:*** forest fires, land use change, advance of agricultural and livestock frontier, advance of urban areas, water deficit, among others.

- ***Criterion 2: Exposure to climate change***: irregular precipitation patterns, temperature increases, increased incidence of frost, others.

- ***Criterion 3: Vulnerability to climate change of population livelihoods:*** decrease in agricultural and livestock productivity, susceptibility to pests and diseases of crops and breeding, decrease in water supply, impact by frost, deterioration of access roads, landslides, alteration of agricultural calendar, among others.

- ***Criterion 4: Expected willingness of the population to implement restoration and conservation practices*** (output 2.1): communities with a history of willingness to enter into conservation agreements, participate in projects for conservation and sustainability.

- ***Criterion 5: Expected willingness of the population to implement population measures in production and value chains*** (component 3): communities or associations of producers with a history of willingness to participate in chain strengthening and sustainability projects.

To carry out the targeting exercise, digital maps, the Geosernanp viewer (https://geo.sernanp.gob.pe/visorsernanp/#) and others provided by SERNANP specialists were used.

In total, 16 people participated (12 men and 4 women). The list of participants is shown below:

Mosaic	Date	Participants	Position
North	12/06/23	• Carolina Guevara Molina • Auner Medina • Katty Carrillo • William Ortiz Herrera • Armando Inga Astete	• Head of the Tabaconas National Sanctuary – Namballe (SERNANP) • Coordinator of the "Andes del Norte" Mosaic of Nature and Culture International Peru (NCI) • Specialist of the Mosaic "Andes del Norte" of Nature and Culture International Peru (NCI) • Head of the Regional Conservation Area El Chaupe (Regional Government of Cajamarca) • Cajamarca Coffee Multi-Stakeholder Platform
Center	07/06/23 and 12/06/23	• Fredy Abanto • Elbert Zavaleta • William Martinez	• Head of Calipuy National Reserve (SERNANP) • Head of Calipuy National Shrine (SERNANP) • Head of Huascarán National Park (SERNANP)

Mosaic	Date	Participants	Position
		● Elvert Puse	● Huascarán National Park Specialist (SERNANP)
South	09/06/23 and 23/06/23	● Jorge Ramos ● Jessica Moron ● Jaime Valenzuela ● Mily Sanchez ● Cesar Camacho	● Head of the Historic Sanctuary of Machupicchu (SERNANP) ● Specialist of the Historic Sanctuary of Machupicchu (SERNANP) ● Head of Ampay National Sanctuary (SERNANP) ● Ampay National Sanctuary Specialist (SERNANP) ● Ampay National Sanctuary Specialist (SERNANP)

In-depth interviews with protected area specialists:

09 interviews were conducted with Headquarters, specialists and allies of each protected area (11 people, 3 women and 8 men). The interviews were intended to collect relevant information for the technical formulation of the Project and identify organized groups relevant to the consultation process (producer associations, women's organizations, youth organizations, others):

Name	Gender	Institution	Geographical area	Interview date
Carolina Guevara Molina	Female	SERNANP	North Mosaic: Tabaconas Namballe National Sanctuary	15/06/23
Katty Carrillo	Female	Nature and Culture International	North Mosaic	17/06/23 and 19/06/23
Auner Medina	Male			
Vidal Rondan	Male	The Mountain Institute Perú – Project Coordinator	Mosaic Center	06/06/23 and 15/06/23
Elvert Puse	Male	SERNANP	Mosaic Center: Huascarán National Park	13/06/23
Fredy Abraham Abanto Terrones	Male		Mosaic Center: Calipuy National Reserve	14/06/23
Elberth Zavaleta Zavaleta	Male		Mosaic Center: Calipuy National Sanctuary	12/06/23
Jaime Valenzuela	Male		South Mosaic: Ampay National Sanctuary	13/06/23
Jorge Ramos	Male		South Mosaic: Machupicchu Historic Sanctuary	26/06/23
Emilene Vizcarra	Female			
Israel Aragon	Male	Regional Government of Cusco	South Mosaic: Choquequirao Regional Conservation Area	07/07/23

Interviews with community leaders:

32 interviews were conducted with leaders of community organizations in each prioritized sector (10 women and 22 men). These interviews fulfilled the objective of validating and deepening information regarding livelihoods and their vulnerability to climate change; validate and deepen information regarding participation, organization, institutionality and aspects of equity and inclusion of women and youth; and collect information on preferences and willingness to engage in conservation activities, and strengthening value chains proposed in the Project. It should be noted that differentiated formats were used for women leaders and male leaders (see formats at the end of this document).

Name	Gender	Leadership time	Organization and position	Geographical area	Interview date
Samuel Jimenez Velasco	male	4 years as Lieutenant Governor	Lieutenant Governor of the Caserío Pueblo Libre	North Mosaic	29/06/2023
Jose Maria Zurita Moreto	male	11 years	Communal vigilance Caserío Pueblo libre	North Mosaic	29/06/2023
Bartolo Zurita Renteria	male	1 year		North Mosaic	29/06/2023
Jose Pintado Granda	male	2 years	President of the Vigilance Committee of Pueblo Libre	North Mosaic	29/06/2023
Alfredo Guerrero Huaman	male		Chair of the ACR Committee	North Mosaic	29/06/2023
Jesus Aponte Morales	male	5 years		North Mosaic	29/06/2023
Rosa Maria Adrianzen Jimenez	female	Does not hold office	Does not hold office Leader of the Pueblo Libre	North Mosaic	29/06/2023
Diana Renteria Jimenez	female	1 year	Round base of the hamlet Pueblo Libre	North Mosaic	29/06/2023
Mirian Esperanza Flores Granda	female	28 years village leader	Does not hold office	North Mosaic	29/06/2023
Eulalia Pozo Ramos	female		Former leader Caserío Pueblo Libre	North Mosaic	29/06/2023
Felipe Ojeda Cruz	Male	1 year and a half	Municipal Agent of Tayapampa	North Mosaic	04/07/23
Jose Santos Garcia Calderon	Male	1 year as lieutenant governor, 30 years of experience as a leader in different positions	Lieutenant Governor of Caserío Comenderos Alto	North Mosaic	04/07/23
Hilario Roja Guerrero	Male	4 years as community president and 20 years as leader	President of the “Segundo y Cajas” peasant community	North Mosaic	02/07/23
Marcelino Rivera Neira	Male	4 years	Head of the Management Committee of Chicuate Chinguelas Private Conservation Area Caserío Cajas el Alumbre	North Mosaic	04/07/23
Ana Yulexcy Chanta Ojeda	Female	2 years	President of the “Glass of Milk” Committee of Tayapampa	North Mosaic	04/07/23
Florian Huaman Peers	Male	2 years	President – Sanitation Administrative Board	Mosaic Center: CNS	06/07/23
Percy Miguel Fernandez	Male	2 years	Secretary – Sanitation Administrative Board	Mosaic Center: CNS	6/07/23
Joel Coronel Infantes	Male	1 year	Lieutenant Governor	Mosaic Center: CNS	6/07/23
Yolsi Velasquez Vasquez	Male	3 years (re-elected)	Municipal Agent – C.P. The Zaile	Mosaic Center: CNS	5/07/23

Name	Gender	Leadership time	Organization and position	Geographical area	Interview date
Francisco Mozo Rodriguez	Male	2 years as president (no definite cessation date)	President – Vigilance Committee belonging to the Committee of Users of Natural Pastures of Cusipampa	Mosaic Center: RNC	7/06/23
Modesta Rodriguez Alcantara	Female	2 years	Treasurer – Vigilance Committee belonging to the Committee of Users of Natural Pastures of Munchugo	Mosaic Center: RNC	7/06/23
Santos Rodriguez Enriquez	Male	2 years	Secretary – Vigilance Committee belonging to the Committee of Users of Natural Pastures of Munchugo	Mosaic Center: RNC	7/06/23
Domitila Vasquez Tolentino	Female	2 years	President – Association of Artisan Woman "Valuing my biodiversity"	Mosaic Center: RNC	8/06/23
Norma Pedraza Palomino	Female	2 years as president (no definite cessation date)	President - Association of agricultural producers of Chupapata (Breeding of guinea pigs and vegetables)	South mosaic: SNA	23/06/23
Florentino Garcia Serrano	Male	2 years as president (ceases in August 2023)	President – Chupapata Peasant Community	South mosaic: SNA	23/06/23
Jose Gonzales Aymara	Male	2 years (no definite cessation date)	Lieutenant Governor - Umaccata	South mosaic: SNA	23/06/23
Cristina Huaylla Carbajal	Female	8 years (no definite cessation date)	President – Umaccata Representative of the Federation of Women of Apurimac (zone 3)	South mosaic: SNA	23/06/23
Santiago Cruz Huillca	Male	Recently re-elected (resignation in 2025)	President of the Umaccata Irrigators Committee	South mosaic: SNA	23/06/23
Victor Arredondo Palomino	Male	2 years (no definite cessation date)	Ccorhuani Irrigation Users Board	South mosaic: SNA	24/06/23
Aurelia Tito	Female	(does not hold office)	Pampacahuana peasant group (Huayllabamba annex)	South mosaic: SHM	27/06/23
Jose Palomino Mendoza	Male	06 months (cessation in 2025)	President of the peasant community of Piscacucho	South mosaic: SHM	28/06/23
Pedro Gordillo Ramos	Male	2 years (no definite cessation date)	President of the Experiential Tourism Association	South mosaic: SHM	28/06/23

Interviews with community leaders in the South Mosaic

Workshops with local population:

Based on the results of the interviews, the type of public and form of priority organization were refined to convene consultation workshops with the population in each mosaic, aimed at families, associations, women's and youth organizations, or others. For all cases, measures were implemented to work in a specialized way with men, women and young people, so that the perceptions of each group are collected. Details of the methodology used at the end of this document.

These workshops had the purpose of collecting information on the preferences and willingness to get involved in the conservation, ecosystem restoration and value chain strengthening activities proposed in the Project; as well as analyzing the differentiated perspective of each population group (men, women, young people, others).

A total of 20 workshops were held with representatives of the population of the prioritized sectors. A total of 313 people attended (135 women and 178 men).

Mosaic and Protected Area	Sector / Settlement	Number of men	Number of women	Date	Feedback
North Mosaic – Tabaconas National Sanctuary – Namballe / ACR El Chaupe	Pueblo Libre	16	08	29/06/23	Workshop facilitated by NCI[60] and Head of the Tabaconas Namballe National Sanctuary
	Cataluco	09	03	02/07/23	Workshop facilitated by NCI
	Tayapampa	07	11	02/07/23	Workshop facilitated by NCI
North Mosaic – ACP Chicuate Chinguelas	Sapalachian	03	07	30/06/23	Workshop facilitated by NCI
Mosaic Center – Calipuy National Shrine	Auguinate Surveillance Post	04	02	05/07/23	Workshop with SERNANP staff
	Auguinate Surveillance Post	13	03	06/07/23	Workshop facilitated by IM[61]
Mosaico Centro – Calipuy National Reserve	El Quiguir - Monchugo	05	08	07/07/23	Workshop facilitated by IM
	Monchugo	07	01	07/07/23	Workshop facilitated by IM
	The Zaile	06	04	07/07/23	Workshop facilitated by IM
	Cusipampa	22	03	08/07/23	Workshop facilitated by IM
	The Quiguir	13	04	08/07/23	Workshop facilitated by IM

[60] NCI: Non-Governmental Organization Nature and Culture International Peru

[61] IM: Non-Governmental Organization The Mountain Institute Peru

Mosaic and Protected Area	Sector / Settlement	Number of men	Number of women	Date	Feedback
	Llacamate	18	13	08/07/23	Workshop facilitated by IM
Mosaico Centro – Huascarán National Park	Sector Acochacas (Local Yacuywarmi)	10	06	29/06/23	Workshop facilitated by IM
	Sector Acochacas (II.EE. Weconcrococha)	09	26	29/06/23	Workshop facilitated by IM
	Chacas Sector (Jambón Community Premises)	04	10	29/06/23	Workshop facilitated by IM
South Mosaic – Ampay National Shrine	ANS control and surveillance post	03	04	21/06/23	Workshop with SERNANP staff
	Chupapata / Umaccata	15	08	23/06/23	Co-facilitated workshop Helvetas / SERNANP
	Ccorhuani	07	04	24/06/23	Co-facilitated workshop Helvetas / SERNANP
South Mosaic – Machupicchu Historic Sanctuary	Huayllabamba	03	10	27/06/23	Co-facilitated workshop Helvetas / SERNANP
	Piscacucho	04	-	28/06/23	Co-facilitated workshop Helvetas / SERNANP

Workshops with population in the North Mosaic

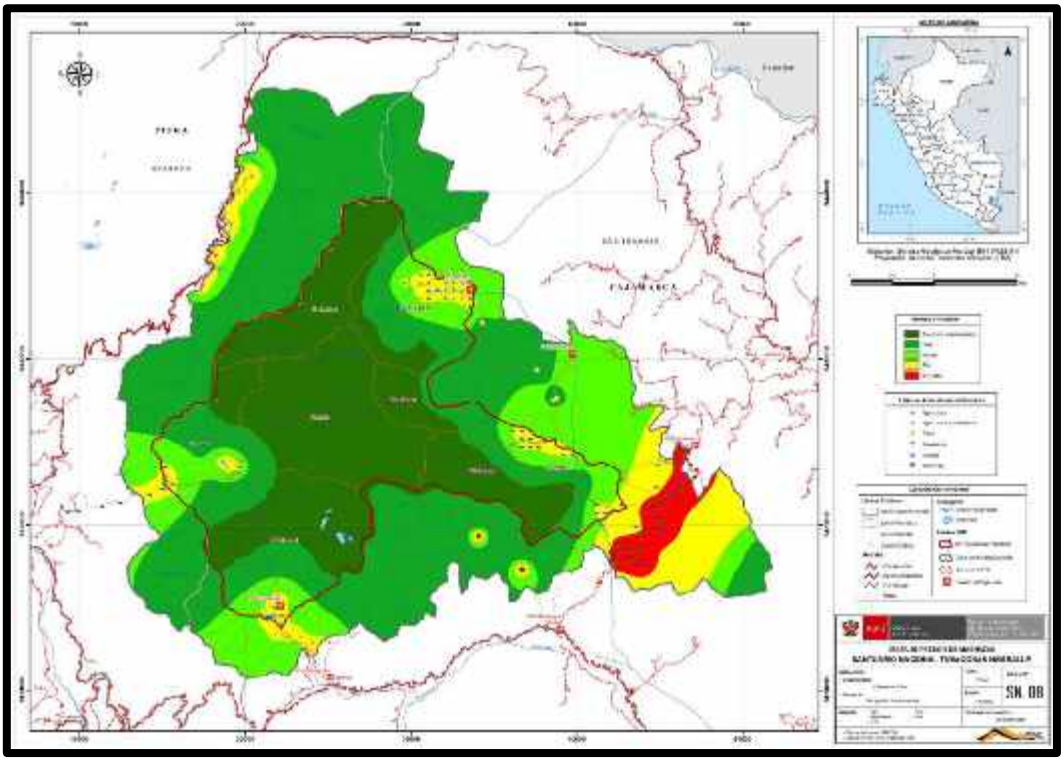
Workshops with population in Center Mosaic

Workshops with population in the South Mosaic

Targeting of prioritized sites and initial characterization

North Mosaic

The prioritization exercise in the Northern Mosaic has considered the pressure map of the Tabaconas Namballe National Sanctuary (SNTN), from which the sites of greatest pressure for anthropogenic activities, located in high Andean ecosystems, have been selected.



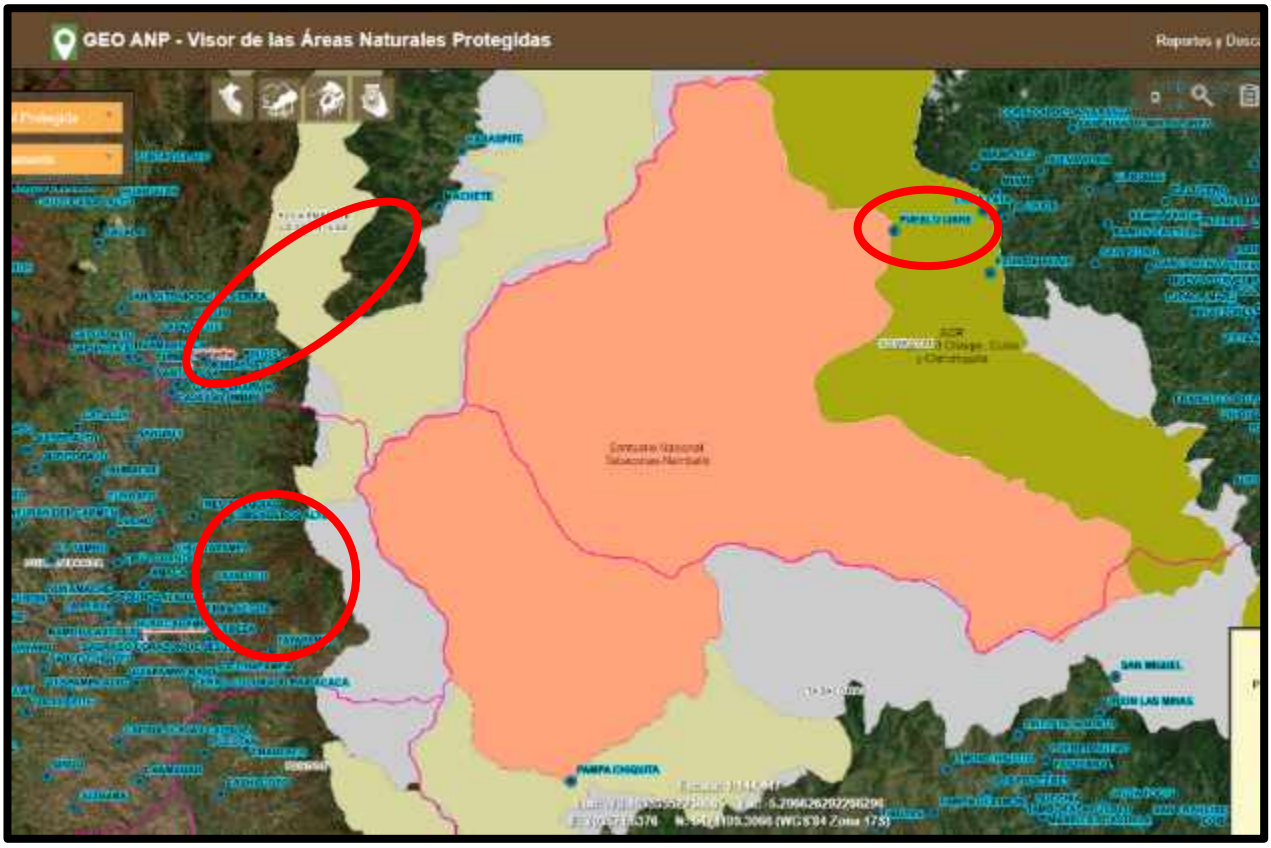
Threat map of the Tabaconas Namballe National Sanctuary

Because of this, the following sectors have been prioritized, which will be validated during the consultation process with key actors, along with their characterization and willingness to get involved with the project:

Protected Area	Sectors Prioritized	Populated Centers and approximate population	Relevant organisations and authorities
Namballe Tabaconas National Sanctuary (SNTN)	Pueblo Libre Sector (east, SNTN border with El Chaupe, Cunia and Chinchiquilla Regional	Pueblo Libre (*116 families, 18 of which live inside the sanctuary*).	- Lieutenant governors, presidents of peasant patrols, water boards, glass of milk committees - 02 coffee associations "Gallito de las rocas" and "Cuenca del Río Blanco"

Protected Area	Sectors Prioritized	Populated Centers and approximate population	Relevant organisations and authorities
	Conservation Area)		
	Cataluco sector (west of SNTN)	Cataluco (*130 families*) Tayapampa (*70 families*) Comenderos Altos (*90 families /400 people*)	- Lieutenant governors, agent, president of Vigilance Committee, irrigation gruop, club of mothers. - There are no associations
ACP Chicuate Chinguelas	Chinguelas sector (border with the SNTN)	Sapalachian (*519 families*)	- Management Committee of the ACP Chicuate Chinguelas - Sapalachee Cattlemen's Association - Pulun Cattlemen's Association - Vigilance Committee - Lieutenant Governor, Water Boards - El Carmen de la Frontera District Women's Association (ADMUCAF) - Association of Entrepreneurs “La Sapalacheña” - “Virgen del Carmen” Mothers Club

It should be noted that the Sauce, Miraflores, Ihuamaca and Chaupe sectors were ruled out as areas of intervention of the Project. These sectors show more seriousness of threats but correspond to ecosystems of Amazonian Yungas.



