Funding Proposal

Project/Programme title:	Resilient Puna: Ecosystem based Adaptation for sustainable High Andean communities and ecosystems in Peru
Country(ies):	Peru
Accredited Entity:	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Date of first submission:	2023-09-18
Date of current submission	2024-02-05
Version number	V.04

Contents

Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the GCF Information Disclosure Policy, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

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Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

A. PROJECT/PROGRAMME SUMMARY

A.1. Project or programme	Project	**A.2. Public or private sector**	Public
A.3. Request for Proposals (RFP)	Not applicable		

A.4. Result area(s)

	GCF contribution	Co-financers' contribution[1]
Mitigation total	Enter number %	Enter number %
☐ Energy generation and access	Enter number %	Enter number %
☐ Low-emission transport	Enter number %	Enter number %
☐ Buildings, cities, industries and appliances	Enter number %	Enter number %
☐ Forestry and land use	Enter number %	Enter number %
Adaptation total	100 %	100 %
☒ Most vulnerable people and communities	30 %	30 %
☒ Health and well-being, and food and water security	30 %	30 %
☐ Infrastructure and built environment	Enter number %	Enter number %
☒ Ecosystems and ecosystem services	40 %	40 %

A.5. Expected mitigation outcome *(Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)*	N/A	**A.6. Expected adaptation outcome** *(Core indicator 2: direct and indirect beneficiaries reached)*	60,715 Direct[2] beneficiaries (of which 30,088 are women)	2,011,856 Indirect[3] beneficiaries (of which 1,005,928 are women)
			0.2% of the national population[4]	6.8% of the national population
A.7. Total financing (GCF + co-finance[5])	78.32 million Euros	**A.9. Project size**	Medium (Up to USD 250 million)	
A.8. Total GCF funding requested	40.79 million Euros			

A.10. Financial instrument(s) requested for the GCF funding

Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.

☒ Grant 40.79 million
☐ Loan Enter number
☐ Guarantee Enter number
☐ Equity Enter number
☐ Results-based payment Enter number

A.11. Implementation period	6 years	**A.12. Total lifespan**	15 years
A.13. Expected date of AE internal approval	11/6/2023	**A.14. ESS category**	Category B

A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	**A.16. Has Readiness or PPF support been used to prepare this FP?**	Yes ☒ No ☐
A.17. Is this FP included in the entity work programme?	Yes ☐ No ☒	**A.18. Is this FP included in the country programme?**	Yes ☒ No ☐
A.19. Complementarity and coherence	Yes ☐ No ☒		
A.20. Executing Entity information	The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, besides being the Accredited Entity (AE) of the project, will also act as an Executing Entity (EE). GIZ is registered in Germany, and its sole shareholder is the Federal Republic of Germany, represented within Germany by the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry of Finance (BMF). In addition, there will be four Peruvian Executing Entities: i) the Ministry of Agricultural Development and Irrigation (MIDAGRI), ii) the National Service of Natural Protected Areas by the State (SERNANP) , iii) Profonanpe, and iv) Asociación Instituto Andino de Montaña (hereafter Instituto de Montaña (IdM)). MIDAGRI and SERNANP are Government entities, Profonanpe is a private non-profit institution of public and social interest, and IdM is a non-government organization (NGO).		

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

1. **Climate change and unsustainable management of productive practices are degrading the Puna ecosystems,** (peatlands, wetlands, and grasslands) **and the services they provide** (provision and regulation of water; provision of fodder, food, and fiber; nutrient and carbon regulation) in the **Southern High Andes of Peru** (SHAP)[6]. Increased temperatures have contributed to glacier melting while fewer rains and longer drought periods have affected water availability in an area where 80% of the population is heavily reliant on rainfed agriculture. This climate factors are threating the livelihoods of approx. half a million people in SHAP and the water security of approx. 4.5 million downstream. Increased temperatures have already decreased 51 percent of Peru's glaciers. In addition, huge stocks of carbon stored in the Puna ecosystems could be released into the atmosphere as they are increasingly degrading.
2. **The Andean Indigenous Peoples and Local Communities (IPLCs) in the SHAP are characterized throughout history by their own adapting capacity to cope with environmental changes.** Over the years, they have passed down from one generation to others their agricultural, water and ecosystem management knowledge and practices. For example, selection and domestication of tolerant crops and varieties such as potatoes and Andean grains, water management technologies, systems of terraces to use small parcels of land at different altitudes and within different microclimates to ensure crop diversification. They also brought important food crops such as potatoes, quinoa and other highly nutritious high-altitude crops to the world[7]. Even though this traditional knowledge has been a key asset to Andean people when facing climate stress, nowadays Andean population find the increasing severity and unpredictability of extreme events, as well as the unpredictability of hydric regimes quite challenging[8]**.** This situation coupled with their vulnerabilities such as low levels of development, dependence on subsistence agriculture and husbandry practices, limited economic opportunities are forcing them to migrate and lose their traditional knowledge. Especially young people are abandoning ancient practices, resulting in insufficient means and capacities to develop alternatives or adopt climate-resilient livelihoods. The Peruvian Ministry of Agricultural

[1] Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e., GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.

[2] Direct beneficiaries include all individuals who will receive i) targeted support from the GCF-funded intervention and ii) a measurable adaptation benefit from a GCF-funded intervention, including: a) Individuals that implement Local initiatives that will be financed and supported by the Puna Facility, multiplied by the average number of members of the groups/legal entities supported and the average members per household in the region, b) Individuals that will be supported by MIDAGRIs co-finance programs, multiplied by the average members number per household in the region. c) Individuals that will receive technical assistance from the GCF- funded intervention (e.g., trainings, support to develop site-specific climate diagnostics and preparation of participatory intervention plans) and d) Public officials that will receive capacity building for adjusting regulations and norms. For more information, please see Annex 23.

[3] Indirect beneficiaries of the project will be those that do not receive targeted support from the GCF-funded intervention but are likely to receive a measurable adaptation benefit from the GCF-funded intervention but will benefit from water generated by the improvement of ecosystems that contribute to water regulation in the basin in the main cities of Cusco, Arequipa and Cañete. For more information, please see Annex 23.

[4] Number based on the latest census of 2017 with a total national population of 29,381,884.

[5] Refer to the Policy of Co-financing of the GCF.

[6] Four regions are considered in the SHAP: Puno, Cusco, Arequipa and Apurimac.

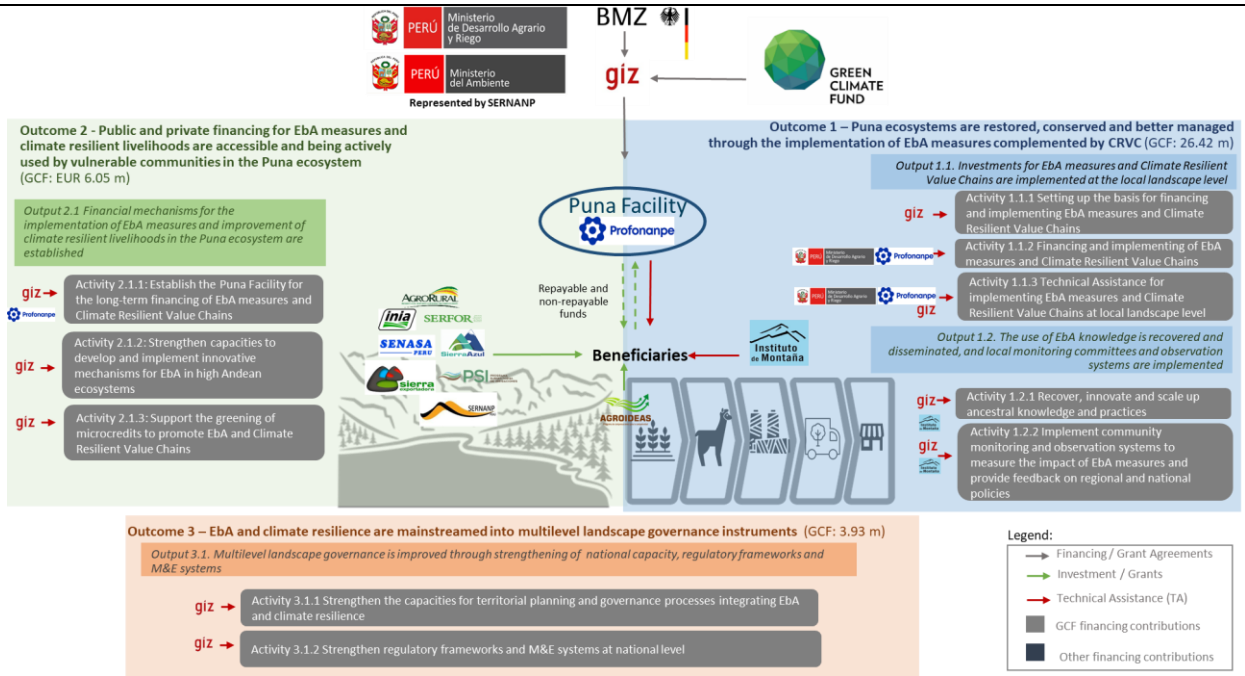
[7] Argumedo, A; Stenner, T; Swiderska, K; (2021). Quechua values and worldviews in the chalakuy maize park, Peru, IIED, London.

[8] Ponce, Carmen (2020). Intra-seasonal climate variability and crop diversification strategies in the Peruvian Andes. A word of caution on the sustainability of adaptation to climate change.

Development and Irrigation (MIDAGRI) has set in place a series of programs to support these vulnerable populations, but access is low, and the available budgets are insufficient to address identified needs.

3. **Regarding the noted vulnerabilities, the proposed project aims to enhance ownership and resources of Andean Indigenous Peoples and Local Communities to build their own resilience to climate change by defining, implementing and monitoring their Ecosystem based Adaptation (EbA) priorities to improve the Puna ecosystems management and ensure the continuous provision of their services such as water provision that will be captured during raining season for their livelihoods during dry season.** Therefore, the project participatory approach consists in providing technical assistance and setting up of a financing mechanism for the implementation of Ecosystem based Adaptation (EbA) measures and promoting Climate Resilient Value Chains (CRVC) led by IPLCs at local scale via the alignment and leveraging of public and private financing. Funding by the GCF will complement, facilitate and increase the access to MIDAGRI programs through technical assistance and set the financing structure to sustain investments in the long term via payment for ecosystem services, private sector contributions, and microfinancing. At the local level, experiences with EbA implementation and the facilitation of community participatory processes from the Nor Yauyos Cochas landscape reserve will be scaled up to the SHAP where communities will receive direct financial and technical support to design, implement and monitor EbA measures to enhance Climate Resilient Value Chains (CRVC) and thus promote a change in behaviour and boost the local economy for the continued protection of the Puna ecosystems. In doing so, at the national level the project will support MIDAGRI in strengthening and mainstreaming the EbA approach with a gender perspective into all its programs (Agrorural, Sierra Azul, INIA, Agroideas and SERFOR), and improve the coordination with other local stakeholders on the landscape. Support will also be given to SERNANP in line with its mandate for actions within Natural Protected Areas (NPAs). To assess progress on agricultural and water sectoral adaptation measures local monitoring systems will be set up and feed into existing information management systems and promote coordination between sectorial M&E systems. The project will support MIDAGRI to enhance their internal monitoring systems in order to allow easier and streamlined reporting on their NDCs into the System for Monitoring Adaptation and Mitigation Measures (SIMOM) managed by Ministry of Environment (MINAM). This will be done in coordination with technical advice from the General Directorate of Climate Change and Desertification (DGCCD) of MINAM and in coordination with the General Directorate of Agriculture Environmental Affairs (DGAAA), focal point within MIDAGRI for its NDCs. The project also recognises the inclusion of different gender perspectives in its activities as a crucial element to understand inequalities between women and men in the SHAP for managing and deciding over agriculture, water and ecosystems (e.g., low participation in decision-making processes. Women have limited access to finance as well as trainings and capacity building opportunities. Men and women have unequal use/control of natural resources. The project proposes actions to address the barriers that have been hindering women's participation in building adaptation to climate change, as well as actions that will contribute to the strengthening of women roles, allowing them to actively participate in the implementation of the project, and thereby promoting a wider appropriation of the EbA measures and CRVC. Following the approach the project design has been structured based on three components (1) Resilient ecosystems and communities, (2) Public and private investments for scaling up EbA measures aligned and leveraged and (3) Multilevel territorial governance for the incorporation of EbA measures which are aligned with three outcomes, as depicted in the following **¡Error! No se encuentra el origen de la referencia.**.

Figure 1. Overview of project outcomes, outputs and activities



4. By implementing investments on the ground (through **component 1**), the aim is (i) to maintain or improve the provision of puna ecosystem services for climate resilience of Andean Indigenous Peoples and Local Communities (IPLCs) in the SHAP and (ii) to strengthening sustainable and productive value chains that are dependent on and impacting on those ecosystems. This component will provide financial and technical support, through a call for proposal mechanism, for EbA and Climate Resilient Value Chains implementation on the ground. To ensure IPLCs investment ownership and enhance replication potential, the component will have a special focus on the promotion of traditional knowledge and practices that play an important role in Ecosystem based Adaptation. Since EbA uses the best available science on climate change and ecosystems, alongside local and traditional knowledge, a list of EbA measures relevant in the target area were pre-identified and validated with IPLCs during stakeholder consultations phase. EbA approach draws on community-based adaptation (CBA) and builds on traditional knowledge systems, therefore IPLCs will decide which combination of EbA measures and Climate Resilient Value Chains will be planned, implemented, and monitored. All this will be supported by peer-to-peer learning among communities and facilitated by the EEs; and, in some cases by local partners (Civil Society Organizations (CSOs)). IPLCs in the SHAP will thus recognize and acknowledge the benefits provided by their traditional knowledge, practices and other EbA-related measures, namely improved resilience in ecosystems, maintained carbon stocks and sustainable livelihoods. A series of technological packages, trainings, information materials and communities' exchanges to nurture dialogue will be implemented to co-produce knowledge and foster local innovation that will result in investment on the ground. Therefore component 1 will enhance access to information obtained at local level, which is expected to trigger a change in behaviour towards conservation of ecosystems and their services and the potential of developing climate resilient agribusinesses. Activities in this component will address the barrier of limited economic opportunities by supporting the development of climate resilient value chains and enhanced entrepreneurship in the SHAP region.
5. Through **component 2** the project will establish a Facility implemented by Profonanpe to delivery financing through a call for proposal for IPCLs led Local Initiatives oriented to increase climate resilience. This component will also align and leverage public and private financing for EbA measures and Climate Resilient Value Chains at different and coordinated levels. At macro level it will focus on the alignment, leveraging, mobilization and upscaling of private and public funds to finance EbA activities on the ground (component 1). At the meso level, it will strengthen the capacities of local institutions and organizations to access financial resources and technical assistance. At the micro level, it will work on enhancing access to alternative financial services for small farmers, such as microfinancing, and access to public programs for improved entrepreneurship (i. e. Agroideas and Sierra y Selva Exportadora from MIDAGRI) and climate resilient investments (i. e. Sierra Azul and Agrorural from MIDAGRI). As a result, the focus of this project is on mobilizing finance at different scales and with different schemes, with impact beyond the specific landscape. The key feature of this project is its leverage potential, to facilitate the mobilization of MIDAGRI, MERESE, private and financial institutions resources.

6. Furthermore, through the last **component 3** the project will promote integrated gender responsive [9] landscape planning, governance platforms and policy improvement and coordination, fostering dialogue and improving coordination among stakeholders that intervene in the landscape (local, regional and national governments, rural communities, producer organizations, watershed committees, and MIDAGRI extension services, among others).The most adequate processes through effective participatory approaches or platforms for knowledge exchange, dialogue, coordination and consensus-building will be fostered according to local needs. The paradigm shift towards climate resilience and sustainability will be driven by a transformation in the way MIDAGRI interacts with rural communities, provides context-appropriate extension services and coordinates among its programs, regional offices and other sectors to implement consistent and effective policies in the territory.
7. Overall, the project will promote the sustainable management of 23,914 ha of Puna ecosystems, benefiting directly 60,715 people and indirectly another 2,011,856 people. The mitigation co-benefit is estimated at 407,657 t CO_2eq. The promoted EbA measures (i.e., qochas, peatlands and grasslands restoration and conservation) will not recompensate the water from rainfall or glacial melting in the same magnitude but they will capture water during the rainy season or during glacier melting and store it to recharge aquifers, expanding water availability during the dry season for agriculture, livestock and drinking water.
8. The Accredited Entity of this project is the German Gesellschaft für Internationale Zusammenarbeit (GIZ), with MIDAGRI as the leading political partner. Profonanpe, the NGO Instituto de Montaña and GIZ Peru will act as Executing Entities receiving GCF funds. While MIDAGRI and the Peruvian National Service of Natural Protected Areas by the State (SERNANP) will act as Executing Entities that will contribute with financing to achieve project's objective. Furthermore, Indigenous Peoples and Local Communities (IPLCs) with their different forms of organisation (i.e., communities, producers' associations and cooperatives in the process of formalization) will be supported by local Civil Society Organizations (CSOs) for the planning, presenting and implementing of climate resilient Local initiatives financed through the Puna Facility.

[9] Please note that the GIZ working definition for gender responsive follows the OECD Gender Equality Continuum (2022): A gender-responsive approach not only considers gender differences, inequalities, ratios and aspects, e.g., by targeting and including a certain number of women in project activities but goes a step further in responding to gender specific needs and/or requirements, or by collecting gender-disaggregated data for monitoring purposes. Gender responsiveness aims to ensure that all people can engage in and/or benefit from certain measures regardless of their gender (e.g., trainings or strategies are developed that consider gendered needs, preferences, and constraints).

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

B.1.1 Socio-economic Context:

9. **Peru** is considered an upper-middle-income economy, but inequality is high, and poverty is concentrated among rural, indigenous populations, whose food security depends upon climate conditions. More than 80 percent of farmers practice subsistence, rainfed agriculture, and changes in precipitation are increasing competition over water resources for consumption, agriculture, and industry. Glaciers, a main water source, are melting at accelerating rates due to increasing temperatures. Peru is susceptible to natural disasters including floods, droughts and landslides, whose frequency, severity, and impacts are compounded by the El Niño Southern Oscillation and will be amplified by increased climate change and variability. Combined with ongoing problems such as agricultural expansion, deforestation, illegal mining and air and water pollution, these climate risks threaten advancements in Peru's development[10].
10. **Peru's population** reached more than 33 million people in 2021, of which 50.5% are women. The country's annual population growth decreased to 1.2%, in comparison to 1.9% in 2019 (World Bank, 2023). Most of the population, 78.5%, lives in urban centers, while 21.5% live in rural areas (FAO, 2023). Peru is divided in three main regions Coast with 58% of the Peruvian population, the Andes with 28% of the population, and the Amazon with 14% of the population[11]. Peru is a multiethnic country formed by the amalgamation of different cultures and ethnicities. Mestizos compose about 60% of the total population[12]. The Indigenous Peoples in Peru represent about 25.7%. Of those, 95.8% are Andean and 3.3% from the Amazon. The two major indigenous or ethnic groups are the Quechuas, followed by the Aimaras. A large proportion of the indigenous population who live in the Andean highlands still speak Quechua. The Afro-Peruvian population (around 3.5%) is concentrated mostly in coastal cities south of Lima. The project will be focused on the Andes region where most of the population belongs to the Quechua Indigenous Peoples Group.
11. **The agricultural sector** employs 29.9% of the total population in Peru (CEPAL, 2023), and 30% of the national territory is dedicated to activities within the sector. In the rural areas, the number reaches, on average, 78% of the population (FAO, 2023). According to the National Agricultural Census (2012) 50.4% of agricultural producers are women. Besides the economic benefits, the agricultural sector also contributes to the country's food security, as 70% of the food consumed in the country is produced internally (Fernández, 2021). However, the government expenditure and investment in the sector is still very low, mainly due to a lack of interest from policy makers (World Bank, 2017). In addition, only 12.2% of the total number of producers have higher education (INEI, 2012).
12. The target region of the project interventions is in the Southern High Andes of Peru (SHAP): Puno, Cusco, Arequipa, Apurimac, Lima. The SHAP is part of the 7,000 km long tropical Andes Mountain range, which is the top biodiversity hotspot for conservation priorities worldwide (Myers et al., 2000). This area is located above 3,500 m.a.s.l and the ecosystems consist primarily of grasslands (77%), wetlands (locally known as bofedales13 in Spanish), and some relicts of high Andean forests also persist[14]. Grasslands hold significant importance as they play a vital role in safeguarding the soil from erosion and promoting effective water infiltration, thereby regulation the flow of runoff water. Wetlands and grasslands capture rainwater and retain it for some period. Local communities rely on Puna ecosystems to feed and provide water to their domestic herds, their crops and finally, for domestic use.
13. The **main economic activities in the SHAP** are mixed husbandry and agriculture for local subsistence on both communal and family land. Major livestock species above the 3,500 m are native South American camelid species (alpaca, lama and vicuña), typically reared in mixed systems with sheep, while the vicuña is a wild species.[15] In the transition zone between 2,800 and 3,500 m, cattle is also present in these mixed herds. See section 3.7 in the Feasibility Study for more details.
14. **Agriculture in the highlands of Peru** is primarily characterized by small-scale farming systems focused on subsistence production, and low-complexity value chains tied to local markets. These farming systems combine the cultivation of staple crops such as potatoes, wheat, and quinoa with livestock rearing (particularly camelids, such as alpacas and *vicuña*, sheep, and cattle). Puna ecosystems contribute with a substantial amount of meat, fiber, and dairy products to local, regional, and international markets. Peru is the main producer and exporter of Andean grains, especially quinoa. Peru is also the largest producer of native potato in Latin America and exported 6,530 tonnes in 2022 (Agencia Agraria de Noticias, 2023). Peru ranks 14th in the world in potato production and the

[10] USAID (2017). Fact Sheet Climate Change Risk Profile: Peru
[11] INEI 2017
[12] "Perú: Perfil Sociodemográfico" (PDF). Instituto Nacional de Estadística e Informática.
[13] In Peru, the term "bofedales" is used to describe areas of wetland vegetation that may have underlying peat layers. These areas are a key resource for traditional land management at high altitudes. Because they retain water in the upper basins of the cordillera, they are important sources of water and forage for domesticated livestock as well as biodiversity hotspots. Maldonado (2014). An introduction to the bofedales of the Peruvian High Andes.
[14] WWF. General description of Central Andean Puna. https://www.worldwildlife.org/ecoregions/nt1002
[15] In Peru, the management and conservation of vicuña are under the responsibility of the National Forestry and Wildlife Service (SERFOR), under MIDAGRI; if the species is found within a protected natural area, conservation and sustainable use is the responsibility of the National Service of Natural Areas Protected by the State (SERNANP), an entity attached to the Ministry of the Environment (MINAM).

potato is the second most important product (after rice) in Peruvian agriculture, with more than 3,000 potato varieties.

15. From the total agricultural units in Peru, 82 percent correspond to farms with equal or less than five (5) hectares, 64 percent are characterized as subsistence farming and 57.5 percent are located in the highlands, especially in the departments of Cajamarca, Puno and Cusco (INEI, 2012). Thus, the majority of farms in the SHAP are less than five hectares, and farmers often have dispersed plots located in various micro-environments. These micro-environments differ in terms of altitude, soil quality, water availability, and climate.
16. **Food production** in the highlands is often inadequate to meet the consumption needs of households, leading many farmers to seek additional income through off-farm activities. Smallholder farmers in the highlands region make use of the diverse ecological niches available to them. In high-altitude areas, livestock is grazed, and specialized traditional tubers like native potatoes, *mashua*, *olluco*, *oca*, and *maca* are grown using traditional agroecological practices, mainly for subsistence and barter. At intermediate altitudes, farmers cultivate grains such as wheat, barley, rye, and maize, along with pulses, fruits, berries, and vegetables. In the inter-Andean valleys, various types of fruits like avocado, orange, lemon, and banana are grown.
17. **Land tenure** in the High Andes generally appears to be dominated by private regime, in average 48% of the agricultural units in the prioritized districts of the Resilient Puna project (varying from 24% to 86% depending on the department), followed by communal land regime, for 44% of agricultural units in average (variation from 1% to 70 % depending on the department). Tenant and Possessors regimes are less common in the target area of the project (INEI 2012). Traditional herder communities living in the High Andes tend to combine private and collective regimes as an alternative form for strengthening land tenure, treating grasslands as common resources which are accessed, used and controlled collectively, usually under open access or communal land tenure regimes.[16] Regarding land use in the project area is 77% is for natural pastures and 8% for agricultural use. Studies[17] show that women have limited access to land, which is conditioned upon their membership in a community and their relationship within a family, including marital status and whether they have children.
18. **Population in SHAP is mainly Andean Indigenous Peoples and Local Communities (IPLCs).** In the target area of the Resilient Puna project only one Indigenous Peoples Group exist: the Quechuas. According to the last National Census (2017) almost 69% of the population within the project target area have Quechua as their mother tongue while 31% of the population have Spanish[18]. Spanish native speakers in this area are mainly rural farmers living also in communities The Quechua people are the long-standing largest Indigenous Group in Peru and in the Andean territory, whose mother tongue is Quechua. A large part of this Indigenous Group is organised in peasant or local communities. Nonetheless, they have other forms of organisation and live in other places such as villages, hamlets, among others. In many areas of the country, including in the Andean region, Quechua communities nowadays tend to also form associations, cooperatives, community enterprises and organisations by the need to manage local development, administer common resources or provide services to each other[19]. Therefore, the project will work with the various forms of organizations that IPLCs have established in the target area. In accordance with the obligations established in Convention 169 of the International Labour Organisation (ILO) and the Peruvian Law, peasant or Andean communities peoples can also be identified as Indigenous or Original Peoples, according to the criteria: a) Direct descent from the original populations of the national territory, b) Lifestyles and spiritual and historical links with the territory they traditionally use or occupy, c) Their own social institutions and customs, d) Cultural patterns and way of life different from those of other sectors of the national population. The names used to designate Indigenous or Original Peoples do not alter their nature or their collective rights.
19. **Andean IPLCs in their various forms of organization continue using practices that they learned from their ancestors**. For instance, they still use ancient techniques to storage rainwater into micro water reservoirs named *qochas* in Quechua, to infiltrate water and recharge aquafers or build irrigation system of canals to divert water from rivers descending from highland areas to irrigate foothill slopes. This ancestral knowledge is accumulated, and transgenerational knowledge related to the natural resources found on the lands and territories they occupy and is central to climate change adaptation. During their agricultural and livestock activities, they also combine collective celebrations and perform a series of rites of payment to the *pachamama* (mother earth) and to the guardian hills of the livestock. They perform animal fertility rites involving singing, dancing and feasting. Also, they have a series of festivals linked to productive activities, such as sowing and harvesting, but above all the cleaning of irrigation ditches[20]. Native fibers (from alpaca, llama, and vicuña wool) and ancestral weaving traditions continue to occupy a central space not only in the Andean culture but also in the social and economic aspects since many communities depend on camelids wool for their livelihoods. In the pre-colonial times Andean worldview was represented by the *Ayllu* concept which is understood as the form of social organization in Andean communities where individuals

[16] Damonte, G., M. Glave, S. Rodríguez and A. Ramos. 2016. 'The evolution of collective land tenure regimes in pastoralist societies: lessons from Andean countries. IDS Working Paper No. 480. Brighton: Institute of Development Studies.
[17] 2016-Best-Practices-Case-Peru.pdf (landesa.org)
[18] Please note that in 2012, 83% were Quechua speakers and 17% Spanish speaker within the project area of the project (CENAGRO, 2012)
[19] In Peru mestizo is defined as the biological, as well as cultural, mixture between white Europeans and Indigenous peoples.
[20] Quechuas | BDPI (cultura.gob.pe)

share same reciprocity norms and rituals with respect to humans, animals, rocks, spirits, mountains, lakes, rivers, pastures, crops. The main objective of *ayllu* was to give guide in the positive relationship between communities and their social and natural environment. Forms of organisation based on the Ayllu concept can still be found in some communities of Cusco, Apurimac and Puno. These cultural and spiritual values of Andean people are still very strong in some parts of the Andes and will play an important role in EbA by promoting conservation and equity values, and social cohesion at landscape level[21]. IPCLs play vital roles in the management of their ecosystems (FAO, 2016), although in most cases, this knowledge is being lost due to the low valuation of native cultures, cultural erosion, high rates of rural-urban migration, among others. Additionally, gender traditional norms in the Andes often prevent women from achieving the same level of visibility as men, or benefit from the same opportunities and recognition, despite their deep knowledge of agriculture, water and ecosystems.

B.1.2 Climate Change context (historic climate trends and future scenarios)

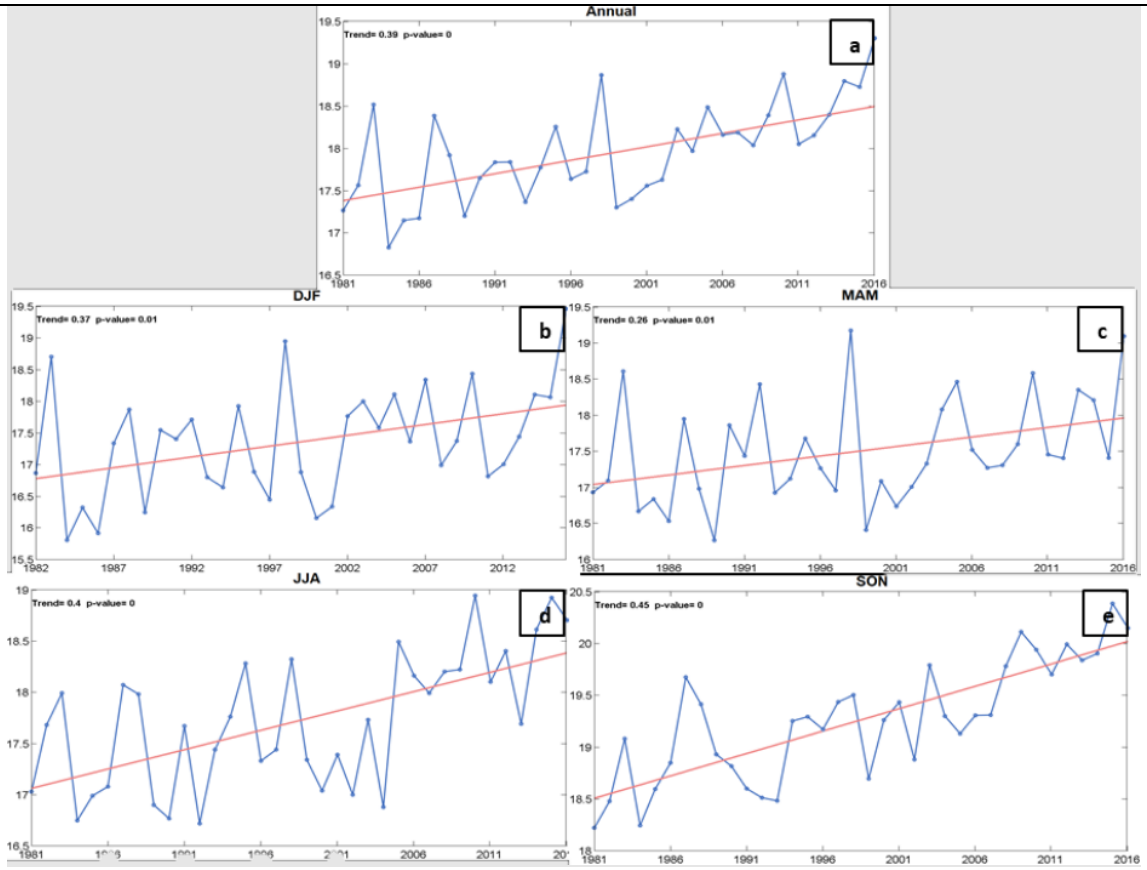
20. Climate change and unsustainable management of productive practices are degrading the Puna ecosystems, (peatlands, wetlands, and grasslands) and the services they provide, including the provision and regulation of water, provision of fodder, food, and fiber, nutrient and carbon regulation. Fewer rains and longer drought periods have contributed to glacier melting, threating the livelihoods of approx. 4.5 million people in SHAP and the water security of millions more downstream. Increased temperatures have already decreased 51 percent of Peru's glaciers. In addition, huge stocks of carbon stored in the Puna ecosystems could be released into the atmosphere as they are degrading increasingly.
21. The communities in the SHAP are characterized by their vulnerabilities such as low levels of development, dependence on subsistence agriculture and husbandry practices, limited economic opportunities, and overall high vulnerability to climate change. They are losing their traditional knowledge and are abandoning ancient practices, resulting in insufficient means and capacities to develop alternatives or adopt climate-resilient livelihoods. MIDAGRI has set in place a series of programs to support these vulnerable populations, but access is low, and the available budgets are insufficient to address identified needs.
22. The goal of the project is to align public and private investments and increase access to state programs improving climate resilience of high Andean ecosystems and communities livelihoods to shift a state of ecosystem conservation, high productivity, income diversity and climate resilience because they will reduce the degree of losses from climate impacts, improve their relationship with ecosystems, increase their participation in the value chain and product transformation, improve their associative processes, market access and monitor progress on decreasing their vulnerability.

Historic climate trends

23. Temperatures during the analysed period (1981-2016) as shown in Figure 2 overall show an increase. Maximum temperatures show the greatest increases during the spring, while the smallest increases show in the autumn season. Increases range from 0.3°C to 0.44°C per decade and the districts with the greatest trends are approximately at 4,600m above sea level. Precipitation historical trends show high seasonal and interannual variability. Trends are therefore of low magnitude and do not usually show statistical significance. Overall, the intervention shows an increase in precipitation at the annual level as well as the summer and autumn seasons. In spring, trends in precipitation have been negative in recent decades. Since the end of the 1970s, Andean tropical glaciers have been shrinking at an increasing rate. The main factor that explains this retreat is the warming of the atmosphere, given that precipitation does not show significant changes. Recent analysis of glacier melting in the last decades in the SHAP show considerable glacier losses (Seehaus et al., 2019). During the period between 2000-2013, the retreat rate in the southern SE subregion was −1.3 percent by year, and in the SW subregion, it was −2.3 percent by year, approximately.

Figure 2. Temperature trends for the period 1981-2016

[21] Swiderska, K, King-Okumu, C and Monirul Islam, M (2018) Ecosystem-based adaptation:a handbook for EbA in mountain, dryland and coastal ecosystems. IIED, London.