Location of prioritized sites for the implementation of the Project in the North Mosaic

Characterization of ecosystems and drivers of degradation (Output 2.1):

The ***SNTN is administered by SERNANP*** and has an updated Master Plan for the period 2022 - 2026 that contemplates climate change as a transversal line but not with specific activities. In terms of area management, it requires empowerment of the management committee, for which it has a training proposal in business plans, gender, and climate change. The area has had logistical support financed by the Heritage of Peru initiative.

On the other hand, ***the ACP Chicuate Chinguelas is administered by the peasant community of Segundo y Cajas*** and has a Management Plan in the process of updating and articulating with the municipalities.

The synthesis of the characterization of ecosystems, drivers of degradation, and proposal of conservation practices in the prioritized sectors is shown in the table below[62]:

Protected Area	Settlement	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
Tabaconas Namballe National Sanctuary - SNTN	Pueblo Libre	Páramos, Podocarpus forests and "cascarilla" (*Cinchona sp*). Ecosystems providing water ecosystem services.	Livestock (progressively approaching the core zone of the SNTN), especially on the border with the ACR in the east, where there are cumulative threats, as there is progressive expansion of the agricultural frontier of coffee	Management of livestock activity with the exclusion of cattle from water sources. *Installation of live fences in areas with the presence of livestock.* Wastewater management and compost mills	They agree with the livestock management in silvopastoral plots and protection of water sources They ask for advice on coffee cultivation.
	Cataluco	Moors. Ecosystems providing water ecosystem services	Livestock, which comes to enter the buffer zone. There is confusion regarding the limit of the SNTN (the population indicates that the limit of the livestock area is the source of water upstream, within the SNTN). Fires in pastures due to agricultural mismanagement. Formal and informal mining, especially in the upper part of the Segundo y Cajas peasant community	Livestock management and exclusion of cattle in water springs. *Note: SERNANP considers necessary an evaluation of the degradation caused by livestock.* Bio-gardens	The population is interested in reforesting with native species (alder, chontilla and romerillo) in the water sources
ACP Chicuate Chinguelas	Chinguelas	Moors and montane forests	Persistence of extensive cattle ranching by a focused	Restoration of moors and patches of	The population is interested in reforesting with

[62] The proposal for conservation and restoration practices was prepared in conjunction with specialists from SERNANP and subsequently submitted to the consultation process with the population, the results of which are described in detail in section 4.1.4. of this document.

Protected Area	Settlement	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
			group of villagers who enter cattle into the forest, which threatens the connectivity of the páramos ecosystem, especially in times of drought. Existence of an access road where there is transit of people and for the realization of economic activities	montane forests (cinchona, Cinchona *sp*.). Livestock management	native species (cinchona, cedar and romerillo) in live fences, silvopastures, riparian strips and water springs. They agree with the protection of water sources and harvesting of water in qochas. Technical assistance for pasture improvement and livestock management and henification and silage techniques

Background to ecosystem management initiatives (output 2.1)

The areas prioritized for the intervention of the Project are framed in a large-scale initiative known as "mosaic Andes del Norte" located on the border with Ecuador, between the departments of Piura and Cajamarca, which extends over a space of 480,000 hectares, in which 12 protected areas have been established to date out of 150,908 hectares, representing 31.46 %. Of these, NCI, local governments and peasant communities have contributed to the creation of 11 areas; while SERNANP manages the Tabaconas Namballe National Sanctuary, the core area of the mosaic. Among the main ecosystems are montane cloud forests, moors, inter-Andean valleys and Andean scrub.

In all sectors there is a history of restoration and conservation actions. In the **Pueblo Libre sector**, the SNTN has made progress with the delimitation of the area and maintains community surveillance programs and joint actions with the San Ignacio agrarian agency on cattle ranching. In the past, the population has worked on issues of reforestation in massif or agroforestry and have a slight knowledge of the initiatives developed in the establishment of the RTA and the ACP. It is the same case of the population centers of Sapalache and Comenderos Alto of the **Chinguelas** and **Cataluco** sectors respectively.

In the **Cataluco** sector, SERNANP is scheduled to begin demarcation of the area this year. In addition, in these and other sectors, the SNTN has had the Natural Heritage of Peru initiative, which has addressed basic and structural aspects of surveillance and control with a budget.

In the **Chinguelas** sector, NCI has been carrying out water monitoring for the future articulation with the Northern Andes Water Fund. There is also a history of restoration with native species of alder (*Alnus acuminata*), reforestation with pine (*Pinus radiata*, exotic species). The Segundo y Cajas peasant community also has ecological and cultural tourism initiatives with avifauna, "shamanería", "baños de fortuna".

It should be noted that the SNTN has also worked on the recovery of ecosystems in other sectors (not prioritized) such as the district of Namballe, practices the use of the SMART system and Geobosques for the planning of a MERESE in San Ignacio (Botijas basin, Chaupe sector, not prioritized by the project). In the area shared with the ACR El Chaupe, physical demarcation, community nurseries, surveillance actions have been implemented in Miraflores, El Progreso, Chirinos, Collpa. It is worth mentioning that productive development projects have been implemented in this sector, with agroforestry packages, guinea pig modules, among others. Projects are currently being developed for Procompite and Agroideas related to sustainable coffee production. The "Cuid" Program, which addresses water management, resilience and gender, is also underway by NCI and Protos Andes. The Cajamarca Regional Government, through the Chaupe ACR, has been promoting the restoration of deforested areas in the Pueblo Libre sector. In addition, it is carrying out an investment dossier for reforestation for the protection of water sources, connectivity and silvopastoral systems.

To date, a small part of the mosaic has a financial sustainability mechanism: the Quiroz – Chira Water Fund (FAQCH), a mechanism for remuneration for water ecosystem services (MERESE). Based on this experience, NCI has been working on the creation of a fund to finance all the protected areas of the Northern Andes mosaic. In the sectors of intervention of the proposal there are two points of monitoring of water resources (Chinguelas and Huaricancha), which are expected to be integrated into this mechanism in the future.

Population perspective and gender issues related to output 2.1:

The SNTN Headquarters[63] reports that, in general terms, in the province of San Ignacio (**Pueblo Libre** sector) there is little participation of women in meetings convened by institutions such as SERNANP, due to cultural patterns of shyness, to which is added the incidence of gender violence, a factor that aggravates the situation and affects their freedom to participate in meetings. An example of the weak representation of women is that the board of the Sanctuary Management Committee has only 3 women out of a total number of 9 people, while within the entire management committee there are 6 women out of a total of 47 members, which limits the inclusion of the women's perspective in decision-making. However, it is noteworthy that in this sector a woman has joined the technical team of the Sanctuary (Park Ranger).

On the other hand, it is reported that there is a high participation of young men in communal surveillance organized by the Sanctuary, since between 30 and 36 people are young people. The population consulted confirms this and points out that young people and women also participate in reforestation activities, in which the main role of women is work in nurseries.

NCI reports that in the case of the **Chinguelas** sector women participate in conservation activities, especially in the fine workforce (nurseries, seeds) and that, although most community leaders are men, there are female leaders. In this sector there is a group of young people called ranger committees of the future. It also refers to the fact that the district municipality of Carmen de la Frontera is working with environmental associations that have a presence of women.

In interviews and workshops, both men and women have shown great value to the issue of conservation of Andean forest and Andean moor areas because they identify water provision and regulation as the main service provided by these ecosystems, and through which they can carry out their productive activities, and identify the direct relationship between "andean forest and/or andean moor – water". Likewise, they also identify other benefits that these ecosystems give them, such as medicinal plants, which are used by the population, and frost protection in the Sapalache area.

The population, both men and women, identified the main threats and pressures identified in each sector. Among the main anthropic causes of ecosystem degradation were the felling of wood for construction and firewood; contamination by agricultural chemicals (fertilizers) and solid waste (there are no treatment plants and most of them are thrown into streams or out in the open); hunting of wildlife; soil degradation through the use of fertilizers, agrochemicals and monocultures (which in turn exacerbates agricultural expansion), illegal mining in the areas of Habaspite, Huachumo and Machete (Huancabamba); the presence of the Río Blanco Mining Project; and fires caused by villagers. As for the latter, the population burns according to their idiosyncrasies to "call the rain", as well as for land clearing, for planting pastures and crops, and for regrowth of pastures, which finally causes a decrease in the forest area. To this is added a climatic factor of vulnerability, which is the decrease in quantity and frequency of rainfall in the area, especially in Sapalache (Chinguelas sector). Women point out as a threat that although it is true, the population knows the importance of these ecosystems, there is still a lack of commitment on the part of the authorities and the population in general to curb these threats as well as lack of the application of sanctions to control them in a better way.

It is worth noting the impact of extensive cattle ranching, which has been exacerbated by the lack of feed for livestock due to droughts (Sapalache) or frosts (Pueblo Libre, Cataluco, Tayapampa and Comenderos Alto) that dry up the pastures, which is why the population extends the income of cattle to the wooded areas in search of the natural pastures that grow in these areas. This coincides with what SERNANP reported, since in a drone overflight carried out by the SNTN it was detected that part of the wooded area was drying abnormally (patch patterns) and a reduction in the size of the water mirrors. These findings lead to the assumption that the sector will soon present a water deficit.

It is necessary to point out that, regarding the perspective between men and women referred to in terms of the valuation of forest and paramo ecosystems, both genders show great interest and are very sensitive to their care and maintenance over time. About productive activities, while men visualize more the initial phase of

[63] SERNANP carried out a gender evaluation in the Sanctuary area thanks to the budget of the Heritage of Peru initiative.

production, women are projected to see the transformation phase of the raw material such is the case of dairy products.

Summary of the consultation process related to output 2.1:

Villagers in all sectors show an interest in the proposed restoration activities. In the **Pueblo Libre** sector, the population states that it is necessary to integrate advice on coffee cultivation to restoration practices, as well as the management and management of livestock, for the protection of water sources in the upper parts, to conserve local resources and improve the quality of life.

In the case of the **Cataluco** sector, in the hamlets Cataluco, Tayapampa and Comenderos Altos, the population expresses interest in reforestation in water springs with native plants such as alder, chontilla, willow in the middle and lower parts and romerillo in the highest parts.

In the **Chinguelas** sector (Sapalache population center), the priority interest of the population is to raise awareness and sensitize the general population for the care of the environment and natural resources of the area, as well as reforest with native plants such as cinchona tree, cedar, romerillo, in the form of live fences, silvopastures, planting in riparian strips, Protection of water sources and springs. In addition, they show interest in harvesting water through reservoirs, and establish internal control measures with peasant patrols to control illegal mining that exists in areas of Habaspite, Huachumo and Machete.

Technical information relevant to output 2.1 intervention strategy:

In the **Pueblo Libre** sector, the SNTN has established a dynamic of communal counterpart in labor for the days of reforestation or installation of live fences. The Head of the area recommends that the Project begin with training in the topics and practices addressed by output 2.1. There are no specific experiences of this type for the Catalonia sector. About the availability of infrastructure and germplasm, there are nurseries in the population centers of Pueblo Libre and Ihuamaca (nearby), which could be enhanced.

In the **Chinguelas** sector, NCI reports that when projects are developed, they cover the costs of food, mobility, materials, while the peasant community of Segundo y Cajas provides labor. It is noted for the existence of a municipal nursery (which produces exotic forest species) in the town of Sapalache (near the sector).

Characterization of livelihoods, vulnerability and value chains (component 3):

Livestock is the main productive activity in the three prioritized sectors of the Northern mosaic. In the **Pueblo Libre** sector it is extensive cattle ranching, there are about 500 head of cattle in total, the vast majority is Creole, although some families manage improved cattle of the Simental, Brown Swiss and Cebu breeds. They use natural pastures for cattle feed, so approximately 150 head of cattle enter the ACR and 300 head into the forest. The cultivation of coffee is also of great importance in this sector, followed by the breeding of guinea pigs, and some crops for self-consumption such as corn, cassava, banana, potato, peas, wheat, and coffee. Other activities that are developed is the beekeeping of stingless bees. The weak associativity of these families is a factor that limits the productivity of their economic activities, a situation that is aggravated by the effects of climate change.

In the Cataluco sector, hamlets of **Cataluco** and Tayapampa, extensive cattle ranching is also practiced for milk production with Creole cattle (with very few individuals of the Holstein breed), there are no improved pastures, nor livestock associations. It manages on average 3 to 10 head of cattle per family, which enter the forest to feed, because in these areas there are natural pastures such as ray grass, knuckle and clover. There are winters located in the middle of Cerro Llorón and Cerro Paja Azul. In times of drought (from July) there is a shortage of pastures in the lower parts and cattle enter the forest for food. It should be noted that cheeses are produced and sold to Huancabamba. As for agriculture, there are crops of potatoes, corn, carrots, peas, beans, wheat, beans, pumpkin, chard and broccoli; as well as goose and olluco crops in the highest parts. The production is mostly for self-consumption, except for potatoes, chard and broccoli, which go on sale to Huancabamba and Tamborapa. In Tayapampa there is also breeding of small animals (guinea pigs and chickens).

In the hamlet of Comenderos Alto, on the other hand, the majority is improved cattle, of the Holstein and Brown Swiss breeds, and a small number is of the Creole breed, but there are no livestock associations. In this sector most cattle are stabled, and each family has about 20 head of Creole cattle, which enter the forest still, to feed, but to a lesser extent. Among the main agricultural crops are wheat, corn, potatoes, peas, mostly for self-consumption.

In the **Chinguelas** sector, pigs, sheep, guinea pig breeding and agriculture (potato, corn) are practiced for self-consumption. The town of Sapalache is a producer of milk being the only place where livestock improvement has been made, with dairy breeds such as Holstein, Brown Swiss and Jersey. Cattle are managed stabled because they need more care than Creole cattle. There are two associations of cattle breeders: Sapalache with 65 members and 580 head of cattle and in Pulún with 20 members and 150 head of cattle. Thus, currently only 3 to 4 villagers enter a total of 20 to 30 head of cattle into the forest, who manage Creole cattle because they are more resistant to the mountainous conditions of the place (forest). In most places dairy products such as cheese, yogurt, custard, delicacy, butter is made, being the cheese the product that is most produced, which is sold to the city of Huancabamba and San Ignacio as appropriate. It should be noted that in the case of Sapalache, the largest amount of milk production is collected by two companies "El Pino" and "Santa Clara", the first being the one with the highest production and whose headquarters are in the city of Lima[64].

In the Sapalache area, in addition to these activities, weaving is also developed, there is an Association of women weavers, who propose to promote sheep to obtain wool, which is decreasing. Likewise, trout farming is developed in fish farms and tourist activity in the complex of Lagunas de las Huaringas, El Agua de los Remedios, Agua de Santa Clara, Chorro Blanco Waterfall.

According to SERNANP, in all three sectors the water deficit is identified as one of the main factors of climate vulnerability. The population has also observed a decrease in rainfall in the areas of Sapalache, in quantity and frequency, as well as periods of drought which brings a decrease in the availability of pastures and therefore a decrease in milk production. In this sector there has also been a decrease in the production of ollucos and potatoes, which the inhabitants attribute to climate changes.

Frosts (July-August) are a climatic factor that harms the activities of the population, burning crops, pastures and producing diseases in livestock in the areas of Cataluco, Tayapampa, Comenderos Alto and Pueblo Libre (to a lesser extent). In the area of Sapalache (Chinguelas sector) there is no frost due to humidity, which is attributed by the inhabitants to the presence of the Tabaconas Namballe National Sanctuary. On the other hand, coffee is affected by more pests such as rust, blackfoot in the Free Town Sector.

It should be noted that a damaged crop is coffee in the Pueblo Libre Sector, due to the presence of more pests such as rust and black foot (increase in humidity for periods).