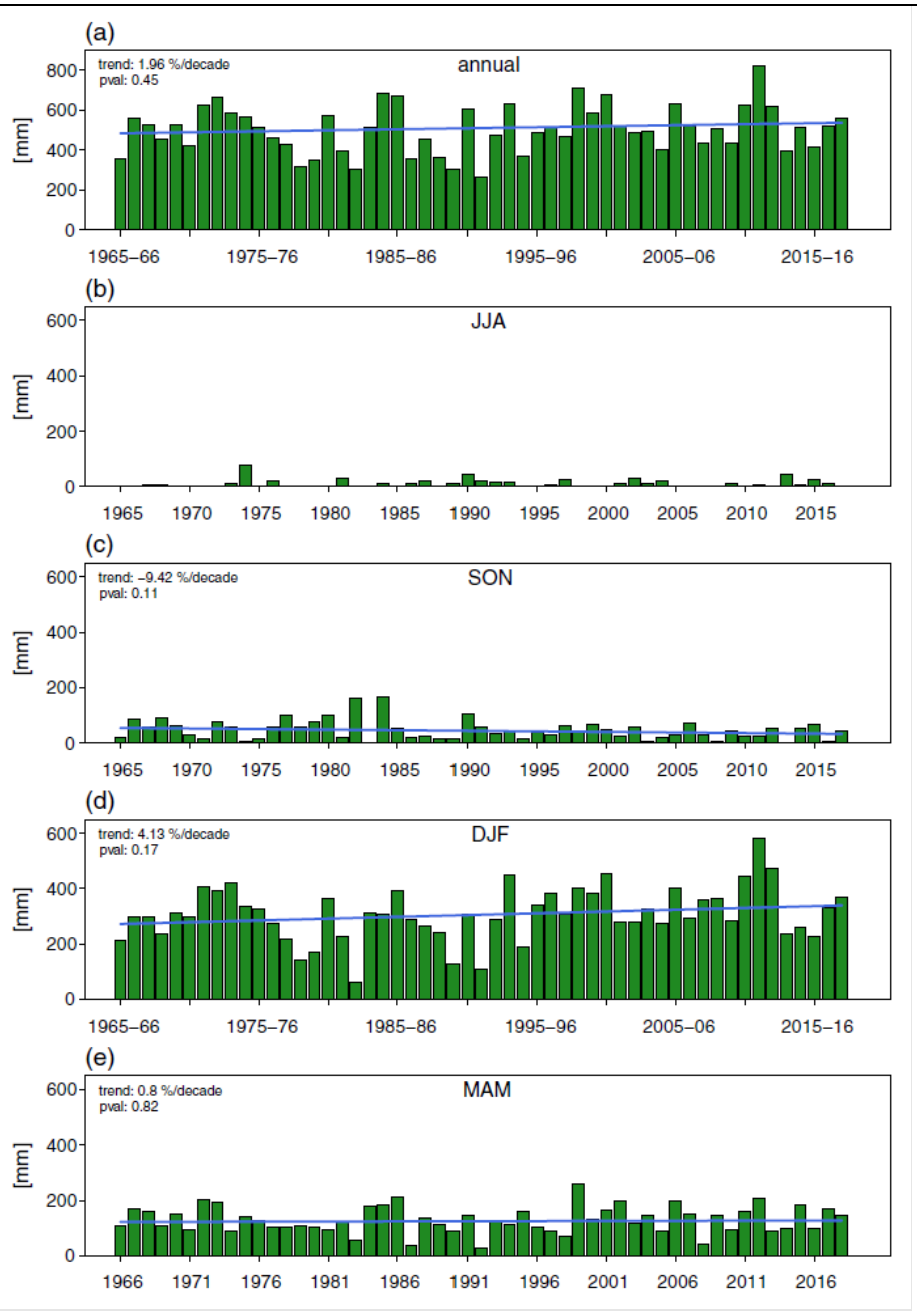


24. Regarding extreme weather events, in accordance with total precipitation trends, the number of events with more than 10 mm rainfall show very few significant trends over the regions with very small intensity. SPI3 trends over the last decades lean towards more droughts in the SHAP region (a negative SPI indicate more severe droughts). Significant trends are visible in the Altiplano, SW and SE region. In recent decades, the Cusco, Puno and Arequipa regions (SHAP), were the most affected by major meteorological droughts, especially in 1983, 1987, 1990, 1992, 2005 and 2016. See Chapters 3.3 and 3.4 in Annex 2 (Feasibility Study) for more details on these observed climate trends.

Precipitation historical trends

25. As shown in Figure 3 show high seasonal and interannual variability. Trends are therefore of low magnitude and do not usually show statistical significance (a). Overall, the intervention shows an increase in precipitation at the annual level as well as the summer and autumn seasons. In spring, trends in precipitation have been negative in recent decades. For winter, no precipitation trends are shown.

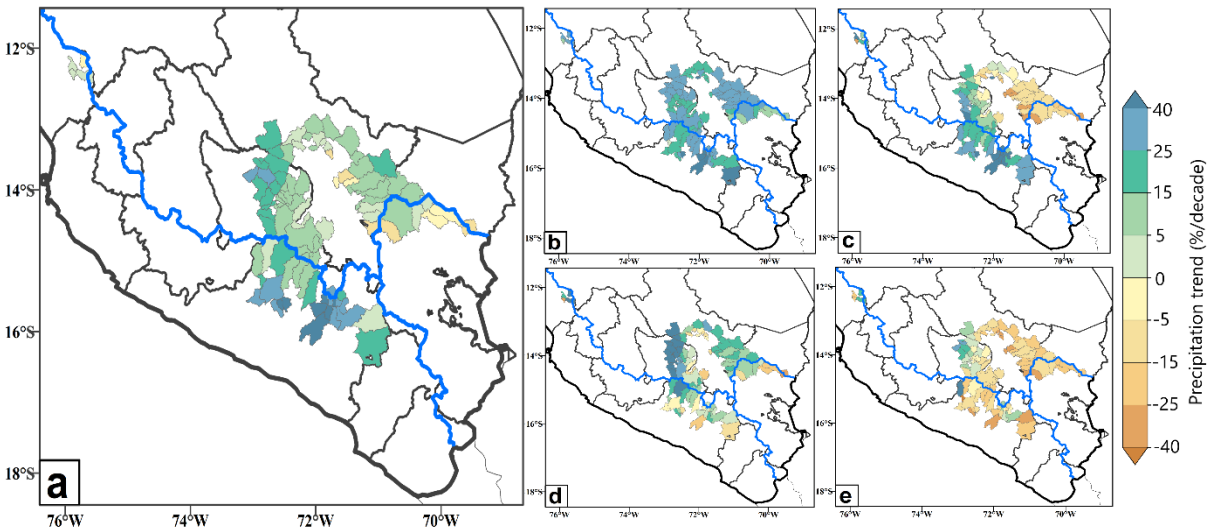
Figure 3. Precipitation trends for the period 1965-2016



(Imfeld, Sedlmeier, & Gubler, 2021).

26. As shown in Figure 4 annual trends (a) in precipitation range from -14.1% to 55.4% per decade. Annual trends are positive throughout SHAP, except in a few districts located in SE and A, which show slightly negative trends. In summer (b), trends show a clear spatially distributed positive trend ranging from 3.7 to 50.9% per decade. In autumn (c), trends range from -28.6 to 65.4% per decade, with eastern SE and A showing negative trends. In contrast, west of SE and SW return spatially positive trends. In the winter (d) months, trends are not significant, but discrepancies in trends again between east of SE and A (decrease) and west of SE and SW (increase), are noticeable. In spring (e), there is a clear trend of decreasing rainfall, ranging from -45.7 to 45.7% per decade. All districts show a decrease, except for a few located northwest of the SE. These decreases in spring months are related to the tendency to delay the onset of rainfall that typically begins in this season. This is in line with other studies in the Peruvian Andes that have noticed similar patterns of rainfall seasonality (Giráldez, Silva, Zubieta, & Sulca, 2020).

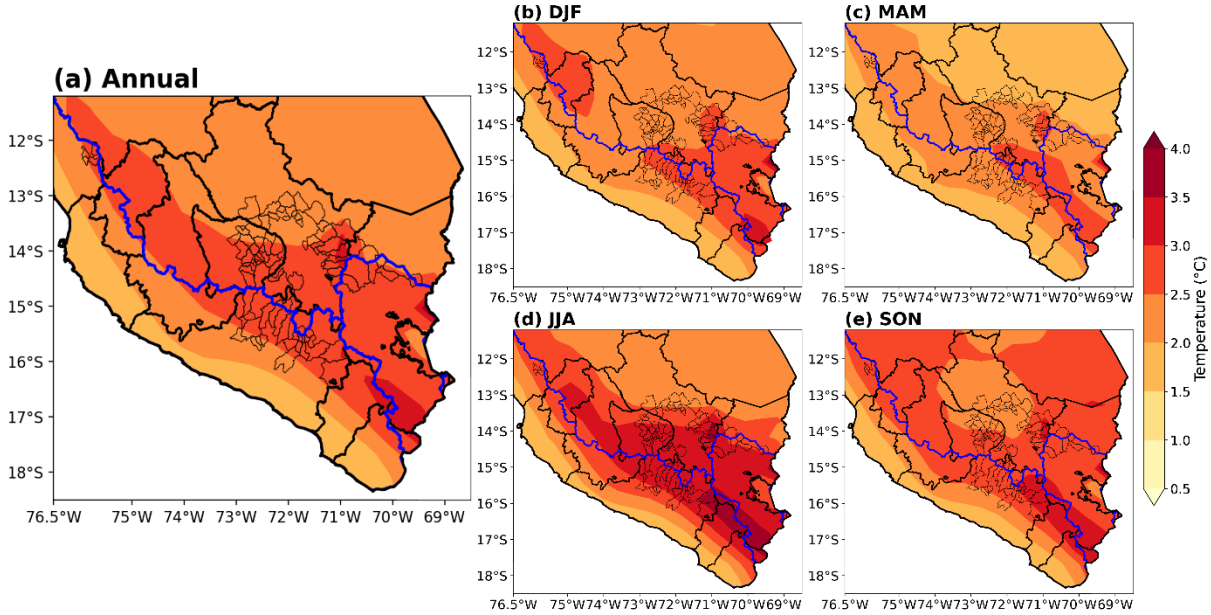
Figure 4. Spatial distribution of precipitation trends (%) from 1981 to 2016 in the SHAP chosen districts



Climate change future scenarios

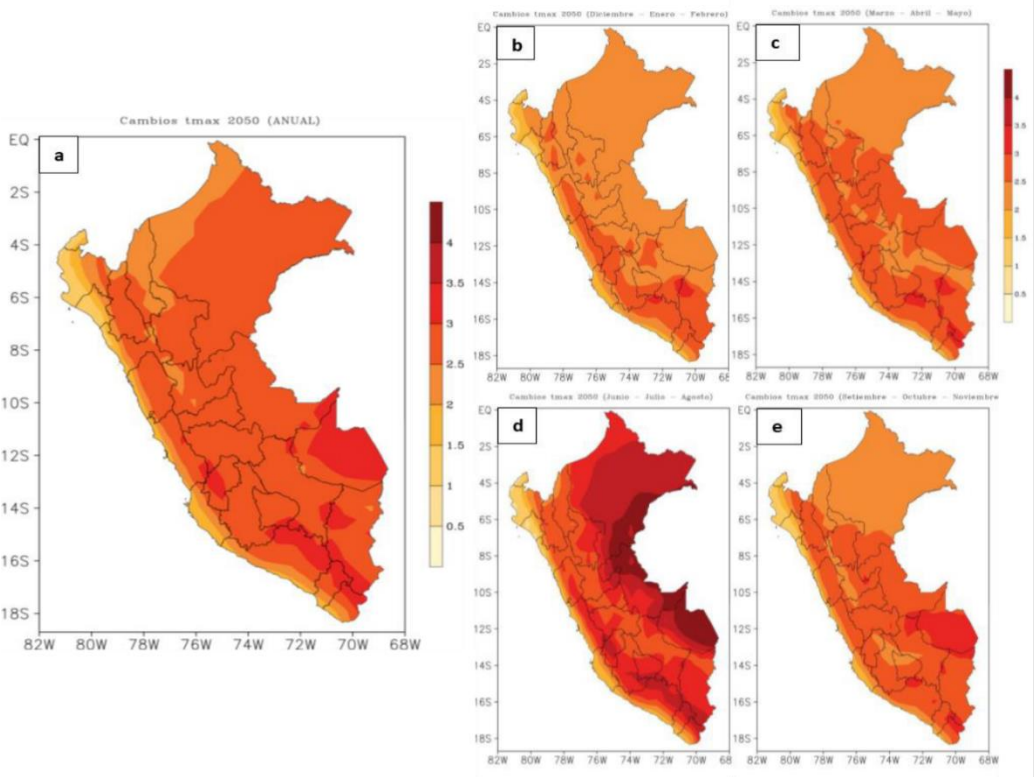
27. Projections for temperature and precipitation in the SHAP region as shown in Figure 5 (subregions are shown divided by blue lines), shows that the changes in temperature are always positive, in any season or scenario. According to the RCP4.5 scenario, by 2050, changes in maximum temperature range between 2.1 and 3.8°C, with stronger signals in winter (d). Minimum temperature shows changes that go from 1.3 to 4°C. Spatially, these changes are bigger in one specific zone placed over high altitudes between the SE and the Altiplano region and the border of SW and SE in autumn.

Figure 5. Projected changes in maximum temperature towards 2050 under RCP 4.5 scenario for the annual mean (a), summer (b), autumn (c), winter (d) and spring (e)



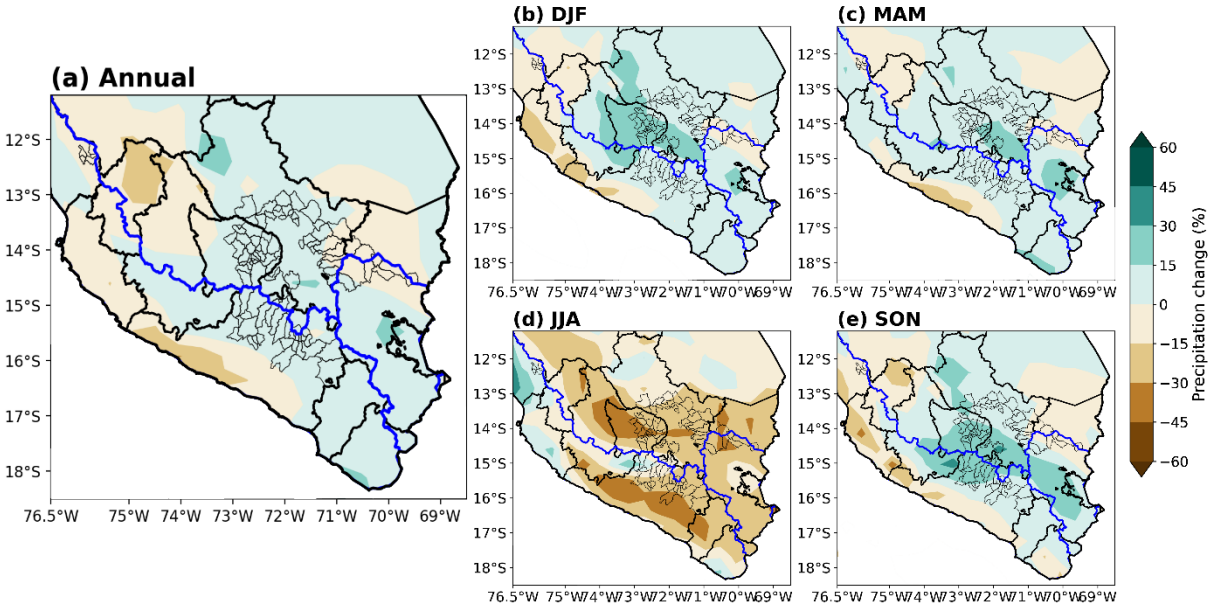
28. Under the RCP8.5 scenario as shown in Figure 6, by 2050, changes in maximum temperature range from 2.5 to 4°C, with stronger signals in winter. Minimum temperature shows changes between from 2 to 4°C. Similar to RCP4.5, areas that show higher increases in all seasons are the border of SE and A and the border of SW and SE.

Figure 6. Projected changes in maximum temperature (°C) towards 2050 under RCP 8.5 scenario for the annual mean (a), summer (b), autumn (c), winter (d) and spring (e)



29. For precipitation, under the RCP4.5 as shown in Figure 7 (subregions are also shown divided by blue lines), annual changes range from -5 to +20 percent by 2050. In winter (d), changes are negative in most parts of the SHAP. On the other hand, the largest positive changes occur in summer, especially over the north of the SE region. In general, areas that show higher increases in all seasons are located at the west of SE. On the contrary, areas with decreases or smaller increases are located in the A subregion.

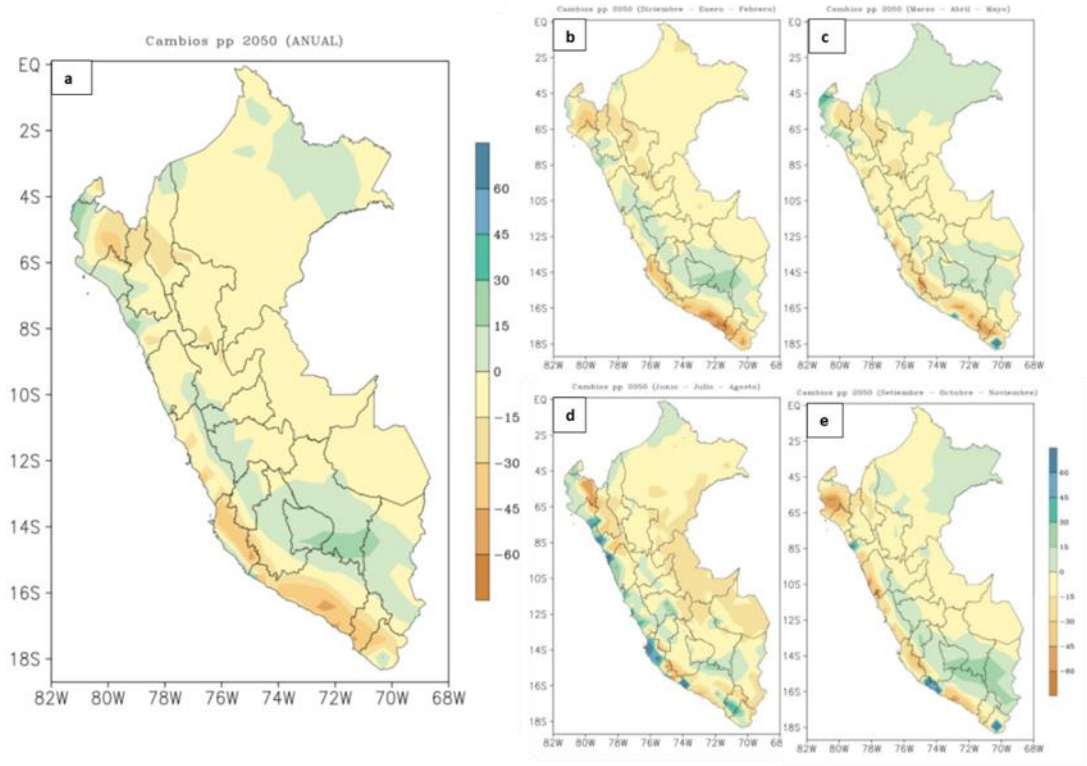
Figure 7. Projected changes in precipitation towards 2050 under the RCP4.5 emission scenario for the total annual (a), summer (b), autumn (c), winter (d) and spring (e)



30. Under the RCP8.5 emission scenario as shown in Figure 8, annual changes range from -30 to +30 percent by 2030. The biggest negative changes happen in winter (d). However, spring is the season when the largest positive changes in precipitation are expected. The SE and the Altiplano regions show mixed positive changes, whereas the SW region shows consistent negative changes. Regarding extreme climate events like droughts Under RCP 8.5, there is an increase of droughts in the Altiplano region by 2050, and wetter climates at lower altitudes. The

total number of drought months by some estimates is projected to almost double by 2100 under the RCP 8.5 scenario (Potter, et al., 2022). This will have impacts on the water balance, and on agricultural activity. See Chapter 3.5 in Annex 2a (Feasibility Study) for more details on these projected climate changes.

Figure 8. Projected changes in precipitation (%) towards 2050 under the RCP8.5 scenario for the annual mean (a), summer (b), autumn (c), winter (d) and spring (e)



B.1.3 Climate risks and vulnerability of the SHAP ecosystems

31. Glacier retreat. Increased temperatures lead to the shrinking of glaciers. Peru is home to 71 % of the world's tropical glaciers, however, due to higher temperatures and the increased absorption of solar radiation, the country has already lost 51 % of its glaciers in the last 70 years.[22] Accelerated glacier melting is possibly the strongest evidence of climate change impacts in the Andes. Water resources in the Puna ecosystems, are greatly dependent on Andean glaciers. According to the National Research Institute on Glaciers and Mountain Ecosystems (INAIGEM), Peru glaciers have been reduced by 43 percent over the last 40 years, with at least seven watersheds already crossing peak flow. Once the glaciers feeding these watersheds disappear, dry season average discharge may decrease by up to 30 percent, causing water stress in these areas (Baraer et al., 2012). In the tropical Andes, glaciers have represented a crucial water source for ancient and modern livelihoods and are of particular cultural and spiritual values for local communities[23]. In recent years, those areas closer to melted glaciers has impacted local livelihoods due to the scarcity of water resources. This is also threatening sacred festivals and reshaping centuries-old indigenous rituals such as the Sanctuary of the Lord of Qoyllur Rit'I which each year about 100,000 individuals make a pilgrimage to the sacred Colque Punku glacier[24].
32. **Frost days.** Associated with the general warming in the region, frost days trends return a general decrease over the last three decades, especially at higher altitude in A and SE (Figure 31: Trends for several extreme weather indices for the period 1981-2020 a) Frost days (FD), b) extreme rainfall (R10) and c) summer drought SPI3 Trends in frost days mostly correspond to trends of minimum temperature with low magnitudes and few significant signals. Since frost days are strongly related to incoming longwave radiation, the occurrence of frost days follows the cycle of minimum temperature cycle (García, Raes, Jacobsen, & Michel, 2007). Regionally, differences in the occurrence of frost days are observed. For instance, the percentage of frost days is considerably reduced close to the border of Lake Titicaca compared to the areas more distant to the lake. This is an indication of the warming effect of the lake on minimum temperature.

[22] ANA (2020). Retroceso glaciar en el Perú 1948-2019. Impactos en el recurso hídrico. http://repositorio.ana.gob.pe/bitstream/handle/20.500.12543/4551/ANA0003031.pdf?sequence=1&isAllowed=y
[23] Drenkhan, Fabian; Carey, Mark; Huggel, Christian; Seidel, Jochen; Oré, María Teresa (2015). The changing water cycle: climatic and socioeconomic drivers of water-related changes in the Andes of Peru. Wiley Interdisciplinary Reviews: Water, 2 (6):715-733
[24] https://www.nationalgeographic.com/culture/article/andean-glaciers-melting-reshaping-centuries-old-indigenous-rituals

33. **Heavy rainfall events.** In accordance with total precipitation trends, the number of events with more than 10 mm rainfall show very few significant trends over the regions with very small intensity. In a recent study, authors were not able to attribute trends in R10 to trends in precipitation in the region (Imfeld, Sedlmeier, & Gubler, 2021). Variability in decadal trends explain well the variability of precipitation in the region and the challenges in detecting significant trends (Imfeld, Sedlmeier, & Gubler, 2021).
34. **Drought risk.** SPI3 trends over the last decades lean towards more droughts in the SHAP region (a negative SPI indicate more severe droughts). Significant trends are visible in the A, SW and SE region. In recent decades, the Cusco, Puno and Arequipa regions (SHAP), were the most affected by major meteorological droughts, especially in 1983, 1987, 1990, 1992, 2005 and 2016. The El Niño phenomenon has long-distance impacts on the behaviour of the climate of the Altiplano and its surroundings, causing a decrease in rainfall during El Niño episodes. ENSO only partially explains a proportion of this decrease in the Andes, mainly in the central and southern western highlands (Lavado W. E., 2014). Therefore, it is important to consider that recent studies of projections of ENSO events indicate that, with a warmer climate comes an increase in ENSO events, and therefore an increased risk of droughts (Cai, Ng, Wang, Santoso, & Yang, 2022).
35. Moreover, in a 2015 SENAMHI study, it was found that the greatest numbers of dry events between 1970 and 2014 are located in the SHAP region. In the Altiplano region (A subregion), these events have a shorter length. The SW subregion, roughly corresponding to Arequipa's high areas, experiences drought with the maximum intensity. Between Cusco and Apurimac (SE subregion), dry events show greater intensity and number of events at the same time (SENAMHI, 2015).
36. **Impacts on Species and Ecosystems.** The impact of higher temperatures and less precipitation will have an impact on species distribution. For example, Feeley et al. (2010) studied the behaviour of Andean trees in the tropical Andes located between 950m 3400m above sea-level. The authors concluded that due to the increase in temperature, trees were migrating to higher elevations, at a mean rate of 2.5-3.5m per year (and even up to 20.6m for some species). The observed mean rate of change is less than predicted in comparison to the temperature increases in the region, suggesting that there is a limited capacity to respond to these and poses extinction risks for some genera (Feeley, et al., 2010).
37. Similarly, glacier retreat has meant that there is more suitable territory for some species to inhabit. For example, the glacial retreat in the Vilcanota mountain range (SE subregions) has opened an ecological corridor in recent decades where species' distributions have been affected. Many of the woody and herbaceous species in the Andes (e.g. *Ericaceae, Bromeliaceae*) depend on interactions with animals for seed dispersal and pollination, and the effects of climate change on these organisms could cause spatial, temporal or physiological asynchronies between mutualistic species. The changes on species distribution implies that there will be changes in the coverage of landscapes as well. For example, Ludeña et al. (2014) found that, in the Puna region, there would be an increase in shrub surface under an A2 emission scenario (equivalent of an RCP 8.5 scenario with regards to temperature rise). The same phenomenon is projected for the *páramos.* Conversely, glaciers, the suprandino area (the area between glaciers and the *puna*), the *puna* and *yungas* forests show large reductions in extension. In general, a migration to higher elevations was observed in the vegetation bands that characterize the Andes, but the *puna* was replaced by shrubs rather than *yungas* forests. The projected expansion desert and dry (xeric) areas will reduce water availability (Ludeña, Sánchez-Aragón, de Miguel, Martínez, & Pereira, 2014). Results from different climate change scenarios suggest a progressive reduction in the carrying capacity of ecosystems and a decrease in the available area of grazing land.
38. **Impacts on agriculture and livestock production.** Prolonged droughts, changes in temperature and precipitation are likely to have various impact on the livelihoods of subsistence farmers in the Andes, including decreased crop yields and shorter growing seasons, changes in water availability, grasslands and diminished carrying capacity of ecosystems for livestock, including camelids. An evaluation developed by SENAMHI found that increases in maximum temperature (2°C to 3°C), minimum temperature (4°C to 6°C), and higher rainfall (10% to 20%) by 2050 would lead to negative impacts in agricultural activity in the SHAP region. According to SENAMHI (2015), crop yields in the SE, SW and A subregions decrease in different magnitudes depending on the model and scenario. For potato[25], in the SE subregion for CanESM2 in the RCP4.5 scenario, the changes in yield crop are between -436.4 and -1750.3 kg/ha with statistical significance toward 2050. Similarly, for CNRM-CM5 in the RCP8.5 scenario, the yield crop is between -762.4 and -21.7 kg/ha with statistical significance toward 2050. Results obtained from MPI-ESM-MR for both scenarios, for CanESM2 for the RCP8.5 and CNRM-CM5 for the RCP4.5 are mostly negative but with no statistical significance. Wheat yields in the SW and A subregions, are also likely to significantly decrease from 125.5 to 39.5 kg/ha with statistical confidence in the RCP4.5 scenario using the CanESM2 model. Likewise, the crop yield for the RCP8.5 scenario using the CNRM-CM5 model, goes from -56.6 to 18.2 kg/ha with statistical

[25] In SEMANHI (2015), they also quantified the **σ** parameter, which is the proportion between the change in yield **(Δ yield = yield $_{(2036-2065)}$ – yield $_{(1971-2010)}$)** and the standard deviation **(σ = Δyield (kg/ha)/standard deviation(kg/ha))** considering the average of 2036-2065 years as the future climate and the 1971-2010 average as the present climate. Results for potato crops showed that averaging all three models, **σ** goes from **-0.17 to -0.82** for the RCP4.5 and from **-0.28 to -0.69** for the RCP8.5. All models in both scenarios show a consistent decrease in potato yields. For wheat yield, the **σ** parameter goes from **-0.84 to 0.56** in the **RCP4.5** and from **-0.71 to 0.35** in the **RCP8.5**. Positive **σ** is shown in the A region, while negative **σ**, in the SW region.

confidence. Pests and diseases[26] will affect potato and onion crops due to shifts in species distribution (SENAMHI, 2015). Most highland communities in the Andes rely on crop and livestock farming for their livelihoods. Many are smallholders who own livestock and use traditional farming practices, relying on rainfed crops and limited irrigation (Aragón, Oteiza, & Rud, 2018). Surveys carried out in Apurimac in 2009, the loss of potato production due to drought was 69% and 65% for corn. Most of the products from this region are used for self-consumption (Llosa, 2009).

39. In the case of livestock, the reduction in the carrying capacity of ecosystems in the high Andes translates into economic losses for communities in the SHAP region. The value of the loss of livestock due to climate hazards was estimated in the context of the Ministry of Agricultural Development and Irrigation's Climate Risks and Adaptation Strategy. The losses in the Puno region alone constitute over 60% of the national total in terms of monetary loss (MIDAGRI, 2012). The scarcity of water and limited grazing areas are further reducing livestock productivity. Extreme temperatures and frost events disrupt the reproductive cycles of both plants and animals, further exacerbating the vulnerability of subsistence farmers who heavily rely on these resources. A detailed climate change impact analysis on relevant value chains can be found in section 5.7.3 of Feasibility Study (Annex 2a).
40. **Impact on population**. In principle, climate change affects all people – but to varying degrees. In addition to regional differences, this is largely due to social structures. Being affected by the consequences of climate change also depends to a relevant extent on gender-conforming behaviour and gender-inequitable distribution of resources. This means that migration caused by climate change also has something to do with gender equality[27]. This is also applicable to specific highland communities use migration to anticipate or react to hazards. In terms of temperature-related hazards, Sperling et al. (2008) mention the emigration of communities from the highlands of Puno, especially of young people, mostly men, due to frosts and droughts. Crespeigne et al. (2009)'s findings show that after an episode of rainfall deficiencies investigated in a community in Puno in 2007, 31% of those surveyed migrated or looked for work as vendors, waiters and shoe-shiners to smooth out income losses in places like Lima and other cities, or by working in mines and in agribusiness. Generally, men and boys migrate and look for work whereas women and girls and the elderly do stay behind. According to a survey carried out in the Apurimac region, in the last five years, 50% of the relatives of the inhabitants of that region have emigrated due to the drought, being the province of Grau (76%) with the highest immigration according to the proportion of cases (Llosa, 2009).

B.1.4 Water balance under climate change

41. In order to assess the current status of the hydrological system of the puna and to describe how the system will be affected by climate change and what the status of the system would be after implementing the, by the project promoted, EbA measures, a hydrological study was conducted (see Annex 2g). As the availability of water is critical for the maintenance of ecosystems and also for the sustainability of the agricultural and livestock breeding activities. In this regard, the hydrological study considered hydrological and climate variables that are available as gathered from open data and scientific literature to assess actual and future hydrological status and dynamics as a function of changing climate and the effect of the EbA measures in the Puna Resilient project's districts.
42. The hydrological study predicts an overall negative climate change impact[28] in all the districts selected with different levels of intensity from an index[29] of 0.25 to 1 (the higher is the value, the higher is the combined effect of the climate change and current water usages as respect to the water availability). Detailed results from the carried hydrological model are described in Annex 2g.
43. In addition, to evaluate the impact of the EbA measures on each district, a Combined Index (CI) considering water stress[30] and EbA suitability was developed. The result showed that Ecosystem based adaptation measures have the potential to generate positive impacts on the water availability at the district level. For example, the EbA Wetlands (Bofedal) restoration and conservation, could potentially increase the soil-plant system humidity, increase the spring flow due to infiltration produced by the wetland system recovered and decrease the base flows. The values of the EbA Impact Index for each district and each EbA vary from 0[31] to 1. The higher the value, the higher is the potential of the relative impact of the EbA in respect to the water availability of the district. In general, the results demonstrate the benefits and positive impacts that the proposed interventions will have in the target areas, identifying which districts benefit best from each EbA measure, providing information on the prioritization of EbA measures for the implementation of sub-activity 1.1.1.2. Ultimately these EbA interventions will substantially reduce the expected negative impacts of climate change in the project area.

[26] The affirmation about the effect of pests and diseases that might affect crops due to shifts in species distribution is not quantified but only mentioned in the results obtained from SENAMHI (2015).
[27] Klimawandel, Migration und Geschlechterverhältnisse | Migration und Klimawandel | bpb.de
[28] Data on current and projected hydrological variables with the projected climate change were based on the data presented in the Annex 2f and information available at landscape scale from reliable sources.
[29] This hydrological study supports the calculation of hydrological and climate resource and risk indexes that contributes to the understanding and estimation of water availability versus water usages. To analyses climate change impacts 10 climate change indexes were calculated based in five water resources and two climate change variables.
[30] For the water stress hydrological interdependencies of EbA measure for climate change adaptation were considered as assumptions based on studies that have demonstrate the links between the proposed interventions and improved climate resilience among vulnerable communities in the region (The benefits for adaptation of the proposed EbAs measures are described in section 9.2 of Annex 2a).
[31] Some EbAs are not suitable for all analyzed districts.

B.1.5 Priorities for climate change adaptation in ecosystems and agriculture

44. The most relevant impacts of climate variability and change in the Puna ecosystems and agricultural value chains include: i) losses in livestock, both in terms of the number of animals and productivity; ii) losses in crop yields, increased incidence of pests and diseases and loss in resilience to external shocks; iii) reduced water availability; iv) increased soil erosion and reduced topsoil moisture; v) decreased food and nutritional security.
45. At present, the prioritized value chains suffer significant impacts due to climate change, which translate into the following vulnerabilities:

Andean crops

46. Potato: The effects of climate change on potato production are complex, as plant growth and yield are related to temperature. Potato cultivation, in order to maintain its nutritional properties, requires cold temperatures. Many farmers in the High Andes have moved the agricultural frontier upwards to maintain favourable temperatures for their crops (Giamberso, 2014). Shaw and Kristjanson (2013) found that potato farmers in the region have raised their crops by approximately 150 m in the last 30 years. Arce et al. (2019) found that in Huancavelica, native potatoes rose almost 500 m above those reported 38 years ago. In the agro-ecological zones of the Puna, in addition to the increase in temperature, there are currently other climatic events that put agricultural production at risk, such as frosts, droughts and hailstorms that generate risks of production losses and loss of genetic diversity of native potatoes (Practical Solutions, 2018). The droughts have caused a reduction of approximately 12.1% in potato sowings (2022/2023 season) with respect to the average accumulated sowings up to October of the last 5 seasons, i.e., 21,028 ha less (MIDAGRI, 2022e). Evidence also indicates that farmers are responding to climate change by increasing areas of potato cultivation in natural grassland areas in Puna areas, due to the increased population and rate of pests and diseases that appear to be occurring at lower altitudes such as rancha, also known as tizón tardío and seca seca.
47. Quinoa: Quinoa has many qualities that make it more resilient to climate change (Balakrishnan et al., 2022, Hinojosa, et al, 2018) tyhan other crops, nevertheless quinoa is not immune to the negative impacts of climate change, which can adversely affect its production and yield. Areas once suitable for quinoa cultivation may no longer have the necessary conditions for sustained production. As temperatures rise and exceed the crop's optimum threshold, production and yield decline. For instance, in Puno, a 1 °C temperature increase results in a reduction of 112.2 Mt in production and 169.1 kg per ha in yield. Additionally, increased rainfall by 300 mm leads to a reduction of 75.78 Mt in production and 127 kg per ha in yield (Carrasco, 2016). Drought is another significant challenge that quinoa producers face, causing water scarcity for irrigation. In Ayaviri, Puno, the entire quinoa harvest was lost during the 2023 season.