Gender issues related to component 3:

In the Pueblo Libre sector, the participation of women is limited, they have begun to join the management committee, but there is greater participation in other forms of productive and communal organization, such as glass of milk, APPAFFA, peasant patrols.

In the sector of Chinguelas something similar happens, except for Sapalache, where women now occupy some positions including managers, supervisors, participate in peasant patrols, there are some leaders who organize their groups and encourage them to participate in different spaces. In the case of young people, most migrate due to lack of job and study opportunities (San Ignacio, Jaén, Huancabamba, Chiclayo, Piura and Lima mainly), and there is a low percentage of young people who occupy positions in organizations in their locality.

In livestock the main activity of women is the milking of cows, the so-called "molting" or rotation of cattle for feeding cheese, yogurt, and other dairy products, they are also in charge of weaving. They are also responsible for raising small animals such as guinea pigs, chickens, as well as domestic chores. In agriculture they participate in the tasks of coffee cultivation and mainly in the drying process, as well as in the processing of sugarcane to obtain panela, in the planting and harvesting of vegetables and in weeding and harvesting activities.

In the **Pueblo Libre** sector, there are no productive experiences directed or inclusive with women, but it refers that in the nearby town of Ihuamaca has given positive results with ventures with handicrafts, crochet weaving and chopsticks. It is noted, however, that women participate in productive activities and tasks in the field (livestock and agriculture).

In the **Chinguelas** sector, women have been leading certain enterprises, such as the District Association of Women "El Carmen de la Frontera" (ADMUCAF), Association of Entrepreneurs "La Sapalacheña" and Club of Mothers "Virgen del Carmen". These associations produce derivatives of dairy products (cheese, yogurt) and

[64] The cost of a liter of milk is between s / .1.20 and s /. 1.30 and the average milk yield is 8 liters per animal.

artisanal fabrics which leads to promote spaces of associativity, small-scale business organization, application to competitive funds by the state, among others.

Prioritized value chains and synthesis of the consultation process related to component 3:

The value chains prioritized by the Project in the prioritized sectors are shown in the table below:

Protected Area	Settlement	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation with Population	Relevant organizations
Namballe Tabaconas National Sanctuary	Pueblo Libre	● Cattle farming ● Coffee ● Guinea pigs	● Livestock management as a productive measure with improvement of pastures and livestock housing.	Improvement of pastures, silage and livestock housing	Lieutenant governors, presidents of peasant patrols, water boards, children feeding committees, 02 coffee associations "Gallito de las rocas" and "Cuenca del Río Blanco"
	Cataluco	● Cattle farming (dairy) ● Guinea pigs / hens ● Vegetables (broccoli and chard)	● Livestock management as a productive measure with improvement of pastures and livestock housing. ● Strengthening of the organization and seal "allies for conservation"	Improvement of pastures, silage and livestock housing Organic bio-gardens Organizational strengthening	Lieutenant governors, agent, president of Ronda Campesina, commission of irrigators, club of mothers. There are no productive associations
ACP Chicuate Chinguelas	Chinguelas	● Cattle farming (dairy) ● Sheep farming (tissues)	● Livestock management as a productive measure. ● Dairy processing	Improvement of pastures and silage. Management of sheep and alpaca breeding (fabric processing).	Management Committee of the ACP Chicuate Chinguelas Sapalache Cattlemen's Association Pulun Cattlemen's Association Peasant patrols Lieutenant Governor, Water Boards El Carmen de la Frontera District Women's Association (ADMUCAF) Association of Entrepreneurs La Sapalacheña Virgen del Carmen Mothers Club

In all the population centers of the Cataluco and Chinguelas sector, the population expressed interest in those measures that optimize and make livestock production more profitable, with practices such as pasture improvement, fodder henification, livestock genetic improvement and animal health. Likewise, they showed

interest in the establishment of bio-gardens under an organic production approach, with the production of organic fertilizers and crop rotation.

In the Chinguelas sector, in addition, the population expressed interest in strengthening the dairy production chain and genetic improvement of cattle, as well as increasing the raising of sheep and alpacas to supply raw material for the manufacture of fabrics carried out by the women's association.

Suggested intervention strategy and technical information related to component 3:

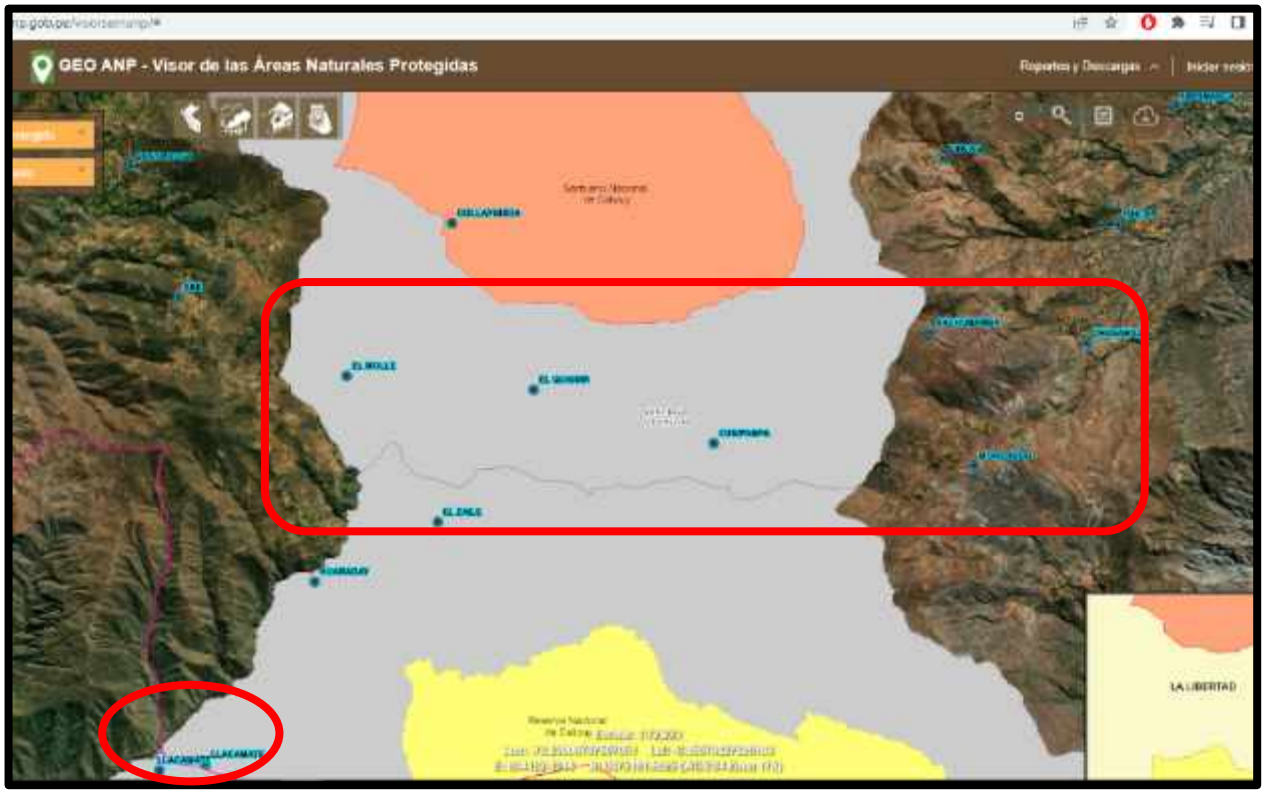
For the purposes of this component, it should be noted that in all cases the population of the prioritized sectors is organized by committees and/or associations, which meet in monthly, quarterly, or extraordinary assemblies, upon call. It is notorious the difference between most of the hamlets with the population center of Sapalache, in which there is a more consolidated organizational aspect, since they are one of the few that has associations and / or committees strengthened in some aspects. The opposite happens with the hamlets of Cataluco, Tayapampa, Comenderos Alto where the issue of associativity is null. In the case of Pueblo Libre, there are only two coffee associations.

Mosaic Center

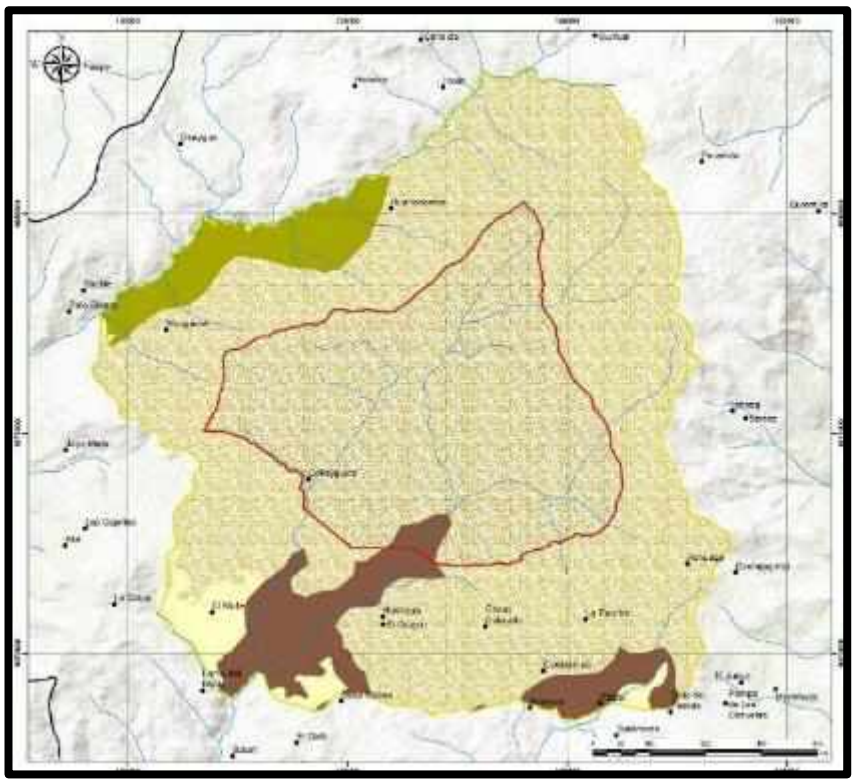
The prioritization exercise in the Mosaico Centro has considered the priorities and background of participatory management of the Headquarters of the three protected areas that make up the mosaic. Consequently, the following sectors have been prioritized, which will be validated during the consultation process with key actors, along with their characterization and willingness to get involved with the project:

Protected Area	Prioritized Sectors	Settlements and approximate population	Relevant organizations and authorities
Calipuy National Sanctuary (SNC)	Southern Sector of the Buffer Zone	Settlements: El Molle, Collayguida baja, El Quiguir, Cusipampa and Cachubamba. *El Zaile and Monchugo also have a link of organization and direct alliance with the leadership of the Sanctuary.* The approximate total population: 1401 people	- Administrative Boards of Service and Sanitation (JASS) of the Settlements El Molle, Collayguida baja, El Quiguir, Cusipampa and El Zaile - Irrigation Committees of the JASS and Pushabara – La Lamball - Woman Association of Artisans and Weavers of the Settlements of El Quiguir, Monchugo and Cusipampa. - Municipality of the Minor Populated Center of Calipuy - District Municipality of Chao and Santiago de Chuco - Provincial Municipality of Santiago de Chuco y Virú - Regional Government of La Libertad (Environment Management and GERCETUR). - 5 vigilance committees and committees of pasture users and irrigators (Cusipampa, Munchugo, El Quiguir, El Zaile, Llacamate, Calipuy and Chagabal) - Associations of Agricultural Producers (potatoes and guinea pigs)
Calipuy National Reserve	*Cutting Sector*	Cusipampa and Monchugo (coincide with the CNS) *Total approximate population: 725*	
	Coal Sector	El Quiguir, El Zaile and Llacamate (the first two coincide with CNS) *Total population: 391 people*	
Huascarán National Park	Sector Chacas	Huallin (approximately 250 inhabitants). Jambón (57 inhabitants).	- Potaca Pasture Users Committee (47 users). - Administrative Board of Drinking Water Services (JASS) and Irrigators Committee (Potaca – Jambón) - Raymondi peasant community. - Head of Huascarán National Park. - Provincial Municipality of Asunción. - Lieutenant Governor of Jambón

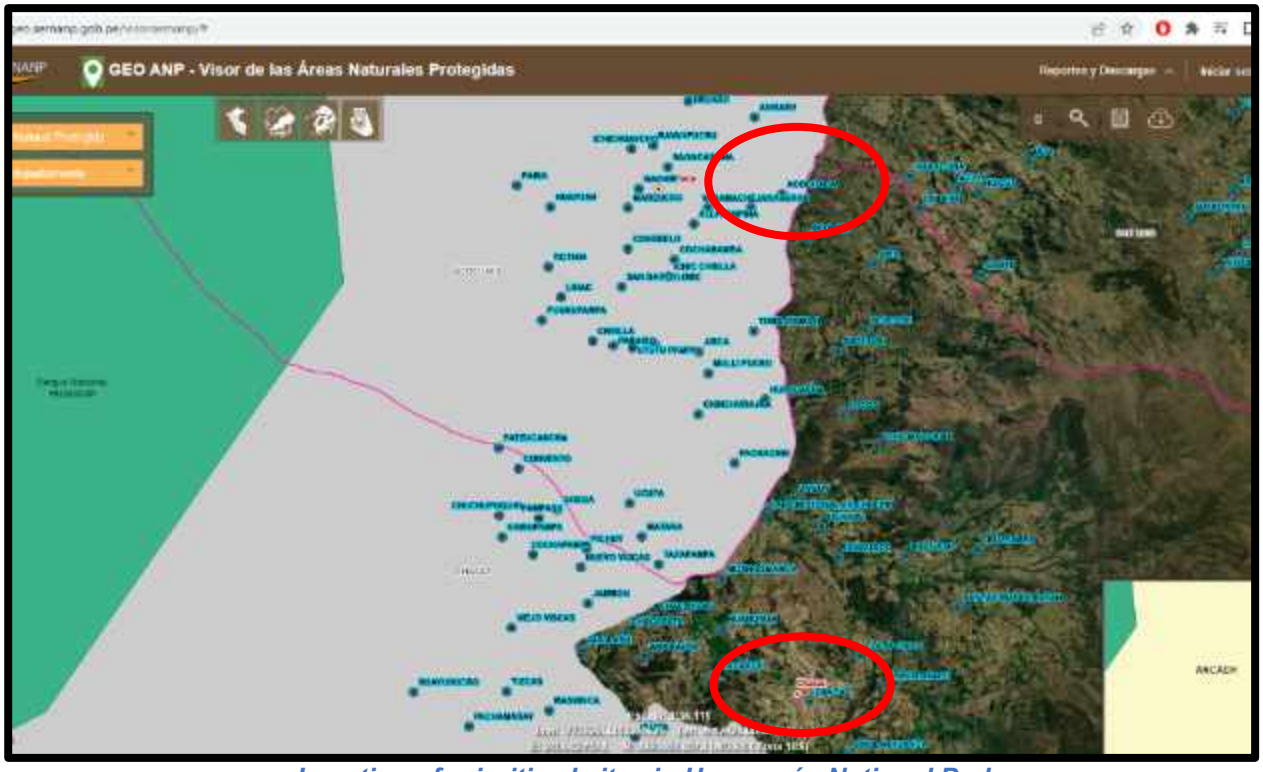
Protected Area	Prioritized Sectors	Settlements and approximate population	Relevant organizations and authorities
			- Religious Congregation Mato Grosso
	Sector Acochacas	Wecroncocha (approximate population of 189 inhabitants). Paccha (91 inhabitants). Yacuyhuarmi (79 inhabitants). Sapcha (254 inhabitants).	- Committee of Users of Pastures of Cajavilca (30 users). - Ruricocha Pasture Users Committee (49 users). - Ruripaccha Pasture Users Committee (31 users). - Raymondi peasant community. - Provincial Municipality of Asunción.



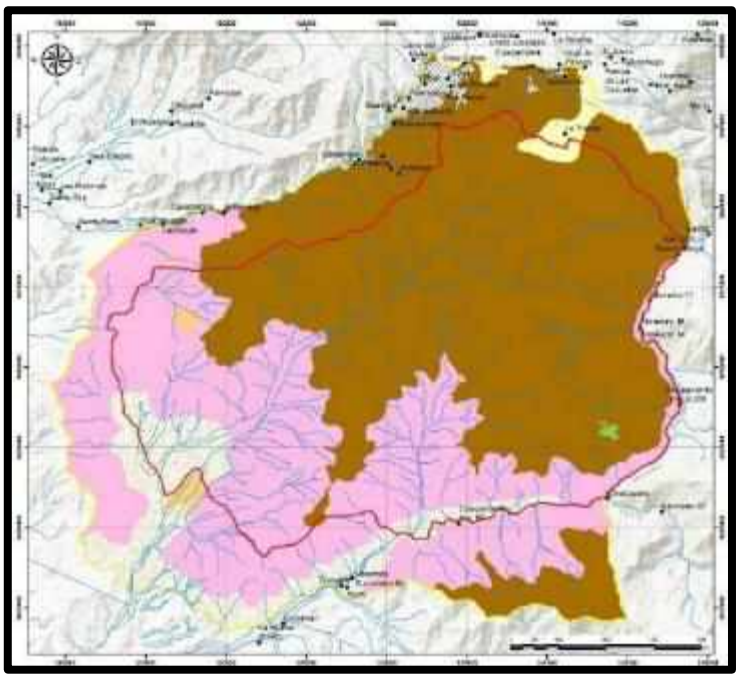
Location of prioritized sites in Calipuy National Reserve and Calipuy National Sanctuary



Map of vegetation cover of the National Sanctuary of Calipuy (MINAM)



Location of prioritized sites in Huascarán National Park



Map of vegetation cover of the Calipuy National Reserve (MINAM)

Characterization of ecosystems and drivers of degradation (output 2.1):

The ***SNC, the RNC and the PNH are administered by SERNANP and*** all have in the process of updating their Master Plan, so they currently work with the extensions of the previous master plans. These management documents contemplate climate change as a transversal line, but the heads and specialists point out the need to strengthen the understanding of the issue among the key actors of the management of the areas.