South American Camelids

48. Alpaca and Vicuña: Increasing temperatures and reduced rainfall have resulted in diminished pastures and a higher incidence of pests and diseases and contribute to higher mortality rates among newborn. This situation is likely to negatively impact vicuña and alpaca populations (Kasterine and Lichstenstein, 2018). Furthermore, climate change has influenced the spatial dynamics of pastures, grazing areas, and the vicuña habitat. As grazing areas degrade, vicuñas are forced to cover larger areas with lower-quality pastures and migrate to higher elevations where better pastures can be found (Korswagen, 2015). Also, sudden changes in rainfall and the melting of glaciers are causing disruption among both alpaca communities and the communities that rear them. A primary challenge currently faced by alpaca producers is the scarcity of water due to reduced rainfall, directly affecting pasture and fodder production for feeding the herd. Consequently, they are incurring additional expenses that were not present before for the animals' breeding.
49. Sustainable management of South American camelids is therefore an ancestral activity and in several cases are still, the most highly appreciated resource for Andean livelihoods (Vilá and Arzamendia, 2022). Although it is known that South American Camelids are more efficient grazers, there is a need to ensure long-term sustainability of this livestock system in a context of climate change by supporting communities in developing climate-resilient business models for camelid breeding and fiber production. This includes improving the management and conservation of water and pastures, adding sustainable value to the fiber products, combining primary production with manufacturing, developing a stronger fiber quality control, promoting associations among camelid breeders to achieve a higher professional level of their members, and taking charge of the direct commercialization on the national and international market. Other productive practices (e. g., crop rotation, selection of adapted crop varieties, agrobiodiversity conservation) related to agriculture value chains will also be promoted by the project through the conservation and restoration of key ecosystem services (food provision, soil fertility, water regulation, nutrient cycling) with the aim to increase livelihoods diversification and to reduce the vulnerabilities of the communities.
50. Additionally, the project will work on complementary value chains including **traditional Andean crops**, **breeding of small animal (guinea pigs), community based tourism** and **traditional handicrafts**. Traditional crops include: (i) Kiwicha (Amaranthus caudatus), (ii) Cañihua (Chenopodium pallidicaule), (iii) Tarwi, (iv) Oca (Oxalis tuberosa), and (v) Mashua. Their vulnerabilities are related to those explained for the main crops (quinoa and potato), as well as those related to animal livestock and tourism. Since Agricultural systems are highly sensitive to climate change,

most farm rural people in the Peruvian Andes hold diversified, low input cropping systems and intercropping as an adaptation response to the intra-seasonal climate variability[32].

51. Ecosystems based Adaptation (EbA) supports the sustainable use of resources and diversification of land and livelihood options such as multi-cropping and agroforestry while reducing climate vulnerability for people at least local scale but ideally at landscape scale[33]. The table below describes the impacts for each of the prioritized value chains and theEbA measures that the project will promote in a complementary manner so climate resilience can be increased in the SHAP. The EbA measures mentioned below has been revised and validated during stakeholder consultations with different actors in the regions (local authorities, technical officials from rural extension programs, Indigenous Peoples and Local Communities, producer organizations, cooperatives, non-governmental organizations, academia, etc.).

Table 1. Climate change risks and impacts in the target Puna ecosystems and value chains, adaptation interventions and benefits

Value chain / Ecosystem	Threat / Climate risk	Impacts of climate change	Ecosystem based Adaptation measures	Adaptation benefits
Highland crops - Potato	- Increase in maximum temperature. - Decrease of minimum temperature/ frost - Dry periods/drought - Heavy rainfalls - Glacial retreat and melting	- Decreased crop yields and shorter growing seasons - Decrease in production quantity owing to water scarcity. - Decreased crop growth - Soil fertility - Logistical problems (harvest/ transport) due to floods - Increase in pests and diseases that affect crop yield and local population	Prioritized EbA measures for highland crops include: - **Conservation and restoration of wetland ecosystems (bofedales)** – ancestral use to retain rainwater and regulate runoff flows, increasing soil moisture. Improvement in water regulation at the source. - **Qochas** – ancestral water micro reservoir natural water reservoirs to retain rainwater - **Integrated soil fertility management (ISFM)** – ancestral agricultural practice to enhance soil fertility, improves water retention, and even reduces germination time through seed priming through e.g. crop rotation, camelids manure (Liniger, Mekdaschi, Hauert, & Gurtner, 2011). - **Andenes/terraces** -ancestral technique to reduce water runoff and soil erosion, usually on steep slopes. Terraces maintain soil moisture and generate a suitable microclimate for crop diversification (HELVETAS Swiss Intercooperation, 2017). - **Infiltration ditches** -retain and infiltrate rainwater. The deposited water infiltrates the soil and helps with aquifer recharge. - **Agroforestry measures** -tree-crop interaction helps control erosive processes and increases water infiltration at small scale (HELVETAS Swiss Intercooperation, 2017) . - **Restoration with native species**- ancestral practice using native species (such as Buddleja coriacea, Alnus acuminata or Polylepis racemosa) have high soil retention capacity, stabilize	EbA measures ensure the provision of ecosystem services. Therefore, water regulation functions of wetlands towards the basins in times of low water levels represent an important measure to make a significant contribution to the challenges of water security, integrated water resources management, and ensuring adequate water availability for human supply (SDG6). In a scenario of low provision of water, technologies to increase efficiency within the irrigation systems is crucial. Solar pumping, geotanks and sprinkler and srip irrigation systems are also crucial to water management. Improved soil fertility would increase resilience to climate change, underpinning plant growth and optimising crop yields. This would promote food security and environmental sustainability of agricultural systems. Sustainable pest management and other adaptation practices will maintain and/or increase productivity and product quality in a changing climate context. Diversifying production will increase the resilience of producers in the event of a climatic event affecting economic activity. Women participate in the different stages of agricultural work. They select and care for native seeds, which are the basis of the food biodiversity that sustains families. While men tend to choose to plant hardy crops that secure their yields, women's preferences are more often shaped by varieties that are easier to grow, quick to cook, nutritious and palatable [34]. They therefore make a key contribution to food security and sovereignty (SDG5)
Highland crops - Quinoa	- Increase in maximum temperature. - Decrease of minimum temperature/ frost - Dry periods/drought - Heavy rainfalls - Glacial retreat and melting	- Decreased crop yields - Decline in crop production and quality. - Decrease in production quantity owing to water scarcity. - Logistical problems (harvest/ transport) due to floods		

[32] Ponce, Carmen (2020). Intra-seasonal climate variability and crop diversification strategies in the Peruvian Andes. A word of caution on the sustainability of adaptation to climate change.
[33] Swiderska, K, King-Okumu, C and Monirul Islam, M (2018) Ecosystem-based adaptation:
a handbook for EbA in mountain, dryland and coastal ecosystems. IIED, London.
[34] Women hold the seeds of a stronger food system for Peru / Las mujeres alimentarán nuestro futuro | CGIAR GENDER Impact Platform

			sudden temperature changes and hold soil and environmental moisture. - **Contour farming** by orienting the crop rows following the contour lines of the topography and other ancestral tillage systems. This practice helps to reduce water runoff and soil erosion. - **Conservation agriculture** - farming system that prevents soil disturbance and emphasizes maintenance of permanent soil cover. The aim is to enhance biodiversity and improved and sustained crop production. Also, it increased water retention and runoff reduction. Other complementary adaptation measures will be also supported.	In Peru, the gender roles around potato production are clearly differentiated. Seed potato management has traditionally been the domain of women, who have knowledge of the cooking quality and agronomic or storage characteristics of different varieties. Women make decisions regarding the selection, storage and use of seeds at planting time, as well as sale of seed or home consumption, and their knowledge is critical to the preservation of the thousands of varieties that exist today[35]
Camelids (alpacas and vicunas)	- Dry periods/ drought - Increase in maximum temperature - Heavy rainfalls - Glacial retreat and melting - Decrease of minimum temperature/ frost	- Low forage production - Increase in herd morbidity and mortality. - Decrease in drinking water sources. - Decrease in production quality and quantity - Decrease in meat/fiber yield - Increase in presence of pests and diseases (animals and farmers)	Prioritized EbA measures for the South American camelid value chain in the intervention areas include*: (see detail on measures above)* - **Conservation and restoration of wetland ecosystems (bofedales)** - ancestral use to retain rainwater and regulate runoff flows, increasing soil moisture and fodder. - **Qochas** -ancestral water micro reservoir natural water reservoirs to retain rainwater. - **Infiltration ditches** -retain and infiltrate rainwater. The deposited water infiltrates the soil and helps with aquifer recharge. - **Sustainable management of natural** pastures -ancestral practice for overgrazing control, increasing water infiltration and controlling erosion, grasslands can be recovered and provide enough fodder for livestock (HELVETAS Swiss Intercooperation, 2017). - **Agroforestry** measures (see highland crops above) **Restoration with native species** - ancestral practice using native species (such as Buddleja coriacea, Alnus acuminata or Polylepis racemosa) have high soil retention capacity, stabilize sudden temperature changes and hold soil and environmental moisture.	EbA measures will improve water harvesting during the rainy season for distribution in times of drought by supplementing water from rainfall. This, together with efficient irrigation technologies, will improve and make sustainable use of water resources for fodder production. Also, grassland vegetation cover protects soils from the effects of erosion, reduces evaporation as well as runoff. This not only improves carbon sequestration, helping to mitigate greenhouse gas emissions from livestock production, but also contributes to improved soil quality by increasing soil porosity and water retention capacity (DDCC, 2019). Its sustainable management contributes to increasing communities' resilience to climate change by buffering the effects of extreme events and is also a strategic social and economic element for camelid producers, as a source of food and survival for Andean vicuñas and alpacas. Diversifying production will increase the resilience of producers in the event of a climatic event affecting economic activity. Women have been playing a fundamental role in the implementation and maintenance of these techniques (wetlands, harvesting and sowing water), as they also work in agriculture and livestock farming. Livestock raising is an activity mostly carried out by women and requires fodder in the dry season (from June to October or

[35] https://www.potatonewstoday.com/2021/03/18/the-phoenixes-in-our-food-systems-women-farmers-in-peru-safeguarding-the-survival-of-potato-biodiversity/

				November) to maintain the size of the herds, their productivity and income. In this context, they produce and transfer knowledge about animal well-being and grassland health. When men migrate to access other income in urban or peri-urban areas, women remain in charge of their agricultural units.

52. **Many core elements and principles of the EbA approach coincide with traditional knowledge, management practices, technologies, and values of High Andean communities**. There are traditional communal management practices to prevent degradation of wetlands through different systems:
53. The management of rustic reservoirs, known as *qochas,* to store rainwater for human use and animal consumption and to promote groundwater recharge through seepage. Another traditional way to support water infiltration and prevent soil loss through erosion is by constructing trenches following the contour of the land, thus, capturing rainwater runoff (and soil) and subsequently feeding aquifers and springs to face water deficits in dry seasons.
54. Such infrastructure is complemented with ancient diversion canals conducting streamflow to infiltrate trenches from which it can slowly seep and then re-emerge in micro-reservoirs or springs for agricultural use.
55. Moreover, the Southern Andes are well known for their terraced landscape, dating back to pre-Inca periods. Terraces reduce the speed of runoff in areas with steep slopes, slowly seeping water into the ground and increasing the surface of land that can be used for agriculture or animal grazing.
56. The management of natural grasslands and wetlands through the establishment of animal exclusion areas, rotational grazing, and restoration allows ecosystems to recover and continue supplying services such as water regulation and provision, fodder, control of soil erosion, and carbon sequestration.
57. These ancient technologies have been an integral part of traditional livelihoods in the SHAP for centuries, shaping a particular way of living with and within nature. Furthermore, these technologies are not only based on the natural infrastructure themselves but on the social network behind them, which demands a high degree of social cohesion to successfully perform the required communal work to keep the technologies in place (Rolando et al., 2017).
58. Proven solutions with potential to be upscaled. The protection of grasslands and wetlands through fencing and the restoration of flows in those areas that have been drained, have proven efficient in recovering their functionality in terms of water regulation. Empirical evidence from studying ten peatland areas (bofedales) in Peru and Bolivia showed that these Andean Puna ecosystems can reduce the climate change impact on water availability by increasing the groundwater recharge during the rainy season (Cooper et al., 2019). Another research by Cervantes (2022) demonstrated the contribution of ecosystems (peatlands, grasslands, and Polylepis forests) to water regulation. According to this recent analysis in the Rontoccocha micro basin in the Peruvian region of Apurimac from 2019, grasslands had the capacity to recharge 194 mm (194 l/m2) of water in one year and stored 15.1 percent of the total rainfall water in one-unit area. Peatlands were shown to store 16.4 percent and recharge 211 mm (l/m2), and Polylepis forests stored 15.4 percent and recharged 198 mm. As presented in the following chart, peatlands have a greater water recharge capacity (water regulation ecosystem service) than grasslands and Polylepis forests (Cervantes, 2022). Moreover, Mosquera et al. (2022) revealed that grasslands have an important and positive hydrological function in the High Andes and, when conserved and restored, can improve soil water infiltration and reduce soil erosion.

Table 2. Results for each ecosystem under study Results for each ecosystem under study (in mm and, in brackets, in % of total precipitation).

Ecosystem	Precipitation	Interception	Net precipitation	Surface runoff	Actual evapotranspiration	Recharge
Grassland	1 290 (100%)	51.5 (4.0%)	1 240 (96.0%)	324 (25.1%)	698 (54.2%)	194 (15.1%)
Peatland	1 290 (100%)	25.8 (2.0%)	1 260 (98.0%)	320 (24.9%)	765 (59.4%)	211 (16.4%)
Polylepis forests	1 290 (100%)	122 (9.5%)	1 170 (90.5%)	311 (24.2%)	696 (54.1%)	198 (15.4%)

Source: Cervantes (2022)

59. A recent study analysed alternatives for water supply in the city of Lima. The combination of amuna restoration, hydrological restoration of wetlands, animal exclusion, and rotational grazing in the puna ecosystem turned to be a competitive alternative (0.51 USD/m^3), compared to a desalinization plant (0.74 USD/m^3) (Gammie and De Bievre, 2015). Ecosystem based solutions, are well known for their contribution to mitigation co-benefits.

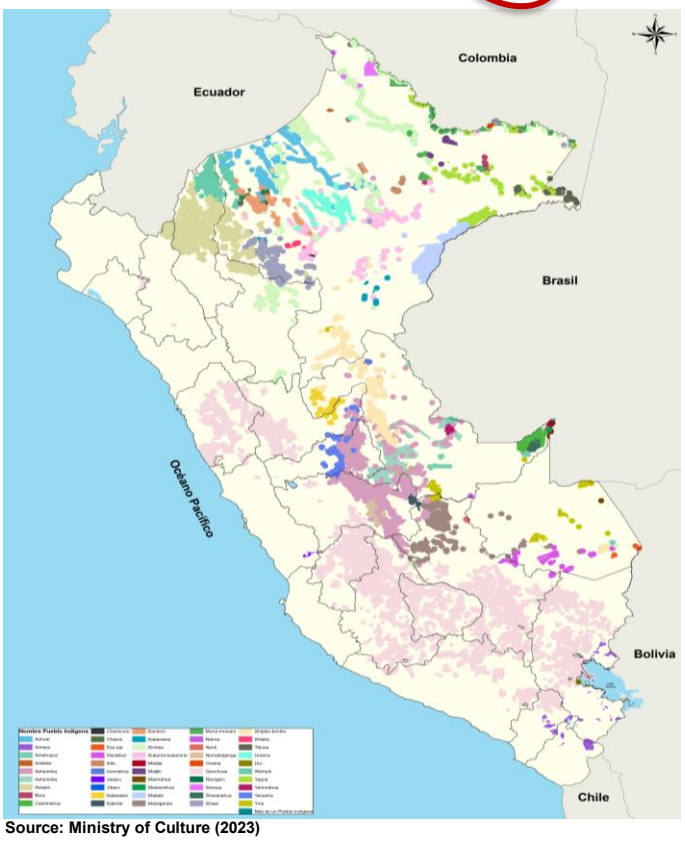
B.1.6 Prioritized Project Areas

60. Due to the extent of the SHAP and limited project funds, areas where interventions could have the greatest potential were prioritized in a two-stage process. In the first stage, the scope of analysis was defined according to a set of criteria including vulnerable communities, high altitude Andean areas (above 3,500 m.a.s.l, including a buffer zone between 2,800 to 3,500 m.a.s.l), presence of key Puna ecosystems (peatlands, grasslands and wetlands), distance to degraded lands and to areas that have suffered deglaciation, and existence of agriculture and husbandry lands with high or very high risks of droughts and high climate vulnerability. In the second stage, priority was given to districts with the best enabling conditions for initiate interventions, considering social, economic, and environmental factors. As a result of the first stage, 91 districts in the regions of Arequipa, Cusco, Apurimac, and Puno were prioritized, covering 5,314,607 hectares. Of the 91 districts, 58 districts will be eligible for the Puna Facility (covering 4,116,475 hectares) and capacity building activities, while 33 districts will only benefit of capacity building activities. Four Natural Protected Areas fall inside of some eligible districts which are: the Landscape Reserve of Nor Yauyos Cochas in Lima region, the Landscape Reserve of Cotahuasi, the National Reserve of Salinas y Aguada Blanca in Arequipa region, and the National Sanctuary of Ampay in Apurimac region. SERNANP is the governing entity of these areas. A detailed explanation of the prioritization methodology and process is included in Annex 16b "Explanatory note Area of intervention". Indigenous Peoples and Local Communities in this area are 69% Quechua speakers and the other 31% Spanish speakers (National Census, 2017)[36]. As depicted in the Map of Indigenous People in Peru, there are no other Indigenous Groups in the target area of the project.

Figure 9. Map of prioritized districts by type of intervention

Source: own

Figure 10. Map of Indigenous Peoples in Peru (Quechua in light pink)



Source: Ministry of Culture (2023)

Table 3. Prioritized districts by departments and type of intervention

Department	Watersheds	N° of districts for Capacity Building	N° of districts for Puna Facility + Capacity building	Total
Apurímac	Inter-watershed Alto Apurimac	13	10	23
Arequipa	Vitor Quilca Chili, sub-watershed Cotahuasi- Ocoña	14	12	26

[36] Note that in 2012, 83% were Quechua speakers and 17% Spanish speaker within the project area of the project (CENAGRO, 2012)

Cusco	Vilcanota-Urubamba, Inambari	6	23	29
Lima	Cañete	-	4	4
Puno	Azángaro, sub-watershed Coata	-	9	9
Total		**33**	**58**	**91**

B.1.7 Direct beneficiaries of the project

61. The direct beneficiaries of the project are primarily Andean Indigenous Peoples and Local Communities from vulnerable rural regions in the high Andean regions (for detailed beneficiary numbers, refer to section D.1.3). In the majority of cases, project's direct beneficiaries are Indigenous Peoples and Local Communities engaged in agriculture and animal husbandry activities in the high Andean zones. Both economic activities are essentially for their subsistence and have a high dependency on climate (70% of agricultural activity depends on rainy season). IPLCs in this part of the Andes as mentioned in the previous section are organized in peasant or local communities, and in other forms (refer to the list below). to manage local development, administer common resources or provide services to each other. These forms of organizations will be regarded as potential recipients of funding from the Puna Facility, as outlined in section B.4.4. Special emphasis will be given to women's participation in IPLCs, enterprises, associations and cooperatives.
62. Local Communities[37]: Refers in most of the cases to peasant communities which are the most widespread and important category in the region, as they represent a strong part of the Andean culture as they are descendants of the Original Peoples of Peru. They are organizations of public interest, with legal existence and legal personality, recognized by the government and protected by Peru's Political Constitution, with rights over natural resources and the territory they occupy. Peasant communities consist of families united together by ancestral, cultural, social and economic ties, who have communal ownership of the territories they inhabit. These communities operate through democratic governance, involving a Communal Assembly and a Communal Board elected for terms ranging from one to two years.
63. Community Enterprises: These are Local communities themselves that, using their legal status, organise and administer their economic activities in a business manner, by generating productive units of communal goods and services, to ensure the well-being of their members and contribute to the development of the community as a whole. A local community can constitute one or more communal enterprises.
64. Producers' Associations: Represent a stable organisation of natural or legal persons, or both, which through a common activity pursues a non-profit purpose. In many cases, community's members tend to form different types of producer associations according to a specific economic activity, for example: artisans associations, alpaca associations, quinoa producer associations, etc. For many years the Ministry of Agricultural Development and Irrigation has promoted producer associativity, which comprises a process of voluntary grouping of individuals, organisations or enterprises working in a coordinated and concerted manner to achieve their goals. This approach aims to optimize the utilization of production resources, enhance earnings through associative marketing efforts, and realize economic of scale, improved market access, and improved incomes.
65. Cooperatives: An agricultural cooperative is a society of persons that can also be the same members of a community who carry out agricultural, forestry and/or livestock activities, who have joined voluntarily through a jointly owned and democratically controlled company that complies with cooperative principles. The agricultural cooperative is constituted with the purpose of providing services related to the agricultural, forestry and/or livestock activity that its members carry out. Among the services that the cooperative can provide to its members are the supply of products and services, marketing, processing, financing, technical advice, etc., as well as any other related or complementary service that contributes to the realization of its objective. The agricultural cooperative acquires the status of legal entity from its registration in the public registers, and to enjoy the benefits established in this law, they must prove its registration in the National Registry of Agricultural Cooperatives in charge of the Ministry of Agricultural Development and Irrigation (MIDAGRI).
66. Micro and Small Enterprises (MSEs): Are an economic unit constituted by a natural or legal person, under any form of organisation, whose purpose is to carry out activities of extraction, transformation, production, commercialisation of goods or provision of services. According to the Legislative Degree 1086, micro enterprises have from 1 to 10 employees and annual sales up to 150 taxable tax units, while small enterprises have from 1 to 100 employees and annual sales up to 1700 taxable tax units.

B.1.8 Related ongoing and forthcoming projects with synergies

67. Table B.1.1.3 provides a summary of the worth noting related past, ongoing and forthcoming interventions in the SHAP (a more extended table and list can be found in the Feasibility Study (Annex 2a) section 7.1.6 Gaps and complementarity with other development initiatives in the sector).

[37] Please note that the term of local communities is going to be used for this project in order to include a wider range of activities in which they engage, as peasant communities are predominantly focused on agricultural activities.

68. Among the projects described below, it is worth noting some of them which the project will have some synergies. For example, the project will scale up EbA pilot interventions on previous projects such as the Global *Mountain Ecosystem-based Adaptation* programme[38] implemented by UNDP and IUCN from 2011-2015 in Uganda, Nepal and Peru. In Peru it was piloted only in a small area of Nor Yauyos Landscape Reserve to test methodologies and decision-making tools for EbA planning and monitoring; implement pilot measures focused on water resources management and built evidence and knowledge for decision making. Instituto de Montaña was IUCN implementing partner so its experience, methodologies and lessons learnt will be replicated and scaled up into Resilient Puna Project through Component 1 and 3 (in community monitoring systems and in territorial planning at different levels).
69. The Puna Facility will also complement and benefit from the experience of the *Six Phase of GEF's Small Grants Programme* implemented by UNDP until June 2021 and from the *Seven Phase* that goes until July 2025, covering the regions of, Puno, Tacna and Cusco. The Puna Facility will fund EbA measures and Climate Resilient Value Chains specifically if they have a climate adaptation purpose, rather than a biodiversity conservation/agricultural development one such as the GEF's SGP. The Puna Facility will start its first call for proposals at the beginning of 2025 avoiding overlaps with SGP but trying to complement the support to IPLCs and the existing multi-stakeholder platforms. The GEF SGP's six phase was successful in creating multi-stakeholder platforms, as well as knowledge-exchange platforms that this project could leverage in Component 1. For example, through the SGP Peru Knowledge Fair or "*Encuentro de Saberes"* where 50 communities in the Peruvian Andes have been sharing their solutions based on nature and their ancestral knowledge[39].Recommendations on how to strengthen Andean local experts' capacities also will be taken in considerations for the implementation of sub-activity 1.1.2.1.
70. The USAID/Forest Trends/Canada "Natural Infrastructure and Water Security Project", which promotes public-private partnerships and ecosystem recovery to prevent hydrometeorological risks will serve to replicate tools and methodologies to identify where to implement EbA measures. Potential synergies with this project during implementation in some territories will be closely coordinated.
71. The Helvetas/AVINA/IISD/IFAD "Resilient Andes project" which aim is to strengthen capacities in private-public stakeholders living in poverty and vulnerability in Bolivia, Ecuador and Peru, aiming to improve their food and water security. Component 3 pf this project will consider, and replicate family farming best practices and knowledges gathered in "Encontrar" web platform.
72. The Sustainable Management of Agro-Biodiversity and Vulnerable Ecosystems Recuperation in Peruvian Andean Regions through the Globally Important Agricultural Heritage Systems Approach (GEF- FAO) which aim is to conserve and sustainable use agrobiodiversity in the high Andes. In component 1 of this project will replicate best practices of farmer field schools for the cultivation of potato and quinoa and tools to connect producers with local markets.
73. **Alignment with existing GCF country programmes/ projects.** Profonanpe is currently implementing two GCF projects in Peru. As one of the main stakeholders, the project will build on previous experiences and include lessons learned in its activities.
74. The project (FP001) *Building the Resilience of Wetlands in the Province of Datem del Marañón* seeks to facilitate better land-use planning and management of the region's wetlands, while strengthening sustainable, commercial bio-businesses of non-timber forest products. It will entrust indigenous communities with the management of resources, improve their livelihoods, and empower women in the decision-making processes.
75. Next to FP001, Profonanpe is also implementing and managing the *Peruvian Amazon Bio Business Facility* (FP193), which was set up in November 2022. The Facility has the aim to invest in eco bio businesses (EBBs) to provide mitigation benefits through enhancing carbon stocks. The Puna Facility which will invest in Climate Resilient Value Chains will benefit from the experience of Profonanpe, which will have gained capacity and knowledge on best practices and management from the implementation of the EBBF.
76. Furthermore, Peru is part of two additional GCF programs related to the Puna project activities: i) the in October 2021 approved (FP173) *Amazon Bioeconomy Fund: Unlocking private capital by valuing bioeconomy products and services with climate mitigation and adaptation results in the Amazon* with the Inter-American Development Bank as an Accredited Entity. The Amazon Bioeconomy Fund in six Amazon countries will deliver sustainable solutions to reduce the impacts of climate change in the Amazon biome by prioritizing natural capital and delivering climate benefits. The project has a similar approach, but its geographic implementation (Amazon basin) does not overlap with the Puna. ii) (FP128) *Arbaro Fund – Sustainable Forestry Fund,* approved in March 2020, the Programme will provide effective climate change mitigation outcome through investing in sustainable plantation forestry projects in emerging forestry markets while also bringing adaptation co-benefits. This investment approach provides developing countries and their rural communities with a solution to increase carbon sinks by producing wood in a sustainable manner and conserving natural forests, whilst contributing to reduction of illegal logging.

Table 4. Related projects and potential synergies with the project

Project characteristics	Objective and results	Potential synergies

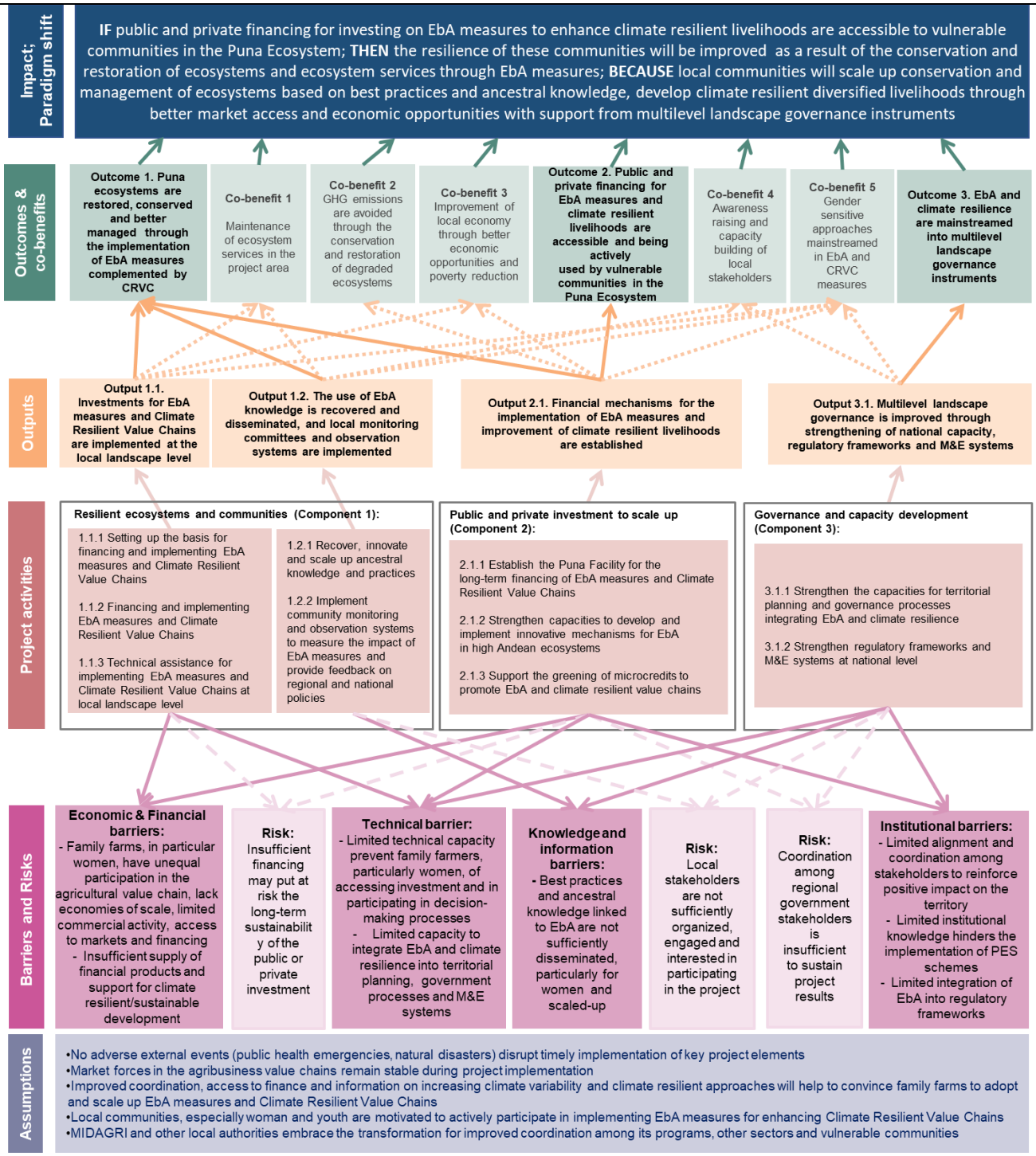
[38] Global Ecosystems Based Adaptation in Mountains Programme | UNDP Climate Change Adaptation (adaptation-undp.org)
[39] When knowledge becomes power | Programa De Las Naciones Unidas Para El Desarrollo (undp.org)

Title: Mountain EbA **Budget**: USD 3,276,637 **Implementation period**: 2012-2016 **Donor**: BMU **Agency**: IUCN, UNDP	Objective: Strengthen national, regional and local capacities to implement EbA measures and reduce community vulnerability, emphasizing mountain ecosystems. LINK Results: Improved water availability and management, as well as the rehabilitation of grasslands in Canchayllo and Miraflores, with knock-on benefits on biodiversity. Three prioritized EbA actions in three pilot sites: a) management of vicuñas for the extraction of animal fibre. b) Community management of natural grasslands, including livestock c) sustainable water resources management, including rehabilitation of ancestral water infrastructure and restoration of wetlands and grasslands. Strengthened local capacities and knowledge related to climate adaptation and the importance of ecosystem services. This includes park rangers and small landowners to municipal-level workers. Creation of interest groups and committees made up of academics and rural communities that has reinforced locally led action. Validity of EbA as an adaptation measure to be invested in at regional and national levels as well as "proof-of-concept".	This project serves as a "pilot" for this GCF project. The proposed GCF project builds on the lessons learnt from this first project, specifically regarding the implementation of EbA measures for better water management and agriculture in the Andes, resulting in enhanced community resilience. The Puna Facility, established under Activity 2.1.1 of this project will also fund EbA activities. Moreover, in a similar manner to the UNDP/IUCN project, this GCF project's component 1 proposes activities such as strengthening community based EbA measures and monitoring impacts.
Title: Seventh Operational Phase of the GEF Small Grants Programme in Peru (UNDP) **Budget**: 6,337,319 USD GEF grant: 1,959,132 USD. **Implementation period**: 2021-2025 **Donor**: GEF **Agency**: UNDP	Objective: To build socio-ecological landscape resilience in the Southern Andes in Peru through community-based activities for global environmental benefits and sustainable development. LINK Results: The programme is in its Seventh Operational phase. The mid-term review for the Sixth Operational phase noted that the programme was especially successful in creating multi-stakeholder platforms called Strategic Landscape Platforms. These support participatory planning and adaptive management of landscapes, and are composed of 6-9 members, including community platforms, local authorities, and private sector. (UNDP, 2019).	Both programmes fund EbA interventions to enhance ecosystem services with agricultural and economic benefits in mind. This GEF Small Grants Programme in the Peruvian Andes seeks to address very similar challenges through providing small grants (5000-50,000 USD) for community-led projects in biodiversity conservation, improvement of ecosystem services, as well as improving agricultural value chains through soil and water conservation practices. The Puna Facility will fund similar activities to those of the GEF Small Grants programme. It is important to note, however, that the Puna Facility will fund EbA activities and climate-resilient value chains specifically if they have a climate adaptation purpose, rather than a conservation/agricultural development one.
Title: Peruvian Amazon Bio Business Facility **Budget**: 10,000,000 USD GCF grant: 8,972,400 **Implementation period**: 2022-2032 **Donor**: GCF **Agency**: PROFOFONAPE	Objective: The Amazon Eco Bio Business Facility (EBBF) (FP193) will provide effective climate change mitigation outcomes by investing in eco bio businesses (EBBs) supporting the sustainable management and conservation of Peruvian forests. LINK Results: This project is still under implementation, but the EBBF aims to contribute to enhancing carbon stocks and avoiding the emission of 3,8 million tonnes of CO2, with an estimated cost of 263 USD / t CO2eq during its lifetime, and support REDD+ infrastructure in Peru.	This facility, managed by Profonanpe, provides repayable grants to EBBs that manage and conserve Peruvian forests in the Amazon, and provide mitigation benefits through enhancing carbon stocks. The Puna Facility, established under Activity 2.1.1 of this proposed project, will invest in Climate Resilient Value Chains through the development of businesses that increase SHAP communities' resilience to climate change, and/or reduce the negative impacts of existing livelihood strategies on the puna ecosystem. The Puna Facility will also invest in EbA measures to adapt to climate change impacts in the intervention area. Both facilities are managed by Profonanpe, which will have gained capacity and knowledge on best practices and management through implementing the EBBF. However, the Puna Facility will fund climate adaptation activities in the Puna biome.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

B2a.1. Theory of change and Project Goal

77. The following diagram shows the ToC for the project, which illustrates the change pathway and interactions of different elements of the intervention logic proposed by the project. As shown in the theory of change diagram, the project has established an integrated self-supporting approach, addressing the identified barriers and risks.



78. **Goal**: The aim of the project is to increase the resilience of communities, ecosystems and livelihood in the High Andean region affected by climate change through the implementation of EbA measures, complemented by CRVC, the establishment of public and private financing for investing in these measures and the support from multilevel landscape governance instruments.
79. **Goal Statement**: **IF** public and private financing for investing in EbA measures to enhance climate resilient livelihoods are accessible to vulnerable communities in the Puna Ecosystem, **THEN** the resilience of these communities will be improved as a result of the conservation and restoration of ecosystems and ecosystem services through EbA measures, **BECAUSE** local communities will scale up conservation and management of ecosystem based on best practices and ancestral knowledge, develop climate resilient diversified livelihoods through better market access and economic opportunities with support from multilevel landscape governance instruments.
80. The ToC diagram, goal and goal statement respond to a series of activities, outputs and outcomes (described in detail in section B.3) that addresses the barriers and risks described below.

B.2a.2. Identified Barriers

81. The barriers that the project will address in the prioritized districts in the SHAP region, including economic, financial, technical, institutional, knowledge and information, are:

Economic and financial barriers

i) **Barrier 1: Family farms have unequal participation in the agricultural value chain, lack economies of scale, limited commercial activity, access to markets and financing**. Excessive fragmentation in agricultural production and supply creates barriers to market entry. Limited collaboration among agricultural producers weakens their ability to negotiate effectively for input procurement and product sales, thereby detrimentally impacting the seamless connection between agricultural producers and markets (Hernández Calderón, 2006). According to Cannock et al (2016), the high transaction costs derived from the remoteness and high geographical dispersion of agricultural productive areas hinders communication and interaction between producers who could share information on input prices or sales channels. In a study conducted by Escobal (cited by Cannock et al, 2016), applied to a sample of potato producers in two districts of the department of Huancavelica, the author finds that transaction costs represent 50% of the value of sales and that these costs are particularly higher for small producers compared to larger ones. The rural population is being limited to the services offered by the formal financial system, which prevents them from investing and improving their production, thus limiting their access to markets. The regulated IFI Intermediary Financial Institutions perceive the agricultural sector as very high risk, since it presents conditions of high climate vulnerability, fragmentation and dispersion of the population itself and mainly of the economic units that generate income, which operate in small-scale volume with low levels of technology applied to the production process with little specialized technical personnel, among other factors (PP121 MIDAGRI 2021). Potential clients also face limited financial literacy and inadequate loan terms, as well as generally high financial transaction costs and limited collateral (Sotomayor, Talledo, & Wong, 2018).

ii) Among camelid producers, the majority of alpacas and llamas in the region, around 85%, are owned by small-scale farmers. These farmers usually possess less than 100 animals each within mixed herds. Also, the South American camelid fiber value chain demonstrates inequality as its commercialization structure is characterized by high intermediation, maintained by traditional relations that limit and condition the price and negotiation terms to the detriment of the producers. The supply is dispersed and in small volumes, and producers seldom have the negotiation capacity to present a collective offer due to their lack of organization (Moya & Torres, 2008). In the case of rural women, there is generally access to lower quality farmland, often in marginal areas, where land is mainly cultivated for household consumption. Rural women raise domestic animals, process primary products or sell their small surpluses in local markets, while men's participation in productive activities is more closely linked to more competitive and profitable value chains[40]. In addition, another important gender gap in the project's region is related to land ownership and/or tenure, with women owning only 30.8% of farmland in Peru (FAO 2018).

iii) Inequalities in income generation among women and men is also present in the target area of the project. According to the National Agricultural Census (2012), there are more women with no income of their own. For example, in Apurimac 32.8% of women no have income in their own compared to only 12.1% of men. In the case of Arequipa women without income of their own (38.1%) while men (22.3%). In Cusco women (30.5%) and men (18.2%). Finally in Puno, women 25.1% while men 17.4%. In the case of women in agricultural occupations, 37.6% are unpaid family workers and only 46.3% of women in agricultural occupations received cash income.

iv) Specifically, in terms of the project beneficiaries IPLCs in their various forms of organization face differentiated barriers in regard to access to financing according on how they are organized which includes:

a) For communities, producers' associations and cooperatives in the process of formalisation
   i. Lack of economies of scale. Their production is mainly for self-consumption, because their productivity is very low, and their production is very small.
   ii. Limited commercial activity. The small part of their production that they manage to sell is sold through middlemen who come to their farms. Consequently, they lack control over pricing, generally resulting in very low prices.
   iii. Limited access to finance. These organisations don't have access to formal credits because they don't meet the legal and commercial requirements to apply for a credit lines. In some cases, they receive advanced payments from middlemen and are then penalised with the price of their products.

b) Micro and/or Small Enterprises, community enterprises and cooperatives with commercial capacities and clear target markets and formalized producers' organization
   i. Partially self-consumption, but with an emerging group of clients. These organisations need to increase the number of customers by finding niche markets that value the origin of their products.
   ii. The organisation collects the products of its members and sells it together. Because of that, they can access better prices, and sometimes can add value to their production. However, they still

[40] retos y oportunidades de la agricultura familiar en perú : care perú

need to improve their production process and quality controls to maintain their customers and expand them sustainably.

iii. Limited access to finance. Their limited experience, low productivity, and sales figures hinder their easy access to credit based on their technical capabilities, despite being legally eligible to do so.

i) **Barrier 2: Insufficient supply of financial products and support for climate resilient/sustainable development**. Peru's microfinance landscape comprises a limited number of institutions that provide loans to small and medium-sized businesses pertinent to this project, particularly those catering to smallholder farmers and communities in the High Andean areas. Financial institutions such as Financiera Confianza, Mibanco, Financiera Compartamos, and Caja Rural Los Andes are notable due to their alignment with the project's target borrowers, their presence in the project regions, and their emphasis on rural lending. Caja Rural Los Andes and Caja Rural Inka Sur also extend microcredits to the rural and peasant population. The Arequipa - Fondesurco Savings and Credit Cooperative is also active in the region, offering small "green loans" tailored for agriculture and livestock purposes. The state-owned bank Agrobanco, which oversees Agroperu, an independent agricultural lending fund, also holds significance due to its rural and sector-specific orientation. Likewise, Cofide, Peru's development bank, also plays a role in this landscape. Regarding to access to loans, in 2012 only between 5% and 20% of men farmers took out a loan; and for women farmers it is even lower, between 4% and 12% (INEI 2012). The extreme shortage of capital of small producers does not allow them to invest in infrastructure (e.g. planting and harvesting water, sheds, greenhouses, road improvements), or to introduce new cultivation and grazing practices (e.g. sprinkler irrigation for pasture cultivation, mobile roosts to facilitate herd management) for the benefit of their families, and particularly women.

Technical barriers

i) **Barrier 3: Limited technical capacity prevents family farmers from accessing investment and in participating in decision-making processes**. The legislation and norms on the participatory budget allow the involvement of the communities, both in the formulation of the budget and in the planning of the territory; however, their participation is limited, due to, among other causes, ignorance of the legislation, lack of interest and difficulty of the institutions responsible for calling and bringing communities together to inform them, discuss, negotiate and put their needs on the agenda of territorial management (Doughty, 2014). In terms of women participation on decision making process the tendency is low whether at national, sub-national or community level. This geographical dispersion is a very serious limitation for the associativity of the rural communities, which, in turn, prevents them from accessing technical and financial assistance offered to increase productivity by the MIDAGRI programs in the area, conditional on loans, which imply compliance with multiple requirements, unattainable for farmers, due to the complex procedures. This prevents small producers, particularly women, from participating in the camelid value chain, mainly higher up the chain in accessing international markets, as well as technological advances for highly valued products such as vicuña fibre (MIDAGRI, 2023). In the case of Andean women, they struggle with a position of gender inferiority regarding access and control over natural resources such as land, water, production and commercialisation of agricultural products. This translates into under representation in different type of organisations. Despite this, women actively participate in the management of key natural resources such as water and land. While men concentrate their participation and decision making in agriculture and husbandry, women are responsible for water supply for subsistence farming, food preparation, cleaning and hygiene of family members, including the ill and disable (Carrillo & Remy, 2022).

v) In addition to the economic and financial barriers mentioned above the project beneficiaries face differentiated barriers in regard to organizational barriers and technical capacities which includes:

c) For communities, producers' associations and cooperatives in the process of formalisation

i. Organizational barriers:

a. Organizations without internal organisational and commercial capacities and clear target markets. This means lack of business organizations. Such organisations do not have commercial purposes; therefore they cannot directly commercialize any product for the purpose of distributing profits among their members, nor can they set aside profits for the purpose of repayment.

b. Sell individually through middlemen. They usually organise themselves to work on common goods (irrigation canals, schools, etc.), but they lack organisational structures to sell together, coordinating the marketing and distribution of commercial gains.

ii. Limited technical capacities: Community members are generally unaware of the types of requirements needed to apply to credit lines. Furthermore, due to the individual production, the training provided by different sources fail to reach all members of the communities, putting the most vulnerable at a disadvantage by denying access to technological improvements.

d) Micro and/or Small Enterprises, community enterprises and cooperatives with commercial capacities and clear target markets and formalized producers' organization

iv. Organizational barriers:

a. Organizations with commercial capacities and clear target markets. These organisations have commercial purposes, so they are accredited to generate profits, distribute profits, and make payments on a joint basis.
b. They have established a minimum level of internal entrepreneurial organisation for their business' operations, marketing and distribution of their financial benefits.

v. Limited technical capacities: These organisations are initiating the processes to improve their productivity by providing training to their members (cooperatives) and workers (micro-enterprises). However, they face the difficulties of physical distances, insufficient resources, and little knowledge of the market.

ii) **Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems**. Different stakeholders do not possess systematic methods to plan EbA and climate resilient practices into policies, plans, budgets and investments. MIDAGRI extension services do not register or keep track of progress in climate change adaptation impact of their training or structural interventions, so there is no way to monitor and evaluate progress in adaptive capacity neither at the Ministry nor at local levels. Traditional methods for decision-making based on observation and ancient knowledge exist but are being lost. On top, in some instances, they are no longer relevant in the new climate context and are often not well understood by regional and national decision-makers. According to Cerdan et al (2022)[41], the main challenges that must be overcome to optimize EbA investments include reducing the time of the budget allocation process from public funds to EbA investments. Sometimes, it depends on the political decision of both regional and local authorities. On the other hand, it was evidenced that only 16% of the project investments include a monitoring system, for example hydrological, what makes more complex to verify the impacts that the interventions on the quantity and quality of water resources, among other variables. Finally, the incorporation of the gender approach is a pending and necessary task in the investment projects, it is necessary to include conceptual frameworks and formal tools of the State that incorporate the needs and women's visions from the formulation, implementation and evaluation of projects.

<u>Knowledge and information barriers</u>

i) **Barrier 5: Best practices and ancestral knowledge linked to EbA are not sufficiently disseminated and scaled-up**. In this field, a very important barrier refers to the fact that the best practices and ancestral knowledge linked to EbA are not disseminated or expanded sufficiently. Ancestral practices and knowledge on EbA are being lost due to: (i) the processes of emigration of young people and (ii) the lack of appreciation and recognition of the value of such knowledge and technologies by national, regional, and local institutions. Climandes project carried out a survey to identify the existence of a common practice among the farmers, named here "Ancestral Visual Indicator". It consists of a hereditary climate-related knowledge, based on the observation of the sky. This usage is mainly spread among old farmers (older than 70 years), for whom it has higher credibility than the information provided by SENAMHI. In contrast, young farmers tend not to adopt this ancestral knowledge, refusing non-modern and for them unreliable habits[42]. The rural areas of SHAP have experienced a significant decrease in population due to migration. While some highland communities migrate in anticipation or in reaction to hazards, others stay in spite of the challenges/dangers. The vulnerability of highlanders is often based on a function of the extent, quality, and location of household resources, including land and livestock, and demographic factors such as family size, age, and health. [43] Outmigration is deteriorating family's structures, culture, traditions and local knowledge[44]. López-i-Gelats et al. (2015) found that migration may weaken the adaptive capacity as traditional knowledge and labour resources are being lost. As the younger population of the SHAP has moved to urban areas, 40 % of the population remaining are now over 54 years old[45]. In addition, gender traditional norms in the Andes often prevent women from achieving the same level of visibility as men, or benefit from the same opportunities and recognition, despite their deep

[41] Eliana Cerdán Estrada, Mia Smith, Mirtha Camacho Hernández y Claudia V. Grados Bueno. Recuperando la fluidez: Estado de la inversión en acciones en infraestructura natural para la seguridad hídrica en el Perú, 2022.
[42] G. Rosas, S. Gubler, C. Oria, D. Acuña, G. Avalos, M. Begert, E. Castillo, M. Croci-Maspoli, F. Cubas, M. Dapozzo, A. Díaz, D. van Geijtenbeek, M. Jacques, T. Konzelmann, W. Lavado, A. Matos, F. Mauchle, M. Rohrer, A. Rossa, S.C. Scherrer, M. Valdez, M. Valverde, G. Villar, E. Villegas, (2016). Towards implementing climate services in Peru – The project CLIMANDES, Climate Services, Volume 4,2016,Pages 30-41.
[43] Oliver-Smith, A. (2014) Climate change adaptation and disaster risk reduction in highland Peru. In: Adapting to Climate Change: Lessons from Natural Hazards Planning (B.C. Glavovic and G.P. Smith, eds.). Springer, Dordrecht, Netherlands, pp. 77–100.
[44] Bergmann, J., K. Vinke, C.A. Fernández Palomino, C. Gornott, S. Gleixner, R. Laudien, A. Lobanova, J. Ludescher and H.J. Schellnhuber (2021). Assessing the Evidence: Climate Change and Migration in Peru. Potsdam Institute for Climate Impact Research (PIK), Potsdam, and International Organization for Migration (IOM), Geneva.
[45] Instituto Nacional de Estadística e Informática (INEI) - IV Censo Nacional Agropecuario 2012.

knowledge of agriculture, water and ecosystems. For example, women alpaca herders in the Andes continue to be side-lined in technical discussions at local and national level around animal health and pasture management, the same as, in discussions about agrifood systems and crop diversification[46].

Institutional barriers

ii) **Barrier 6: Limited alignment and coordination among stakeholders to reinforce positive impact on the territory**. The weak intersectoral and intergovernmental articulation and coordination is one more reason for policies in Peru to fail. According to A. Fernández (2017)[47], the Peruvian State presents a complex and hierarchical structure organizational that limits the channels of coordination between ministries, levels of governments, among other institutions in the implementation of public policies which generates the appearance of critical knots that make the correct continuity of the policy impossible. The implementation of public policies in Peru is the weakest link in the decentralization process and public management, due to the ineffectiveness of the instances, platforms or spaces of articulation and coordination where the government authorities of the three levels of government (national, regional and local) have not achieved consensus and/or agreements to establish a shared vision of territorial development in search of closing economic and social inequalities[48]. Despite the existing normative on participatory involvement of communities in budget and territorial planning, community's involvement is limited due to the lack of awareness, weak capacities to dialogue, negotiate and put their needs in the territorial agenda.

iii) **Barrier 7: Limited institutional knowledge hinders the implementation of PES schemes**. From the institutional point of view, barriers are related to the roles of regional and local governments in prioritizing investments to improve the impact of the actions developed within the framework of the hydrological MERESE stand out. For the specific case of the water utilities (EPS[49]), they need to adapt their organizational structure to address the challenges present in the design of the MERESE and the execution of the funds raised, as well as to incorporate conservation and recovery of water sources in their institutional culture and strategies (Tristan et al 2021). Technical barriers are mainly related to the limited knowledge to understand the functioning and management of MERESE and therefore to design projects oriented to the conservation, recovery and management of ecosystems. On the other side, limited capacities and methodologies to monitor and evaluate the impacts of the green investments on the hydrologic ecosystem services (HES); the lack of information on which activities are effective for the recovery, conservation and sustainable use of HES source ecosystems; and on methodologies to evaluate the return on investment for retribuyentes[50], such as EPS (Tristan et al 2021).

iv) **Barrier 8: Limited integration of EbA into regulatory frameworks**. Although there is a State Policy No. 34 of Territorial Planning and Management, there is still no Land Management Law, which establishes the necessary instruments to channel efforts to regulate the occupation and appropriate use of the territory, establishing objectives and actors responsible for its implementation, monitoring and vigilance for compliance (Ojea, E, 2015). Another aspect is the absence of policies for the recognition and valuation of ecosystem services, which establish the responsibility to protect and conserve the ecosystems that produce them, as well as the way to reward the work of restoration and conservation of ecosystems. the same. An advance in this sense is Law 30215, Mechanisms for Retribution for Ecosystem Services - MERESE, (LSE, 2014) which is fulfilled through the companies that provide water and sanitation services and must be used for the restoration and conservation of ecosystems that provide hydrological services, among others. The progress achieved with this law opens a new range of technical and social needs and limitations that must be overcome. Since MERESE resources are insufficient for the recovery needs of ecosystem services, it is necessary to design regulatory frameworks which facilitate other public actors could be engaged and committed.

B.2a.3. Alignment of proposed outcomes, outputs and activities with identified barriers

82. The identified barriers will be addressed by the three project outcomes and related outputs and activities. Specifically, in the following paragraphs a clear explanation on how each barrier will be addressed by the project outputs and activity is provided. Table B.2a.1 provides a summary of the linkages between barriers addressed and corresponding outcome/outputs and activities. The unequal participation of family farms, in particular women, in the agricultural value chain, lack economies of scale, limited commercial activity, access to markets and financing (Barrier 1) will be addressed by Output 1.1 (the implementation of EbA measures at the local landscape level) and Output 2.1 (Financial mechanisms for the implementation of EbA measures established). The insufficient supply of financial products (Barrier 2) will be address by Outputs 1.1 as well as 2.1.

[46] Caine, A (2021) "Who Would Watch the Animals?": Gendered Knowledge and Expert Performance Among Andean pastoralists. Culture, Agriculture, Food and Environment ISSN 2153-9553, eISSN 2153-9561.
[47] Fernández, A. (2017). Análisis de la gestión articulada orientada a reducir la desnutrición crónica y la anemia infantil, distrito de Sancos – Ayacucho. [Trabajo presentado para obtener el grado académico de Magister en Gestión pública]. Universidad del Pacifico.
[48] Chessman, Yuri (2022). The intergovernmental articulation and coordination mechanisms of National and Territorial policies in Peru.
[49] EPS refers to the sanitation service providers, for more information, please see https://www.sunass.gob.pe/prestadores/empresas-prestadoras/
[50] The retribuyentes is the natural or legal person, public or private, who obtains an economic, social or environmental benefit, and rewards contribuyente for the ecosystem service received.

83. The limited technical capacity of farmers, particular of women (Barrier 3), will be addressed by technical assistance for implementing EbA measures (Activity 1.1.3), the recovery, innovation and scale up of ancestral knowledge and practices (Activity 1.2.1) and strengthen capacities to develop and implement innovative mechanisms for EbA (Activity 2.1.2). The limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems (Barrier 4) will be addressed by implementing community monitoring and observation systems to measure the impact of EbA measures and provide feedback on regional and national policies (Activity 1.2.2), strengthening capacities to develop and implement innovative mechanisms for EbA with a gender responsive approach in high Andean ecosystems (Activity 2.1.2) and the improvement of multilevel landscape governance through strengthening of national capacity, regulatory frameworks and M&E systems (Output 3.1).
84. The limited dissemination, particularly limiting women and scale-up of best practices and ancestral knowledge linked to EbA (Barrier 5), will be addressed by Output 1.2. (use of EbA knowledge is recovered and disseminated, and local monitoring committees and observation systems are implemented) and trough strengthening the capacities for territorial planning and governance processes integrating EbA and climate resilience (Activity 3.1.1).
85. The limited alignment and coordination among stakeholders (Barrier 6) will be addressed by activity 3.1.1. The limited institutional knowledge for the implementation of PES schemes (Barrier 7) will be addressed by activity 2.1.2. Finally, the limited integration of EbA into regulatory frameworks (Barrier 8) will be addressed by activity 3.1.2.

Table 5. Overview of Project's outcomes, outputs and activities and their link to barriers addressed

Outcome	Output	Activity	Sub-activities	Barriers addressed
1	1.1.	1.1.1	1.1.1.1	• Barrier 1: Smallholder farmers and associations, in particular women, have unequal participation in the agricultural value chain, lack economies of scale, limited commercial activity, access to markets and financing.
			1.1.1.2	
		1.1.2	1.1.2.1	• Barrier 1: Family farms, in particular women, have unequal participation in the agricultural value chain. • Barrier 2: Insufficient supply of financial products and support for climate resilient/sustainable development.
			1.1.2.2	
		1.1.3	1.1.3.1	• Barrier 3: Limited technical capacity, particularly of women.
			1.1.3.2	
			1.1.3.3	• Barrier 1: Family farms, in particular women, have unequal participation in the agricultural value chain. • Barrier 3: Limited technical capacity, particularly of women.
	1.2.	1.2.1	1.2.1.1	• Barrier 3: Limited technical capacity, particularly of women. • Barrier 5: Best practices and ancestral knowledge linked to EbA are not sufficiently disseminated and scaled-up.
			1.2.1.2	• Barrier 5: Best practices and ancestral knowledge linked to EbA are not sufficiently disseminated, particularly for women and scaled-up.
			1.2.1.3	
			1.2.1.4	
		1.2.2	1.2.2.1	• Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems.
			1.2.2.2	
			1.2.2.3	• Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems. • Barrier 5: Best practices and ancestral knowledge linked to EbA are not sufficiently disseminated and scaled-up.
2	2.1.	2.1.1	2.1.1.1	• Barrier 2: Insufficient supply of financial products and support for climate resilient/sustainable development.
			2.1.1.2	
			2.1.1.3	• Barrier 1: Smallholder farmers and associations, in particular women, have unequal participation in the agricultural value chain, lack economies of scale, limited commercial activity, access to markets and financing. • Barrier 2: Insufficient supply of financial products and support for climate resilient/sustainable development.
		2.1.2	2.1.2.1	• Barrier 3: Limited technical capacity, particularly of women, prevents family farmers of accessing investment and in participating in decision-making processes. • Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems. • Barrier 7: Limited institutional knowledge hinders the implementation of PES schemes.
		2.1.3	2.1.3.1	• Barrier 2: Insufficient supply of financial products and support for climate resilient/sustainable development.
			2.1.3.2	• Barrier 1: Smallholder farmers and associations, particularly women, have unequal participation in the agricultural value chain, lack economies of scale, limited commercial activity, access to markets and financing. • Barrier 2: Insufficient supply of financial products and support for climate resilient/sustainable development.
3	3.1.	3.1.1	3.1.1.1	• Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems • Barrier 5: Best practices and ancestral knowledge linked to EbA are not sufficiently disseminated and scaled-up.
			3.1.1.2	• Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems. • Barrier 6: Limited alignment and coordination among stakeholders to reinforce positive impact on the territory. • Barrier 5: Best practices and ancestral knowledge linked to EbA are not sufficiently disseminated, particularly for women and scaled-up.
			3.1.1.3	• Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems.
		3.1.2	3.1.2.1	• Barrier 8: Limited integration of EbA and climate resilience approaches into regulatory frameworks.
			3.1.2.2	• Barrier 4: Limited capacity to integrate EbA and climate resilience into territorial planning, government processes and M&E systems. • Barrier 8: Limited integration of EbA and climate resilience approaches into regulatory frameworks.

B.2a.4. Project co-benefits.

86. The project will generate several co-benefits including:
    i. Maintenance of ecosystem services in the project area.
    ii. GHG emissions are avoided through the conservation and restoration of degraded ecosystems.
    iii. Improvement of local economy through better economic opportunities for poverty reduction.
    iv. Awareness raising and capacity building of local stakeholders.

v. Gender responsive approaches mainstreamed in EbA and CRVC measures.

87. See section D.3 (sustainable development potential) for further details on the identified co-benefits, and section E.5 for the co-benefit indicators.

B.2a.4. Risks and Assumptions.

88. **Risks.** Project risks related to technical and operational, credit, governance and legal risks, among others, are described in detail in Chapter F, and environmental and social risks are described within Chapter G.1. Amongst others it includes:
    - **Insufficient financing may put at risk the long-term sustainability of the public or private investment.** Insufficient public or private financial flows may put at risk the long-term sustainability of the project. Market intake for EbA options, especially those promoted via microfinancing may be insufficient. Fluctuations in the market value of cash products (South American camelid fiber, quinoa) may limit economic activity and entrepreneurship.
    - **Local stakeholders are not sufficiently organized, engaged and interested in participating in the project.** Participation from local stakeholders in the project activities may not be as high as expected due to the lack of interest.
    - **Coordination among regional government stakeholders is insufficient to sustain project results.** Coordination among government stakeholders is insufficient and the lack of interest and ownership of the project may limit the sustainability of project results.
    - **Risk of continuity due to political instability.** The project is constructed on the assumption of sustained commitment from the Government of Peru to fulfil its Nationally Determined Contribution (NDC) goals and from MIDAGRI to continue its open and proactive engagement. Political instability in Peru may affect project continuity.
    - **Maladaptation and degradation of ecosystems and social structures.** Improved economic opportunities in the SHAP may lead to increased pressure on ecosystems (e. g., number of cattle heads increases as a result of business-oriented approaches). Moreover, the promotion of certain EbA's such as agrotourism may result in maladaptation. Social structures may continue to deteriorate because of increased ecosystem degradation.
    - **Difficulties and delays in unlocking technical and financial support.** Access to MIDAGRI programs as well as technical and financial support from the Puna Facility will be on a voluntary basis. This may limit the ability of the project to meet its targets or have sufficient concentration of interventions to show tangible results. Unlocking of public financing via MERESE schemes may require lengthy negotiations beyond the life of the project.

89. **Assumptions.** The project design is based on the following assumptions (assumptions are further described in sections E.3 and E.5 for each relevant project indicator):
    - No adverse external events (public health emergencies, natural disasters) disrupt timely implementation of key project elements.
    - Market forces in the agri-business value chains remain stable during project implementation.
    - Improved coordination, access to finance and information on increasing climate variability and climate resilient approaches will help to convince family farms to adopt and scale up EbA measures and Climate Resilient Value Chains .
    - Local communities, especially woman and youth are motivated to actively participate in implementing EbA measures for enhancing Climate Resilient Value Chains.
    - MIDAGRI and other local authorities embrace the transformation for improved coordination among its programs, other sectors and vulnerable communities.

B.2 (b). Outcome mapping to GCF results areas and co-benefit categorization

90. Each of the project Outcomes identified in section B.2(a) map to the GCF results area as follows:

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	**MRA 2** Low-emission transport	**MRA 3** Building, cities, industries, appliances	**MRA 4** Forestry and land use	**ARA 1** Most vulnerable people and communities	**ARA 2** Health, well-being, food and water security	**ARA 3** Infrastructure and built environment	**ARA 4** Ecosystems and ecosystem services

Outcome 1	☐	☐	☐	☐	☒	☒	☐	☒
Outcome 2	☐	☐	☐	☐	☒	☒	☐	☒
Outcome 3	☐	☐	☐	☐	☒	☒	☐	☒

91. The following co-benefits identified in section B.2(a) map to the following corresponding category:

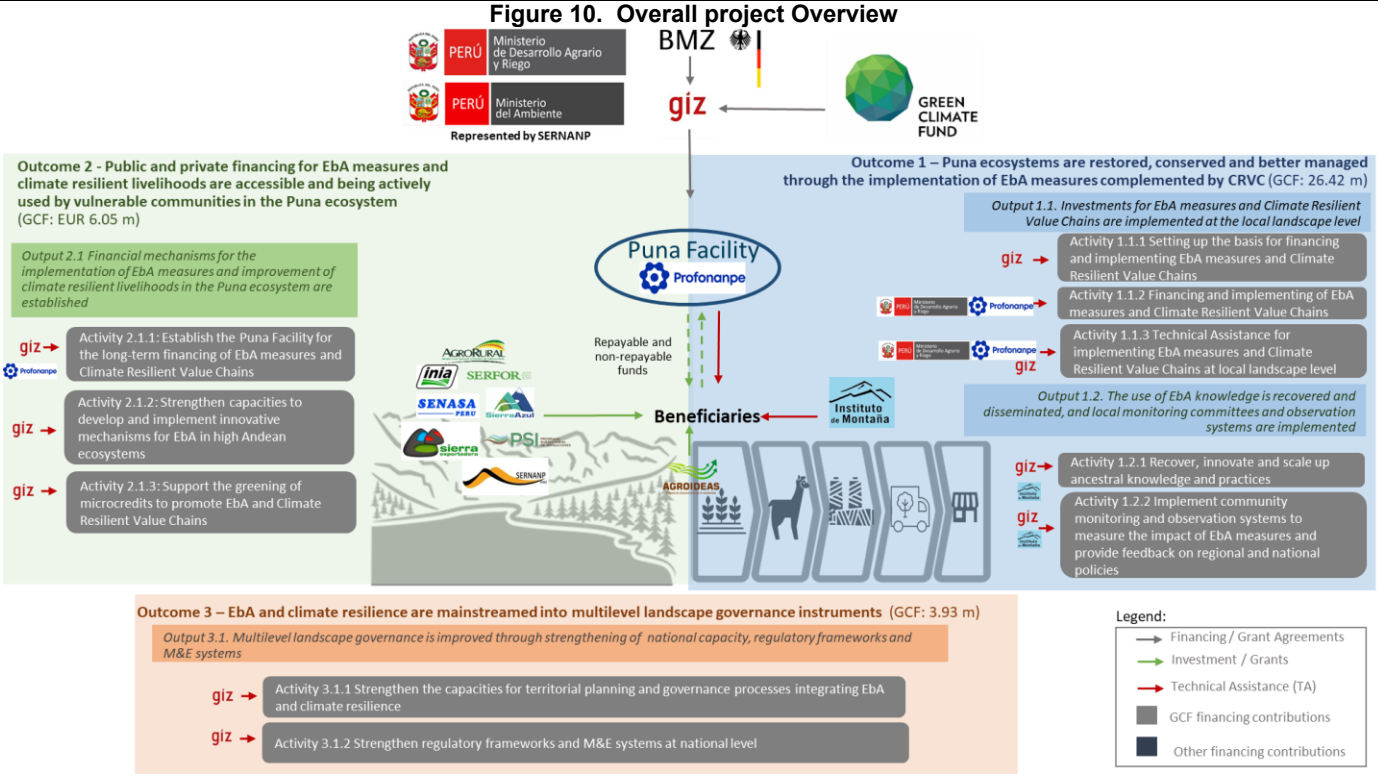
Co-benefit number	Co-benefit					
	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1 Maintenance of ecosystem services in the project area	☒	☒	☐	☐	☐	☐
Co-benefit 2 GHG emissions are avoided through the conservation and restoration of degraded ecosystems	☐	☐	☐	☐	☐	☒
Co-benefit 3 Improvement of local economy through better economic opportunities and poverty reduction	☐	☒	☒	☐	☐	☐
Co-benefit 4 Awareness raising and capacity building of local stakeholders	☐	☒	☐	☐	☐	☐
Co-benefit 5 Gender responsive approaches mainstreamed in EbA and CRVC measures	☐	☒	☐	☒	☐	☐

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

92. **Overall, the project will support MIDAGRI in promoting a paradigm shift in the management of Puna ecosystems** (wetlands, peatlands and grasslands) and productive practices to increase climate resilience of some of the most vulnerable groups in the country which include rural farming and herding communities depending on these ecosystems for their livelihoods. Puna ecosystems and associated livelihoods are threatened by increased temperatures, droughts, precipitation variability, and overall decrease in water availability. The project will address identified financial, ecological, social, institutional, and regulatory barriers (as described in section B.2 (a)) to improve structural conditions that will enable rural communities in the High Andes to use and manage Puna ecosystems in a more sustainable and climate-smart way, offering alternatives to reduce unsustainable practices contributing to ecosystem degradation and magnifying climate change impacts. This is consistent with the need for a comprehensive approach on Ecosystem-based Solutions and a focus on the implementation and upscaling of ecosystem-based adaptation (EbA) measures[51].
93. In order to achieve this, the project consists of three components (1) Resilient ecosystems and communities, (2) Public and private investments for scaling up EbA measures aligned and leveraged and (3) Multilevel territorial governance for the incorporation of EbA measures which are aligned with the three outcomes, as depicted below. The overall project design is presented in detail below[52].

[51] Ecosystem-based Adaptation, Nature-based Solutions, and Natural Climate Solutions are similar concepts describing slightly different approaches of using nature or natural infrastructure to tackle the climate problem. The focus on Ecosystem-based Adaptation stems from the experience gathered in the country and alignment with current national policies. The terms, however, may be used interchangeably to describe the ancestral practices being recovered through the project, which have adaptation benefits and mitigation co-benefits.
[52] For more information on the description of the project design please see the activity sheets in section 8.6 of the Feasibility Study (Annex 2a).

Figure 10. Overall project Overview



B.3.1. Outcome 1: Puna ecosystems are restored, conserved and better managed through the implementation of EbA measures complemented by CRVC:

94. This outcome will promote resilient Puna ecosystems and value chains by financing and co-financing the implementation of climate-focused investments led by IPLCs at local landscape level. By implementing community-based investments on the ground, the aim is (i) to maintain or improve the provision of Puna ecosystem services for climate resilience of the Indigenous Peoples and Local Communities and (ii) to strengthening Climate Resilient Value Chains that are dependent on and impacting on those ecosystems. iii) to monitor and evaluate the impact of the implementation of EbA measures iv) to nurture the dialogue between and within Indigenous Peoples and Local Communities to recover ancestral knowledge from older women and men to younger generations and to disseminate it and scaled up into Local Initiatives. A series of technological packages, trainings, information materials and communities' exchanges will be implemented to co-produce knowledge and foster local innovation that will result in investment on the ground. The outcome will enhance access to information obtained at local level, which is expected to trigger a change in behaviour towards conservation of ecosystems and their services and the potential of developing Climate Resilient Value Chains , through two main outputs:
    i. Investments for EbA measures and Climate Resilient Value Chains are implemented at the local landscape level
    ii. The use of EbA knowledge is recovered and disseminated, and local monitoring committees and observation systems are implemented.

    Activities in this outcome will address the barrier of limited economic opportunities by supporting the development of Climate Resilient Value Chains and enhanced entrepreneurship in the SHAP region.