The synthesis of the characterization of ecosystems, drivers of degradation, and proposal of conservation practices in the prioritized sectors is shown in the table below[65]:

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
Calipuy National Sanctuary - SNC	El Molle, Collayguida baja, El Quiguir, Cusipampa y Cachubamba. El Zaile y Monchugo	Grasslands, shrubs and wetlands. *SERNANP has indications that before the area was dedicated to livestock exploitation there were forests of Lloque (Kageneckia lanceolata)*	The core area is currently in recovery due to previous exploitation of agriculture and livestock, however, there are pressures for livestock in the buffer zone. Growth of illegal human settlements The drought or lack of rainfall that reduces the water	Protection of wetlands and pastures. Restoration of intervened ecosystems through reforestation with native plants and excluder fences[66]	The population agrees with the proposed practices of restoration and protection of wetlands and degraded soils inside and outside the Sanctuary, through the construction of dikes (masonry) and infiltration ditches, as well as with reforestation with native plants. *The key actors also propose insertion of vicuñas.*

[65] The proposal for conservation and restoration practices was prepared in conjunction with specialists from SERNANP and subsequently submitted to the consultation process with the population, the results of which are described in detail in section 4.2.4. of this document.

[66] The key actors (SERNANP and population) consider it important to complement these interventions with environmental awareness and education for the entire population and strengthening research related to ecosystems (puyas or caguas) and training/workshops for raising awareness among the population (environmental education).

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
			capacity of the wetlands and decreases the growth of grasslands.		
Calipuy National Reserve - RNC	Cortadera Sector (Cusipampa y Monchugo)	Lloque forests (*Kageneckia lanceolata*), shrubby scrub, coastal desert	In the past the reserve was degraded by illegal logging and overgrazing, so it is in the process of recovery, however, there are pressures for livestock in the buffer zone and remanence of feral cattle. It is currently managed with an organized cattle access quota (maximum of 15 heads per owner, with seasonal rotation) Climate change: droughts that directly affect the availability of water resources, added to mass movements (huaycos) in extreme events such as those caused by the El Niño phenomenon.	Reforestation with natives such as Lloque and Quishuar	● Reforestation with natives (Lloque and quishuar) ● Management of water sources through infiltration ditches and construction of dikes. ● Control and handling of feral cattle ● Installation of drinking troughs for guanacos ● Strengthen the capacities of the monitoring and research committee on the guanacos population.
	Carbonera Sector (El Quiguir, El Zaile y Llacamate)	Quishuar forests (*Budleja sp.*), shrub scrub, coastal desert			
Huascaran National Park - PNH	Chacas	*Polylepis sp forests,* grasslands and scrub.	Pressures for livestock and agriculture. Planting of exotic forest species (pines and eucalyptus). Forest fires Climate variation (frost and heavy rain)	*Reforestation with* Polylepis *sp.*	● Livestock rotation and exclusion in the HNP area. ● Reforestation with native species in areas degraded or affected by livestock and forest fires. ● Control and monitoring of excessive extraction of medicinal and aromatic plants
	Acochacas	Forests of *Polylepis sp*, wetlands, grasslands and scrub.	Overgrazing Mining pollution Forest fires	*Reforestation with* Polylepis *sp.*	● Cattle rotation. ● Restoration of degraded areas or affected by frost and drought.

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices	Summary of the consultation with Population
			Climate variation (frost, drought and heavy rainfall)		

Participatory mapping in Huascarán National Park

Background to ecosystem management initiatives (output 2.1)

Regarding the recent history of conservation and restoration actions, it should be noted that the core area of the **SNC** is almost entirely in natural recovery due to the exclusion of livestock (70% of the Sanctuary is fenced with stone walls, which limit the entry of livestock). In addition, 4 hectares of restoration have been installed with queñuales (pilot that was not successful due to technical problems). Both actions have been carried out with the participation of the irrigation committees, who over the years have established alliances with the Head of the Sanctuary and provided labor, while the ANP providing materials and technical advice. To date, they have remuneration agreements for the provision of water resources, perform tasks for the maintenance of fences, roads and tourist circuits, organize community surveillance, participate in the census of puyas, provide attention and / or rapid response to incidents within the Sanctuary, among other activities.

In the buffer area of the SNC, environmental education campaigns are also being developed to conserve the ecosystems of grassland and the Puya de Raimondi, thus increasing the retention and infiltration of water (necessary for the economic activities of the surrounding population). The members of the committees have a commitment to contribute a day of 8 hours per person per year, for which they themselves contribute their refreshments and resources. Currently the NGO ECOAN, is working, rehabilitating an old nursery (near the Auganate checkpoint), where it is producing seedlings of queñuales and alder (20 thousand seedlings per year).

The **buffer zone shared by the SNC and the RNC** has the presence of committees of pasture users who participate in the surveillance activities of the area, but with whom to date it has not been possible to work on restoration actions. In the **Carbonera sector,** plots were established in the past for the monitoring of species, but not for restoration, an action that is necessary.

The PNH Headquarters has been implementing two community participation mechanisms in both the Chacas sector and Acochacas: 1) conservation agreements with the CUPNs, which include reforestation activities, control and surveillance of streams, cleaning of solid waste with the support of the municipality in collection

with the RRSS collector, rodeo and control of cattle and others, in reward for cattle grazing within the HNP and others, in reward of the usufruct of the natural pastures of the HNP for cattle and 2) the implementation of the community ranger program, whose members are adult and youth members of the CUPNs, to carry out activities of accompaniment to the official park rangers of the PNH in special surveillance patrols, the control of forest fires and others in favor of the conservation of the PNH. Likewise, in past years, they have developed reforestation activities with queñuales within the PNH and the "goodbye plastic" campaign, this being an activity of commitment between the CUPN of Potaca and the PNH Headquarters.

Population perspective and gender issues related to output 2.1:

In the context of the **SNC**, women and young people do not usually participate in decision-making related to the management of pasture, water, or others, since their responsibilities and / or decisions are more related to their work as mothers in household chores and raising small animals especially (guinea pigs, chicken and pigs) in the buffer zone. However, they do participate actively in carrying out the activities agreed at community meetings, as do young people, to whom their parents have delegated the responsibilities of participation. The Headquarters points out that there are two organizations of women's artisans that are formally constituted with whom it is desired to strengthen capacities for their contribution in the revegetation of wetlands (for example, in nurseries): the Association of Women Artisans "Conserving our biodiversity" and Association "Puya Raymondi".[67]

During the consultation workshops in the scope of the **SNC**, the population (both genders) recognized as the main ecosystems to which the wetlands inside and outside the Sanctuary are related (Pushabara, Lamball, La Victoria, Mayoreda, Pajilla, Los Conejos and others); that provide water supply to the streams and rivers in the area. They also identified the sectors of puyas or caguas, the Andean grasslands that allow the growth of certain wild flowers and the queñual and alder forests.

The population has also identified the climatic and non-climatic factors that generate vulnerability to both ecosystems and their activities. The lack of rains or droughts within the Sanctuary has produced the decrease in the water capacity of the wetlands, in some cases these have reduced their size, which in turn causes the degradation of the surrounding ecosystems, due to the decrease of natural pastures (Andean grasslands) and lack of drinking water and irrigation for the population centers located in the buffer zone. The huaycos (in spanish) or landslides within the Sanctuary happen sporadically and cause the degradation and undermining of areas of native shrubs and puyas. In addition, these events also occur in the buffer zone directly affecting the infrastructure of houses, access roads, canals and irrigation pipes, canals, among others.

There is a hamlet illegally settled within the Sanctuary, Collayguida, which causes great pressure to the ecosystems within the Sanctuary, which carry out anthropic activities such as grazing and agriculture that degrade and deforest the soil cover, in addition to the slash and burn of puyas that they use as firewood and the hunting of wild animals.

The **RNC** also indicates high participation of young people in vigilance committees, while the participation of women is considerably lower, since it is an Andean area where there are macho patterns that limit their involvement in equal conditions. Women in the prioritized sector of ***Cortadera*** do not usually participate in decision-making related to the management of pasture, water, or others, since their responsibilities and / or decisions are more related to household tasks and upbringing. However, in the prioritized Carbonera sector, its participation is more active in decision-making and carrying out the activities agreed in community meetings. Young people, in both prioritized sectors, are linked to decision-making and activities from an early age, however, in the town of Munchugo there is a greater migration of young people who go to the urban area to look for work since there is a lack of water, therefore, pastures and agriculture.

In the **HNP**, it is noted that young people frequently participate as volunteers in the "Fans of Conservation " initiative, but not in the monitoring committees for migration for studies or work. Women, on the other hand, participate mainly in environmental education activities, but not in user committees in which their presence and voice is restricted by patriarchal patterns. Through the consultation process in the ***Chacas*** sector, it was determined that women participate in the activities of the CUPN of Potaca such as tasks and cleaning within the PNH; however, they mention that in organizational decision-making their participation is lower.

In the **Acochacas** sector, on the other hand, they participate and make decisions for the development of the activities of the CUPNs of Cajavilca, Ruricohca and Ruripaccha and the tasks; as well, they are present in the

[67] The activities carried out by the Head of the Sanctuary in terms of training, awareness workshops and advice for the conservation of ecosystems are carried out with a transversal and inclusive approach. Although, these activities were suspended due to the covid-19 pandemic and are just being resumed.

organization and have women representatives in the managerial and leading positions in each sector of the locality. They have also developed activities related to the restoration of Andean ecosystems such as reforestation with queñuales and pines in their individual plots. Taking this into account, most of them are interested in participating in activities to restore their ecosystem with native plants in the area.

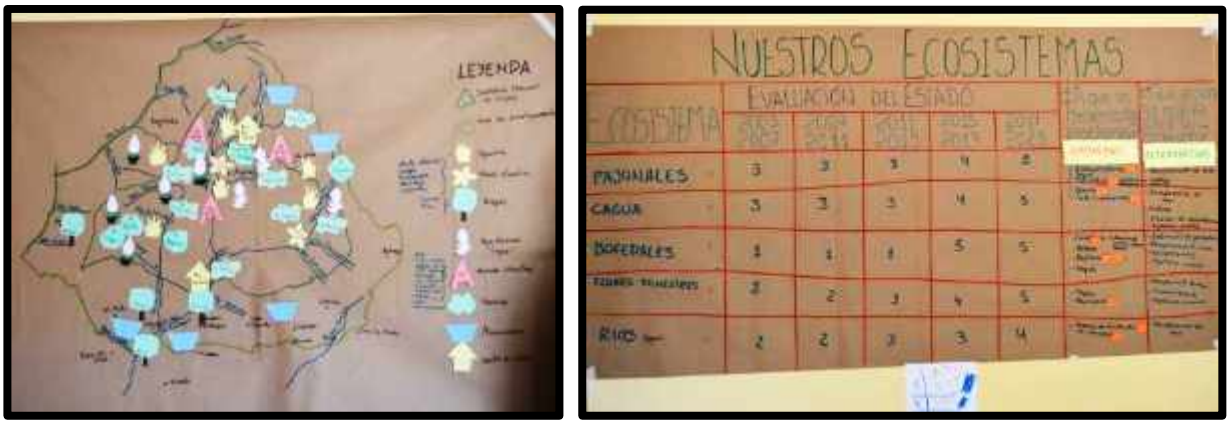
Participation of women in the workshops of the Huascarán National Park

Based on the participatory analyses carried out for the present consultation process, local organizations recommend that the Project apply a constructive pedagogical approach, based on the previous knowledge of the participant, promoting the recovery of cultural-local knowledge. This cultural-local knowledge about the management and use of grasslands, relict forests and agroecosystems, shows that women know particular details in contrast to their male peers. The public recognition of women's knowledge as part of the project can be considered as a strategy for individual and collective empowerment of the vulnerable population, in this case women. Participation as a strategy should also empower communication skills, particularly of women, from the soft skills aspect to access to information and communication technologies.

Summary of the consultation process related to output 2.1:

In the **SNC**, the population consulted shows willingness to the proposed practices of recovery and protection of wetlands through excluder fences, infiltration ditches, and construction of dikes (masonry), for which they also suggest the re-introduction of camelids (vicuñas), for which it would be necessary to review the regulations of the Sanctuary. They also show interest in the recovery and restoration of degraded soils, and reforestation with native plants and excluder fences.

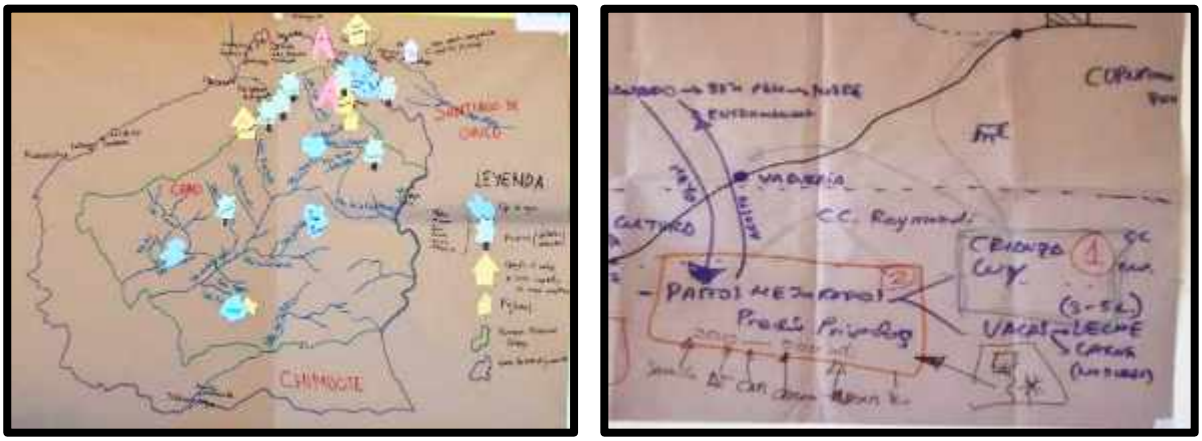
In addition, the key actors consider it important to raise environmental awareness and education for the entire population and to strengthen research related to ecosystems (puyas or caguas) and training/workshops to raise awareness among the population (environmental education).



Talking map and participatory evaluation in the area of the Calipuy National Sanctuary

In the prioritized sectors of the **RNC**, the population consulted has expressed interest in conservation and restoration and conservation practices that articulate water management with the control of cattle and camelids. Some of the activities indicated are to recover and protect degraded areas through reforestation with native plants (Lloque and Quishuar) and carob in the southern zone of the Reserve (area not prioritized for the Project). They also propose to recover and maintain the supply of water holes and puquios through infiltration ditches, construction of dikes (masonry) and others, the management and control of feral cattle within the

Reserve, the implementation and improvement of drinking troughs for guanacos and controlled cattle. To all this, they add the need to strengthen research related to guanacos, training for surveillance committees to improve livestock controls within the Reserve and training/workshops to raise awareness among the population (environmental education).



Talking map and participatory evaluation in the area of the Calipuy National Reserve

In the ***Chacas sector of the PNH***, the consultation process proposed alternatives to reduce the animal load within the Huascarán National Park and sustainably manage the activity in the buffer zone or transition. To this end, the population expressed interest in livestock management, through the rotation and reduction of livestock in the PNH area; the activities of restoration of degraded ecosystems or affected by livestock and forest fires, reforestation with native species, and the control and monitoring of excessive extraction of medicinal and aromatic plants. In the **Acochacas** sector, the population expressed its willingness to develop actions such as the improvement and management of pastures for cattle, through technical assistance in livestock management and rotation. Also, restoration activities of degraded ecosystems or affected by livestock and reforestation with native species.

In addition, in both sectors they expressed the need for the massive collection of solid waste within the PNH, awareness and environmental education campaigns with a focus on the Huascarán Biosphere Reserve at the level of educational institutions and the population in general, the formation of community brigades for the prevention and conservation of ecosystems of the PNH and its buffer zone and the strengthening of management and management capacities of the CUPN according to the standards and laws established by SERNANP.

Talking map and participatory evaluation in the area of Huacarán National Park

Technical information relevant to output 2.1 intervention strategy:

In the area of influence of the **SNC**, the population has understood that conserving and revegetating the ANP increases water retention (necessary for their economic activities), which is why they have been contributing to conservation through labor, during the days of delimitation and restoration. In these processes, the ANP provides work materials, while the members of the committees have a commitment to contribute a day of 8 hours per person per year, for which they themselves contribute their refreshments and resources (they only

request coca leaves to *chaccar*[68]). Currently the SNC is working on the reactivation of an old nursery (within the area) in conjunction with the NGO ECOAN, in which seedlings of queñuales and alder are being produced (20 thousand seedlings per year). The Head of the area comments that a study is necessary to know what the native species before the livestock establishment were (it is believed that the area had Lloque forests).

Over the years, the population in alliance with the RNC Headquarters has been implementing activities, alliances and practices for the conservation of ecosystems. Having remuneration agreements for the provision of pastures, under the modality of registered Surveillance Committees, they support with tasks in the maintenance of fences, drinking troughs and tourist circuits, organize communal surveillance, participate in the census of guanacos, participate in participatory consultations for the internal plans of the Reserve, among other activities. Also, they have received training from SERNANP in the management of lloque, has knowledge in their forestry and provide labor. In these sectors, we work with a counterpart in labor, while SERNANP covers aspects such as materials and food when Projects are available. There are no forest nurseries in the area.

The head **of the PNH and the Mountain Institute have signed an inter-institutional agreement to carry out joint actions in restoration of ecosystems of grasslands, wetlands and forests** of Polylepis (Queñual), training of prevention and conservation brigades of the *PNH* with whom awareness campaigns against forest fires have been carried out. It is worth mentioning that in the Chacas and Acochacas sectors there is no PNH control and surveillance post and there is a limited presence of park rangers (except for special patrols sporadically depending on budget).