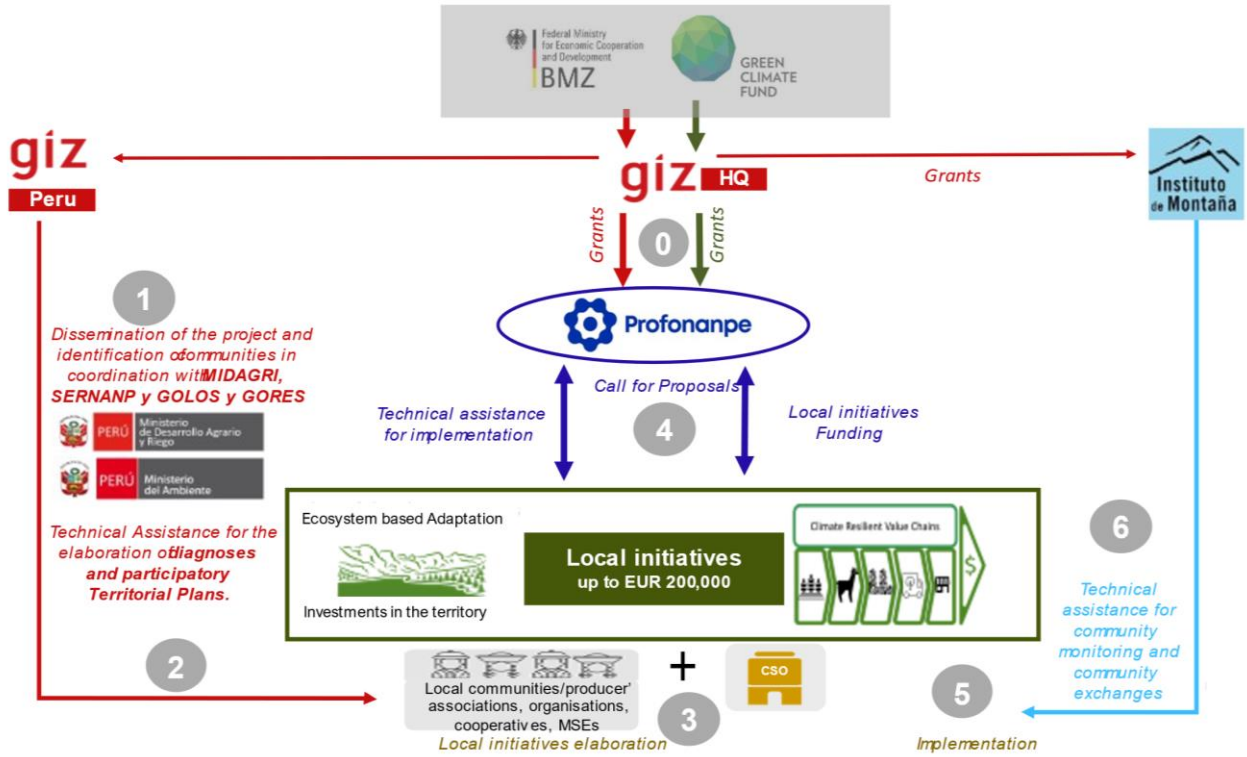
Output 1.1. Investments for EbA measures and Climate Resilient Value Chains are implemented at the local landscape level:

95. The project aims at supporting investments led by IPLCs for resilient ecosystems at local landscape level and strengthening Climate Resilient Value Chains with access to markets. This output will address the urgent need of direct finance to reduce the degradation of ecosystems and reduced services that result from climate change and unsustainable land management practices and to redress the lost linkage between ancestral practices and EbA. At the same time addresses weak associativity, limited economic opportunities and low access to finance and markets for Climate Resilient Value Chains in the SHAP region. Therefore, this output will cover the whole cycle from setting up the basis for the financing and implementation of EbA and Climate Resilient Value Chains (CRVC), through the provision of financial support and up to the provision of technical assistance for the implementation EbA measures and CRVC. Part of the financial and technical support provided in this output will be implemented through a call for proposal (launched by a, through this project established, Facility (the Puna Facility, for more information please see sub-activity 2.1.1.1.), for the implementation of integrated Local initiatives with an a)

Ecosystem based adaptation component and a b) CRVC component[53]. The Local initiatives supported within this output will therefore focus mainly on investments in EbA measures meant to protect and restore the puna ecosystem and therefore re-establish its ecosystem functions and services to enhance its resilience against the effects of climate change and in investments in CRVC specifically investments aimed at increasing the resilience of Puna relevant value chains against the effects of climate change. The financial support will be complemented by technical support to project beneficiaries who are primarily IPLCs in its different forms of organizations (e.g., peasant/local communities, producers' associations, cooperatives (formalized and or in the process of formalization), MSE, community enterprises, producers' organizations (hereafter project beneficiaries) who implement the Local initiatives in order to add value to their products and facilitate access to markets. In addition, public resources for public investment projects and to provide technical assistance will be provided by different MIAGRI's programs.

96. Figure 11 below shows the cycle of the Local initiative implementation which will be implemented within Output 1.1.

Figure 11. Local initiative implementation cycle



Activity 1.1.1. Setting up the basis for financing and implementing EbA measures and climate resilient value chains (CRVC):

97. This activity will focus on creating a communication strategy to develop awareness among the local stakeholders about the project and create the basis for the implementation of IPLCs led Local Initiatives that comprises EbA measures and CRVC at landscape and/or micro water basin levels that will be financed by the Puna Facility. In this regard, IPLCs in their different forms of organizations (communities, community enterprises, associations, MSEs, cooperatives) will be able to receive technical support in order to participate in the call for proposals. The process of selecting beneficiaries has two important stages. The first is described in sub-activity 1.1.1.1 in which the districts of the prioritized project area (58 districts) will be visited to identify potential beneficiaries interested in participating in the Call for Proposals mechanism. Those IPLCs and their different forms of organizations willing to participate then will receive technical support in sub-activity 1.1.1.2 to develop participatory community diagnostics and plans and they will need to propose Local Initiatives where they prioritize EbA measures and Climate Resilient Value Chains that contribute to their resilience. In sub-activity 1.1.2.1, the potential beneficiaries will apply their Local Initiatives to the Puna Facility (managed by Profonanpe) to be evaluated based on a list of eligibility criteria that will be established in the Puna Facility Operations Manual. This activity includes the following sub-activities:

98. **Sub-activity 1.1.1.1. Inform and identify communities, associations, cooperatives and Civil Society Organisations interested in participating in the project (EE: GIZ):** This sub-activity aims to inform local authorities and ILPCs about all project activities and specially Puna facility criteria (refer to step 1 of Figure 11) within the 58 prioritised districts to identify potential project beneficiaries interested in participating. A gender and

[53] The selection of the EbA measures and CRVC will be based on the eligibility list as shown in table 6 of the Operations Manual (Annex 21). And Pub+lishi

culturally sensitive strategy for beneficiary engagement and communication will be developed by a consulting service in coordination with the project's communication team, MIDAGRI, Profonanpe, Instituto de Montaña (IdM), and SERNANP. This strategy will comply with the different plans (Environmental and Social Management Plan (ESMP), Gender Action Plan (GAP) and Indigenous Peoples and Local Community Engagement Plan (IPLCEP)) developed based on the GCF Social and Environmental Safeguards and Gender and Indigenous Peoples Policies, as well as, on Free, Prior and Informed Consent (FPIC) principles to allow IPLCs to actively participate in the design, implementation and monitoring of their own Local Initiatives. Before engaging with communities, regional government and district municipality authorities will be contacted to identify specific local needs and priorities regarding climate change adaptation and avoid isolated or nonaligned actions. It will be also important to actively engage local authorities from the beginning to promote support and increase awareness for EbA funding and inclusion in planning instruments (sub-activity 3.1.1.3). To this end, the communication strategy will be in place, and it will be coordinated with municipalities, NGOs and local radio stations. At this stage, the eligibility criteria to apply to the Puna Facility (described in Operations Manual - Annex 21) will be disseminated and potential beneficiaries who meet the eligibility criteria will be encouraged by hired GIZ local promoters to prepare ideas. To promote the coordination with the water MERESE, awareness-raising actions carried out in the areas of water MERESE, explaining the benefits they bring to local development and the synergy with the Project. All Indigenous Peoples and Local Communities and their forms of organization such as local communities, producers' associations, cooperatives, community enterprises and/or MSEs who agreed to participate in the project will present to GIZ their signed community agreements giving their informed consent to participate in the project and an attached form for a Local initiative idea (including a simplified explanation of the climate problem and a proposal on how to solve the climate change problem/s based on the eligibility list of EbA measures and CRVC as shown in table 6 of the Operations Manual (Annex 21)). Once GIZ receives all the Local initiatives ideas, a team of experts from GIZ, MIDAGRI, SERNANP and local authorities will evaluate and select the best proposed ideas. Then, in activity 1.1.1.2, the territorial diagnostics and intervention plans will be developed to continue preparing the Local initiative proposals for the Puna Facility. It is expected that after implementing the sub-activity at least 100 Communities, associations, cooperatives and/or micro and small enterprises have been selected to continue the support in sub-activity 1.1.1.2, in order to start the process of preparing them to access funding to implement EbA measures and CRVC to recover ecosystems and ensure climate resilient livelihoods.

99. **Sub-activity 1.1.1.2. Development of site-specific climate diagnostics and preparation of participatory intervention plans (EE: GIZ):** This sub-activity aims to support project beneficiaries to identify and prioritise through a participatory process resilient measures and Climate Resilient Value Chains in their territories through comprehensive climate diagnostics and intervention plans (refer to step 2). In this context, Indigenous Peoples and Local Communities and their other forms of organization such as MSEs, community enterprises, cooperatives, producer's associations and/or organizations whose idea were selected (sub-activity 1.1.1.1) will receive support from local promoters or CSOs in the development of participatory site-specific climate diagnostics to not only better understand climate and non-climate threats to ecosystem and livelihoods but also social and economic aspects. IPLC's own concepts and perceptions will provide an empowering and culturally appropriate way for communities to assess climate change impacts on their territories and plan adaptation solutions that build on their traditional knowledge and may be combined with modern scientific findings. When developing diagnostics, it will be also important to identify the causes of vulnerability in the specific sites such as communal organization, gender roles and inequalities over resources uses and access to basic services, etc. As well as understand which are their livelihood strategies and how ecosystems and their services in its site support them. The specific areas in each locality to be intervened with EbA measures and CRVC will be defined in this sub-activity and will depend on case-by-case (local consultations, specific site diagnostics and viability). For the development of an intervention plan per community, prioritization of EbA and CRVC will be held through a comprehensive and participatory process, where respective members of each IPLCs will be broadly consulted, ensuring active participation of women, young and elderly people during design phase, which will need to be ultimately approved by the respective decision-making body. Along with this, the interested project beneficiaries in applying to the Puna Facility will already have the basis to prepare their Local initiatives to apply to the call for proposal. The interested project beneficiaries will receive in this regard support to be prepared to apply to the Puna Facility (refer to step 3). To continue fostering the participatory process, potential IPLCs beneficiaries must designate "local researchers" (composed by women and men), who will lead and facilitate the diagnostics and planification process inside its community and encourage the intergenerational dialogue among community members to recover men and women traditional knowledge, discuss their concerns and identify solutions together (activity 1.2.1). Finally, local researchers will establish the community monitoring committees supported in activity 1.2.2. In addition, in this sub-activity, interventions in EbA and CRVC by different public and private actors (e.g., MIDAGRI through its programmes, SERNANP, water utilities and others) will be identified in order to determine early on whether a coordination/synergy with the potential Local initiatives is needed in the case the Initiative is financed by the Puna Facility. The rationale behind is to seek for complementarity and avoid duplication in the same territory.

Activity 1.1.2. Financing and implementing of EbA measures and Climate Resilient Value Chains:

100. This activity will focus on promoting climate resilient Puna ecosystems and CRVC through the implementation of climate-focused Local initiatives at local landscape level. The activity will provide financial support for Local initiatives through the Puna Facility (established under Activity 2.1.1) and through public resources (MIDAGRI's programmes). The two types of financial support are complementary and contribute to a general objective of improving the climate resilience of the IPLCs in the target territories.

101. **Sub-activity 1.1.2.1. Implementation of Local initiatives financed by the Puna Facility [54] (EE: Profonanpe):** This sub-activity has the objective to channel GCF and BMZ funds through a competitive selection process (open call for proposals (see step 4 in Figure 11)) in the high Andes of Peru involving investments in EbA measures and CRVC. The disbursement for each Local initiative will be differentiated according to three sub-windows: (i) Non-Repayable Grant Sub-Window: for IPLCs with their different forms of organization (local communities, producers' associations and cooperatives in the process of formalization), applying with the support of local CSOs trusted by communities; (ii) Results-based Repayable Grant Sub-Window: for Micro and or/ Small Enterprises, community enterprises and cooperatives permitted by law with commercial capacities and clear target markets; and (iii) Agroideas Matchmaking Sub-Window: for formalized producers' organizations (small and/or medium) with commercial capacities and clear target markets, that are eligible for the MIDAGRI support programme Agroideas[55]. The selection process for the Local initiatives from preparation and approval for call for proposals to the signing of Local initiatives Agreements is described in the Operations Manual (see Annex 21) section 5. Within the process of evaluation and selection, the Local initiative selection criteria and scoresheet will include a gender representation criterion weighted with 20% and a gender quota of at least 30% of the selected Local initiatives should either support a women's association, cooperatives, organizations and/or a women led enterprise in order to ensure the equal access between men and women of the funds. It is expected that after implementing this sub-activity, 127 Local initiatives Grant Agreements will have been signed (with a total value of up to EUR 14.4 million), for the three sub-windows and a total of 23,914 hectares would have been restored and/or conserved (see step 5 in Figure 11. The beneficiaries are expected to provide contributions of at least 25% of the value of the Local initiatives, which may be contributed to labour or from another source, such as water utilities.

102. The management and governance structure[56] of the Facility will include: Profonanpe as the main EE who will have the responsibility to manage the Puna Facility through the Puna Facility Management unit (established within sub-activity 2.1.1.1.), an Independent Technical Assessment Committee (in charge of shortlisting Local initiatives evaluation), the Project Steering Committee (PSC) (composed by MIDAGRI, MINAM and GIZ) and the Project Management Committee (PMC) who will revise and approve amongst others the final list of Local initiatives evaluated according to the established processes and criteria. More information on the Puna Facility in regard to the different sub-windows (including repayment conditions) and sustainability can be found in B.4.5 and B.6.1 respectively.

103. **Sub-activity 1.1.2.2. Financial support through MIDAGRI (EE: MIDAGRI):** In this sub-activity, MIDAGRI, through its programmes (AGRORURAL, Sierra Azul, Irrigation Subsector Program (PSI), (National Institute for Agrarian Innovation) INIA, Agroideas and National Forestry and Wildlife Service (SERFOR) and Agroperu Fund), will finance additional interventions in the SHAP area that in some cases will complement the 127 Local Initiatives financed by the Puna Facility (as in the specific case of the Agroideas Matchmaking Sub-Window) in the same territory and will contribute to increase the resilience of High Andean populations to climate change. These will comprise three types of public interventions:(i) Public investment projects, which, on the one hand, include adaptation interventions such as the recovery of degraded High Andean grasslands, sowing and harvesting of water and technical irrigation to improve the efficiency of water resource application. These interventions are implemented directly by MIDAGRI's programs: AGRORURAL, Sierra Azul and PSI. On the other hand, INIA and SERFOR will implement public investment projects that will contribute to research and technology transfer in High Andean livestock and sustainable use of the vicuña, among others. It is expected that at least eight (8) public investment projects are implemented directly by MIDAGRI. (ii) Agroideas Program Non-reimbursable funds for business plans, which require co-financing from producers, to strengthen the adaptive capacities of climate change resilient value chains including guinea pigs, camelids and High Andean crops. This includes the acquisition of agricultural technology (e.g., machinery, infrastructure, vehicles and tools) in order to reduce costs and improve production systems and agricultural productivity. They contribute to increasing the resilience of value chains. The producers' organisations who can prove to have been selected by Agroideas will be also eligible to apply to the third sub-window (Agroideas Matchmaking) of the Puna Facility to complement the financing of their business plans with financing from the Facility for Ecosystem based Adaptation measures. (iii) Individual credit lines and producer organizations credit lines provided by MIDAGRI through the Agrarian Development Bank (Agrobanco). The credits

[54] For more information on the establishment of the Puna Facility please see sub-activity 2.1.1.1. and for the operationalization Annex 21 Operation Manual.

[55] The Agroideas Matchmaking Sub-Window is meant to finance through a complementary grant support the development of more advanced CRVC businesses that also qualify for the existing Agroideas government program from MIDAGRI. Agroideas promotes agricultural development (via promoting cooperatives, strengthening of business management and adoption of sustainable environmental agricultural technologies) through non-reimbursable grants covering 60-80% of the investment required by an eligible agro-business, with a cap of ~EUR 315.000.

[56] For more information, please see chapter 3 Institutional arrangements and responsibilities for managing the financial mechanism of the Operations Manual (Annex 21).

offered by MIDAGRI through Agrobanco possess certain features that complement the financing provided by the Puna Facility. One of the key features is their repayment period of 18 months, making it more suitable for business with rapid turnover. For instance, in the alpaca value chain, these credits can serve as working capital for alpaca cooperatives to gather and process fiber, resulting in a higher market price compared to individual sales from farms. Simultaneously, these same alpaca breeders can access financing from the Puna Facility for investments in EbA. The benefits of these investments are realized in the long term and contribute to mitigating climate change risks.

Activity 1.1.3. Technical Assistance for implementing EbA measures and Climate Resilient Value Chains at local landscape level:

104. The activity will be three folded. It will provide Technical Assistance (TA) complementary to sub-activity 1.1.2.1 for the refinement of proposals within the call for proposals for the Puna Facility and during Local initiative implementation (including TA for EbA and CRVC implementation, business development and access to finance). Complementary to sub-activity 1.1.2.2. it will also include the TA provided by MIDAGRI within their programs (which includes hiring extensionists and commercial coordinators, development of courses and events, among others). In addition, the project will also enhance organizational and entrepreneur skills, formalization and competences to access markets and develop economic opportunities for CRVC including EbA. Finally, the project will ensure women's access to technical assistance including financial education, and access to markets.
105. **Sub-activity 1.1.3.1. Technical assistance for the refinement of proposals and Local initiatives implementation (including EbA implementation, business development and access to finance) through the Puna Facility (EE: Profonanpe**): The objective of this sub-activity is to provide Technical Assistance (TA) that will accompany the financial support provided through the Puna Facility (sub-activity 1.1.2.1). The Puna Facility will offer Technical Assistance (TA) through a service provider hired by Profonanpe and in the case of the Non-repayable Grant Sub-Window optionally in conjunction with the CSO supporting the applicant (see step 6). The TA packages will be differentiated between:
    - **i)** TA for the **refinement of the local initiative proposals**, provided by the TA provider: This support will include a series of workshops held at regular intervals before the final proposal submission. The workshops aim to help applicants refine their local initiative proposals and address any concerns raised by the Facility Management Unit during the evaluation process. The workshop content will be tailored to the specific proposal types and FMU feedback. Further technical studies (e.g., soil studies) required to refine technical proposals will be supported.
    - **ii)** TA for the **implementation of the Local initiatives** provided by the TA provider and optionally in conjunction with the CSO in the case of the Non-repayable Grant Sub-Window: After signing the agreement with applicants, TA during the implementation will focus on three key areas: 1) Implementation of EbA and CRVC measures, including participatory approaches for planning, implementing, monitoring and reporting using the community monitoring approach (related to sub-activity 1.2.2.1, as well as recovering un upscaling ancestral knowledge) 2) Business development, and 3) Access to finance, including financial literacy.
106. **Sub-activity 1.1.3.2. Technical assistance through MIDAGRI (EE. MIDAGRI):** In this sub-activity, MIDAGRI, through its programmes will provide technical assistance and technology transfer for the implementation of EbA measures and value chains planned by MIDAGRI's programmes ((INIA, SENASA, Agrorural, Sierra y Selva Exportadora and SERFOR). This includes hiring extensionists and commercial coordinators, development of courses and events, among others. The TA topics foreseen include amongst others (1) commercial technical assistance; (2) technology transfer in value chains prioritised by the project, such as guinea pigs, pasture and forage, roots and tubers, Andean grains and legumes, and South American camelids; (3) technical assistance for the improvement of sustainable camelid breeding, including animal health actions etc. Through this sub-activity an integrative result in the territory will be achieved. Moreover, around 9,647 producers are expected to be trained.
107. **Sub-activity 1.1.3.3. Promote market access and economic opportunities for climate resilient and sustainable value chains (EE: GIZ):** This sub-activity will focus on supporting project beneficiaries to have a better market access for their Climate Resilient Value Chains . The project will support commercial connections between producers and buyers for the more prominent businesses, including women led business (e.g., participating in local markets or fairs, connections with gastronomic routes, etc.), as well as support with the development of market studies and market strategies for specific products. Under this sub-activity, the project team will also explore the potential for a partnership with the SIPAM project, and the online sales platform tool that was developed "Kusikuy". Potential partnerships with MIDAGRI programs such as Agrorural and Sierra y Selva Exportadora will also be considered. It is expected that through this sub-activity a digital platform for sale of puna products is operating. This will facilitate the access to market opportunities for project beneficiaries for their Climate Resilient Value Chain products.

Output 1.2. The use of EbA knowledge is recovered and disseminated, and local monitoring committees and observation systems are implemented:

108. This output 1.2 will complement output 1.1 establishing local monitoring committees and observation systems within the Local Initiatives that were selected by the Facility while recovering ancestral knowledge and practices, to empower high Andean communities to take a proactive role for increased participation in building climate resilience

and to monitor their own progress in enhancing overall resilience. Through its activities it will induce a behavioural change and address the limited access to relevant information to support decision-making in the SHAP region, which will also be essential to recover disseminate and scale up adaptation ancestral practices and knowledge.

Activity 1.2.1. Recover, innovate and scale up ancestral knowledge and practices:

109. This activity seeks to develop and strengthen the capacities of communities, local experts (called yachachiqs[57] or kamayocs), and technical experts from national and regional institutions to increase the implementation of ancestral water and land management practices and technologies during project implementation and after project finalisation. This activity will also encourage the use and exchange of ancient knowledge and practices from both women and men in the Local Initiatives financed by the Puna Facility. In addition, it will promote dialogues on ancient practices and innovation within members of communities, building intergenerational memory (e.g., children, youth and adults) and fostering discussions on gender roles as well on women knowledge at the community level. In this sense, the project will support the recognition and appreciation of people's own values, knowledge and practices, improving their self-esteem and strengthening their identity with the territory. It will also expand on gender roles to reflect on their place in and relationship with ecosystems. For this to be effective, studies and communication materials (printed, radio spots, videos, etc.) in native languages (Quechua and Spanish) will be produced to capture lessons learned and promote replication of success stories. Exchange between communities will be financed by the project to encourage peer-to-peer learning and ownership of implemented solutions. Of particular importance is the transfer of experience already gathered from recuperating ancient practices and promoting participatory agreements in the Nor Yauyos Cochas landscape reserve. Special attention to ancestral practices that contribute to hydrological ecosystem services, generating contributions to the water MERESE.
110. **Sub-activity 1.2.1.1. Capacity building of local experts for the transfer of ancestral and innovative knowledge linked to EbA and CVCR measures (EE: GIZ):** This sub-activity aims to strengthen the capacities of local experts (*yachachiqs*[58], *kamayocs*, *talentos rurales*[59], rural extensionists, among others) to increase the application and replication of ancestral practices and technologies linked to EbA measures and CRVC in other communities in the territory. The role of local experts is to teach and transfer knowledge, using a peasant-to-peasant methodology, to implement and manage ancestral and innovative techniques for small irrigation systems, installation of greenhouses, animal breeding, cultivating pastures, and growing crops. This sub-activity will identify local experts in all of the 91 districts of the project, including i) entities at national and subnational level, ii) local CSOs working in the territory, and iii) community and/or association leaders that can potentially collaborate in the transfer of local knowledge (*yachachiqs*, *kamayocs*, rural talents). A capacity building programme for local experts will be developed, tailored to the profile (e.g., level of education and technical capacities) of the identified local experts and ancestral and innovative knowledge. It is expected that after implementing the training program, the program achieves to strengthen the capacities of local experts (a) within the project beneficiaries and (b) within the technical teams of national and subnational institutions. In this context, the project aims to strengthen the capacities of at least 910 local experts.
111. **Sub-activity 1.2.1.2. Production and dissemination of information materials on lessons learned from ancestral practices and innovation in a context of change (EE: Instituto de Montaña[60]):** The objective of this sub-activity is to produce studies and communication materials (printed (e.g., brochures with infographics), digital, radio spots, videos, etc.) in Quechua and Spanish to capture lessons learned and promote the replicability of successful implementation of EbA and CRVC experience. This sub-activity will be based on identifying and systematising successful past experiences and lessons learned from communities that combine ancestral and innovative practices when implementing EbA measures and climate resilient agricultural practices. This will include successful experiences from the Nor Yauyos Cochas Landscape Reserve. Other existing systematisations of ancestral practices will be revised such as the ones developed by MIDAGRI[61], ENCONTRAR Platform[62], Encuentro de Saberes Small Grants Program-GEF[63]. The systematisation will also include new experiences generated by IPLCs in general, and with a special focus on the ones generated by women groups during the project. As a result, this sub-activity will produce documents and communication materials in Quechua and Spanish on lessons learned from ancestral practices and innovation and disseminate these lessons through events and/or dissemination

[57] A *yachachiq* is an indigenous expert who obtained his practical knowledge on agricultural and livestock practices by an ancestral ways and transfers its knowledge to others
[58] Indigenous experts who obtained their knowledge to manage agricultural and livestock practices in ancestral ways.
[59] The "*talentos rurales*" are men and women who live in peasant communities and are known for their capacities and abilities to experiment, adapt, develop and teach good intercultural practices and rural innovations.
[60] Instituto de Montaña will place special emphasis on facilitating the implementation of quality participatory processes through coordination with local CSOs supporting beneficiary communities, producers' associations and cooperatives in the process of formalization during Local initiative implementation. These processes are intergenerational dialogue on ancestral practices and innovation, knowledge sharing with a gender perspective, and community monitoring to estimate the impacts of EbA measures. Capacity building of trainers (local CSOs and other stakeholders) will facilitate the training of villagers on the causal relationship between implemented activities and their impacts, and the benefits obtained. Capacity building will ensure a common understanding of concepts and working methodologies to facilitate participatory planning, implementation and monitoring processes that promote ownership and thus sustainability of EbA measures.
[61] repositorio.midagri.gob.pe
[62] Plataforma EncontrAR - Agricultura familiar andina (encontrarandes.org)
[63] PPD Perú – Programa de Pequeñas Donaciones (ppdperu.org)

spaces. This sub-activity will be implemented in coordination with MIDAGRI (through their programs), MINAM and SERNANP, Regional Governments, Profonanpe, and Sectoral and/or Territorial governance platforms as the good governance platform.

112. **Sub-activity 1.2.1.3: Knowledge sharing among beneficiary communities with a gender perspective (EE: Instituto de Montaña):** This sub-activity aims to support the recognition and appreciation of IPLCs ancestral practices regarding to the management of agriculture, livestock, water and ecosystems, contributing to promote the participation and leadership of Indigenous Peoples and Local Communities in recovering ancestral knowledge and encouraging a collective reflection on gender roles. The project will promote and facilitate exchanges between local communities who have been selected to receive funds from the Puna Facility (through sub-activity 1.1.2.1 and 1.1.3.1) or are being supported by MIDAGRI (through sub-activity 1.1.2.2. and 1.1.3.2) to foster peer to peer learning and to share innovations and practices developed between communities. Particular attention will be placed on recognizing diverse gender roles and expertise related to agriculture, livestock, water, and ecosystems management. This focus aims to prevent the exclusion of women participants and acknowledge their valuable expertise and knowledge. Additionally, it seeks to highlight their significant contributions towards building climate resilience within communities. At least one exchange among IPLCs women from different communities will also be promoted, (e.g agropastoralist, artisan women networks, etc) who possess substantive knowledge and skills in these different fields. These exchanges can work as space for women empowerment and inspiration. As part of this sub-activity, a community knowledge sharing plan with a gender perspective will be developed. This plan will define the implementation strategy, both interregional and intraregional exchanges, and the methodology for selecting experiences and means of exchange (meetings, workshops, internships, and others). This sub-activity will be implemented in coordination with MIDAGRI (through their programs), SERNANP, Profonanpe, Local Governments.
113. **Sub-activity 1.2.1.4: Facilitating intergenerational dialogue on ancestral practices and innovation in a changing context (EE: Instituto de Montaña):** This sub-activity aims to build intergenerational memory (children, youth and adults) on ancestral practices and innovation in a context of change (climate, markets, and others) in selected beneficiaries of each Puna Facility call. An intergenerational dialogue on ancestral practices and innovations strategy and implementation plan will be prepared, containing the methodology, means and instruments (videos, books, games, others). Local researchers (composed by women and men) in each community will be trained to facilitate the intergenerational dialogue on site with the participation of women, children, youth, adults, and older adults. The spaces to carry out these dialogues could be schools or farmer field schools. Intergenerational dialogues will serve to recover and considerate different gender perspectives, roles, knowledge embedded within communities during the design, implementation and monitoring phases of the Local Initiatives that will be implemented in sub-activity 1.1.2.1. The intergenerational dialogue plan will be implemented through workshops, surveys, and other activities, depending on each selected community design. The results and achievements of the sub-activity will be systematised and disseminated. Relevant institutions involved in this sub-activity are: MINEDU (through local schools) and, MIDAGRI through its attached institute INIA, and SERNANP (in the case of Natural Protected Areas).

Activity. 1.2.2. Implement community monitoring and observation systems to measure the impact of EbA measures and provide feedback for regional and national policies:

114. This activity will be implemented in alliance with the IPLCs implementing Local initiatives and supporting local CSOs. The EE Instituto de Montaña will conduct a Training of Trainers (ToT) for local CSOs that will support beneficiary communities that were selected in Puna Facility's Non-repayable Grant Sub-Window and will provide technical assistance to facilitate the participatory design of indicators and protocols for participatory community monitoring. This activity will build upon Community Monitoring Committees (CMC), which applicants to the Puna Facility are required to create when applying their Local Initiatives. These Committees that will be composed by "local researchers" (composed by women and men) (designated previously in sub-activity 1.1.1.2) will lead the participatory monitoring process designed based on each community knowledge and interest. Then CMC will inform about the progress of the Local Initiative to the community members . Within this activity the capacities of local researchers and committees will be strengthened through facilitation, dialogue, training and other capacity-building measures. This will enable knowledge weaving and co-production to understand how traditional practices and scientific findings can explain the ecosystem functions and the effectiveness of EbA. Target populations will establish climate vulnerability social and biophysical indicators based on local knowledge as the observation of fauna and/or flora species as indicators of the ecosystem health, and other indicators based on men and women community member's interest. This also includes establishing and monitoring rough estimates on the potential for carbon storage and sequestration, water storage and climate regulation, as well as the provision of fodder, fiber and food, among other relevant ecosystem services. Committees will learn and discuss how to develop local indicators and technical protocols to assess changes in ecosystem service provision over time as the EbA measures are implemented and mature. The data produced by the local monitoring system will feed regional and national institutions studies and research on impacts and effectiveness of EbA measures, thus contribute to policy decision making processes. Follow-up on this activity will be coordinated at all levels of intervention, including from the local (community) level, in coordination with the national actors responsible for M&E systems and the NDCs.

115. **Sub-activity 1.2.2.1: Training and implementation of Community Monitoring Committees (CMC) to develop local monitoring systems (EE: Instituto de Montaña):** This sub-activity seeks to make project beneficiaries aware of the impact of climate change and poor landscape management on high Andean ecosystems, as well as the benefits obtained and the causal relationship between the implementation of EbA measures and their impacts on the recovery and conservation of their ecosystems and ecosystem services. Local Researchers (composed by women and men) designated in sub-activity 1.1.1.2 will form Community Monitoring Committees (CMC). CMC will collect information about the impact of the implemented EbA measures in a context of climate change through indicators proposed together with community members. Local researchers will lead and facilitate the community monitoring process since the selection of indicators to assess socio-economic, ecosystem and ecosystem service impacts. In the areas of water MERESE communities, the monitoring will seek to contribute to water utilities monitoring systems. This sub-activity will allow beneficiary communities to take a proactive role in monitoring their own progress and building climate resilience. CMC will participate in trainings and dialogue for selecting sites for monitoring, setting a baseline information for their Local Initiative and collecting data using an app that will be developed in sub-activity 1.2.2.2. Collected data will then feed into a data-driven information management system that will be also developed in sub-activity 1.2.2.2. This system will be connected to the Puna Facility monitoring system and to the project monitoring system. The information produced by the system will be used to report to MIDAGRI and SERNANP national monitoring systems that contributes to the NDCs. Therefore, discussions among all executing entities need to be conducted to agree guidelines and indicators for community monitoring. During this sub-activity, community monitoring protocols will be discussed with local researchers in each community in the frame of the agreed guidelines and provided to the information system responsible (sub-activity 1.2.2.2). Thus, a capacity building plan will be prepared by Instituto de Montaña and implemented to monitor the planned EbA measure's impacts in the selected recipients of the Puna Facility. The work will be carried out together with fund recipients under the Repayable and Agroideas Matchmaking Sub-Windows and the local CSOs that are supporting local communities, producers' associations and cooperatives under the Non-repayable Grant Sub-Window. Local CSOs will provide support in the territory and will bring permanent assistance to the community monitoring committees.

116. **Sub-activity 1.2.2.2. Development and implementation of a local data-driven information management system using digital technologies innovation measures (EE: GIZ):** This sub-activity aims to develop a Cloud based system that will store the data and information provided by the community monitoring committees (sub-activity 1.2.2.1). This information will be related to the baseline condition of the ecosystems and their ecosystem services (prior Local Initiative implementation); and the outcomes of the selected EbA measures and CRVC. The materials and equipment to be used for monitoring will be procured by GIZ and will be provided to the community monitoring committees when needed. The Cloud based system must be later hosted in one of the existing MIDAGRI´s and/or SERNANP's national monitoring system. This system will be identified during implementation (sustainability condition). This sub-activity will include data collection tools and protocols for processing and sharing information. For data collection it will be developed an app to facilitate data gathering by the community monitoring committees. Special consideration will be given to hire a consultancy from a research specialized institution such as universities or other scientific centres at the beginning of this activity to support the establishment of this information gathering process that will be hosted in an existing national monitoring system. The collected data will be processed and can be used to provide feedback on local, regional and national policies or as a source for analysis linked to sub-activity 1.2.2.3.

117. **Sub-Activity 1.2.2.3. Analyse collected information on the impact of EbA measures (EE: GIZ):** This sub-activity aims to improve evidence of EbA effectiveness while at the same time increasing the knowledge and understanding of EbA measures for future decision-making processes (i.e., increasing community awareness and values about EbA, donor investment in EbA and support to strengthen and further mainstream the integration of EbA across relevant ministries, water utilities and public investments). Therefore, this sub-activity will develop studies and research using data generated by the community monitoring committees, thus contributing to the dissemination of coupled indigenous and scientific knowledge. Main topics to analyse will include impact measurement of EbA (carbon sequestration, ecosystem recovery and water regulation), cost-benefit analysis, cost risk reduction in business operations, cost effectiveness and the type of ecosystems to be investigated (e.g., peatlands, wetlands, grasslands, others). The generated evidence about the EbA impact will be used to increase awareness and the engagement of potential investors in the Puna Facility (sub-activity 2.1.1.2) and the integration of EbA measures into policy and budgetary processes (sub-activities of component 3). In addition, a methodology for assessing carbon stock changes resulting from the implementation of EbA measures in the Puna ecosystem will be developed in coordination with MIDAGRI and MINAM. This will create the basis to prepare the national and local actors to improve the carbon inventory in the high Andean zone, especially the basis for considering how the implementation of adaptation NDCs that contribute to the conservation/maintenance of Puna ecosystems also contribute to climate change mitigation. Under this sub-activity, the methodology will be tested in at least one area within the Natural Protected Area System with committed communities that obtain conservation agreements signed (under the Puna Facility in sub-activity 1.1.2.1). Alliances with research centres, scientific and university entities will be sought for this purpose and the results of studies and research will be disseminated through the corresponding

channels such as webpages, events, emails, journals, seminars, regional platforms according to the project objective.

B.3.1. Outcome 2: Public and private financing for EbA measures and climate resilient livelihoods are accessible and being actively used by vulnerable communities in the Puna ecosystem:

118. This outcome will align and leverage public and private financing for EbA measures and CRVC at different and coordinated levels. It will focus on the alignment, leveraging, mobilization and upscaling of private and public funds to finance EbA and CRVC activities on the ground. On one hand will support the establishment of an innovative financial mechanism called Puna Facility that will finance Local Initiatives though a call for proposals that will be operationalized in sub-activity 1.1.2.1 at the same time that mobilizes private and other donors' funds . On the other hand, the activity will aim at enhancing the offer and access to micro green financial products and increase the access to public programmes from MIDAGRI (e.g., Agroideas, Sierra Azul and Agrorural). This outcome has one main output, which is "Financial mechanisms for the implementation of EbA measures and improvement of Climate Resilient Value Chains are established and accessible to vulnerable communities in the Puna ecosystem".

Output 2.1. Financial mechanisms for the implementation of EbA measures and improvement of climate resilient livelihoods in the Puna ecosystem are established:

119. This output will focus on mobilizing different public-private mechanisms to finance EbA measures and CRVC, through the implementation of three main activities which will include: activity 2.1.1 to establish the Puna Facility for long-term financing of EbA measures and Climate Resilient Value Chains; activity 2.2.1 to strengthen capacities to develop and implement innovative mechanisms for EbA in high Andean ecosystems including hydrological payment for ecosystem services (MERESE), activity 2.1.3 to facilitate access to greener microfinance products and services that promote EbA measures and Climate Resilient Value Chains. These activities will address the limited medium to long-term financing for ecosystem-based climate solutions, while creating incentives to finance Climate Resilient Value Chains, as well as the lack of alignment and coordination of financing interventions on the ground and support beneficiaries to tackle limited economic opportunities in the SHAP.

Activity 2.1.1. Establish the Puna Facility for long-term financing of EbA measures and Climate Resilient Value Chains:

120. This activity aims to unlock investment for EbA measures in Puna ecosystems and Climate Resilient Value Chains through the "Puna Facility", managed by Profonanpe. The Puna Facility will be composed of the financial window that will have three sub-windows (linked to activity 1.1.2): i) Non-repayable Grant Sub-Window, ii) Results-based Repayable Grant Sub-Window, iii) Matchmaking Agroideas Sub-Window. In addition, to engage with the private sector and other international donors, a sustainable financial strategy will be developed by Profonanpe with the support of the technical advice of GIZ during the firsts years of implementation to mobilise resources from the private sector and different donors to secure amongst others the sustainability of the Puna Facility. In this regard, the sustainable financing strategy will include criteria for selecting interested companies (e.g., companies committed to social and environmental responsibility, without potential conflicts, linked to CRVC and key ecosystems), criteria for selecting demonstration sites, and an effective communication and marketing strategy to engage with the private sector. The sustainable financial strategy will be validated with the different private stakeholders and then approved by the Resilient Puna Project Steering Committee. Finally, to increase alignment and use of public funds for actions related EbA and CRVC, the activity will seek to increase the mobilisation of resources from public programmes for the High Andean population and their associated ecosystems. To this end, access to and alignment of investments from MIDAGRI and SERNANP and other government programmes will be promoted for EbA and CRVC measures through the development of dissemination material (e.g., Flyers) to facilitate the access to public financing.

121. **Sub-Activity 2.1.1.1. Preparation and continuous improvement of the allocation of resources of the Puna Facility (EE: Profonanpe):** To unlock investment in Puna ecosystems and CRVC, an innovative financial mechanism will be established and will be called "Puna Facility". The name "Facility" is based on its role as facilitator in leveraging, mobilising and channelling different financial resources. In this context, the Facility is at the centre of the financial exit strategy (for more information please see B.6.1.), opening the possibility of channelling additional resources from multiple sources. This facility will target local communities, producers' associations, cooperatives, SMEs, community enterprises and producer' organizations and will finance Local initiatives with EbA measures and CRVC that enable adaptation to climate change. The operationalization of the Puna Facility from the awarding of Local initiatives and the provision of technical support to the selected applicants will be carried out in component 1 through sub-activity 1.1.2.1 and sub-activity 1.1.3.1 respectively. Through the sub-activity 2.1.1.1. with the technical support of GIZ, Profonanpe as EE will establish a Facility Management Unit which will be responsible for coordinating the Puna Facility under the supervision of Profonanpe's Monitoring and Evaluation Department. It will also coordinate with the Administration and Finance Management to grant funds and report on Local initiatives, and with the Innovation and Strategic Management Directorate to coordinate the leveraging of funds for the facility. The FMU will also coordinate the establishment of the Independent Technical Evaluation Committee, which will involve the selection and hiring of its members. It will also manage the selection and contracting of the technical assistance

provider organization. Next to the management structure of the Facility, the Governance structure of the project through the Project Steering Committee and Project Management Committee will also play an important role in addition to their roles and responsibilities related to the overall project. After the call cycles are finalized, lessons learned will be systematized and if required, processes will be improved for the subsequent calls.

122. **Sub-Activity 2.1.1.2. Development and implementation of an innovative strategy to mobilize resources from the private sector and different donors (EE: GIZ):** This sub-activity aims to facilitate and secure funding through leveraging, mobilising and channelling financial resources from the private sector and other donors for EbA investments in Puna ecosystems and CRVC as part of the project's financial exit strategy. For this sub-activity, it is necessary to develop a sustainable financing strategy for the mobilization of future funds through Profonanpe. Therefore, the engagement of potential investors such as, private sector actors and different donors will be crucial to ensure the sustainability of the Puna Facility and the continuation of financing for EbA measures and CRVC. In order to elaborate the financing strategy, first a mapping of potential private sector actors and different donors will be conducted as it will be key to have a portfolio/directory of potential donors and their projects or initiatives that integrate EbA and CRVC measures in the High Andean areas. In addition, for the selection of companies to be targeted by the strategy, consideration will be given to those businesses interested based on Corporate Social Responsibility and that depend on the ecosystem services provided by the Puna ecosystems. For instance, those that benefit from the camelids fibre produced in the upper parts of the watersheds or those who benefit from water provision and regulation ecosystem services in the lower parts of the watersheds. Other type of businesses can be those who are part of the value chains promoted by the Puna Facility. For example, businesses that buy products to small producers. In addition, a narrative will be developed based on results from Puna Facility's Local initiatives systematizations and on the results of the studies developed in sub-activity 1.2.2.3. This will show how EbA measures reduce costs and risks in business operations and provide opportunities and benefits to the operation of various industries (e.g., hydroelectric, cement, water, mining, agro-industrial, etc.). In addition, events will be organized to attract the interest of several companies and/or international donors and to disseminate communication materials to inform on the effectiveness and impact of EbA measures. Travel to present good practices will be also coordinated. The strategy will also include a communication strategy. If the interests of the companies do not match with the Puna Facility, the project will facilitate the investments directly with potential beneficiaries.

123. **Sub-Activity 2.1.1.3. Promote access and alignment of investments and other government programs for EbA and Climate Resilient Value Chains (CVCR) measures (EE: GIZ):** The objective of this sub-activity is to increase the mobilisation of resources from public programmes related to sub-activity 1.1.2.2 and other government programmes for the High Andean population and their associated ecosystems. In coordination with MIDAGRI this sub-activity will develop simplified and user-friendly materials (e.g., flyers) out of guidelines for potential beneficiaries to access the different support options provided by MIDAGRI programmes and services; and other relevant government programmes that contribute to the implementation of EbA measures and/or CRVC. These materials will also support local governments in their alignment with the national government. In addition, there will be workshops for producers and local[64] governments to disseminate the information on the different public programmes. Promoters will be hired (the same as for 1.1.1.1 sub-activity) to support beneficiaries explaining the requirements of different public programs and how to access them. This will be carried out in coordination with Profonanpe, the General Directorates, programmes and funds of MIDAGRI (Agroideas, Sierra Azul, Sierra y Selva Exportadora, AgroBanco, Catastrophic Insurance, Rural and Indigenous Women's Fund), Regional Government (ProCompite) and MIDIS (social programmes)[65]. In addition, support will be provided for establishing the required coordination mechanisms to integrate the implementation of water MERESE with other government programs.

Activity 2.1.2. Strengthen capacities to develop and implement innovative mechanisms for EbA in high Andean ecosystems:

124. The activity will seek to overcome the barriers faced by public water utilities that have established or are willing to establish a mechanism for payment for ecosystem services (MERESE) schemes. Therefore, activities will be focused on strengthening stakeholders' capacities to identify and overcome bottlenecks and gaps in the implementation of MERESE. Local water utilities will receive technical support in planning, evaluation and selection of intervention projects; development of agreements with communities; and analysis of gender aspects to be included in MERESE's processes. During the trainings for water utility officers the participation of women will be secured. The related sub-activities will be developed in close coordination with the Ministry of Environment and the National Superintendence of Water Supply and Sanitation of Peru (SUNASS). In addition, the activity will include technical assistance for the establishment of a methodology to calculate carbon in the Puna ecosystems and

[64] In some cases, government programmes are designed to work with local governments to serve producers.
[65] In particular, the National Action Platforms for Social Inclusion Programme (PAIS), which is located in the most remote localities of the project and is designed to facilitate and coordinate the provision of services for programmes, projects and activities in social, economic and productive areas of public and private entities, in order to improve the quality of life of the rural and dispersed rural population.

provide capacity building for local actors (e.g., communities, local government, academia) aligned with national legal and institutional arrangements for carbon markets.

125. **Sub-activity 2.1.2.1. Technical assistance to improve existing hydrological MERESE processes in the project areas (EE: GIZ):** This sub-activity aims to strengthen water utilities capacities to identify and overcome bottlenecks and gaps for the implementation of the hydrologic PES (which in Peru it is called Retribution Mechanism for Ecosystem Services-MERESE) and thus mobilise financial resources not only for the conservation of High Andean ecosystems but also to increase water availability. The objective is to engage with men and women officers of water utilities that implement MERESE in key watersheds of the project as a complementary intervention to the Resilient Puna project and other public-private initiatives. The sub-activity will first include technical assistance for hydrologic MERESE which are already underway, such as the MERESEs in: Arequipa (1), Lima (1), Cusco (2) and Apurimac (1). In the project target area five water utilities have hydrologic MERESE in place including EMUSAP Abancay, SEDAPAR Arequipa, EMAPA Cañete, EMSAPA CALCA in Cusco, SEDA Cusco. For more information on these water utilities see Table 25 in Annex 23. Given the gradual implementation of the hydrological MERESE in the target area, this sub-activity will provide technical assistancethat will be focus on the a) establishment and/or strengthening hydrologic MERESE's good governance platforms, b) development of methodological tools for implementation, c) provision of technical information for the identification of water MERESE interventions, d) contributing to the design of the monitoring system, e) supporting the capacity development for the implementation of different implementation modalities as described under Section 3.1 in Annex 2d, f) establishment of contractual agreements with communities, g) development of EbA public investment projects, h) analysis of gender aspects to be included in MERESE's processes and systematization of learning experience at the end of the process. To consolidate the implementation of MERESE in each region, the specific technical assistance package will be assessed on a case-by-case basis according to the needs of each MERESE.[66]

Activity 2.1.3. Support the greening of microcredits to promote EbA and Climate Resilient Value Chains:

126. This activity will focus on two main topics: (1) Supporting the greening of microcredit lines and business models and (2) supporting the dissemination of green financial products and services. In order to increase the supply of microfinance products and services to finance integrated EbA and CRVC initiatives, the project will support either the development of specific financial products or the greening of existing financial products for EbA measures and CRVC (aligned with the lists of EbA measures and CRVC developed in sub-activity 1.2.1.1) in Puna ecosystems. This will include the integration of gender-sensitive aspects in financial products to promote EbA and Climate Resilient Value Chains. The design will include a diagnostics identifying gender gaps and needs. Microcredit institutions officials will receive training to increase the capacity of MFIs to finance businesses with EbA measures with a gender approach. In addition, a communication strategy to disseminate the green financial products will be developed and implemented, raising awareness regarding the requirements and conditions, with a focus on the beneficiaries of the project.

127. **Sub-activity 2.1.3.1: Support to financial institutions in greening microcredits (EE: GIZ):** This sub-activity aims to develop and introduce greener microcredits for financing not only Resilient Puna beneficiaries but also beneficiaries in other regions interested in implementing EbA measures and CRVC (aligned with the lists of EbA measures and CRVC developed in sub-activity 1.2.1.1) within the Puna ecosystems. Microfinance institutions (MFIs) with a presence in the project area and with interest on expanding their credit portfolio to small-scale farmers for adaptation measures will be selected (e.g., Caja rural los Andes, Caja Cuzco, Microfinance BBVA Foundation-Confianza), and technical assistance will be provided to either adjust existing products (including existing financial products for women) or develop new ones, incorporating the EbA approach in the financial risk analysis for prioritised value chains. In order to achieve this, first, MFIs' portfolio will be analysed, taking into account data disaggregation by gender and employing a cross-cutting approach. The goal is to identify the value chains prioritised in the project with the greatest exposure to climate risks, as well as to assess the exposure to credit risk based on gender. Then mitigation activities (EbA measures) will be proposed and included in the value chain business model to reduce these climate risks and thus reduce the negative economic impacts that climate events have on agricultural producers, men and women, and the credit portfolio of microcredit institutions. Moreover, through working sessions (peer-to-peer exchanges) and studies, we will seek lessons learned from current processes related to green financial products and financial products specifically designed for women. This review will encompass crucial stages, spanning from credit approval to loan disbursement and subsequent follow-up. The overarching objective is to integrate these insights into the development of microcredit greening activities. In parallel, market demand studies will also be carried out including diagnostics for identifying gender gaps and needs for accessing to microcredits. Demonstrating the viability of the proposed EbA and CRVC measures business model is essential. Therefore, concrete and tailor-made business models will be developed using the information

[66] Also, the operationalization and diversification of MERESE schemes to leverage funds from beneficiaries of these services downstream to local communities upstream is one of the economic benefits of the project. EPSs will be supported to operationalize the MERESE scheme in their watershed with a potential of mobilizing USD 5-6 million by following EPS, EMAPA CAÑETE S.A., EMPSSAPAL S.A., EMUSAP ABANCAY S.A.C., SEDA CUSCO S.A.).

generated and analysed in activity 1.2.2. In addition, demonstration sites will also be identified to showcase good practice and serve as models to be replicated and scaled up. Based on the results of the analysis, the microcredits to be adapted will be identified, as well as gender aspects to be included. In particular, to improve women's accessibility to credit, taking into account the diversity of women's technical, financial, digital and entrepreneurial capacities, including adapted services to women's specific challenges. During the adaptation phase, management tools (including digital tools, guidelines, and protocols) will be modified to include the EbA approach. This will include aspects such as sustainability and climate risk management criteria and development of tools for credit analysis based on agro-climatic and risk reduction information. The option of developing new green microcredit lines will be assessed by each microfinance institution based on their product development strategy. Relevant institution involved in this activity will be the microfinance institutions.

128. **Sub-activity 2.1.3.2. Raise awareness of greener microcredits to promote EbA and Climate Resilient Value Chains (EE: GIZ):** This sub-activity aims to promote the greener microcredits (either adapted or newly developed in the previous sub-activity) and includes the development and implementation of an awareness campaign for potential clients, with a focus on the project beneficiaries selected by the Puna Facility. In order to achieve this, the sub-activity will capacitate field personnel of financial institutions, which will promote the greener microcredits including trainings on requirements and conditions. Financial institution front office and field personnel will also be trained to effectively market and disburse loans to beneficiaries in remote rural areas in the High Andean zone. In addition, risk management of financial institutions will be strengthening, with a special focus on addressing climate risks within their portfolio. Credit officers from these institutions will receive training on the EbA approach, climate risks, gender considerations for rural financial market and innovative strategies to promote greater sustainability in businesses. Subsequently, the greener microcredits will be disseminated through different channels. This will include a launch event and an awareness campaign for the population of the project areas, especially for the beneficiaries of the Puna Facility. This will provide them other sources for financing their present and future EbA measures and CRVA.

B.3.3. Outcome 3. EbA and climate resilience are mainstreamed into multilevel landscape governance instruments:

129. This outcome will promote integrated landscape planning and policy improvement and coordination, by fostering dialogue and improving coordination among stakeholders that intervene in the landscape (local, regional and national governments, local communities, producers' organizations, watershed committees, and MIDAGRI extension services, among others). The corresponding activities proposed in this outcome will directly address identified barriers regarding i) lack of understanding of the causal relations of EbA practices to increase climate resilience, ii) poor coordination among national and subnational governments on the ground, including MIDAGRI programs, SERNANP and other sectors, iii) weak governance structures for a sustainable management of the landscape and its natural resources and iv) limited local capacities to adapt to climate change, v) Insufficient and lack of policies and regulatory framework enforcement for implementing the EbA approach and Climate Resilient Value Chains.

130. **Output 3.1. Multilevel landscape governance is improved through strengthening of national capacity, regulatory frameworks and M&E systems** The approaches that will be promoted by Resilient Puna require progressive development of capacities of governmental Executing Entities[67], local actors, and subnational governments to promote the replicability and sustainability of the changes introduced by the project. Therefore, in order to promote the mainstreaming of EbA and climate resilience approaches at landscape and water basin levels into the national, regional and local planning processes (i.e., development plans, including budgets and further public investment project planning), women and men's official capacities at different levels (national, regional and local) will be strengthened and gender, intergenerational and interculturality cross-cutting approaches will be considered as well as the valuation of ancestral knowledge and practices. The output will also provide technical support to MIDAGRI and SERNANP to improve the regulatory framework for the promotion and implementation of EbA measures and CRVC in the High Andean areas of the country**.**

Activity 3.1.1. Strengthen the capacities for territorial planning and governance processes integrating EbA and climate resilience:

131. The activity aims to strengthen participatory sectoral and territorial platforms[68] so that EbA measures and CRVC developed by project beneficiaries can be replicated and scaled up. Through this activity the project will enable that lessons learned from the community's experiences in EbA and CRVC planning, and implementation are considered

[67] Please see Annex 2c were the capacities of the two governmental EEs MIDAGRI and SENRANP where assessed.

[68] By platforms is meant spaces officially formed to bring together different public and private stakeholders to discuss issues that are of interest to them and then coordinate, decide and plan concrete actions to address them. These topics can be based on the management of a specific territory such as the Natural Protected Areas Committees, or based on water management such as River Basin Councils, or based on the coordination of the agricultural sector in the territory such as the CGRAs, or based on the planning and coordination of the MERESE in a specific sub- basin such as the platforms of good governance of the MERESE.

and scaled up in the agenda of government platforms[69] and in local and regional governments plans. In order to strengthen territorial planning processes, the activity aims to: (1) Strengthen the capacities of relevant government stakeholders for the incorporation of EbA and CRVC measures, integrating the gender perspective in their processes and interventions in the territory, (2) Strengthen participatory sectoral and territorial platforms for the articulation and scaling up of EbA measures and CRVC within the scope of the project by promoting IPLCs participation. Special emphasis will be given to encouraging women's participation in decision-making and planning processes. (3) Integrate EbA measures and CRVC in territorial planning and management instruments. Lessons from local planning processes, especially those derived from monitoring activities, should be integrated into territorial planning in the target watersheds (watershed management plans).

132. **Sub-activity 3.1.1.1. Strengthen the capacities of relevant national, regional and local government stakeholders for the incorporation of EbA and CRVC measures, integrating the gender perspective[70] in their processes and interventions in the territory (EE: GIZ):** This sub-activity aims to strengthen the capacities of relevant public officials working in thematic and geographical areas of the project at the national, regional, and local levels. The identification of specific participants will be based on pre-assessed capacity needs (for more information see Annex 2h) defined in through a participatory approach with SERNANP as part of MINAM and MIDAGRI. Personnel (both women and men) from both entities in charge of national programmes and rural extension services will undergo training. This training aims to enhance the incorporation and reinforcement of EbA and CRVA at landscape and water basin levels. It also aims at promoting the coordination with water MERESE (if any in the area), promote traditional practices and integrate gender consideration into agricultural extension programs. These efforts will enable officials to be able to recognize the diverse needs and roles of men and women farmers in agriculture. As a result, it will progressively encourage more involvement in women's roles, thus contributing to the reduction of gender inequalities in the agricultural sector. Training topics will include: i) EbA and CRVC: Climate risk assessment, territorial, landscape and water basin approach, ecosystem monitoring and evaluation, prioritisation of adaptation measures, MERESE, identification of indicators that match with the respective monitoring system. ii) Gender awareness and intergenerationally: Improve gender and intergenerational awareness among public officials and develop tools for gender and intergenerational mainstreaming in their processes and interventions in the territory. In order to provide capacity building, as a first step, content and materials will be developed for online and/or presential training modules, based on lessons learned generated by other project experiences and those generated during project implementation (based on the data generated in activity 1.2.2.). The relevant institution involved in this sub-activity are Instituto de Montaña as they will provide inputs from their past and present experience to develop the contents of the training modules, MIDAGRI through its Directorates-General, programmes and affiliated public bodies will contribute and participate in de design and implementation of training modules, SERNANP as they will contribute and participate in de design and implementation of training modules, and Subnational governments as they will participate of training modules.

133. **Sub-activity 3.1.1.2. Strengthen participatory sectoral and territorial platforms for the articulation and scaling up of EbA measures and Climate Resilient Value Chains within the scope of the project (EE: GIZ):** This sub-activity has three specific objectives: (i) Promote the participation of IPLCs in decision-making processes at the local and regional platforms[71], (ii) disseminate successful Local initiatives experiences financed in component 1 for scaling up EbA and CRVC measures, specially the one led by IPLCs women organizations and (iii) coordinate public and private interventions in EbA and CRVC measures at landscape and water basin level of each territory integrating a gender approach. The first step within this sub-activity involves identifying sectoral and/or territorial platforms that hold official recognition and social acceptance in each territory. These platforms will serve as forums where diverse public, private, and civil society organizations in the project area convene to foster dialogue, address concerns, and collaborate on coordinated efforts related to EbA investment and CRVC, both at the landscape and water basin levels. Potential platforms include Regional Committees for Agriculture Management (CGRA), Good Governance platforms of MERESE, Natural Protected Areas Management Committees, the Council of Basins, and others. The project will support the participation of IPLCs in its different forms of organizations (local community and producers' associations representatives) to bring to the platforms their best practices and concerns when implementing EbA measures and Climate Resilient Value Chains. Participation of women in these spaces of dialogue and decision making will be supported and facilitated. In addition, methodological guides for the analysis of the social context for the identification of actors and promotion of Good Governance Platforms will be developed and implemented. The project will facilitate the exchange of available data and information produced by each institution (e.g., climate, hydrological, finance, etc.). and will foster the inclusion of climate risk vulnerabilities in their

[69] Platforms refer to formally established spaces where diverse public and private stakeholders convene to discuss about issues relevant to them.
[70] By gender perspective is meant being aware of and taking into account the different outlooks, roles and behaviours of me and women (may be also boys and girls – depending on their involvement).
[71] Ibid

planning processes, prioritisation of adaptation solutions, and promote agreements among platform members for future funding. Finally, successful EbA and CRVC experiences that have emerged because of the implementation within the project at landscape and water basin level (through the implementation of activities in component 1 will be disseminated.

134. **Sub-activity 3.1.1.3. Integration of EbA measures and** Climate Resilient Value Chains **in territorial planning and management instruments (EE: GIZ):** This sub-activity aims at increasing influence on subnational governments (regional and local) through their planning and budgeting instruments in order to leverage and increase public finance in EbA measures and CRVC in the medium and long term. The specific tasks assigned to this sub-activity will vary based on the level of intervention, encompassing local and regional levels, as outlined below. Technical assistance will be provided to local and regional government officers interested in developing or improving their development plans and budgeting instruments by incorporating EbA measures, gender and CRVC in

i) Local and/or Regional Concerted Development Plans: The technical assistance for local and regional officers will be focused in improving their participatory process and the prioritisation and planification of adaptation measures at landscape and water basin level. Additionally, climate risk analysis will be developed in territorial plans. Based on prior identification, the project will support local and/or regional governments in developing climate risk and vulnerability studies as part of the preparation of their local, regional or basin development plan. Including strengthen territorial planning with watershed approach for the adequate coordination, synergies and alignment of water MERESE.

ii) Local Climate Change Plans and/or Regional Climate Change Strategies: Technical support to local or regional technical officers will be focused in developing participatory Regional Climate Change Strategies and/or Local Climate Change Plans to prioritize and integrate EbA and Climate Resilient Value Chains measures into those climate change instruments.

iii) Regional and local budget & investment projects: Technical support to local and regional technical officers to prioritize and design EbA and Climate Resilient Value Chains within the local and regional public budgets, including budget for EbA M&E

iv) Natural Protected Areas´ Master plans: the technical assistance for SERNANP will be focused in integrate the EbA approach in the participatory process of updating master plans. Support to update their climate risk and vulnerability studies will be done.

Activity 3.1.2. Strengthen regulatory frameworks and M&E systems at national level:

135. The activity aims to provide technical support to MIDAGRI and SERNANP to improve the regulatory framework for the promotion and implementation of EbA measures and CRVC in the High Andean areas of the country, as well as ensuring the participation of IPLCs in resolutions related to their participation in decision making process for the management of the territory and its ecosystems. In addition, it will provide technical support for the national long-term M&E systems of the different government entities to measure impact of EbA interventions and ensure data disaggregation by gender. Partnerships will be established with local universities and research institutes to support the monitoring of progress resulting from the interventions implemented by the different actors in the territory. This activity will also support MIDAGRI in improving its agricultural policy monitoring and evaluation efforts while complying with 4 Peru's NDC targets to which the project will contribute to: i) (AGRI7- Natural grassland management to secure feed for livestock and reduce vulnerability to climate change; ii) AGRI11 - Management of wild South American camelids (vicuñas) considering the effects of climate change; iii) AGRI16.- Implementation of business strategies that incorporate risk and opportunity management in the face of climate change; iv) AGU2 - Implementation of interventions related to planting and harvesting water for agricultural water security in watersheds vulnerable to climate change.

136. **Sub-Activity 3.1.2.1. Improving national regulatory frameworks linked to EbA measures and Climate Resilient Value Chains (EE: GIZ):** This sub-activity aims to improve the regulatory framework at the national level (norms, laws, budget, and investment guidelines) for the promotion and implementation of EbA measures and CRVC in the High Andean areas of the country. The sub-activity will develop proposals or draft standards based on the assessment of legal barriers related to ecosystem restoration and conservation, agricultural productive uses, sowing, and harvesting of water, IPLCs participation, water MERESE, among others. It will also include studies required for explanatory statements. Subsequently, consultancies to improve norms, plans, strategies will be made and will work in close coordination with the Regulatory offices in MIDAGRI, MINAM and SERNANP. As a third step, an Advocacy Plan will be developed for regulatory or legislative entities. In addition, a work plan will be developed in coordination with the Planning and Budget Offices of MIDAGRI and SERNANP to adjust or update budget programs and investment guidelines at national level. Then, these documents will be used by the ministries and regional and local governments to increase the allocation of public resources for EbA projects and CRVC.

137. **Sub-Activity 3.1.2.2: Improve coordination of EbA monitoring and evaluation (M&E) systems at the national level linked to project and NDC purposes (EE: GIZ):** This sub-activity aims to support the nationwide monitoring system with adequate protocols and measurement methodologies that allows MIDAGRI and SERNANP systematically collect, analyse data and information in order to detect the impacts of EbA interventions. This will allow policy makers to understand whether or in what extent EbA public investments are meeting their results, as well as monitor EbA effectiveness and evaluate progress towards the national adaptation climate contributions (NDCs). To this end, technical advice will be provided to MIDAGRI and SERNANP for the integration of the EbA approach and aspects of NDCs in its monitoring and evaluation processes and consider data disaggregation by gender. This sub-activity will be closed coordinated with the General Directorate of Climate Change and Desertification of MINAM that manages the Monitoring System for Mitigation an Adaptation measures (SIMOM). Community monitoring systems supported in activity 1.2.2 will also contribute with data and information to the national systems. This will be an exercise of exchanging information (data, tools for collecting data, interpretations, etc) from the local perspective and knowledge to national level and vice-versa. The project will also support MIDAGRI in the improvement of it reporting system for the NDCs in the agricultural and water NDCs to which the project will contribute to, by the development of adequate protocols and methodologies to gather field information and measure the impacts of MIDAGRI interventions and report MIDAGRI´s NDCs progress implementation. To this regard, close coordination with the newly MIDAGRI´s Agriculture and Irrigation Commission on Climate Change (CSARCC)[72] created by Ministerial Resolution N° 0187-2023-MIDAGRI will be promoted. All actions mentioned above will be mainly coordinated with the General Directorate of Climate Change and Desertification of MINAM. Potential synergies with other relevant institutions such as SENAMHI, ANA, INAIGEM, SUNASS, and others for potential synergies will be promoted. Relevant entities involved in this activity will be Instituto de Montaña that will contribute to the design of the protocols to integrate community monitoring data M&E systems, MIDAGRI through its technical Directorates implementing Monitoring and Evaluation systems for ecosystems, and MIDAGRI´s Agriculture and Irrigation Commission on Climate Change, SERNANP will contribute to the design of protocols in the of Natural Protected Areas, MINAM and affiliated entities such as SENAMHI and INAIGEM will contribute in the design of protocols and SUNASS will contribute to the design of protocols in the case of EPS target areas.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

B.4.2 Project management, implementation and execution structure

Role of GIZ as AE:

138. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is a German-based private, limited liability, non-profit company owned by the Federal Republic of Germany; it is the Accredited Entity (AE) of this project, while the same GIZ with its management structure in Peru will operate as an Executing Entity (see next section). To avoid conflicts of interest, these two functions - accreditation and implementation function - are strictly separated, with different management structures within GIZ.

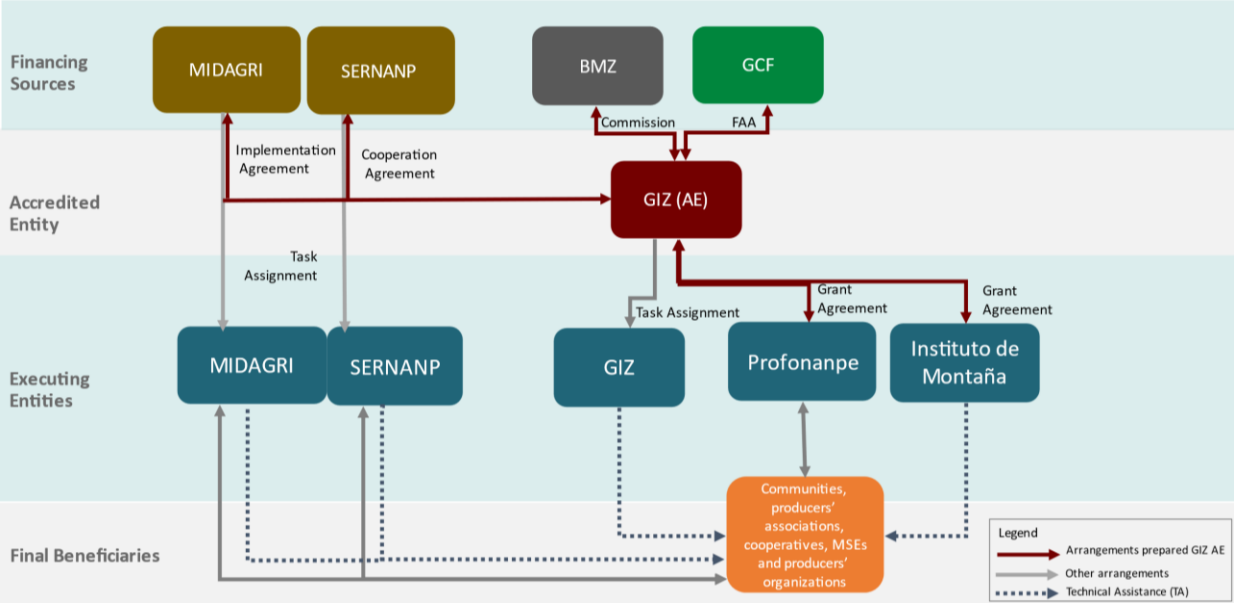
139. As the AE, GIZ will assume oversight responsibility of the project, as defined in the Accreditation Master Agreement (AMA) between GCF and GIZ (AE). As AE, GIZ will administer project funds on behalf of the GCF and will provide oversight guidance and quality assurance of Profonanpe and Instituto de Montaña as EEs receiving GCF funds through its relevant head office units.

140. In order to implement the Project, GIZ will need to establish legal arrangements with MIDAGRI, SERNANP, Profonanpe and Instituto de Montaña - see Figure 12. Legal below):

- The German Federal Ministry for Cooperation and Development (BMZ) will commission GIZ with the implementation of the GCF project (amended commissioning agreement). The GCF will transfer funds based on the Funded Activity Agreement (FAA) to the Accredited Entity GIZ.
- GIZ (as EE) will receive an internal task assignment from the AE for the implementation of the project.
- GIZ (AE) will amend an existing implementation agreement (i.e., subsidiary agreement), based on GIZ standard operating procedures with the MIDAGRI as the political partner of the project and Executing Entity executing activities with own funds (related to the BMZ commission and signed between GIZ and MIDAGRI).
- SERNANP as an Executing Entity executing activities with own funds will sign a cooperation agreement (i.e., subsidiary agreement), based on GIZ standard operating procedures with GIZ (AE).
- Finally, GIZ (AE) will sign with Profonanpe and Instituto de Montaña grant agreements (i.e., subsidiary agreements), based on GIZ standard operating procedures. These subsidiary agreements establish the legal basis on which GIZ makes the GCF Proceeds available to Instituto de Montaña to implement project activities and Profonanpe to set up, manage and operate grant disbursement through the Puna Facility, in accordance with the AMA and FAA.