Characterization of livelihoods, vulnerability and value chains (component 3):

The population settled in the buffer zone of the **SNC** is mainly engaged in economic activities of agriculture and to a lesser extent in the livestock of cattle and minors. The agricultural activity is mainly crops such as potatoes, olluco, goose, hay and barley in the higher areas and mashua, wheat, corn and some vegetables such as onion, lentil, peas in the lower area. No fruit crops are produced. Two campaigns are carried out a year (large and small), starting with sowing in the months of April to May (small) and from October to December (large), the preparation of the land is one month before planting, and ends with the harvest in the months of October to November and April to June for the small and large campaign respectively. The threats to this activity are due to the occurrence of droughts, frosts, hailstorms and irregular rains, which last longer and with greater intensity, and have caused shortages and / or decrease in water for drinking and irrigation in the dry season and the proliferation of diseases and pests in crops that directly affect agricultural activity, producing a decrease in the production of crops of olluco, goose, potato, mashua, corn, wheat, barley, peas, hay and other products. The population centers have micro-reservoirs and technified irrigation, but not in their entirety. In some families, production is only enough for self-consumption or commercialization with other population centers.

The livestock activity is carried out in a smaller number of families, being cattle, horses, sheep, guinea pigs, chickens, rabbits and goats. Livestock is practiced extensively since there is a lack of pasture and management and control of livestock. Cattle, horses, sheep and goats usually consume the forages of the term of the harvests and are settled in the family farms, while the smaller animals live next to or inside the houses, feeding on the hay produced. The main threats to this activity are droughts and frosts; along with overgrazing and lack of technical assistance for raising cattle, horses and minors (guinea pig, chicken and rabbit) that cause soil degradation and / or loss of natural pastures. These activities, in the population centers located further south of the Sanctuary, are mostly for marketing with the Chao and Trujillo markets through intermediaries.

The population in the area of the RNC **settled near the prioritized sector of Cortadera** is mainly dedicated to cattle and small animal husbandry, while the population ***near the prioritized sector of*** Carbonera to biodiverse agriculture. The livestock activity of the populations near the prioritized sector of Cortadera is mainly cattle, sheep and pigs, while in the prioritized sector of Carbonera it is cattle, pigs and small animals such as rabbits and guinea pig.

The average number of heads of cattle per user in the hamlets of Cusipampa and Munchugo is 25, with users with a greater number of animals, however, in the hamlets of El Zaile, El Quiguir and Llacamate the average number of heads of cattle is 5 since there are many users with only one or three animals in their possession. The populations of both prioritized sectors have Committees of Users of Natural Pastures (C.U.P.N.), which in turn constitute Vigilance Committees and Peasant Patrols. These community organizations are responsible for supervising the proper functioning of the agreement of uses of pastures within the Reserve, which allows the entry of 15 heads of cattle per user, where each population center has defined its sector and only during

[68] Ancestral Andean custom that consists of chewing coca leaf for its invigorating properties.

the months of January to August. The users are registered, thus having a regulation that contains the activities of remuneration for provision of pastures and their schedule, in addition to the sanctions to the inhabitants who have more livestock and in other areas. The commercialization of cattle is carried out constantly during the year, usually sold standing, while the derivatives of these (milk, rennet) are for self-consumption. The main factors of vulnerability are the scarcity of water and pastures, the proliferation of diseases and / or pests and the lack of improvement of livestock has caused the fall in prices therefore families, mainly in the population center of Munchugo.

The agricultural activity in the ***Cortadera*** sector is mainly of products such as potatoes, oca, mashua, olluco, wheat, corn, barley, among others. There are two campaigns a year (large and small) of potato and oats. For this area, the water for irrigation comes only from the Quebrada Morin, so the water supply, especially for the town center of Munchugo, is only for a few hours a week, preventing the proper realization of agricultural activity. For the ***Carbonera sector,*** crop production is biodiverse, ranging from tubers such as olluco, mashua, potato, goose; cereals such as wheat, barley; fruit trees such as grapes, tomatoes, custard apples, oranges, apples; vegetables such as pumpkin, celery, lettuce, among others. There are problems with the use of water since there is no technified irrigation or reservoirs. The products obtained from the agricultural activity of the hamlets of Llacamate, El Zaile and El Quiguir are generally for commercialization in the markets of Chao and Trujillo, while the agriculture of the populated centers of Cusipampa and Munchugo are for self-consumption or commercialization with other population centers. Agricultural activity has been affected by the lack of water, pests and frost, reaching the area to have been declared in emergency due to drought.

In the **Chacas sector of the PNH**, the population is mainly engaged in economic activities of agriculture and to a lesser extent in cattle and child breeding. The main crops are potatoes, corn, wheat, barley, peas, beans, olluco, goose, and in the higher areas the mashua. Some vegetables such as onions, lettuce and medicinal and aromatic plants such as chamomile, muña, lemon balm and others are also produced in home gardens. Two campaigns are carried out a year (large and small), starting with sowing in the months of April to May (small) and from October to December (large), the preparation of the land is one month before planting, and ends with the harvest in the months of October to November and April to June for the small and large campaign respectively. The surplus of crop production, mostly potatoes (Yungaina variety), corn, wheat and barley are sold in Chacas or through intermediary merchants who come to their locality each harvest. In some families, production is only enough for self-consumption or commercialization with other population centers.

The threats to this activity are frost, hail and heavy and irregular rains (it rains more intense and stronger in less time), generating climatic uncertainty in the population, scarcity and / or decrease of water for human consumption (dryness of springs) and animal and for irrigation. In addition, there is presence and multiplication of diseases and pests in crops (ranch, wheat dust, worm in corn and others). There is a water channel for irrigation is rustic of earth or paved, channeled from the Potaca River and other water sources.

The livestock activity is carried out in a smaller number of families, being cattle, horses, sheep, guinea pigs, chickens and rabbits. Cattle, horses and sheep usually consume the cultivated pastures in small quantities and the fodder is from the stubble or remnants of the crops of the family farms, while the smaller animals live next to or inside the houses, feeding on alfalfa and residues of the cooking of the family's food.

The population of the **Acochaca** Sector settled in the buffer zone of the PNH, is mainly dedicated to the economic activities of cattle ranching and raising of small animals (guinea pig, chicken and pig). Livestock is carried out extensively taking advantage of communal grasslands where natural pastures grow in association with cultivated pastures such as alfalfa, white clover, red clover and ray grass. Agriculture is characterized by self-consumption with a predominant production of Andean products such as grains (corn, beans, peas, beans, barley, wheat, quinoa, linseed); tubers (potato, goose, olluco, mashua, yacon) and vegetables (pumpkin, caigua, pumpkin, beetroot, lettuce, cabbage, onion, carrot, rocoto, cauliflower, cabbage) and fruits (strawberry). However, agricultural activity has been harmed in recent years due to climate change that generates the occurrence of natural phenomena such as more intense frosts, rains out of season or of strong intensity, windstorms, extreme temperatures between cold and heat during the day, to which is added the deficient irrigation infrastructure formed by an open channel which presents considerable losses of amount of water that is necessary during the Dry seasons to maintain crops.

Surplus crop production, mostly potatoes (Yungaina variety), corn, wheat and barley are sold to Chacas and intermediary merchants who come to their locality each harvest. In some families, production is only enough for self-consumption or commercialization with other population centers.

Identification of breeding in Acochaca sector

Gender issues related to component 3:

In the priority area of the **SNC** there are two women's associations (mentioned in section 4.2.3.) that have the potential to be involved in the Project also in the productive component, for which it is recommended to suggest the activity of raising guinea pigs. Women's participation in agricultural or livestock decision-making is lower than that of men; However, they show great interest in specific activities such as raising guinea pigs and chickens mainly, as well as a desire to participate in workshops and training on tissues.

Young people, being involved in agricultural activities from an early age, are more frequently involved in decision-making. They show interest in improving their agriculture through technified irrigation and pasture management (improved pastures, phytotoldos, seed bank).

The population most vulnerable to the effects of climate change inside and outside the Sanctuary are the elderly, widowed women and all residents with low economic resources. Another vulnerability factor that affects the entire population is the accessibility from Chao to the Sanctuary and population centers, which is through the neighborhood road network LI-962 and trails that are in poor to moderate condition, this due to the large number of huaycos and landslides, which do not allow quick attention and support to the population.

The RNC Headquarters reports that women in the prioritized sectors have high participation in the economic activities of agriculture (especially harvesting) and livestock, as well as in the elaboration of fabrics; however, they do not have an evident participation in productive organizational life. In both sectors, women have shown their concern and interest in integrating or participating in workshops or training related to the weaving and raising of small animals, especially in the hamlet of Llacamate, women have a large number of guinea pigs that usually market in a "temporary" way to some intermediaries, so they seek advice to be able to associate. It is considered that the Project would be a pioneer by including them in technological options such as technified irrigation or guinea pig breeding. It is also noted that there are women's organizations in the field that have been working on the production of handicrafts. In the case of young people, in both prioritized sectors, they are linked to decision-making and showing great concern for agricultural activity.

In the **Chacas and Acochacas sectors of the PNH**, women's participation in agricultural or livestock decision-making is lower than that of men, except to a lesser extent, when they are widows and/or single mothers, women's participation is relevant, but with fears of opinion. There is accentuated machismo in families. The activities in which women are engaged are mainly the raising of small animals (guinea pig, hen, etc.) and agriculture, where they participate by selling the surplus of the cultivated products, they are responsible for grazing the animals and collecting the grass for the livestock (sheep, guinea pig, etc.). Women have shown great interest in raising guinea pigs and hens mainly, in addition to participating in workshops and training on sheep wool fabrics (from their sheep) and marine. They carry out the activity of weaving (scarves, stockings, gloves, sweaters and others) from a very young age (15 years) for their own use and that of their family; In some cases, it sells to neighbors and also partners between families or acquaintances to sell in groups. Considering that in this area the female local authorities (councillors) support the gender approach, it is recommended to forge a network that allows to defend their proposals for social development.

Young people from an early age are dedicated to supporting the father of the family in agricultural activities. This group shows interest in improving their agriculture through technified irrigation and pasture management

(improved pastures and technified irrigation for cattle). On the other hand, young people at the end of high school migrate to the city to continue their studies at university or in search of a job.

Prioritized value chains and synthesis of the consultation process related to component 3:

The preliminary characterization of the value chains to be prioritized by the Project (to be consulted with key actors) in the prioritized sectors is shown in the table below:

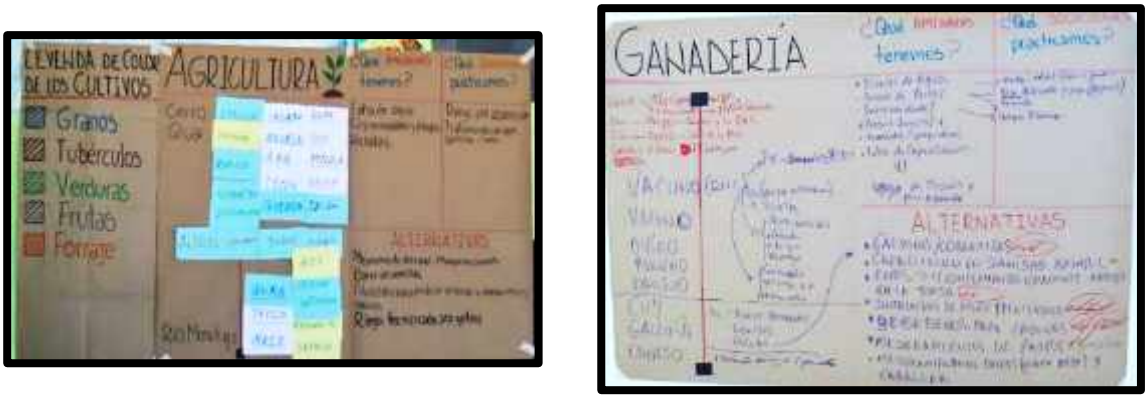
Protected Area	Settlement or Peasant Community	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation process	Relevant organizations
Calipuy National Sanctuary – SNC	El Molle, Collayguida baja, El Quiguir, Cusipampa y Cachubamba. El Zaile y Monchugo	● Tubers (potato) ● Guinea pigs ● Fabrics (sheep wool)	● Technified guinea pig breeding ● Technified irrigation in tubers	The population expresses interest in: ● Breeding guinea pigs in modules, with improved pasture management, technified irrigation. ● Cattle improved in sheds, with improved pastures (in the ZA). ● Technified irrigation, installation of family micro-reservoirs to improve the distribution and management of water for drinking and irrigation. ● Improvement of agricultural seeds, phytotoldos and mills or equipment for the aggregate processing of tubers and cereals. ● Advice for the improvement of quality, quantity and technique of the fabric ● Commercial and technical strengthening	● Association of artisan weavers of the populated centers of El Quiguir, Cusipampa and others that can be formed. ● Creation of associations led by women in the breeding of guinea pigs. ● Association of potato producers of the town of Munchugo and others that can be formed.
Calipuy National Reserve - RNC	Cortadera Sector (Cusipampa y Monchugo)	● Tubers (potato) ● Cattle farming ● Guinea pigs	● Technified irrigation ● Improved pastures ● Tech	The population agrees with: ● Efficient water management through technified irrigation and creation of family	● Association of artisan weavers of the populated centers of El Quiguir, Cusipampa. ● Association of potato producers of the town of Munchugo.

Protected Area	Settlement or Peasant Community	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation process	Relevant organizations
	Carbonera Sector (El Quiguir, El Zaile y Llacamate)	● Fabrics (sheep's wool)	nified guinea pig breeding (modules)	micro-reservoirs ● Management of improved pastures, henification, genetic improvement of livestock and sanitary control. ● Organizational strengthening (productive quality, marketing, financial management) ● Equipment for aggregate processing of tubers and cereals. ● Equipment for the technification of fabrics ● Creation of associations led by women in the breeding of guinea pigs.	● Agricultural production associations from Calipuy to El Molle. ● Association of producers of derivatives.
Huascaran National Park - PNH	Chacas	● Tubers (potato) ● Guinea pigs ● Fabrics (sheep's wool)	● Technified irrigation ● Technified guinea pig breeding (modules)	The population proposes: ● Improved pastures for cattle. Genetic improvement and animal health. ● Canals, micro reservoirs and technified irrigation ● Technified guinea pig breeding ● Transformation of cereals and tubers into flour for sale and family self-consumption. ● Advice for the improvement of quality, quantity and technique of the fabric. ● Organizational strengthening of women and producers.	● CUPN. Potaca ● SERNANP – JPNH ● Conventional tourism agencies. ● Board of Irrigators JASS
	Acochacas	● Vegetables ● Guinea pigs ● Tissues	● Technified irrigation	The population proposes: ● Improved pastures for cattle. Pasture rotation. ● Canals, micro reservoirs and	● CUP. of Cajavilca, Ruricocha and Ruripaccha ● Warmicocha peasant community. ● Board of irrigators.

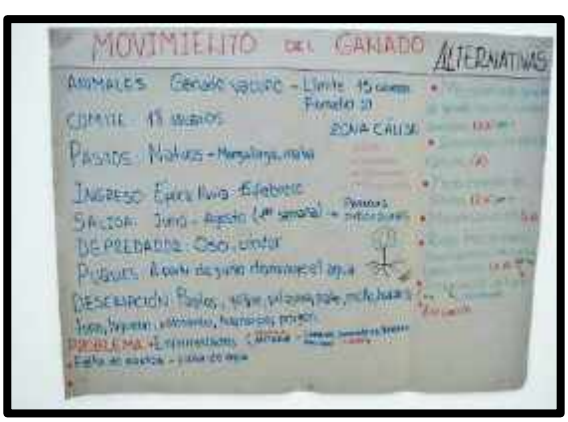
Protected Area	Settlement or Peasant Community	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation process	Relevant organizations
				technified irrigation. ● Technified guinea pig breeding ● Production of vegetables in greenhouses.	● Association.

It should be noted that in both the **SNC** and the **RNC**, the population also expresses interest in the improvement and implementation of tourist circuits within the protected areas and in the buffer zone. For this, the population can associate to provide tourist services such as food, guidance, lodging, among others. In the RNC, the inhabitants of Llamacate, especially young families, have the idea of carrying out agricultural activities such as planting avocados in the buffer zone.

Analysis of solutions for prioritized value chains in Calipuy National Sanctuary



Analysis of solutions for prioritized value chains in Calipuy National Reserve



Analysis of solutions for prioritized value chains in Huascarán National Park

In the **Chacas and Acochacas** sectors of the PNH, the population also showed interest in working on other complementary activities such as attention to tourists at the Punta Olímpica viewpoint, production in fish farms, early warning campaigns of the climate (frost, cold and intense rains and others) prioritizing vulnerable sectors and environmental awareness and education at the level of the entire population. They indicate interest in being trained to access State programs such as PROCOMPITE, AGRORURAL, AGROIDEAS and others.

Suggested intervention strategy and technical information related to component 3:

Within the scope of the **SNC and RNC** The population centers of Cusipampa, Molle, Collayguida baja, El Zaile and El Quiquir have their Administrative Boards of Drinking Water Services (JASS) and the population centers of Cachubamba, Munchugo and Chagaball with their Committee of Irrigators (Pushabara – La Lamball), which supervise the use of water for users and try to maintain the regime of water resources through maintenance tasks, implementation of pipelines, awareness and alliances with the Sanctuary and are the key organizations for the activities proposed in component 3, since they bring together the families that carry out these economic activities. It should be noted that the water for irrigation in these population centers is through four channels that are supplied with water coming directly from the Sanctuary: Rio Los Chilenos, Rio Huashquis, Quebrada Imvall, Quebrada Chalacpampa and other water sources.