Figure *12*. Legal arrangements

[72] The aim of this CSARCC is to monitor the implementation processes of climate adaptation and mitigation measures under responsibility of MIDAGRI, as well as develop annual reports regarding the advances of MIDAGRI´s NDCs.



GIZ as Executing Entity [Executing Entity-GCF funds]:

141. GIZ has been active in Peru since over 50 years and currently employs approximately 210 staff members, most of them Peruvian nationals. Specifically, GIZ Peru has been working on climate change and biodiversity issues in Peru since 2003 and current technical assistance in the sector amounts to approx. EUR 60 million.
142. In its capacity as an EE, GIZ will lead, and provide overall management of, the Technical Assistance (TA) to the project at national and subnational levels. It will be responsible for:
    - Liaising with government institutions for overall coordination and alignment of objectives, managing technical assistance activities and ensuring full compliance with the expected project results and that adequate monitoring and evaluation procedures are implemented.
    - Ensuring compliance with the Social and Environmental Safeguards, the Environmental and Social Management Plan (ESMP), the Gender Action Plan (GAP) and the Indigenous Peoples and Local Communities Engagement Plan (IPLCEP).
    - Providing technical assistance to MIDAGRI and SERNANP to mainstream Ecosystem based Adaptation (EbA), climate resilience and gender aspects in all their programmes and to improve coordination between their operational units and collaboration with other sectors.
    - GIZ Peru, will also provide technical assistance to Profonanpe to improve their capacities to sustainable manage and promote the Puna Facility.
    - Technical assistance for the promotion of the "Mechanism for Remuneration for Ecosystem Services (MERESE)" schemes will also be under the responsibility of GIZ Peru and in close coordination with MINAM.
143. GIZ Peru, will also act as the technical secretariat within the Project Steering Committee and as the executive coordination within the Project Management Committee as well as the Implementation Unit, including the territorial teams.
144. In their role as technical secretariat GIZ Peru will keep the Steering Committee and the Management Committee informed in a timely manner about the main decisions or recommendations made by the GCF in the framework of the project implementation.
145. GIZ as an EE will be responsible for a GCF budget of EUR 19.315 million.

Profonanpe [Executing Entity-GCF funds]

146. Profonanpe is a non-profit private law institution organized under the laws of the Republic of Peru in accordance with Decree Law No. 26154. It is the only environmental fund in Peru and a direct access entity accredited before the GCF, with extensive experience in the management of environmental funds (Regional Water Fund in Piura, MERESE for Arequipa, etc.). Its mandate is to provide stable, long-term funding and to develop and implement innovative strategies for the conservation and management of protected areas. Its local, national and international partnerships with donors, its experience in managing environmental funds, and its strong fiduciary standards will ensure efficient and effective delivery of results.
147. Profonanpe will be responsible for the management of the “Puna Facility” (which will be set up under activity 2.1.1.) a competitive fund, which will provide through sub-activity 1.1.2.1. non-repayable and repayable grants, through calls for proposals aimed at promoting Local initiatives to implement Ecosystem based Adaptation measures and Climate Resilient Value Chains. In addition to the financial support, the Puna Facility will also provide

Technical Assistance (through sub-activity 1.1.3.1) through a service provider for the implementation of the Local initiative, access to finance and business development.

148. In order to manage the Facility, Profonanpe will set up a Facility Management Unit (FMU). Among its functions[73] will be to:

- Ensure that all activities promoted and developed by the Puna Facility are in accordance with the strategic guidelines established by the Project Steering Committee.
- Ensure submission of information to the Project Management Committee in case any modifications or updates are required at the operational or strategic level of the Puna Facility.
- Develop the terms of reference for the calls for proposals.
- First review of applications and pre-selection according to the terms of reference and established criteria and proposal for evaluation by the Project Management Committee (shortlist).
- Negotiate Local Initiative Grant Agreements.
- Monitor the execution of funded Local initiatives.

149. Under the supervision of GIZ AE, Profonanpe will ensure that all GCF and GIZ fiduciary standards are followed, complying with the stipulations of the Grant Agreement, always within the legal framework of the project (AMA, FAA).

150. Profonanpe will also participate in the Project Management Committee (PMC) and will be part of the Territorial Implementation Units (TIU).

151. In addition, it will liaise and coordinate with other project partners to guarantee the integral fulfilment of the expected results of the project.

152. Profonanpe as an EE will be responsible for a GCF budget of EUR 19.175 million.

The Ministry of Agricultural Development and Irrigation of Peru (MIDAGRI) [Executing Entity-Own contributions]

153. MIDAGRI is the Peruvian government institution in charge of the agricultural sector. It was created by Law 9711 on January 2, 1943. Its main function is to supervise and regulate the country's agricultural sector. The main objectives of MIDAGRI are: i) Strengthen producers' organizations and promote their integration under watershed and production chain management approaches; ii) Promote technological innovation and training linked to the business management of agricultural producers, providing technical assistance; iii) Establish an agricultural information system to enable economic agents to make efficient management decisions; iv) Facilitate agricultural producers' access to legal, administrative, management, financial, technical assistance, health and other services that will enable them to improve their management capacity; v) To facilitate the linkage of small-scale agriculture with the market economy through the establishment of policies for the appropriate use of natural resources.

154. MIDAGRI as the main political partner of the project will also act as an Executing Entity executing activities through own funds through following relevant programs Agrorural, Sierra Azul, SERFOR, PSI, SSE, INIA, SENASA and Agroideas.

155. In addition, amongst his function in the project MIDAGRI will:

- Chair the Project Steering Committee and participate in the Project Management Committee and Territorial Implementation Unit.
- Coordinate with the project partners to guarantee the integral fulfilment of the expected results of the project.
- Ensures the efficient execution of its co-financing in its sector through the aforementioned programs and contribute to the achievement of the project's activities.
- Lead coordination with aforementioned programs and the attached public bodies: SERFOR and INIA within the project structure and in the territory.
- Internally, MIDAGRI will set up a sectoral commission to guarantee the coordination and harmonization of the interventions and co-financing of its units with the implementation of the project.

The National Service of Natural Protected Areas by the State (SERNANP) of the Ministry of the Environment (MINAM) [Executing Entity- Own contributions]

156. SERNANP is a specialized technical public agency attached to the Ministry of the Environment, in charge of directing and establishing technical and administrative criteria for the conservation of Natural Protected Areas (NPAs) and ensuring the maintenance of biological diversity. SERNANP is the governing entity of the National System of Natural Areas Protected by the Peruvian government (SINANPE), and as the technical-normative authority, it carries out its work in coordination with regional and local governments and landowners recognized as private conservation areas. It leads SINANPE with ecosystem, integral and participatory perspective with the aim of sustainably managing its biological diversity and maintaining the ecosystem services that provide benefits to society.

[73] For more information, please see Annex 21 Operations Manual chapter 3.

157. SERNANP will act as an Executing Entity executing project activities with own funds and amongst its functions it will:
- Coordinate with the project partners to guarantee the integral fulfilment of the expected results of the project.
- Participating in both the Project Management Committee (PMC) and Territory Implementation Units (TIU).

158. In particular, SERNANP will co-finance and participate in the execution of the activities implemented within the Natural Protected Areas that are part of the project and together with MIDAGRI in the buffer zones.

Instituto de Montaña (IdM) [Executing Entity-GCF funds]

159. IdM is a non-profit organization that works for the conservation of the natural, cultural and spiritual values of mountain peoples and ecosystems. They have been working in the Andes since 1995 and in Peru they have programs in the highlands of Ancash, Piura, Junín and Lima.

160. It will act as Executing Entity, by contributing and scaling up its experience in the implementation of EbA measures in the Nor Yauyos Cochas Landscape Reserve to the other regions of the project. It will use participatory tools for participatory design, implementation and monitoring of EbA measures, which contribute to the ownership and sustainability of the Local initiatives supported by the project.

161. Amongst its functions in the project IdM will:
- Participate in the Project Management Committee and in the territory as part of the Territorial Implementation Units
- Liaise and coordinate with other project partners to guarantee the integral fulfilment of the expected results of the project.

162. IdM as an EE will be responsible for a GCF budget of EUR 1.5 million.

B.4.2. Summary of the Capacity Needs Assessment

163. In the frame of the Funding Proposal development a Capacity Needs Assessment (see Annex 2h) was developed in order to assess the capacity needs and institutional gaps from the EEs (besides GIZ) for project implementation. This included evaluating EEs current capacities in relation to the project components, identification of gaps, and providing recommendations for capacity development to address these gaps effectively.

164. In this regard, the Capacity Needs Assessment draw two key conclusions. Firstly, in some cases, capacities exist, but enabling conditions are weak, at the same time the implementation process of EbA, climate resilience and gender approaches are making progress as it is the case of MIDAGRI for example, even though it has the capacities (established functions) to develop specific guidelines, methodologies and tools to incorporate a gender and climate resilience approach into sector planning, budgeting and investments; however, these are insufficient. Secondly, there is the need to enhance existing capacities and establish new ones where gaps exist as in the case of MIDAGRI, even though it has several agricultural support programmes, there is little promotion of these in the high Andean zones.

165. A list of recommendations for each EE, based on the gaps identified can be found in section 5 of the Capacity Needs Assessment (Annex 2h).

B.4.3. Project Governance structure

166. The project Governance structure (shown in

167. Figure *13*) was extensively discussed, developed and validated by the project partners. Following bodies will be established:

Project Steering Committee (PSC)

168. The highest level of governance will be overseen by a Steering Committee consisting of GIZ, MIDAGRI and MINAM.

169. MIDAGRI through the Vice Minister of Family Agriculture Development and Agrarian Infrastructure will chair the PSC meetings. The substitute is the General Director of the General Office of Planning and Budget of MIDAGRI. Specifically, PSC participating members will include:
- MIDAGRI Vice-Minister of the Vice-Ministerial office for Family Farming Development and Agrarian Infrastructure.
- MINAM Vice-Minister of the Vice-Ministerial office for Strategic Development of Natural Resources, which will provide the required climate guidance and its alternate will be the General Directorate of Climate Change and Desertification.
- Representative of GIZ
- The PSC will provide policy and strategic guidance to the Project Management Committee (PMC), while ensuring compliance with the Funding Proposal approved by the GCF, the legal agreements, policies and requirements of the GCF, and the climate and national socio-economic development objectives.

170. As part of the responsibilities the PSC will:
- Acknowledge proposed tools, directives and/or standards presented by the PMC and advocate for their inclusion in public policy.

- Encourage national authorities to take ownership of actions addressing climate issues and ensure project coherence within the international and national contexts.
- Provide guidance for the fulfilment of legal agreements.
- Monitor compliance with the project's commitments to social and environmental safeguards, the Indigenous Peoples policy, and the objectives and implementation of the respective plans (ESMP, IPLCEP and GAP).
- Ensure effective inter-institutional and inter-sectoral coordination, as well as collaboration with civil society.
- Resolve any disputes that arise within the Project Management Committee and holds decision-making authority for their resolution.
- Annually approve the project Annual Operating Plan (AOPs), evaluate and provide approval for the execution of the AOPs (technical and financial execution reports).
- Provide strategic guidance for project management and provides feedback on the AOP, based on systematic reporting of outcome and impact indicators.
- Oversee the timely and adequate delivery of the respective contributions of the partners to the project.
- Supports process transparency and the harmonization of working approaches in the territory.

171. The Project Steering Committee (PSC) will establish a Technical Secretariat, operated by GIZ Peru. The Secretariat will provide technical information to the members of the PSC and will serve as a bridge between the PSC members and the Project Management Committee (PMC). In addition, it will coordinate (before, during and after) all related aspects of the PSC sessions.
172. The PSC will meet at least 2 times a year and more frequently, when necessary.
173. PSC members have the option to organize extended PSC meetings where non-permanent PSC members can participate, for example for accountability and/or consultation with the NDA (Ministry of Economy and Finance), as well as to seek inputs on project-related matters with other stakeholders such as national, regional, and local authorities, donors, community and producer organizations, women's groups, Indigenous Peoples representatives, NGOs, private sector representatives, and thematic experts.

Project Management Committee (PMC)

174. The Project Management Committee (PMC) will be responsible for overseeing and coordinating the project's execution among the Executing Entities and ensuring its implementation within the designated territory. The PMC will also provide regular reports to the Steering Committee.
175. It is the decision-making body for the management and implementation of the project. The PMC will be coordinated by GIZ Peru and will have its offices within MIDAGRI. If necessary, thematic working groups could be created to coordinate cross-cutting activities in depth (e.g., on safeguards, gender, financial management or EbA/value chains, etc.).
176. The PMC will additionally be responsible to:

- Review, reflect, and systematize lessons learned from the project, proposing their integration into tools, directives or standards to be considered by Executing Entities.
- Generate proposals in response to changes, effects, or events in the project areas that may be attributable to climate change, based on intersectoral reviews with experts and agreements with the GCF.
- Mobilize timely technical expertise from EEs and other stakeholders when project development issues are identified.
- Timely share guidelines with the PSC and offer feedback to enhance project coherence on both national and international levels, while also facilitating the flow of information from the territories to the PSC.
- Supervise the implementation and compliance with Social and Environmental Safeguards and Gender policies (i.e., ESMP, GAP and IPLCEP).
- Ensure compliance with project management directives, guidelines, and information flow among Executing Entity members.
- Coordinate and ensure the timely implementation of activities by each Executing Entity in the designated territory outlined in the Annual Operating Plan, systematically informing the PSC and promoting a common understanding among Executing Entities regarding the theory of change and its mainstreaming across all project activities.
- Foster inter-institutional and inter-sectoral coordination and collaborate with civil society.
- Oversee technical and budgetary project progress, aligning with approved plans, budgets, and indicators related to territorial needs outlined in Annual Plan documents.
- Provide technical feedback on Terms of Reference (ToRs) and other selection processes for regional coordinator positions in Territorial Implementation Units.
- Lead mid-term and final evaluations of the project.

177. The PMC will meet at least 2 times a year and permanent PMC members will include according to the entity:

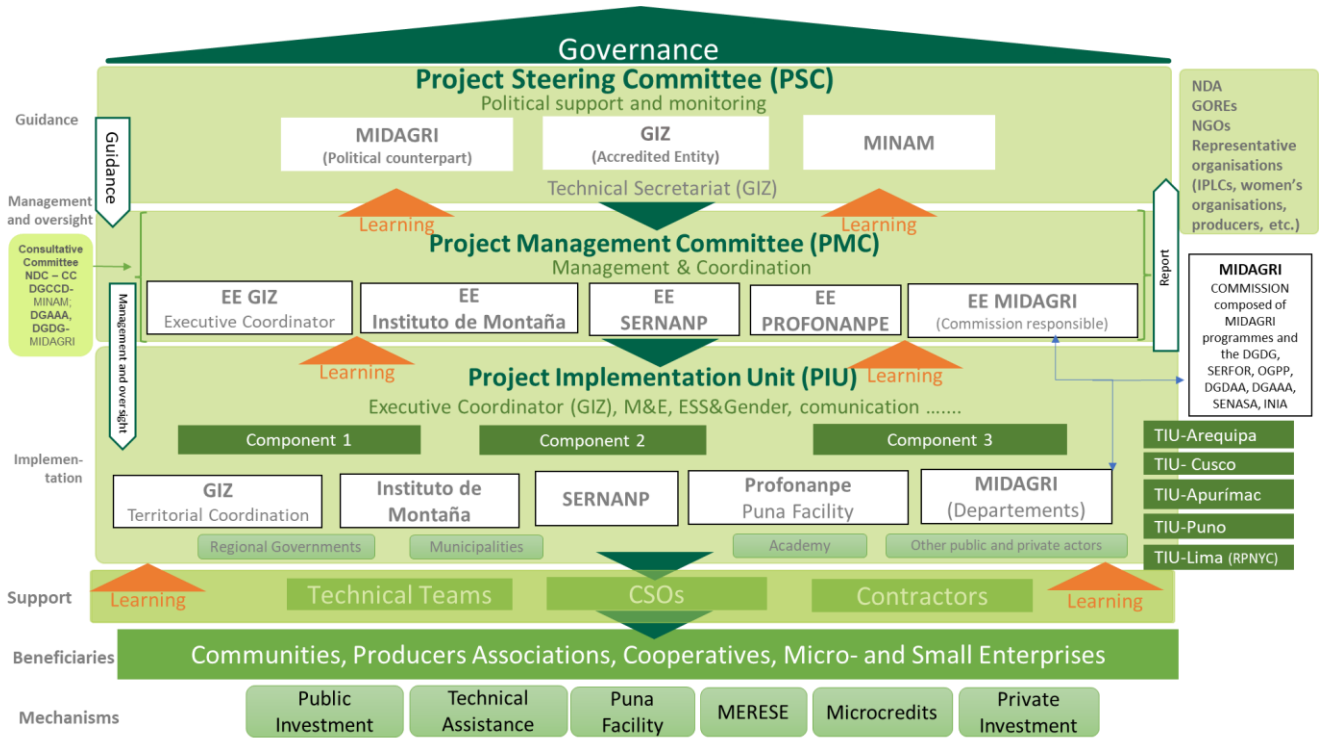
- MIDAGRI as an EE with a technical personal and financial person designated by MIDAGRI.
- GIZ as an EE with the project manager, technical manager and financial manager.
- Profonanpe as an EE with a technical manager and financial manager.

- SERNANP (MINAM) as an EE with a technical manager and financial manager.
- Instituto de Montaña as an EE with a technical manager and financial manager.

178. Likewise, a Consultative Committee will be established. It will be invited to participate in the Project Management Committee (PMC) meetings through following members: the General Directorate of Climate Change and Desertification (DGCCD) of MINAM; the General Directorate of Agricultural Environmental Affairs (DGAAA) and General Directorate of Livestock Development (DGDG) of MIDAGRI, each with directorate and technical representatives; providing technical assistance on the project issues related to climate change, within the framework of its institutional competencies, including those corresponding to the implementation, monitoring, evaluation and reporting of nationally determined contributions (NDC). The Management Committee will issue the corresponding meeting invitation and agenda.

179. When necessary, extended Management Committee meetings can also be held, including the following MIDAGRI's programs, MINAM´s General Directorates, National Institute for Glacier and Mountain Ecosystem Research (INAIGEM), National Service of Meteorology and Hydrology of Peru (SENAMHI). Other public or private entities, women's groups and/or Indigenous Peoples and Local Communities representatives, according to the subject to be addressed at the respective meeting.

Figure *13*. Governance structure



Coordination of the Project Implementation Unit (PIU):

180. The governance structure will also include a Project Implementation Unit. The Coordination of this level will be in charge of GIZ, and its responsibilities will include:

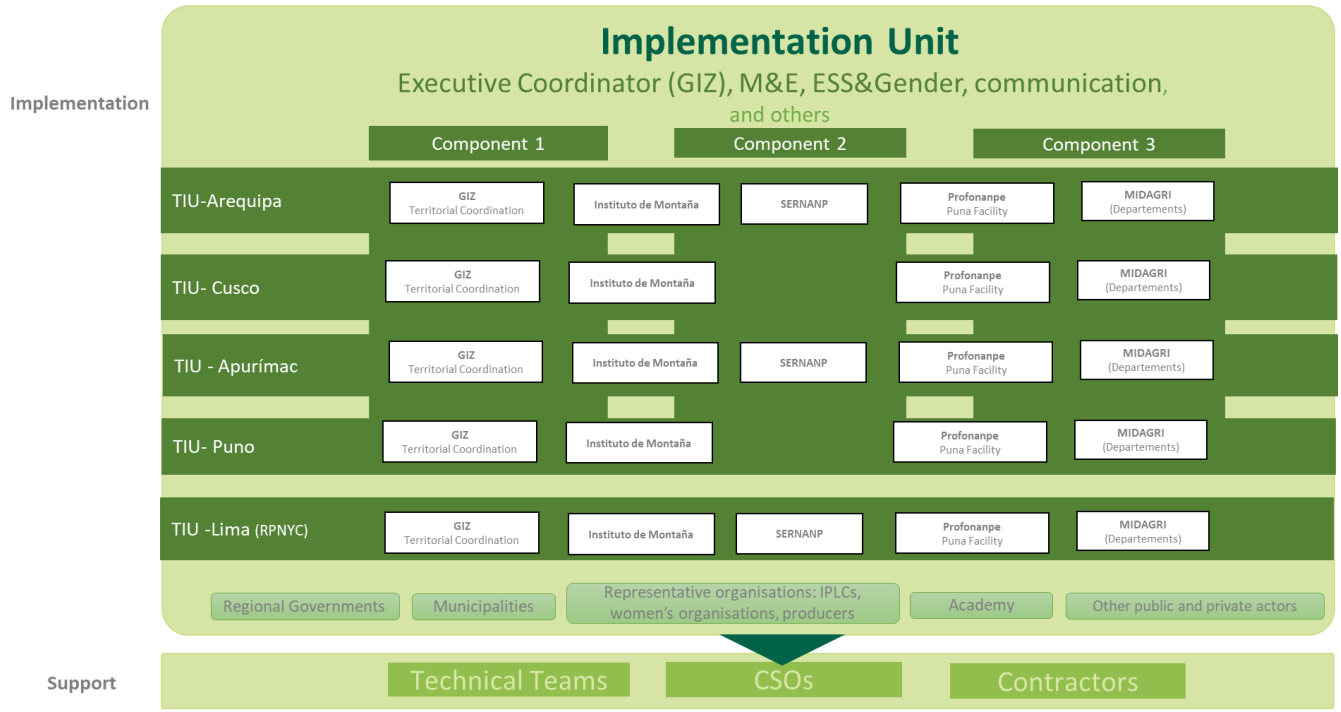
- Ensuring consistency, providing feedback, and validation of learnings made by territorial teams, local communities, organizations and institutions around ecosystem management, conservation and restoration, territorial governance and the coordination of collaborative efforts at institutional and social levels.
- Systematizes knowledge about changes/events occurring in the intervention areas that could be attributable to climate change and the effects they generate in populations and ecosystems.
- Transmits in a timely and appropriate manner PSC orientations regarding to the national and international context and, where appropriate, follows up on their implementation by the territorial teams.
- Executes the recommendations of the PMC and ensures that the recommendations of the Territorial Implementation Units (TIUs) are discussed and addressed.
- Ensures compliance with the Social and Environmental Safeguards and Gender policies (i.e., ESMP, GAP and IPLCEP).

- Promoting a common understanding of the theory of change and mainstreaming it in all project activities by the territorial teams to ensure adaptive project management in order to foster information exchange and synergies among project experts and advisors.
- Guaranteeing the harmonized work with stakeholders in each territory and an adequate identification of the tasks and additional requirements that must be addressed in connection with the project.
- Ensuring the implementation of the project in accordance with the project proposal approved by the GCF.
- Coordinating and integrating the Territorial Annual Operating Plan into the general Annual Operating Planning of the project to be reviewed by the PMC and approved by the PSC.
- Coordinating the M&E system and monitoring the technical and budgetary progress of the project, in accordance with the approved Annual Operating Plan and budget. Including monitoring of a timely implementation in the territory and systematically informs the PMC in this regard.
- Preparation of project reports.
- Overseeing the progress of the indicators in charge of each EEs in the monitoring system and ensures that the implementation progress reports are consistent with the reports to be provided to the GCF.
- Ensuring exchanges among territorial teams to assess the project progress, challenges and lessons learned in each territory.

Territorial Implementation Unit (TIU):

181. For an efficient, coordinated and articulated implementation in the territory, the executing entities will be formed into implementation units in each region of the project area, coordinated by the GIZ. Part of the responsibilities of the TIU will include:
    - Generate knowledge and learning regarding the project implementation, and the engagement with beneficiaries, public-private stakeholders, and other issues related to project implementation.
    - Identify, record, report changes/events occurring in the intervention areas that could be attributable to climate change and the effects they generate in populations and ecosystems.
    - Implement PMC guidance regarding the national and international context in project actions.
    - Follows PSC and PMC guidance.
    - Comply with the Social and Environmental Safeguards and Gender policies (i.e., ESMP, GAP and IPLCEP).
    - Participate in the Regional Agricultural Management Committees (CGRAs) meetings to inform, and coordinate issues of interest for the region and the Project.
    - Participate/promote dialogue/working groups or other coordination bodies, when needed.
    - Promote strategic alliances with local governments, regional governments, private sector, civil society organisations, to generate synergies during project implementation.
    - Coordinate the implementation of project activities in each territory, according to the Project's management instruments.
    - Prepare territorial Annual Operating Plan to feed the project Annual Operating Plan, in accordance with the approved Logical Framework. Report the progress of goals, indicators, bottlenecks, etc. to the PIU Coordinator,
    - Promote the participation of beneficiaries in the different public-private financing mechanisms and identify the needs of actors in the territory linked to the project's themes.
    - Supervise and monitor the implementation of project activities in the territory
    - Identify other local and regional initiatives that may have potential synergies with the interventions planned by the project and inform the PIU Coordination.
    - Identify the potential private sector financing in the territories and report to the PIU Coordination.
182. Part of the members of the Territorial Implementation Unit:
    - GIZ: With regional technical coordinator.
    - MIDAGRI: With regional technical specialists of Agroideas, Sierra Azul, Agrorural, Serfor
    - SERNANP: With regional technical specialists.
    - Profonanpe: With regional technical specialists.
    - Instituto de Montaña: With regional technical specialists.
183. Depending on the specific approaches and developments in the implementation of the project in each of the territories, TIUs may occasionally invite other participants such as representatives of Indigenous Peoples and Local Communities, women's groups, producers' associations cooperatives, civil society organizations, local governments and regional governments to participate in the meetings. At the request of a specific TIU and depending on the fulfilment of the TIU's work plan, the TIU coordinator may authorize the regular inclusion of one or more of these representatives.

Figure *14*. Structure of the Territorial Implementation Unit (TIU)

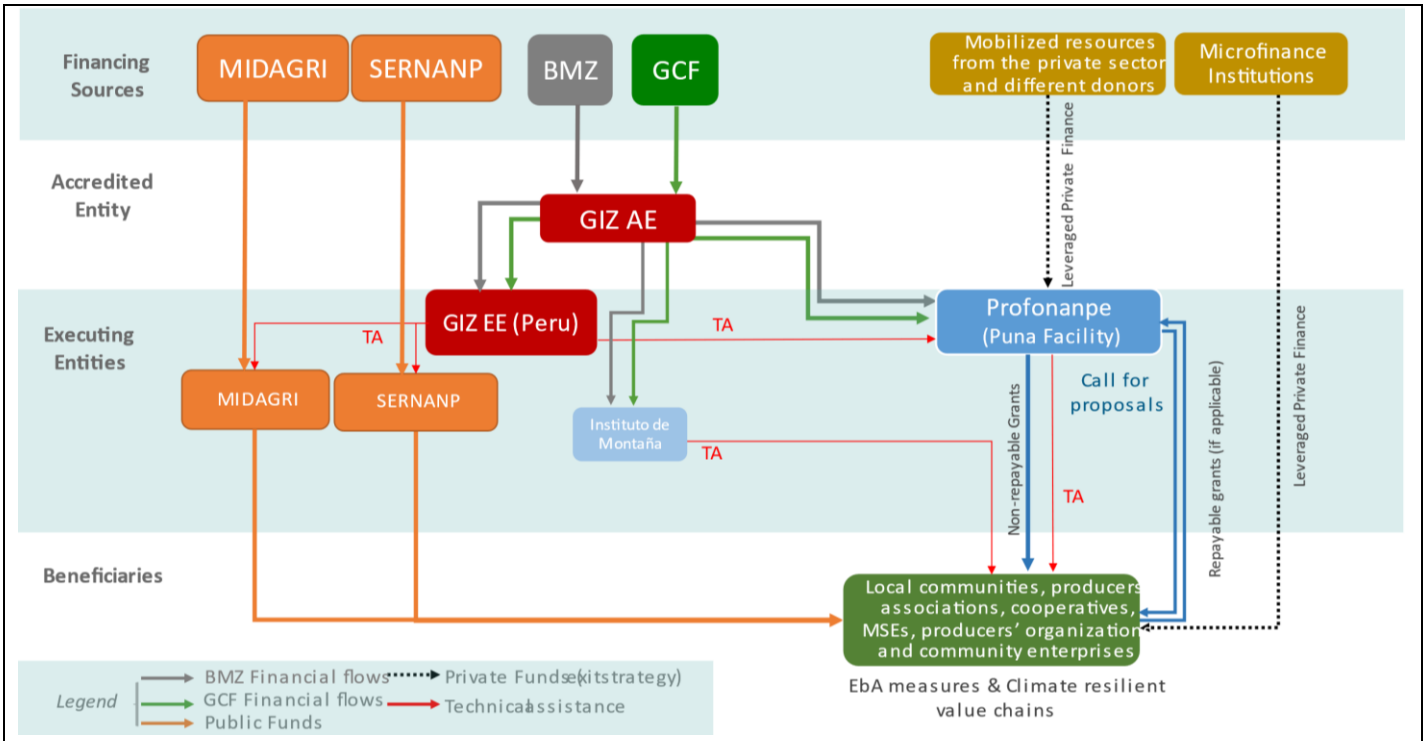


B.4.4 Flow of Funds

184. The following Figure 15 depicts the overall flow of funds for the project. Funds from GCF will be transferred to GIZ as AE, who will then transfer funds through the Puna Facility (manage by Profonanpe (in its role as EE) to the beneficiaries and directly to GIZ Peru and Instituto de Montaña (in their respective role as EEs). The Government of Peru through SERNANP and MIDAGRI will provide co-financing.

185. Additional funds either from Microfinance Institutions (MFIs) (as a result from the provided TA within the activity 2.1.2) in form of loans or mobilized resources in form of grants from the private sector and different donors (as a result of the TA provided to Profonanpe within sub-activity 2.1.1.2) could be leveraged. These funds will either flow directly through the MFIs to the project beneficiaries or through the Puna Facility to continue financing Local initiatives. For the later, initial discussions have already started with the Government of Canada who has expressed their interest in channelling grants through the Puna Facility.

Figure *15*. Flow of funds



B.4.5 Puna Facility Funding Windows

186. As described above, GIZ will make GCF proceeds available to Profonanpe to then channel funds to Indigenous Peoples and Local initiatives in their different form of organization (e.g., local communities, producers' associations, cooperatives (formal and in the process of formalization), Micro and/or Small Enterprises (MSEs)[74], community enterprises and producers' organizations[75]) to finance Local initiatives combining EbA measures and the development of Climate Resilient Value Chains based on predefined eligible EbA measures and CRVC (as shown in table 6 of the Operations Manual (Annex 21). Further detailed procedures are outlined in the Operations Manual (Annex 21).

187. Profonanpe, as described in the Operations Manual (Annex 21), will be responsible for the management (with guidance of the PSC and PMC) and transfer of GCF funds to beneficiaries, including all related financial monitoring and auditing and ensuring compliance with the GCF ESS and Gender requirements. Detailed responsibilities and the role of PSC and PMC are stated under chapter 3 Institutional arrangements and responsibilities for managing the financial mechanism in the Operations Manual.

188. Grant disbursements channelled through the Puna Facility will be through call for proposals (up to three within the project implementation) and will be differentiated by three sub-windows (see

189. Figure 16) based on the recipient of the funds. Mainly:

a. **Non-Repayable Grant Sub-Window** for formal/legal Indigenous Peoples and Local Communities in their different forms of organization (communities, producers' associations and cooperatives[76] in the process of formalization)[77] (from here on IPLCs), applying with the support of local CSOs.
   The Non-repayable Sub-Window is meant to finance a maximum non-repayable grant amount per Local initiative activities (including both EbA and CRVC interventions) of up to EUR 100,000.

b. **Results-based Repayable Grant Sub-Window** for micro and or/ small enterprises community enterprises and cooperatives permitted by law with commercial capacities and clear target markets. Hence:
   - Formal/legal micro and/or small enterprises
   - Formal/legal community enterprises according to the law Nº 24656
   - Formal/legal Cooperatives according to the legislation in force.

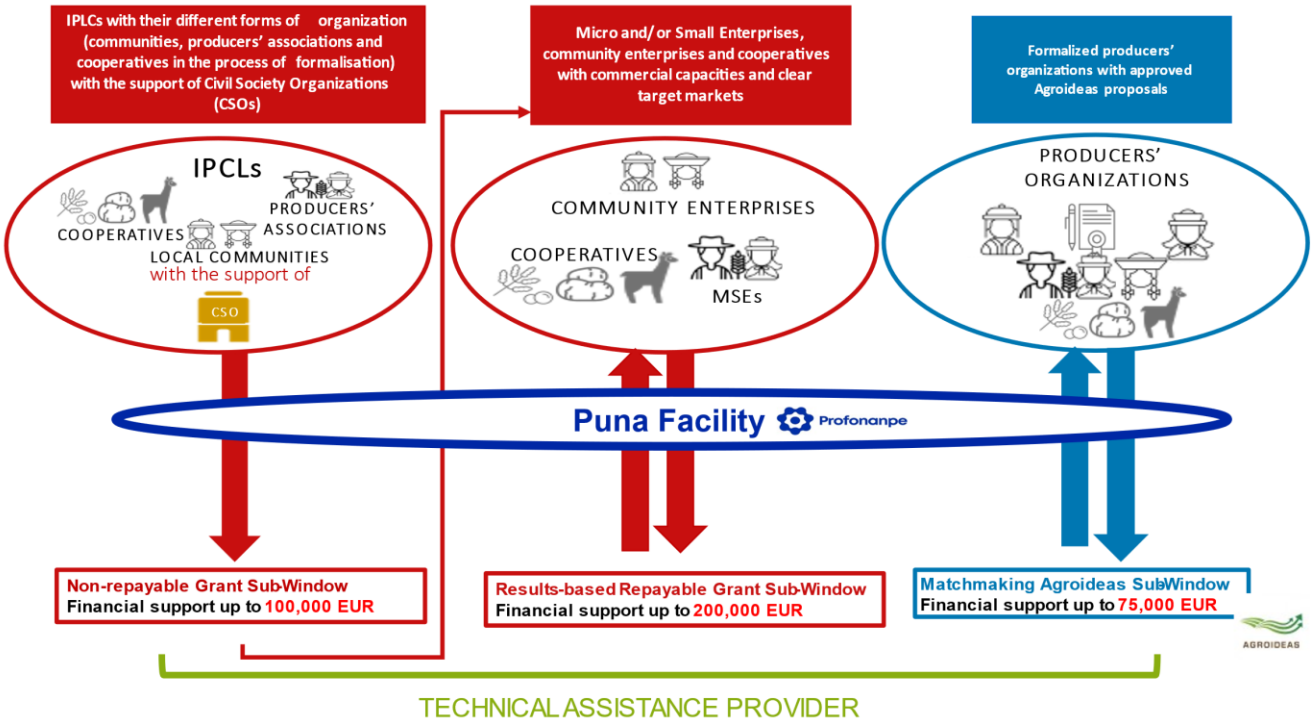
[74] Micro and/or small enterprises are defined according to the Legislative Degree 1086. Micro enterprises have from 1 to 10 employees and annual sales up to 150 taxable tax units (Unidad Impositiva Tributaria), while small enterprises have from 1 to 100 employees and annual sales up to 1700 taxable tax units (Unidad Impositiva Tributaria).
[75] Small and/or medium agricultural producers under any organizational form permitted by law: associations, native communities, peasant communities, limited liability companies, public limited companies, cooperatives and other forms allowed by law. The definitions of small and medium agricultural producers as well as the forms of organizations are defined by the Agroideas eligibility criteria that can be accessed here.
[76] Cooperatives working on the topics related to the project.
[77] The Law No. 31335, law on the improvement of the association of agricultural producers in agricultural cooperatives was recently regulated on July 21, 2023. From this regulation some associations will migrate to cooperatives, regime in which they will be able to commercialize and have net benefits in an associative way, with which in the future they will be able to demonstrate the generation of income, but the process will involve some requirements that may not allow them to apply to sub-window 2 in the first call.