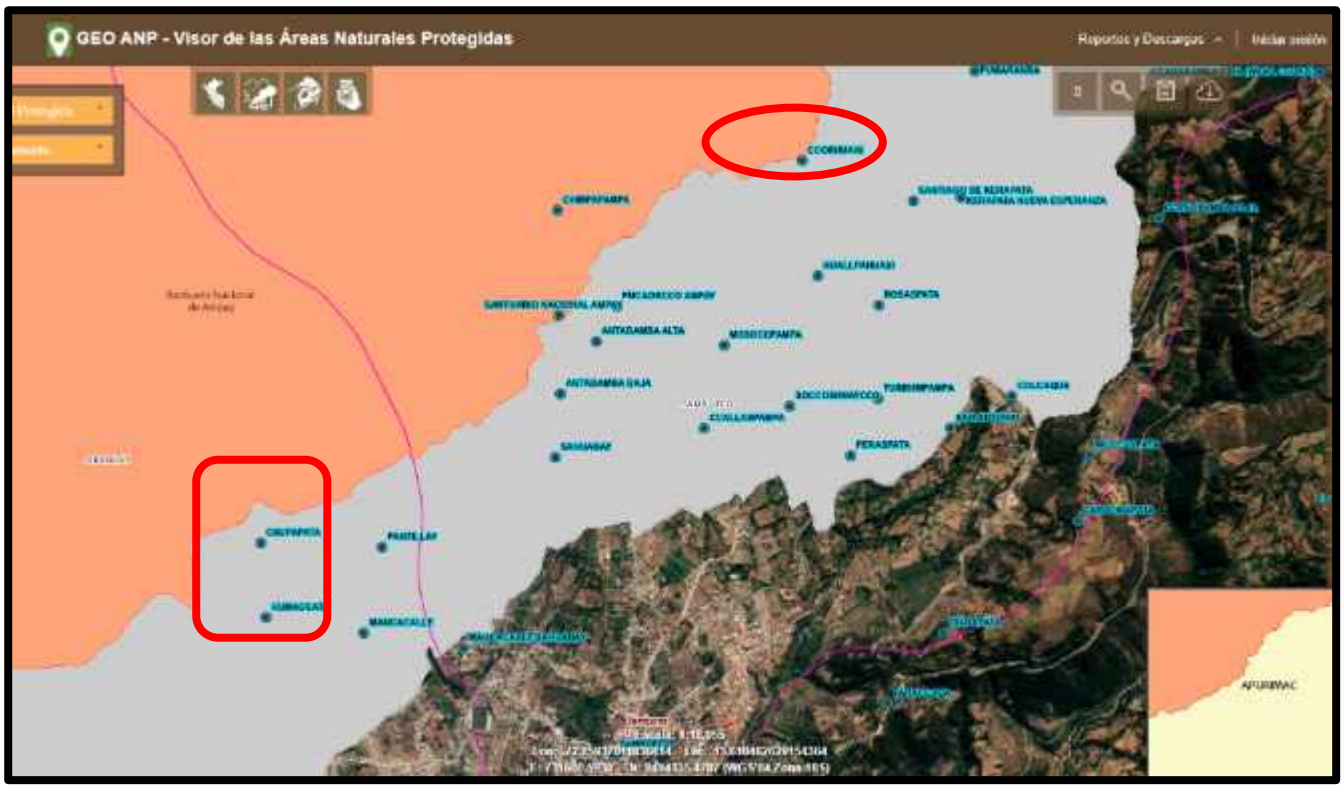
During the consultation process, the population has expressed concern about a variety of vulnerability factors, indicating for example that they are interested in carrying out cold campaigns and medical advice to the population, prioritizing vulnerable sectors, in response to frost. Likewise, they show concern about the quality and financial sustainability of their enterprises, for example, in the case of the fabrics in which they request technical and financial training, to promote their participation in State programs such as PROCOMPITE, AGRORURAL, AGROIDEAS and others. It should be noted that there are already antecedents of activities carried out by the Head of the SNC and RNC in matters of training, awareness workshops and advice for entrepreneurship carried out, with a transversal and inclusive approach. Although these activities were suspended due to the Covid-19 pandemic, they are being resumed this year. Likewise, the Reserve is closely linked to the district and provincial municipalities such as Chao, Virú, Santiago de Chuco and Gore La Libertad with whom they seek alliances to support activities that involve all sectors of the population.

South Mosaic

The prioritization exercise in the South Mosaic has considered the priorities and background of participatory management of the Headquarters of the protected areas that make up the mosaic. The following sectors have been prioritized:

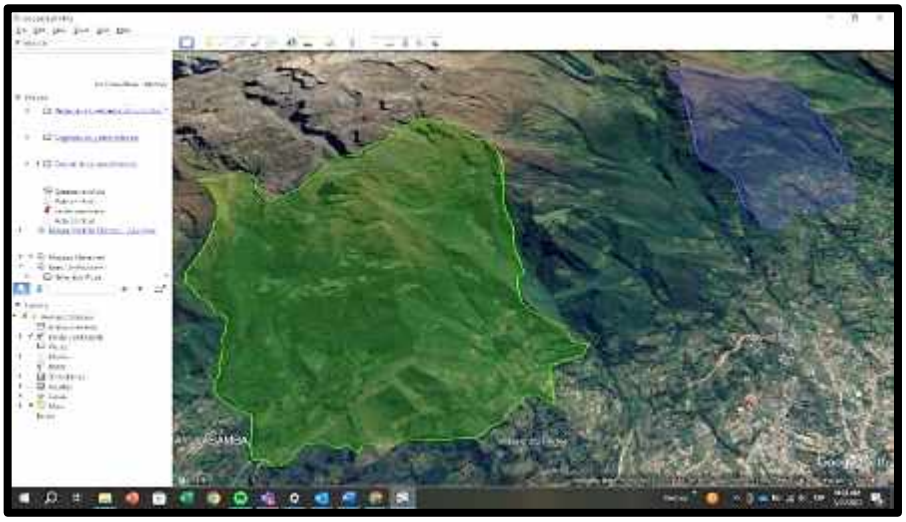
Protected Area	Sectors Prioritized	Settlements and approximate population	Relevant organisations and authorities and #de associated families
Ampay National Sanctuary	Chupapata/Umaccata sector. *Polygon of 859 hectares of intervention area of the Project (priority areas affected by forest fires and surroundings of q'ochas)*	Peasant Community Chupapata (*30 registered families and 50 families*) Settlement Umaccata (*65 families)*	- Chupapata Communal Assembly - Assembly of the population center of Umaccata - Irrigation Board of Chupapata and Umaccata (*51 users*) - Administrative Boards of Service and Sanitation (JASS) - Association of agricultural producers of Chupapata (*18 families*) - Federation of Women of Apurimac
	Sector Ccorhuani *Polygon of 320 hectares of intervention area of the Project (priority areas affected by forest fires and surroundings of q'ochas)*	Settlement Ccorhuani (*78 families*)	- Irrigation board (*56 families*) - Administrative Boards of Service and Sanitation (JASS) - Development Committee - Lieutenant Governor of the town
Machupicchu Historic Sanctuary	Sector Piscacucho *445 hectares prioritized by the community for afforestation and 60 hectares for agricultural use*	Peasant community of Piscacucho (*87 families*)	- Communal Assembly - Reforestation Committee - Producers' association - Association of artisans - 03 Irrigation Committees (Piscacucho, Chaco and Inca Canal)
	Sector Huayllabamba	Huayllabama peasant group (*70 families*) Pampacahuana (7 *families*) Palccay (5 *families*)	- Assembly of the peasant group
Choquequirao Regional Conservation Area	Sector Santa Teresa	Settlement Yanama, Totora and Ccolccapampa (80 families approx)[69]	- Alto Salcantay Cooperative

[69] It was not possible to consult with the population in the sector prioritized in the Choquequirao ACR, since the management of the area has not yet been implemented by the Regional Government of Cusco and does not have a Headquarters that articulates initiatives with the population. Therefore, it was only possible to delimit those sectors and population centers with which the Regional Government has begun the dialogue, there is a significant level of organization (Salcantay Cooperative) and considers it more likely to articulate the Project.

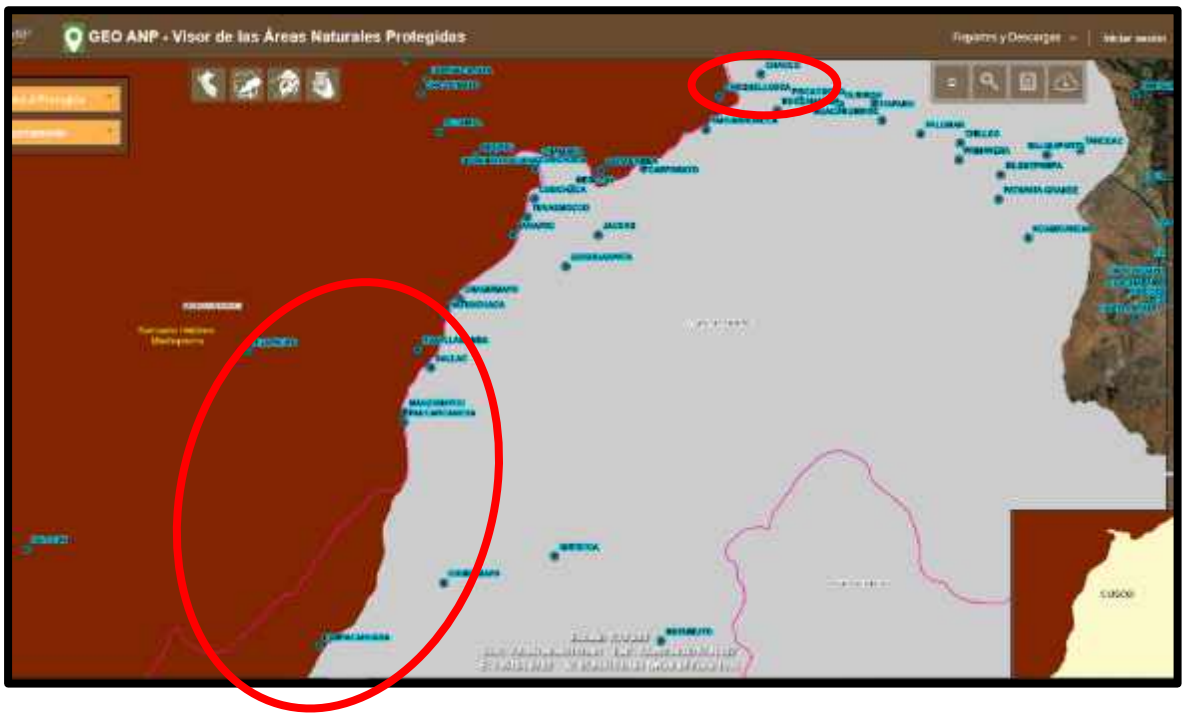


Location of prioritized sites at Ampay National Sanctuary

In the Ampay National Sanctuary, together with SERNANP staff, two polygons of areas of influence have been delimited for the intervention of the Project in the two prioritized sectors (859 hectares in Chupapata/Umaccata and 320 hectares in Ccorhuani). These polygons enclose a mosaic of land uses (population centers, agricultural areas, areas of forest and natural scrub under protection, areas affected by forest fires and water sources). During the workshops and interviews it has been decided that in the start-up activities of the Project a fieldwork will be carried out in these polygons, with the aim of mapping with a high level of detail the areas in which the practices corresponding to output 2.1 will be implemented. For this, the priorities will be in the areas affected by forest fires and the surroundings of the water holes, especially those affected by overgrazing. For component 3, priority will be given to agricultural areas and population centres.



Delimitation of polygons in the Ampay National Sanctuary



Location of prioritized sites in the Machupicchu National Sanctuary

In the SHM it has not been possible to determine exact polygons of intervention of the Project, since the personnel of the SERNANP is still in the process of reconnaissance of the area, understanding of its engines of degradation and sensitization to the population, reason why they do not have to date enough technical elements to delimit the exact area of intervention of the Project. However, it should be noted that the population of Piscacucho claims to have prioritized 445.5 hectares as an area for afforestation and 60 hectares for agricultural use.

Location of proposed sites in the Choquequirao RTA

Characterization of ecosystems and drivers of degradation (Output 2.1):

The ***SNA and SHM are administered by SERNANP***. The SNA has an updated Master Plan in force since 2022, while the SHM is in the process of updating, so it currently works with the extensions of the previous master plan. These management documents contemplate climate change as a transversal line and the heads and specialists point out that from this it is possible to design actions, tasks and budgets for an adaptation line of action.

The ***ACRCh,*** on the other hand, is administered by the ***Regional Government of Cusco***. Although the area was created in 2010, the management scheme of this area is still in the process of implementation and the hiring of park rangers and planning of control and surveillance posts, as well as an interpretation center, is currently underway. It does not yet have a head office and the master plan is in the process of being updated. For the year 2024, socialization meetings have been planned in the Santa Teresa sector and it is expected to have funds for the installation of infrastructure.

The synthesis of the characterization of ecosystems, drivers of degradation, and proposal of conservation practices in the prioritized sectors is shown in the table below[70]:

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices suggested by SERNANP	Summary of the consultation with Population
National Sanctuary of Ampay - SNA	Peasant Community Chupapata Umaccata Ccorhuani	Andean forests and scrub. Relict of the species *Podocarpus glomerata.* *Areas providing water ecosystem services.*	Overgrazing (cattle not stabled) affecting vegetation cover and water sources. This problem generates conflict with agriculture due to soil compaction and water pollution. Forest fires due to poor agricultural practices. Currently the population is expanding its agricultural frontier, in the lands affected by the fires of the years 2021/2022. Extension of the agricultural frontier (especially since the pandemic).	Reforestation of scrub and forests with native species: *Podocarpus glomerata.* (prioritized by SERNANP for the core area) Protection of water sources (exclusion of livestock income)	The population expresses interest in reforesting in special use and agricultural areas with native species that can be exploited (alder, queuña and elderberry). In Ccorhuani there is provision for the plantation of *Podocarpus glomerata*, but only in the upper parts. A part of the population says they understand the need and agree with the exclusion of livestock in the upper parts.
Machupicchu Historic Sanctuary - SHM	Huayllabamba	Grasslands and forests of *Polylepis sp.*	Overgrazing by equine cattle used for tourism (not stabled). They do not have infrastructure of sheds for the ordering of the activity.	Exclusion of livestock from high water supply areas	They do not identify the need to exclude livestock from the highlands as a water management measure. They express the need to control forest fires.

[70] The proposal for conservation and restoration practices was prepared in conjunction with specialists from SERNANP and subsequently submitted to the consultation process with the population, the results of which are described in detail in section 4.3.4. of this document.

Protected Area	Settlement or Peasant Community	Ecosystems	Current degradation engines	Conservation and restoration practices suggested by SERNANP	Summary of the consultation with Population
	Peasant Community Piscacucho	Unca forests, scrub and grassland	Fires due to burning of stubble. *Note: Cattle farming has been recently managed and is not currently the main driver of degradation*	Don't burn Water management to supply water for fruit crops	Expresses interest in implementing water management measures, under technical studies. They show interest in reforestation with the queñua species
Choquequirao Regional Conservation Area - ACRCh	Sector Santa Teresa (Yanama, Totora y Ccolccapampa)	High Andean forests (queuñas) and grasslands ecosystem transitions	Fires due to traditional agricultural practices	Livestock management and silvopastoral systems. Forest restoration, subject to feasibility studies	It was not possible to carry out the consultation process with the population.

Forest fires at Ampay National Sanctuary
Photo: Jaime Valenzuela Trujillo.

<u>Background to ecosystem management initiatives (Output 2.1):</u>

In the ***Umaccata/Chupapata sector of the SNA***, agroforestry has been promoted in the past as an agroecological measure to reduce the use of agrochemicals and diversify the system with rotation of ancestral crops (NGO IDMA). Community leaders from both sectors point out that they have also participated in the past in reforestation projects with natives (intimpas, queñua, elderberry and alder) and that they have also had projects to improve reservoirs and capture water for consumption. As a result of these experiences and the awareness-raising and participatory management work of SERNANP, the population shows an intermediate understanding that water stress problems are intensified by poor agricultural practices such as burning and overgrazing.

In the **Huayllabamba sector of the SHM,** SERNANP is currently promoting bio-gardens (vegetables for self-consumption and use of biocides) with farmers interested in the subject. Along these lines, training in agricultural management (crop management) has been scheduled for the coming months. In addition, SERNANP reports that the population participates in participatory management planning workshops and a livestock center is planned. In the town of Pampacahuana (upper part of Huayllabamba sector) reforestation has been worked between 2005 – 2009, in which INRENA produced seedlings in a nursery in Huayllabamba (queñua to bare root). It should be noted that SERNANP is in talks with the company EGEMSA (hydroelectric

power plant) as it is interested in the restoration for recovery purposes of hydrological services in the upper parts.

On the other hand, in the **Piscacucho** sector there is currently a project to recover vegetation cover in the areas of Calca Urubamba by the Regional Government of Cusco[71], which has been 4 years in implementation. Through the sensitization carried out with this project, the community began to carry out livestock management. In addition, the community has participated in the initiative to offset carbon environmental services with the company Natural Services (Regenera), within the framework of which they developed a Life Plan and received incentives for restricting the practice of stubble burning (even before the pandemic). They have also participated in the initiative "One million trees" of SERNANP and have had technified irrigation projects.

Peasant community of Piscacucho

In the **Santa Teresa** sector, there has been no history of conservation, restoration or productive projects. There is, however, a planned road improvement project from the Choquequirao archaeological center to Yanama.

Population perspective and gender issues related to output 2.1:

In the **SNA** there is a gender-linked distribution of agricultural and livestock work. Males generally carry out more livestock activities, take advantage of forest resources, and manage the conduction of irrigation water. Domestic work and the care of agricultural plots (crops) are carried out by women, who have a medium to low participation in the Irrigation Boards. A particular case is that of the town of Umaccata, whose president of the assembly (and representative of the Federation of Women of Apurímac) indicates that they have attended capacity building with various NGOs and as a result have agreed that the attendance of their meetings must have 50% representation of each gender.

During the workshop with population **in Chupapata / Umaccata** it was evident that women are more aware than men of the diversity of native forest species and represented with a much greater level of detail the built infrastructure and crops in the communal area (church, educational center, housing, water catchments, access roads). In addition, they showed in greater detail the distribution of agricultural land by family. However, they did not distinguish systems within the protected area (natural forest/plantations) or activities within it. Men, on the other hand, represented more accurately their geographical scope, and with a greater level of detail the different types of vegetation in the protected area, the types of crops (maize, tarwi, potatoes and vegetables), the productive activities that invade the protected area (crops), the trees inside plots in the middle zone and the water mirrors. Both genders identified the main factors that cause degradation and vulnerability in their area: burning and fires of grasslands and wooded areas, water deficit in water bodies and the affectation of this in crops. These representations show that, although it is true that each gender group has a greater or lesser relationship with the components of its environment and there is a high degree of specialization in its tasks, they equally identify its vulnerability.

[71] Technical file available in https://ofi5.mef.gob.pe/invierte/general/downloadArchivo?idArchivo=8c0bf031-1f31-4c1b-8127-112ce3bcce8c.pdf


Workshops with population in Chupapata / Umaccata.

In the workshop held in the town of **Ccorhuani**, the women represented in a clearly differentiated way the areas of forest, lagoon, agricultural cultivation, animal husbandry and infrastructure (church and housing); however, the level of detail of these components was lower than that of the talking map prepared by the men, who also represented more clearly the built infrastructure (churches, housing, water reservoirs and sprinkler irrigation systems). Although both genders identified the factors of degradation and vulnerability (fires, frost and water scarcity), the men did so with a greater level of detail and precision in locations, even pointing out the productive activities that invade the protection area in the Sanctuary (livestock) and the different points of forests affected by burning. This shows a higher level of ability to describe the environment of men than women and could be considered an indication of training gaps.


Workshops with population in Ccorhuani

Regarding the participation of young people in agricultural activity, SERNANP-SNA has frequently received expressions of interest from children and grandchildren of landowners, who have shown interest in continuing the activities of the older generation. This coincides with what was pointed out by community leaders of ***Umaccata/Chupapata*** who report that young people and women get involved and participate in the Water Boards, widows and young people who assume the roles of parents. In **Ccorhuani,** on the other hand, the authorities point out that there is insufficient representation of women in the decision-making bodies of the population center (committees and assemblies).

In the **Huayllabamba sector of the SHM** it is referred that there is also a distribution of work linked to gender: equine cattle are raised by men, while women are responsible for self-consumption crops. However, in communal assemblies the most active group with the most voice are women. This was verified in the workshop with population held in this locality, since there was a high participation of women and with very good social skills to express their impressions and transmit their ideas.

In the talking map of **Huayllabamba** the women captured in detail elements of the landscape such as clouds and precipitation, hills, glaciers, wildlife (condors and deer), natural pastures, water sources (springs and rivers), relicts of natural forests and forest plantations, areas of cultivation (consumption and ornamental), the roads of muleteers and tourism, small animals (rabbits), equine, cattle and camelids, infrastructure (housing) and the human population itself. The talking map prepared by the men also clearly captures the hills and glaciers, the Salcantay and Huayruro rivers, the forests and grasslands (relicts), the reforested areas), and with a high level of detail the area of crops (corn, potatoes, beans, quinoa, and vegetables), the Inca trail (tourist route), forest plantations and communal infrastructure (educational center and health post). One of the main differences between the map of men and women is that the former included areas surrounding the community and its main elements (fish farms, road), while women focused on the Huayllabamba area, which

is considered a reflection of their level of specialization in productive activities (tourism on the Inca trail, versus self-consumption crops).

Both genders in **Huayllabamba** identified and showed concern about threats to their environment forest fires, the disappearance of glaciers and lack of rain, associated with the lack of water in low-lying areas, causing a decrease in river flow and water deficit in crops and loss of productivity. The men also identified potato crop diseases, contamination of waterways and communal environments; while women identified the reduction of lagoons and the danger of extinction of wildlife.

Workshops with population in Huayllabamba

In the **Piscacucho** sector, on the other hand, specialists point out that there is little participation of women in restoration activities and community assemblies, although these patterns are changing progressively. In interviews with community leaders, they pointed out that women are part of the irrigation committees and currently the lieutenant governor of the town center is a woman. They also indicate that in community tasks (reforestation, maintenance of irrigation canals, etc.) both women and men, young people and children participate, although there is high migration of young people in search of study and employment opportunities. During the visit to the locality, women could not be counted on in the interviews or the workshop.

The talking map prepared by the workshop attendees in **Piscacucho** accurately represented most of the natural and cultural elements of the community environment. They first identified three snow-capped mountains (La Verónica, Punkuyoq and Wakay Huillque), as well as two main watercourses (Chaquimayu and Huaytampo streams, both delimiting the community), springs in the middle zone and the Vilcanota River. The natural forest and the plantations of eucalyptus, chachacomo and queuña in the upper parts were also represented, the different sectors of agricultural cultivation in the middle zone (corn, potato, pumpkin, wheat, avocados, quinoa, flowers) with the division by plots and terraces; and the raising of cattle, horses and small animals in the lower zone (the community has prohibited grazing in the upper part). In the same way, an Inca irrigation channel and conduction hoses were represented in the upper zone, irrigation channels in the middle zone, water reservoirs in the middle and lower zones, tourist infrastructure (viewpoints, rest areas, roads and the tourist terminal), two archaeological sites, technified irrigation infrastructure (in fruit trees and avocado), housing, the SERNANP checkpoint and the railway line.

As main threats they identified the melting of glaciers, forest fires in the eastern sector of the community (Piquillacta) and water scarcity in the lower zone, near the population center (Chaco sector).

Workshop with population in Piscacucho

In the **Santa Teresa** sector of the ACRCh, the staff of the Regional Government of Cusco states that community leadership tends to fall mainly on men, while women do not actively participate in meetings and communicate mainly in Quechua among themselves, although they show interest and seek to communicate

their opinions through their partners. However, they note that these patterns are changing due to the increased influx of tourism, which motivates greater interaction by economic activity.

Summary of the consultation process related to output 2.1:

The priority of the ***SNA*** Headquarters for this output is to recover and revegetate the areas of forest and scrub that were affected by the forest fires of 2021 and 2022, which are currently being invaded for the practice of agriculture and livestock. To this end, they propose the revegetation and exclusion of livestock in fragile and water-supplying areas, especially with the species "Intimpa" (*Podocarpus glomerata*)

The population of the two prioritized sectors is also concerned because forest fires and overgrazing have affected natural vegetation, areas revegetated in the past (planting with queñua in the vicinity of the Faccha wetland) and water sources that supply water to their population centers and agricultural properties. Therefore, they point out that revegetation actions are not enough without adequate monitoring.

> *"When the forest looks beautiful there is life for us and other people, when there is no water, we suffer. Our parents have not known how to take care, but I see that young people are already changing" (Norma Pedraza)*

Unlike SERNANP, in the **Umaccata/Chupapata** sector the priority is to establish reforestation with species that, according to their statements, "attract water" and at the same time can take advantage (firewood, fruits) such as "queñua", "alder" and "elderberry". Both men and women understand and explicitly represent the relationship between the recovery of natural ecosystems in the upper part with the recovery of the ecosystem service of water supply and show interest in simultaneously practicing restoration with water efficiency in technified irrigation. They agree with SERNANP that for this practice to be successful, they need to remove animals that graze in these areas, although this understanding is not uniform among all the people who participated in the consultation process.

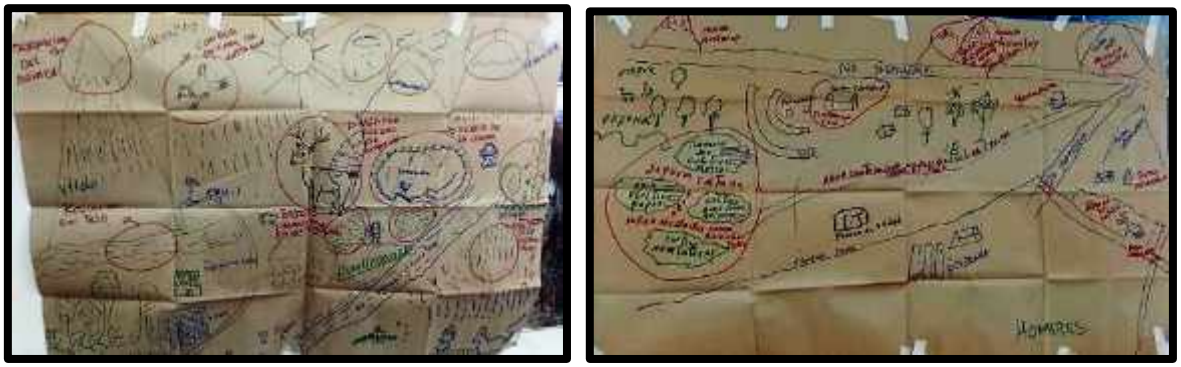
In **Ccorhuani**, the population did show willingness to revegetation with *Podocarpus glomerata*, only in the upper parts of the core (protection) zone, where they identified affectation by forest fires. However, for the restoration of areas surrounding watercourses and middle areas, they prefer to use the species "queñua" (*Polylepis sp*.)

Talking maps in Ccorhuani

Talking maps in Chupapata/ Umaccata

In the **Huayllabamba sector of the SHM,** a dialogue of analysis and closure was held during the workshop in which the population indicated that it has worked in the past with reforestation with natives (queuña, chachacomo) and expressed its concern about the alteration of climatic patterns, the reduction of glaciers and lagoons, the disappearance of fauna species such as the Andean bear and the deer. the increased intensity of frost, among others.

"When I was little, the rain fell in July, but I eat snow. Between September and March the rain allowed planting, not like the crazy rain now that does not allow it" (workshop assistant)



Talking maps in Huayllabamba

Although they expressed strong concern about how this affects agricultural production (water deficit and diseases) and the vigor of natural pastures (where cattle graze), they did not easily identify overgrazing by equine cattle (used for transport and tourism services) as one of the factors aggravating the situation due to soil compaction and disappearance of pastures.[72]. It was thus evident that a process of capacity building and awareness is necessary so that the population understands the importance and commits to the practices proposed by the project (protection of water sources and livestock management). Finally, they said it was important to control the burning of grasslands and forests and to control the contamination of solid and liquid waste. Regarding the restoration of vegetation cover, they indicated that their preference is the "queñua" species, especially around the water sources, but expressed concern about the availability of water, since they point out that the rains are not enough and that the plantations are at risk of drying up.

"Many of us did not know about pastures (their role in water regulation), there are many who do not know, and we must make them understand that they must reduce the number of animals and make changes" (workshop assistant)

In the **Piscacucho** sector, workshop attendees said they already had significant progress regarding restoration with native species and the exclusion of livestock from the upper parts, their main concern being to optimize water management. For this, its interest is to work on the improvement of q'ochas and reservoirs, under technical studies, in an articulated way to technified irrigation. Also indicate interest in planting native species (queñua and chachacomo) in the wastelands, in 445 hectares that the community has determined to be destined to the restoration.

[72] In dialogues with SERNANP and the population of Huayllabamba, it was described that the equine grazing system is extensive and with little control of the animals. Regularly, each family owns between 10 and 40 animals, which rotate to be put to work (they have 3 to 4 animals working and feeding on cultivated pastures, while resting animals are released to natural pastures). Although resting animals roam freely, there is some non-formal distribution of areas of natural vegetation, which have been assigned to families.

Talking maps in Piscacucho

Technical information relevant to output 2.1 intervention strategy:

In the area of influence of the **SNA (Chupapata / Umaccata and Ccorhuani),** the staff of SERNANP (Chief, specialists and park rangers) recommend to develop widely socialization and awareness workshops with a view to the population "owning" the project, understanding that its objectives, activities and results contribute to addressing its vulnerability factors (water deficit in the ecosystem) and see itself as a key actor that can contribute not only to the mitigation of threats (for example the attention of fires) but to the sustainable management of the entire space through the sustainability of crops.

They point out that during the implementation of activities it is necessary to ask for a non-economic counterpart (in labor and food preparation), which, in addition to being a collaborative strategy, is consistent with the communal practices of *ayni* and *mita* (community work). In addition, they recommend that the selection of beneficiaries include the demand for commitments by the population through conservation agreements and minor activity, as a strategy to transform the welfare approach that other projects have had in the past and that have been failed in sustainability. To encourage the commitments of the population, it is necessary that, before the implementation of practices, the relationship between the practices of exclusion of livestock, revegetation and prevention of fires with the management of the ecosystem service of water supply, necessary for productive activities, be explained in detail. Likewise, to verify progress and effectiveness, they recommend periodic monitoring that probes how practices are being implemented, and which beneficiaries are complying with minor activity and conservation agreements.

About the participatory management of the project, it should be noted that both in Umaccata and in Ccorhuani there are organized community brigades of forest firefighters that have been formed by SERNANP and that have the potential to be convened, the Umaccata being the most organized. They also have forms of organization of communal tasks around the Water Users Boards, with whom a work agenda is organized for the maintenance of water distribution channels. The association of producers of Chupapata, for its part, said that it wants to articulate its productive actions to the afforestation and protection of springs, since they have observed how it is necessary to ensure the provision of water for productive activities and they are interested in moving from raising cattle to raising small animals such as pigs and guinea pigs.

Regarding the possible articulation with other institutions, the president of Umaccata suggests the participation of the provincial municipality, SUNASS, MIDAGRI and ANA, since she points out that she has participated in internships in Rontoccocha, Cusco and Puno and that she has seen how the interventions to recover the natural infrastructure within the framework of the initiative of these institutions have impacted on a greater availability of water. Likewise, in Ccorhuani they referred that the district municipality of Tamburco and the provincial municipality of Abancay eventually respond to requests for support for communal tasks and can be a key ally actor.

Workshops with SERNANP-SNA

SNA has experience in reforestation with native species (*Podocarpus sp.)* in the degraded areas within the core zone and has estimated the approximate cost of it (***S/ 2500 / hectare approximately to the year 2019***). These costs include the production of seedlings in nursery (seedlings chimed in the forest), preparation of substrate, filling of bags, purchase of hoses and payment to laborers. For this, SERNANP has a nursery that currently has 4 beds, with a capacity of 3000 plants each and that could be expanded (it would involve adaptation work). In the area there are other nurseries of the provincial municipality and the regional government, with whom it would be necessary to establish agreements for the provision of seedlings.

Forest nursery of SERNANP-SNA

In the **Huayllabamba sector,** on the other hand, it is suggested to approach the intervention of the Project as a productive efficiency strategy, since the opportunity cost of the population is too high[73] to request that they contribute a non-monetary counterpart in the work of restoration and conservation of ecosystems (their main livelihood is to provide transport services in acémilas and horses for tourism and families). In the previous projects, SERNANP has paid the working day, as do other institutions (the assembly of the peasant group requests the plants and the travel and tourism agencies pay the labor). The population covers the transfer in the acémilas but charges a fee of S / .2.00 soles for opening a hole and S / .1.00 for installing each reforested seedling. With these rates SERNANP has installed three thousand plants in the past at an approximate cost of ***8 thousand to 10 thousand soles per hectare*** in the **Huayllabamba and Piscacucho** sectors (depending on the daily wage rate, access, among others).

Currently, in the bio-gardens project underway in the **Huayllabamba** sector, families provide labor, under the logic that the products are for their own consumption (SERNANP provides technical assistance). In addition, the costs of this project are reduced because the plots are smaller, and do not need to be mobilized to other sectors. It should be noted that SERNANP has minor activity agreements (linked to tare production) in the buffer zone (valley floor,) but not in the upper part. They point out that to make agreements of minor activity within the area, the livestock carrying capacity of the area would have to be analyzed.

In the **Piscacucho sector,** it is pointed out that the population is organized within the framework of its communal structures and Life Plan, so there are ways to summon the participation of the population in the Project and organize community tasks. For this, the population recommends coordinating efforts with the Ministry of Culture (promotes tourism) and the Regional Government (they have reforestation projects, but do not address water scarcity).

[73] The population has an average earnings of 80 to 120 soles per day, so it refuses to lose days of work to devote itself to community work.

Huayllabamba Peasant Group

Regarding the **Santa Teresa** sector in the ACRCh, there is still no precedent that allows approximating intervention strategies or estimating costs of the practices to be promoted. However, it is expected that being a tourist area, the population could request the payment of wages, the same as in the Huayllabamba sector.

Characterization of livelihoods, vulnerability and value chains (component 3):

The main economic activities in **both sectors of the SNA** are the agriculture of rotational crops for self-consumption and, to a lesser extent, sale to the local market (potato, olluco, corn, alfalfa, beans, peas, potatoes, cereals, broccoli, cabbage, garlic, among others) and extensive cattle ranching. The raising of small animals, pigs and horses, as well as in some cases the cultivation of flowers, is also practiced on a smaller scale. In the case of a family from ***Ccorhuani***, they develop the cultivation of strawberries in a greenhouse and there is an association of producers ***in Chupapata*** that has worked with the production of guinea pigs in the past. Although the population is settled in the buffer zone (housing and population centers), they practice extensive livestock, invading the core area of the SNA with animal grazing. Also, although they practice agriculture in the buffer zone, the collection of water for irrigation is in the core zone.

The main reason for climate vulnerability in the prioritized sectors of the SNA is the water deficit that affects all productive activities (melting of the glacier added to the compaction of soils in water sources) and alterations in temperature and rainfall patterns, which have triggered uncertainties in productive decision-making and frost affectation. Heat stroke and disease (potato ranch). Another factor that affects sustainability is the dependence on chemical fertilizers in the case of agricultural crops [74] , the high price of agricultural inputs (especially after the pandemic) and the poor conditions in which extensive livestock farming is practiced (unproductive animals that nevertheless generate great impact on soils and natural vegetation).

Throughout the scope of the SHM the main economic activity is tourism services, together with agricultural and livestock activities. In the **Huayllabamba** sector most of the population is dedicated to being muleteers and moving luggage and various products from the train stations (Piscacucho and Qoriwayrachina) in acémilas and on foot (tourist stevedores), which is very large and there are families that come to own between 10 and 40 animals. In addition, there is the service of temporary camps for tourists, sale of packaged food (they do not sell prepared food for the preferences of tourists). However, the main use of the land is the rearing of equines for tourism, for which most of the animals are released into the natural pastures of the middle and upper parts for free grazing (uncontrolled).

[74] Projects promoted by local NGOs in the past have promoted sustainability with organic inputs, but failed to get the population to continue these practices when the projects ended.

Equine cattle in Huayllabamba sector - SHM.

In the Huayllabamba sector, rainfed agriculture is practiced for self-consumption (corn, potato, beans, carrots, cabbage, onions, among others) and there is raising of cattle (milk and meat, for self-consumption) and horses, for which it is carried out to a lesser extent sowing of pastures in rotation with crops for human consumption. It should be noted that equine **farming is also practiced in the Pampacahuana** annex, but they receive much less influx of tourists, so they provide tourist services outside the scope of the annex and practice other types of livestock (sheep, cattle, pigs), as well as agriculture for self-consumption (especially tubers). The population clearly identifies that its main vulnerability factor is the water deficit and alteration of climatic factors, which affects self-consumption crops.

In the **Piscacucho** sector, the population practices the agriculture of various crops both for self-consumption and for sale (potatoes, corn, beans, avocado, fruit trees, vegetables, pumpkin, wheat, peas), for which they participate in the Program "From the Farm to the Pot" of Agrorural. In addition, there is tare production under conservation agreements and services are provided to tourism. The main reason for climate vulnerability is the water deficit, which has generated conflicts within the population, as there is a greater demand for frequent irrigation. Changes in temperature and rainfall patterns have generated changes and uncertainty in the agricultural calendar and affectation to crops, especially by pests and diseases, so that for some years farmers have had to abandon the cultivation of pumpkin. To this is added the price increases of fertilizers, pesticides and seeds and the alteration of the schedules of agricultural wages (increase in temperatures in the mornings towards noon prevents work in the field).

Gender issues related to component 3:

In the priority areas of the **SNA**, women participate with greater emphasis on irrigation in agricultural plots and are especially related to the tasks of raising guinea pigs, an activity that is considered to have high potential for development and market, there is even the Association of Agricultural Producers of Chupapata, made up mainly of women (16 women and 2 men). The president of this organization points out that the whole family participates in this activity, since the men perform tasks, such as cutting fodder, while the women attend the training and handle the animals. They also point out that there is good participation of young people in productive activities.

The president of Umaccata emphasizes that it is important to boost the economy of women, with an adequate articulation to the market and also considers that the productive chain of guinea pigs is promising. She points out that economic empowerment is a strategy to address the physical and psychological violence that is still experienced in many households, where the fact that women do not yet have their own income is a factor of discrimination. It recommends strengthening the capacities of women, who need to work on self-esteem and social skills.

In the **Huayllabamba sector** of the **SHM**, it is reported that women develop economic activities linked mainly to tourism (sale of chicha, food and snacks). In agricultural work, they perform fine work of sowing and weeding, crop irrigation, fertilization, among others; while men are responsible for the heaviest agricultural tasks, but mainly for haulage and transport services for tourism. It should be noted that in the **Piscacucho** sector there is a Committee of Vendors and Artisans, composed mainly of women, who organize the attention to tourists.

Prioritized value chains and synthesis of the consultation process related to component 3:

The value chains prioritized by the Project in the prioritized sectors are shown in the table below:

Protected Area	Prioritized Sectors	Prioritized Value Chains	Measures for optimization and resilience	Summary of the consultation with Population	Relevant organizations
National Sanctuary of Ampay - SNA	Peasant Community Chupapata Umaccata Ccorhuani	●Guinea pigs ●Rotational vegetables *Vulnerability due to water deficit*	●Breeding guinea pigs in modules. ●Strengthening of associativity and seal allies for conservation ●Technified irrigation (water scarcity)	The public expresses interest in the proposed chains and measures, in line with the protection of water sources proposed for output 2.1. They emphasize their interest in breeding guinea pigs.	- Chupapata Communal Assembly - Assembly of the population center of Umaccata - Committees of irrigators of Chupapata and Umaccata - Association of agricultural producers of Chupapata (*16 women)* - Federation of Women of Apurimac
Machupicchu Historic Sanctuary - SHM	Huayllabamba	●Equine livestock (linked to tourism) *Vulnerability due to water deficit*	●Semi-stybulated cattle with improved fodder	The population is not sensitized to the need to manage livestock. Expresses interest in the technified irrigation of self-consumption crops	- Communal Assembly - Reforestation Committee - Association of producers and artisans
	Peasant Community Piscacucho	●Tara and fruit trees *Vulnerability due to water deficit*	●Technified irrigation and seal allied for conservation	The population expresses interest in the proposed chains and measures, in line with the management of water sources proposed for output 2.1	- Assembly of the peasant group

In both sectors prioritized in the SNA, the leaders and representatives of the population consulted in the workshops in both prioritized sectors have shown interest in the two alternatives proposed during the consultation process: technified irrigation and guinea pig production. For this, they have located on the talking maps the figures of "technified irrigation" in the middle and low areas where there are agricultural crops and identified vulnerability due to frost and water scarcity. In Ccorhuani they pointed out the importance of leaving the practice of gravity irrigation, since sprinkling is more efficient in the use of water and allows a greater frequency of irrigation (every 7 days with sprinkler and every 25 days with gravity irrigation). They also highlight that the installation of sprinkler irrigation requires a participatory technical analysis and adequate maintenance of the channels and q'ochas.

The "breeding of guinea pigs" was located in the settlement, near the houses, pointing out that the cultivation of fodder is necessary, but they emphasize that in much less quantity than that necessary for cattle, so they prefer the breeding of guinea pigs. Community leaders express fear for having had failed experiences in the past and needing to suspend the production of guinea pigs due to water scarcity, so they request training to better understand water management and be able to produce in a sustained manner. Some participants of the workshops, however, stated that they are interested in maintaining the activity of raising cattle, although they admit that the alteration of the rainfall pattern has affected the growth of pastures (while SERNANP specialists consider that cattle breeding is not profitable and causes a high impact on the ecosystem).

In the **Huayllabamba sector** of the SHM, there are already previous experiences of installing technified irrigation, which was promoted by the municipality (year 2012). The population states that it is interested in expanding and renovating facilities that are already deteriorated. In addition, they point out that they are interested in installing organic agriculture pilots to provide sustainability to self-consumption crops and regenerate the soils of family plots.

In the **Piscacucho** sector, previous experiences of exclusion of livestock, technified irrigation and maintenance of irrigation canals mark a precedent and starting point. The population wants to expand and optimize technified irrigation in fruit crops and reforested areas, while SERNANP considers that it is possible to articulate them to the marketing strategy under the seal "Allies for Conservation", granted by this institution.

Suggested intervention strategy and technical information related to component 3:

Within the scope of the ***SNA***, SERNANP recommends starting the Project with an in-depth participatory analysis and awareness regarding vulnerability to climate change, as a strategy to promote adaptation practices to be implemented through the Project. They also suggest that the project start with a small number of pilots with families selected for their commitment and performance in output 2.1 activities (conservation and restoration). They highlight the importance of having technical personnel to advise the production of guinea pigs from production to marketing and to marketing.

About the establishment of possible synergies with other institutions, the president of the Association of Chupapata Producers points out that the municipality of Abancay and Agroideas are in the process of formulating a guinea pig breeding project, which would install sheds, provide materials, alfalfa seeds and training, but would work only with families in the peasant community of **Chupapata**. but in the town of Umaccata, because it is not a peasant community. In **Umaccata**, they have had in the past support from FONCODES for the installation of sprinkler irrigation, after which it is the same Board of Irrigators that is responsible for maintaining and managing the distribution of water. In **Ccorhuani,** they have received support from the provincial municipality in terms of raising guinea pigs, greenhouses and dairy cattle, but in a timely and small-scale manner.

With respect to the **Huayllabamba** sector of the SHM, SERNANP points out that alternative productive activities such as the raising of guinea pigs and alpacas have been promoted in the sector, which has failed due to mismanagement and lack of vision of sustainability. In the middle sector (access to Huayllabamba, middle part of the Cushichaca river basin) there is a fish farm that does not currently work and a family initiative to raise guinea pigs in sheds that is in production. Given the high opportunity cost of tourism, specialists conclude that the intervention of the Project must be related to tourism (for example, the sustainability of equine livestock). SERNANP considers that its environmental education program is an opportunity to introduce this issue (through community assemblies).

In **Piscacucho,** it is recommended that the management of component 3 be organized through the associations of producers of the community, as well as the initiatives of SERNANP, Ministry of Culture and the Regional Government.

INTERVIEW FORMAT

Form 1 - Interview with Chief / Protected Area Specialist (Baseline)

Good morning and thank you for your willingness to participate in the consultation process for the elaboration of the concept note of the Project "**Building a program for the adaptation and resilience to climate change of the Andean ecosystems and populations of Peru**". You have been kind enough to participate in the previous activities of pre-consultation (during 2022), targeting and validation of the online POA. This last stage of the Project formulation and consultation process aims to a) collect information relevant to the ***project baseline***; and b) ***identify organized groups relevant to the consultation process*** (producer associations, women's organizations, youth organizations, others). We expect to take a maximum of 1 hour and a half of your time.

a) Data of the person interviewed

- Full name, position and institution, email

b) Restoration and conservation practices

- For the implementation of the Project, the area of influence of these population centers has been prioritized, could you confirm it?
- What kind of local authorities are relevant to the activities of the Project?
- We were told that the main drivers of degradation in these sectors are ….. could you confirm it?
- Are there previous experiences of restoration/conservation in these sectors? What kind of practices (native restoration, nucleation, massif, agroforestry systems, etc.) do you have area estimates? Records of community participation?
- During the prioritization of sites, it was identified that the project will intervene with practices. Do you have technical data such as costs per hectare of these practices to help us with the formulation of the Project? Other information such as the existence of nurseries or availability of seedlings? Could you provide it for us?
- Could you confirm/point out the local grassroots organizations that would be involved in the project? (Irrigation Boards, Community Assemblies, Committees, Associations, etc.)
- Are there records, accounts, or estimates of the number of families who would participate through these organizations?
- What strategy do you suggest involving them and generating benefits? (participation in conferences, training, technical assistance, incentives, etc.)
- The involvement of young people and women is important for the project. How do you suggest that the inclusion of these groups in these activities should be approached?

c) Value chains

- The project has prioritized the strengthening of the following value chains in population centers. What is the current situation for these chains? Emerging? Developed? Are there previous experiences of strengthening (financial, technical assistance, training)
- What is your main problem? Do they show vulnerability to climate change?
- Are there local associations or organizations that are part of these chains? (producers, intermediaries, marketers)
- Do you have records of the number of families involved in these chains?
- What measures are proposed to strengthen them) (for example: technified irrigation, marketing advice, agroecological management, etc.)

- The involvement of young people and women is important for the project. How do you suggest that the inclusion of these groups in these production chains should be approached?

d) Area planning tools

- In our interview last year, we were told that in the area master plan, the issue of climate change was addressed ….. Do you think that the management instruments of the area could be strengthened? ¿In what way?

e) Recommendations for visiting communities

- We are about to conduct interviews with leaders of the communities and a workshop with the population, whose objective is to consult and validate the proposed activities of the Project. What recommendations could you give us in terms of logistics and facilitation? (For example, for transport, the selection of schedules, is it necessary to consider different schedules for men and women for example? interview with women leaders, contacts, among others).

Form 2 - Interview with community leader (male) - consultation

(Note to facilitator: if interviewing male and female leaders simultaneously, move the questions from form 4 to this one, in the appropriate sections and try to address the female leader(s) equally.

Good morning and thank you for your willingness to participate in this interview. We are working on a project proposal called "Building a program for the adaptation and resilience to climate change of the Andean ecosystems and populations of Peru", which if approved, will have several objectives such as promoting the conservation of forests, pastures, wetlands and other Andean ecosystems in protected areas, and at the same time strengthening the adaptation of the population to climate change (extreme heat, droughts, abnormal rainfall) on and around (buffer zones).

We are here because the community you represent has been prioritized as part of a consultation process in which we seek to better understand some important aspects about the families that live here. We expect to take between 40 minutes of your time to an hour.

a) Data of the person interviewed

- Full name:
- Position and community/location:
- Contact details:
- Age and gender
- Time of experience as a community leader and how much longer you will officially be a leader:

b) Community, organization and representation

- How many families/people live in the community/town center?
- How is the community organized? Do you have an assembly that meets periodically? Are committees formed? Productive organizations?
- How do women participate? Do they have specific activities that they carry out in the committees and organizations?
- What are the main institutions that work with the community? (For example the municipality, educational and health centers, SERNANP, Agrorural, etc?

c) Value chains, vulnerability and engagement

- We have been told that some of the main economic activities developed by the community are ... That's right?

- How do women get involved in these activities? Do they perform any specific tasks? What are your main activities?

- What about younger people? (Ask for migration)

- We have been told that these activities are affected by climatic factors such as droughts, frosts, uncertain rains .... What is your personal perception of this?

- Are there any other factors that affect the economic activities of the community? (e.g. pandemic, transportation, difficulties in selling, etc.)

d) Linkage with conservation and restoration

- Have you ever carried out activities for reforestation, protection of forests or water sources, of what kind? (For example: environmental education, waste management, restoration or reforestation, protection of watershed headwaters, planting and harvesting of water, protection of flora and fauna, agroforestry, etc.?

- Do men, women and younger people participate equally in these activities?

- The project proposes the following activities (1,,3,4 ... .etc) Are you interested in participating in it? In what way?

We are about to hold a workshop with the population, whose objective is to consult and validate the proposed activities of the Project. What recommendations could you give us in terms of logistics and facilitation? (For example: for transport, the selection of schedules, is it necessary to consider different schedules for men and women for example? place, among others).

Form 3 - Interview with community leader (woman)

(Note to facilitator: if male and female leaders are interviewed simultaneously, move the questions on this form to No. 03, in the corresponding sections and try to address the female leader(s))

Good morning and thank you for your willingness to participate in this interview. We are working on a project proposal called "Building a program for the adaptation and resilience to climate change of the Andean ecosystems and populations of Peru", which if approved, will have several objectives such as promoting the conservation of forests, pastures, wetlands and other Andean ecosystems in protected areas, and at the same time strengthening the adaptation of the population to climate change (extreme heat, droughts, abnormal rainfall) on and around (buffer zones).

We are here because the community you represent has been prioritized as part of a consultation process in which we seek to better understand some important aspects about the families that live here. We expect to take between 40 minutes of your time to an hour.

a) Data of the person interviewed

- Full name:

- Position and community/location:

- Contact details:

- Age and gender

- Time of experience as a community leader:

b) Community, organization and representation

- How many families/people live in the community/town center?

- How is the community organized? Do you have an assembly that meets periodically? Are committees formed? Productive organizations?

- How do women participate? Do they have specific activities that they carry out in the committees and organizations? ¿Do you have specific organizations?

- What are the main institutions that work with the community? (For example, the municipality, educational and health centers, SERNANP, Agrorural, etc?

c) Value chains, vulnerability and engagement

- We have been told that some of the main economic ones developed by the community are …... That's right?

- How do women get involved in these activities? Do they perform any specific tasks? What are your main activities?

- What about younger people? (Ask for migration)

- We have been told that these activities are affected by xxxxxx climatic factors such as droughts, frosts, uncertain rains ..... What is your personal perception about it? Are women affected in any particular way?

- Are there any other factors that affect the economic activities of the community? (e.g. pandemic, transportation, difficulties in selling, etc.)

d) Linkage with conservation and restoration

- Have you ever carried out activities for reforestation, protection of forests or water sources, of what kind? (For example: environmental education, waste management, restoration or reforestation, protection of watershed headwaters, planting and harvesting of water, protection of flora and fauna, agroforestry, etc.?

- Do men, women and younger people participate equally in these activities?

- The project proposes the following activities (1,,3,4 ... .etc). Are you interested in participating in it? In what way?

- Of everything proposed by the Project, there is some activity proposed (or that you can suggest) that is of interest especially to women and / or young people.

Form 4: Workshop Script with Population

Community / population center / group: ____
Main activities of the place: ____
Date: _____/____/2023 Time: _____
Place:_____

General Recommendations: Not all stakeholders may be able to provide information on all sections of the workshop and some guiding questions of activities may be suspended. In cases of information gaps, complete with interviews with key informants. Separate worktables gender or age (unless impossible. **If necessary, consider doing the workshop at different times for each gender and age group.** The dynamic is designed to be facilitated between at least two people (a third is suggested for taking photos and additional notes).

Pre-workshop activities

- Selection of place.

- Preparation of materials:
  - Flipchart #1 with the map of the community (population center, agricultural areas, including its location with respect to the ANP and its buffer zone, highlighting the main resources (rivers, lagoons, meadows, forest masses, among others).

- Flipchart #2 with posters/drawings of conservation and restoration practices proposed for each mosaic, accompanying each with referential images.
- Print attendee lists.
- Prepare: several sets of three-color markers. maskintape tape. Empty cardstock cards

- Call and logistics (transport, refreshments).

Presentation (10 min.)

- Welcome remarks and presentation of SERNANP / community leaders.

- Words of facilitator (suggested speech): *Good morning and thank you for your willingness to participate in this workshop. We are working on a project proposal called* ***"Building a program for the adaptation and resilience to climate change of the Andean ecosystems and populations of Peru" which****, if approved, will have several objectives such as promoting the conservation of forests, pastures, wetlands and other Andean ecosystems in protected areas, and at the same time strengthening the adaptation of the population to climate change.*

  We are here because this community / population center has been prioritized as part of the project and we want to carry out a consultation process in which we seek to know better some important aspects about the families that live here and collect their opinions regarding the activities we have proposed for the project. We expect to take a maximum of three hours of your time.

Disposition to conservation and restoration practices (40 minutes):

1) SERNANP: Using flipchart #1, a brief reminder is made about the area, as well as its most outstanding characteristics (area, sectors, date of creation) and resources (ecosystems and biodiversity), without delving into ecosystem services. It is noted that the map has represented the main existing resources.

2) Facilitator (hereinafter): Working groups are organized by gender groups (men / women). If necessary, tables of young women / men are formed.

3) Attendees are asked to point out those natural resources that are important according to their perspective (drawing a star). It is also noted that if important resources are missing from the map (e.g. wild species of flora, streams, waterfalls, lagoons, fish, wildlife, soil, etc.), they can draw them or write their names.

4) It is requested that they draw the existing threats to these resources (advance of agriculture, advance of housing areas, agricultural burning, roads, pollution, wastewater, rainfall deficit).

5) Flipcharts are presented (one for each table) with the signs/drawings representing the conservation and restoration practices that have been previously proposed (xxxxxxxxx) For each practice, 10 copies will be produced. There will be empty signs. They are asked to locate the practices presented in the places they feel are needed on the map.

Refreshment (10 min)

Presentation and finale (20 min):

1. Each group is asked to present the work of each table on their flipcharts and explain which are the most important ecosystem resources and services and what are the related practices.

2. The perspectives of each group are compared.

3. Finally, the working groups are dismantled, and a plenary is called in which they are asked what are the most important things that they have been able to visualize in the exercises and what are the main differences and complementarities between the different groups.

Thanks and farewell (10 min.)