The Results-based Repayable Sub-Window is meant to finance a maximum repayable grant amount per Local initiative activities (including both EbA and CRVC interventions) of up to EUR 200,000.

c. **Agroideas Matchmaking Sub-Window** for formalized producers' organizations with commercial capacities and clear target markets, that are eligible for the MIDAGRI support programme Agroideas. Hence:
   - Small and/or medium agricultural producers organized under any organizational form permitted by law: associations, native communities, peasant communities, limited liability companies, public limited companies, cooperatives and other forms allowed by law.

   The Agroideas Matchmaking Sub-Window is meant to finance a maximum results-based repayable grant amount per Local initiative activities (including only EbA measures) of up to EUR 75,000.

Figure 16. Operation of the Puna Facility: Sub-Windows



190. The principle underlying the differentiation between the different sub-windows is related to the segmentation of the potential beneficiaries which are reflected in the differences between their a) current internal organizational and commercial capacities and b) the level of barriers they face (please see section B.2a.2. for more information). In this regard the Non-Repayable Grant Sub-Window is meant to benefit local communities, producers' associations and cooperatives in the process of formalization without commercial capacities and clear target markets and the Results-based Repayable Grant Sub-Window is meant to benefit Micro and/or Small Enterprises, community enterprises and cooperatives with commercial capacities and clear target markets. Moreover, the Agroideas Matchmaking Sub-Window (also for Results-based repayable grants) – in line with the guidelines of the Agroideas programme – is meant to benefit formalized producers' organizations with commercial capacities and clear target markets conforming to the rules and regulations of the Agroideas programme.

191. Reflecting the fact that Non-repayable Grant Sub-Window beneficiaries lack the required level of preparedness and ability to submit and implement Local initiative proposals on their own, applicants of the Non-repayable Grant Sub-Window will partner with qualified local CSOs to submit and implement approved Local initiatives (while ensuring that beneficiaries are proactively involved in the process and their capacity is built). **¡Error! No se encuentra el origen de la referencia.** in the Operations Manual (Annex 21)**¡Error! No se encuentra el origen de la referencia.** lists the eligible recipients for the three Sub-Windows in more detail.

192. Up to 100% grant repayments (if applicable for Sub-Window 2 and 3) will be based on specific performance triggers established case-by-case and agreed including but not limited to:
   i. Percentage or absolute increase in revenues compared to the revenues in the year before application to the Puna Facility, or the average revenues over a certain number of years before application;
   ii. Percentage or absolute increase in profits over the same reference period;
   iii. Percentage or absolute increase in cash flows or cash balances over the same reference period;

iv. Increase in business volumes, such as volumes of crop sold, alpaca fiber sold, alpaca heads in herd or similar indicators;
v. Other initiative-specific triggers, such as winning a large sale contract or gaining a new large client (e.g., commitment by alpaca fiber processor to buy large volumes).

193. Upon achieving the performance trigger, grant repayment will follow a specific repayment schedule tailored to each Local initiatives to address the particularities of the EbA and CRVC interventions. The Puna Facility will aim to achieve full repayment within five years from the last grant tranche disbursement, however it is possible that repayment could take longer for certain local initiatives, depending on the timing of the trigger achievement and cashflow profile of the initiative. More information on the repayment conditions can be found in the Operations Manual chapter 6 and 7. Grants repaid will flow back to the Puna Facility. More information on the use of repaid grants and sustainability of the Puna Facility can be found in section B.6.1.

194. The Financial Window aims to support up to 127 local initiatives over 5.5 years for a total disbursed grant amount of up to EUR 14.4 million. The preliminary breakdown[78] of the funds between the sub-windows will be as indicated in the table below.

Table 6. Preliminary Grant Breakdown per Sub-Window

Sub-Window	Funding instrument	Cost per project in EUR up to	Estimated # of Local initiative	Estimated Grants in EUR per Sub-Window up to	Funding source
1. Non-repayable Grant	Non-repayable grants	100,000	75	7,500,000	GCF and BMZ
2. Results-based Repayable Grant	Results-based repayable grants	200,000	24	4,800,000	GCF and BMZ
3. Matchmaking Agroideas	Results-based repayable grants	75,000	28	2,100,000	GCF and BMZ
Total			**127**	**14,400,000**	**GCF and BMZ**

195. In parallel to financial support, the Puna Facility will offer Technical Assistance (TA) through a service provider hired by Profonanpe and in the case of the Non-repayable Grant Sub-Window optionally in conjunction with the CSO supporting the applicant. The TA packages will be differentiated between:
a. TA for the refinement of the local initiative proposals, (please see Step 5 in Section 3.3. of the Operations Manual (Annex 21) provided by the TA provider and
b. TA for the implementation of the local initiatives (please see Step 10 in Section 3.3.) provided by the TA provider and optionally in conjunction with the CSO in the case of the Non-repayable Grant Sub-Window

196. The total amount of TA that will be provided to the beneficiary by either the TA service provider or (in applicable) the CSOs will be of up to EUR 3.17 million.

B.4.6 Regulation, taxation and insurance

Privileges, immunities and taxation

197. The Federal Republic of Germany has concluded Framework Agreements on Technical Cooperation under international public law with the Government of Peru (dated 25th February 1998), which provide for certain privileges and immunities to be applied in projects and programmes of technical cooperation, including exemptions for taxes, customs, duties and fees. GIZ will endeavour to reach arrangements to have these privileges and immunities also applied to the Project, including GCF proceeds. However, formal agreements will only be entered into after the project has been approved.

Approvals, permits, licenses and land

198. At the time of submitting this Funding Proposal, GIZ is not aware of the project requiring specific approvals, permits, licenses or land to allow for the implementation of planned activities.

Currency

[78] The distribution of the grants per sub-window could change during project implementation based on the development and lessons learned from the first and second call cycle.

199. The local currency in Peru is the Peruvian Sol (code: PEN). The project's local transactions will use PEN. The AE will manage GCF proceeds in Euro. GIZ will apply its standard rates for the conversion of currency.

Insurance

200. GIZ, as the AE, will ensure that project activities are adequately insured as per GIZ standard operating procedures and common practices. GIZ standard operating procedures require contractors to ensure required insurance cover. GIZ policies provide insurance cover for GIZ staff. At the time of submitting the Funding Proposal, GIZ does not anticipate additional insurance to cover special risks in this project.

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

B.5.1. Grant justification – Concessionality

201. While the government has increased its focus on climate finance, efforts to channel budgetary or other public resources to climate resilience in the high puna are still limited and scattered. The government's annual spending on climate change has been below USD 300 million for the past decade. For comparison, public investment on infrastructure has averaged USD 5.4 billion over the past five years and total public investment USD10.6 billion.[79] The World Bank estimates at USD 45 billion Peru's investments needs in climate change mitigation and adaptation to 2030, with the biggest priorities identified in the transport, water and energy sectors. The government has increased public spending aimed at managing natural resources sustainably, from 1.9% of the total national budget in 2008 to 5.4% in 2018 (IDB, 2020). However, national resources remain insufficient due to the global environmental and climate crises, as shown in national environmental performance indicators (ranked from 0 to 1, where 1 signifies the highest possible score), for example the agriculture sector scores 0.3 with a regional average in LAC of 0.45, on the other hand the forest sector scores 0.26 with a regional average in LAC of 0.57 (IDB, 2020).

202. The required investment for climate adaptation needs cannot be met with the national budget alone. With the economy expected to slow down, inflation risk, relatively high unemployment, public debt on the rise and persistent political instability, it will be difficult for the government to rise to the climate investment challenge. In this context, the government is making a substantial effort to co-finance the proposed GCF project, matching the GCF contribution almost dollar for dollar (~1:1 co-finance ratio). GCF resources are crucial to achieve innovative coordination between private and public actors to scale the impact of interventions at the ecosystem and local community levels. The resources will also allow overcoming barriers to accelerate the implementation of existing but underdeveloped financial instruments (i.e., MERESE) and will generate capacities in rural population to access available financing (public and private). The proposed financial and technical support mechanisms, including business development, microfinancing and increased participation in specific Climate Resilient Value Chains (CRVC) will improve production systems and make them more resilient.

203. Available resources from the international community are also limited. Peru received USD 923 million in climate-focused official development assistance (ODA) in 2021, the majority in mitigation. Of this, only USD 13 million was ear-marked by the OECD to the agriculture (excluding forestry) and livestock sub-sectors.[80] It is possible that other ODA was channelled to these sectors via financial institutions and ear-marked as ODA to the financial sector. Still, agriculture and livestock draw a small minority of climate ODA to Peru. In the high puna, ODA directed at the project's target beneficiaries has been extremely limited.

204. Private sector financing of CRVC in the puna has been almost absent to date (see section 7.2 in the Feasibility Study (Annex 2a)). Universal and municipal banks in Peru focus primarily on large enterprises and/or urban borrowers. MFIs focus on MSME lending but only one (Confianza) has a meaningful presence in the target areas, as do a few small rural banks. Lending to CRVC is constrained by several barriers: (i) the inherent high risk of agricultural and livestock activities, exacerbated by climate change; (ii) logistical difficulties in reaching borrowers in the high puna (long distances and remote locations); (iii) limited financial literacy of prospective borrowers; (iv) limited understanding – by both borrowers and lenders – of the climate change impact on high puna economic activities, and how EbA and CRVC can mitigate such impact and improve creditworthiness; and (v) prevalence of informal businesses with limited collateral. As a result of these barriers, loan supply to the target beneficiaries is extremely limited and loan terms are inadequate to EbA measures and CRVC (short maturities, very high interest rates, inflexible repayment schedules). For example, capex loans offered by MFI Confianza have a maximum maturity of 3 years only and interest rates in the 60-70% range. One state-backed financial institution, Agrobanco, offers at least on paper concessional loans (with "low" rates of 20-30%) to the project's target beneficiaries, but in practice the organization is severely undercapitalized and operationally dysfunctional.

205. A significant portion of the GCF grant (EUR 21.6 million) is for technical assistance and capacity building activities that do not lead directly to financial reflows for beneficiaries. The use of grants for these activities is justifiable on a public-good basis. The remaining EUR 19.217 million portion of the GCF grant is to fund the establishment and operation of the Puna Facility, which will disburse repayable and non-repayable grants to revenue generating Local initiatives. A detailed financial analysis has been conducted (see Annex 3) to determine the financial IRR of Local initiatives in the three windows of the Facility, with and without GCF grants. The analysis is based on prototype Local initiatives in the alpaca and native potatoes sectors representative of the majority of

[79] World Bank (November 2022). *Peru: Country Climate and Development Report*.
[80] OECD climate ODA data, 2021.

Local initiatives to be funded by the Facility. Detailed assumptions were developed both for business-as-usual scenarios (not incorporating EbA and CRVC practices) and climate-resilient scenarios where beneficiaries invest in and implement the recommended mix of EbA measures and CRVC practices. The transition from business-as-usual to EbA/CRVC generates positive FIRRs without grants in all prototype's Local initiatives, ranging from 8.4% (for alpaca breeding in the Non-repayable Grant Sub-Window) to 25.8% (native potatoes in the Results-based Repayable Grant Sub-Window). Still, grants are considered essential for the widespread adoption of EbA/CRVC among target beneficiaries, for the following reasons:

i) In the **Non-repayable Grant Sub-Window**, (i) the beneficiaries live in poverty to the extent of often abandoning the high puna and moving to urban areas in search of jobs (see section D.4.2). (ii) They have virtually no savings, and certainly not to the tune of the EUR 125,000 and EUR 139,000 per beneficiary group required to implement the transition to EbA/CRVC (in native potatoes and alpacas, respectively). (iii) Beneficiaries have limited financial literacy and almost no access to finance; when finance is available, it is offered by micro-finance institutions at prohibitive rates and for short maturities that are unsuitable to the timeline of CR transition (the payback period for the EUR 125,000 investment is approximately 8 years). (iv) Beneficiaries do not have the knowledge to implement EbA measures nor the financial resources to pay for technical services provided by private experts in order to gain that knowledge. GCF non-repayable grants not only cover a significant portion (80%) of the EBA/CRVC investment but fund the technical assistance necessary to correctly implement the measures and put EBA/CRVC-adopting businesses on a sustainable path of cash generation, building their future bankability.

ii) In the **Results-based Repayable Grant Sub-Window**, (i) beneficiaries have limited savings, but certainly not to the tune of the EUR 257,000 and EUR 283,000 per farmer group required to implement the transition to EbA/CRVC. (ii) They have limited financial literacy and almost no access to finance; when finance is available, it is offered by micro-finance institutions at prohibitive rates and for short maturities that are unsuitable to the timeline of transition. (iii) Beneficiaries do not have the knowledge to implement EbA and have limited financial resources to pay for technical services provided by private experts in order to gain that knowledge. Considering the attractiveness of the business model over the long term, however, non-repayable grants would be too concessional. To minimize concessionality, a repayable grant is therefore introduced, with the benefits that (a) beneficiaries start building a track record in managing repayments that enhances their future bankability with MFIs and other financial institutions, (b) repayment terms are negotiated at Local initiative approval to suit the Local initiative's cashflow profile (unlike MFIs' rigid repayment schedules), (c) there is no interest charge (unlike the MFIs' prohibitive rates) and (d) repaid amounts flow back into the Facility, which will use it to support additional future Local initiatives. In addition to the repayable grant, beneficiaries also receive technical assistance. The combination of financial and technical assistance will put them on a path to full commercial bankability.

iii) In the **Agroideas Matchmaking Sub-Window**, for which only existing formal businesses qualify, a very significant investment is required, to the tune of EUR 245,000 in our prototype Local initiative. While the applicants are formalized and may have some access to finance, it is not for this sort of amounts and would carry the prohibitive conditions imposed by MFIs. To alleviate the funding gap, the government's Agroideas program will provide non-repayable grants covering 80% of the value chain portion of the investment (e.g., construction of greenhouses, cultivated pastures and alpaca shearing equipment). The GCF grant will be repayable and therefore less concessional. It will cover 80% of the EbA portion of the investment, will carry no interest and will have repayment schedules tailored to the individual Local initiatives. Financial and technical assistance provided by Agroideas and GCF will put these businesses on a solid footing, increase their creditworthiness and likelihood of sourcing affordable commercial loans in the future.

206. The project strongly contributes to the GCF identified sectoral paradigm shift enablers. The government of Peru sees GCF financing in the form of grants as essential to achieve changes in the geographical and temporal scale required to face the challenges of accelerated change in climate and the loss of ecosystems and their climate services. In this regard, GCF funding is required to contribute to the GCF sectoral paradigm shift enablers.

207. At the project level, in the business-as-usual scenario, MIDAGRI will contribute with EUR 28.67 million that it has pledged in co-financing, focusing on the short-term productivity aspects, neglecting the value of the ecosystem services as a long- term solution for the high Andean communities and for other beneficiaries of puna ecosystem services. It would focus on isolated investments and activities financed from different programs (Agrorural, Agroideas or Sierra Azul) without looking for synergies and impact programs. Participation of local communities on the decision-making process would be limited and CSOs that have gained the trust and engagement of communities from experience working with them would not be involved. The MERESE (payment for ecosystem service) scheme would continue being innovative on paper but non-functional on the ground and little investment would reach target communities. Other climate-relevant puna ecosystem services such as carbon sequestration would not be considered nor valued. GCF financing would fill an important gap in climate finance for the most vulnerable populations in Peru and promote a sector transformation towards conservation of Puna ecosystems and corresponding services.

B.6. Exit strategy (max. 500 words, approximately 1 page)

B.6.1. Replicability

208. **The proposed interventions are already replicating successful experiences**, such as i) the incorporation of ancestral EbA practices and experience on local implementation in the high Andes from Nor Yauyos Cochas[81]; Agrorural and Sierra Azul, Helvetas and Forest Trends; ii) the strategy developed by IFAD, GEF projects and Agroideas on business development with focus on specific value chains (South American camelid fiber and Andean agricultural products) in an economically-linked area (SHAP); and iii) experience by Profonanpe in managing environmental and climate funds (including GCF funds) and engaging with private stakeholders for PES schemes. This ensures ownership from the national EEs MIDAGRI, SERNANP and Profonanpe.

209. The model for replication is completed by i) focused intervention on priority landscapes/watersheds where information, lessons learnt and best practices will be obtained, ii) support via financial windows accompanied by technical assistance, iii) increased investment from private sources and iv) improved planning and coordination at landscape level considering communities participation. v) capacity building and experience exchanges among beneficiaries for increasing the application and replication vi) produce communication materials in native languages to capture lessons learned and promote replication of successful experiences. This approach can then be transferred to other high priority areas with similar Puna ecosystems and climate vulnerability conditions (e.g., Junin, Huancavelica, Ayacucho) at lower costs.

210. In addition, the project will serve as an example of a successful initiative aimed at promoting and facilitating the adoption of EbA measures and Climate Resilient Value Chains . By enhancing governance mechanisms at multiple levels within the landscape and fostering stakeholder engagement in the project's focus area, it will foster the ability to encourage replication and knowledge exchange for comparable endeavours not only within Peru but also across similar ecosystems in the broader regional context.

B.6.1. Sustainability

211. Improved ecosystem services, climate resilient livelihoods and increased access to public and private finance will ensure that target populations in the SHAP develop rural Climate Resilient Value Chains (CRVC) and local economies. The resources that will be requested from the GCF will enable expected results. The results will ensure the sustainability of the proposed interventions by creating an enabling environment in policy, technical and financial terms.

212. **The exit strategy is embedded into the project design**. The project, through its various components, will support both the financial sustainability (component 2), and **behavioural changes** (component 1 and 3).

213. **Financial sustainability** will be ensured **at the Local initiative level** through the following:

i. Crucially, all Local initiatives financed by the Puna Facility will be profitable in the long-term and generating positive financial IRRs without grants. In the Local initiatives prototype analysed in Annex 3, these IRRs range from ranging from 8.4% (for alpaca breeding in the subsistence window) to 25.8% (native potatoes in the Results-based Repayable Grant Sub-Window). While grants are needed during the Puna Facility implementation for the reasons described in section B.5, once beneficiaries have implemented EbA measures and CRVC they will continue to do because it makes financial sense to them and significantly increases their incomes.

ii. In addition, the initial investments required for EBA measures and CRVC will not need to be repeated in their entirety in the future. EbA measures, once implemented, only need regular and relatively low maintenance costs. Equipment for CRVC, on the other hand, has a limited useful life (e.g., 10 years for greenhouses) and will need to be replaced in the future, but it represents a minority of the overall EbA and CRVC investment. Enhanced creditworthiness of the beneficiaries and access to finance (see below) will be such that beneficiaries no longer need grants at the time of capex replacement but will be able to use commercial sources of finance, as well as accumulated savings resulting from profitable EbA and CRVC initiatives.

iii. Local initiative applicants will be inherently more creditworthy and therefore bankable after the successful implementation of EbA measures and CRVC, not only because they are on a sounder financial footing, but also because their businesses will be formalized (including proper accounting and tax compliance) and the businesses that benefited from repayable grants under the applicable windows will have a track record of compliance with financial obligations, which financial institutions will view positively.

iv. The technical assistance provided by the Puna Facility, in addition to the financial incentives, will be critical in this respect. All selected Local initiatives, including beneficiaries without commercial capacities and target markets (i.e. eligible under the Non-repayable Grant Sub-Window), will receive comprehensive technical assistance on access to finance, in areas including: developing a fund-raising strategy; analysis of the positive financial implications of EbA and climate resilient business investments to reduce the perceived risk for prospective lenders; preparation of a pitch deck to present business to prospective lenders; introduction to MFIs active in the region; explanation of the terms of any loan products offered by MFIs and support with loan applications; and, basic financial literacy training including the importance of repayment to create a strong credit track record.

[81] Implemented by the Instituto de Montaña, IUCN, UNDP and UNEP in partnership with SERNANP.

v. The project will also work on the capital supply side to enhance the ability of MFIs (e.g., Caja rural los Andes, Caja Cuzco, Microfinance BBVA Foundation-Confianza) to increase the supply of microfinance products and services to finance integrated EbA and CRVC initiatives and among others better serve the beneficiaries of the Puna Facility, through technical assistance in the following areas: (i) introduction to concrete and tailor-made business models based on information generated and analysed from Local initiatives implemented during the project duration; (ii) support the modification or design of existing microcredits or tailored EbA and CRVC loan products; (iii) modification of management tools (including digital tools, guidelines and protocols) to integrate EbA approach; (iv) training of credit officers on each EbA and CRVC measure with particular focus on the costs required and their impact on beneficiary communities' cashflows over a 10-year period or longer; (v) training of credit officers on marketing and explaining the terms of the greener microcredits to prospective borrowers; (vi) training of credit officers on how the adoption of EbA and sustainable business practices alters the credit profile of individuals or associations, by generating an additional and more climate-resilient income stream, and interactive credit assessment exercises. The MFIs have expressed their interest in leveraging private finance by either adapting existing microcredits or developing new microcredits for the financing of EbA measures and/or CRVC. Options on how this interest will be formalized (e.g., signing of MoUs) will be assessed individually with the respective MFI.

214. **Financial sustainability** will be ensured **at the Puna Facility level** through the following:

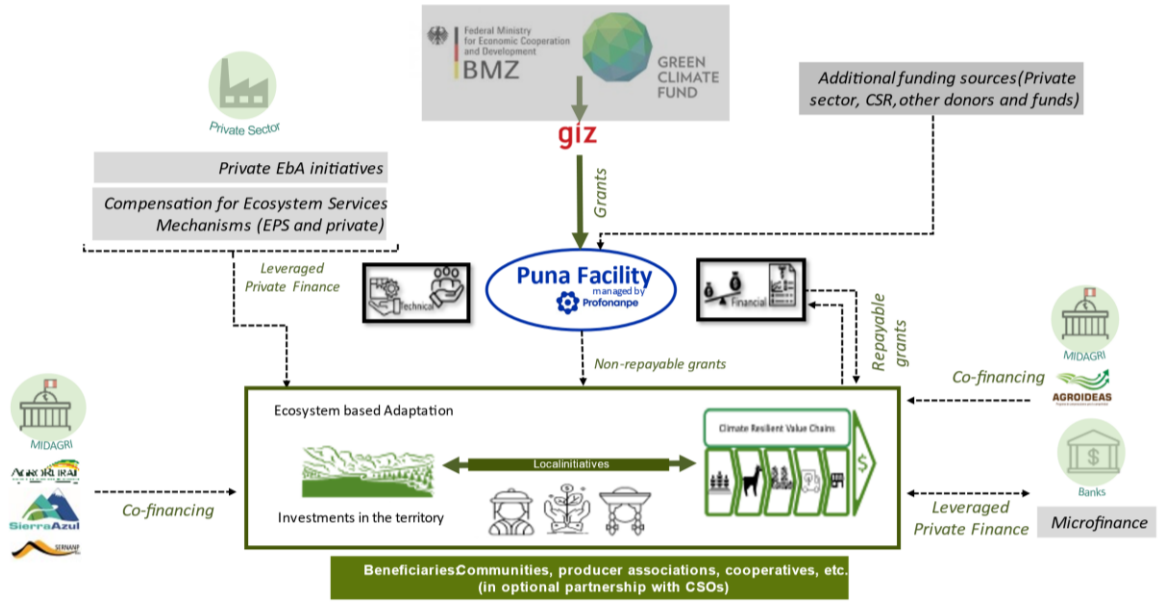
vi. Grants repaid from the Results-based Repayable Grant and Matchmaking Agroideas Sub-Windows will flow back into the Puna Facility most likely towards the end of the GCF project implementation and/or after project completion and will support further cycles of calls for proposals for the Non-repayable Grant Sub-Window[82], after the completion of the Resilient Puna project. Each Results-based Repayable Grant Local initiative Agreement will require full 100% repayment and beneficiaries will be expected to comply with that full repayment. Conservatively, for the purpose of estimating reflows into the Facility, it is assumed that 50% of the overall repayable grant amount disbursed under the two sub-windows (i.e., Agroideas Matchmaking Sub-Window and Results-based Repayable Grant Sub-Window) will be actually repaid. Such repayment ratio could be the result of some Local Initiatives repaying the whole amount, some not repaying at all and some repaying in part – the exact combination is impossible to forecast at this stage. With the prototype Local initiative portfolio assumed in Annex 3, this would lead to a total of EUR 3.4 million being repaid. Considering the call-for-proposal and Local initiative implementation timing, most repayments are likely to occur towards the end of the GCF project period or later. In Annex 3, it is assumed that the Facility would "recycle" the repaid amount once these are paid back to support another 24 Local Initiatives substantially increasing its reach after the GCF project period.

vii. Profonanpe has also expressed their commitment in contributing to the Puna Facility after project ends with EUR 1 million which are foreseen to cover operative staff costs.

viii. In addition, Profonanpe intends to attract additional resources from donors and the private sector to capitalize the Puna Facility after and in addition to the GCF grant, through sub-activity 2.1.1.2. Profonanpe, as a national institution deeply involved in the project's design phase and accredited as a Direct Access Entity to the GCF, will oversee the operations of the Puna Facility, drawing upon its extensive experience in managing environmental funds. Evidence of success in attracting applicants through calls for proposals and supporting the implementation of EbA and CRVC Local initiatives under the GCF project will facilitate Profonanpe's raising of additional donor funds for the Puna Facility.

Figure 17. Sustainability approach of the Puna Facility

[82] The feasibility of including results-based repayable grants in the subsequent cycles will be evaluated by Profonanpe taking into consideration the performance during the project implementation.



215. **Behavioural changes** (component 1 and 3) will facilitate the medium- and long-term sustainability. Project beneficiaries will be trained on implementation and maintenance of EbA interventions so they can continue providing benefits long after the project has ended. They will also be trained on improved production practices and Climate Resilient Value Chains (CRVC) to increase self-dependence and overall climate resilience. This will in turn conserve puna ecosystem services in the long term. Related to planning processes and institutions, the project aims at mainstreaming EbA and strengthening coordination capacity within MIDAGRI and between other sector and stakeholders in governance platforms that will continue operating and will then integrate climate change and enhanced coordination without additional cost.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount		Currency	
	40.79		million euro (€)	
GCF financial instrument	**Amount**	**Tenor**	**Grace period**	**Pricing**
(i) Senior loans				
(ii) Subordinated loans				
(iii) Equity				
(iv) Guarantees				
(v) Reimbursable grants				
(vi) Grants	40.79			
(vii) Results-based payments				

(b) Co-financing information	Total amount			Currency		
	37.53			million euro (€)		
Name of institution	**Financial instrument**	**Amount**	**Currency**	**Tenor & grace**	**Pricing**	**Seniority**
BMZ (implemented through GIZ)	Grant	7.91	million euro (€)			
MIDAGRI	Grant/In kind and loans[83]	28.67	million euro (€)			
SERNANP	In kind	0.95	million euro (€)			

(c) Total financing (c) = (a)+(b)	Amount	Currency
	78.32	million euro (€)

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)

Project Co-finance[84]:
The following provides an overview of the co-financiers for the proposed project:
MIDAGRI will contribute with EUR 28.67 million through **grants** (EUR 2,411,938), **in kind** (EUR 16,877,658) and **loans** (EUR 9,385,386) and **SERNANP** through **in-kind** contributions with EUR 0.95 million to the implementation of the project.

Key government inputs from MIDAGRI will be through a) Public investments projects[85] (implemented by AGRORURAL, Sierra Azul, PSI, INIA and SERFOR), b) operational activities (implemented by programmes such as Agroideas) and c) other budget provisions, comprising individual credit lines to producer organisations (such as Directorate of Insurance and Promotion of Agricultural Financing (DSFFA)).
Key inputs from SERNANP will be **in-kind** in the form of staff time contributions in order to coordinate project interventions in National Protected Areas.

[83] Please note that this refers to the DSFAA of MIDAGRI.
[84] Co-financing commitment letters are provided in Annex 13, which includes Annex 13a Co-financing letter from MIDAGRI, Annex 13b Co-financing letter from BMZ and Annex 13c Co-financing letter from SERNANP (Carta N°30-2023-MIDAGRI-DVDAFIR and Letter N°091-2023-SERNANP-J).
[85] Please note that Sierra Azul, INIA and SERFOR contribu8tions are investments and activities.

	BMZ financing: The total BMZ financing for the project amounts **in grant** to EUR 7.91 million. EUR 6.26 million will be implemented through GIZ as an Executing Entity in Peru. GIZ (Executing Entity) will finance the implementation of activity 1.1.1, 1.1.2, 1.1.3, 1.2.1, 1.2.2, 2.1.1, 3.1.1, 3.1.2; EUR 1.5 million will be forwarded to Profonanpe for the Puna Facility and EUR 150.000 to Instituto de Montaña. **Other financing (e.g., leveraged private finance):** The project will mobilize approx. EUR 6 million from international donors. Through sub-activity 2.1.1.2 the project will support in developing and implementing of an innovative strategy to mobilize resources from the private sector and different donors to support Profonanpe in ensuring the sustainability of the Puna Facility. In this regard, the **Government of Canada** has already expressed their interest in contributing to the project with approx. EUR 6 million. Of particular relevance, they expressed their interest in financing gender and monitoring related activities and in contributing to the Puna Facility in order to continue financing Local initiatives.

C.2. Financing by component

Component	Output	Indicative cost million euro (€)	GCF financing		Co-financing		
			Amount Options	Financial Instrument	Amount[86] Options	Financial Instrument	Name of Institutions
1. Resilient ecosystems and communities	1.1 Investments for EbA measures and Climate Resilient Value Chains are implemented at the local landscape level	52.68	21.65	Grants	31.03	Grants/In kind and loans[87]	BMZ MIDAGRI
	1.2 The use of EbA knowledge is recovered and disseminated, and local monitoring committees and observation systems are implemented	6.27	4.77	Grants	1.50	Grants/In kind	BMZ SERNANP
2. Public and private investment for EbA aligned and leveraged	2.1 Financial mechanisms for the implementation of EbA measures and improvement of climate resilient	7.17	6.05	Grants	1.12	Grants	BMZ

[86] Please note that the calculations of the contribution of the Government of Peru (MIDAGRI and SERNANP) where done in Soles and were converted to Euros using the SBS exchange rate dated April 2023 namely EUR 1= 4.1 Sol.
[87] Please note that this refers to the Irrigation Subsector Program of MIDAGRI

	livelihoods in the Puna ecosystem are established						
3. Institutional capacity strengthened to integrate EbA into territorial planning	3.1 Multilevel landscape governance is improved through strengthening of national capacity, regulatory frameworks and M&E systems	5.57	3.93	Grants	1.64	Grants	BMZ SERNANP
(b) M&E		2.00	1.64		0.36		
(c) Contingencies		800,000	800,000		0		
(d) PMC		3.81	1.93		1. 88		
Indicative total cost (USD)[88]		85.26	44.40		40.86		

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes ☒ No ☐
C.3.2. Does GCF funding finance technology development/transfer?	Yes ☒ No ☐

216. In collaboration with the local communities, MSEs, community enterprises, cooperatives, producers' associations, producers' organizations and local CSOs implementing Local initiatives, Instituto the Montaña[89], will enhance the capabilities of stakeholders, promote the alignment of approaches, and facilitate the formation of community monitoring committees. The project will empower these committees by providing training, facilitating dialogue, and employing other capacity-building methods. This will enable the exchange of knowledge and collaborative efforts to better comprehend the connections between traditional practices, Ecosystem-based Adaptation (EbA), and climate resilience.

217. Income-generating alternatives will result from Climate Resilient Value Chains, where technological packages for climate resilience, increased productivity and market development (e.g., qochas, grassland conservation and restoration, infiltration ditches, organic fertilizer production, livestock management, alpaca fiber production, and agroecological products) will also be financed.

[88] Please note that the used exchange rate is based on the European Commission's official monthly accounting rates for the euro (Exchange rate (InforEuro) (europa.eu)) for the month of September 2023 namely 1 EUR = 1.0886 USD.
[89] See role in section B 2.4 below

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential (max. 500 words, approximately 1 page)

D.1.1 Impact Potential - Adaptation

218. **Contribution to increased climate-resilient sustainable development: The project has an integrated vision of promoting EbA** at landscape level through: i) On-the-ground activities in Component 1 that will ensure the long-term provision of essential puna ecosystem services, such as water provision and regulation for upstream, middle stream, and downstream communities, fodder production for South American camelid husbandry and soil formation and retention for agricultural practices despite increased risks of drought and reduced water availability due to climate change; ii) the establishment of a financial facility with technical assistance in Component 2 complementing the funding from and increase the access to existing public MIDAGRI programs executed under Component 1, while providing a framework for scaling up the deployment of EbA interventions also after the project has ended (exit strategy); and iii) Integration of EbA into territorial planning and consensus-building processes through participatory dialogue platforms adjusted to local customs and gender needs that will promote the coordination of on-the-ground activities of the different stakeholders intervening in various ecological floors of the watershed and benefiting a range of interest groups (regional governments, municipalities, local communities, producers' associations, cooperatives, MSEs, community enterprises and producers' organizations).

219. In addition, the hydrological modelling carried out for this proposal (see Annex 2g) allowed estimating the potential impacts of this project resulting from the implementation of EbA interventions. In general, the analysis concludes that the EbA interventions results in improving the water availability in the district areas, for agriculture and livestock as well as for the ecosystems that extract water from the surface layers of the soil (more details on the results can be found in Annex 2g).

D.1.2 Ecosystems improved

220. The project is estimated to conserve and restore 23,914 hectares of Puna ecosystems that High Andean livelihoods depend upon. The project will promote direct interventions to maximize the landscape and ecosystem connectivity within and between watersheds to ensure the highest impact in terms of recovery of ecosystem services as an adaptation and mitigation strategy. The local impact will be monitored by community committees and at the national scale via a long-term monitoring and evaluation framework, as part of the support provided to strengthen intra- and intersectoral collaboration among MIDAGRI and MINAM programs and their contribution to the NDCs and other climate-related strategies. Both local and national results will be integrated into existing monitoring systems in the ministries which are being hosted by MIDAGRI's programs and SERNANP.

D.1.3 Direct and Indirect Beneficiaries

221. The total estimated number of project **direct beneficiaries** are 60,715 people (of which 30,088 are women) from 91 districts, 69% of the total beneficiaries have Quechua as their mother tongue and 31% have Spanish. Considering the numbers, the proposed GCF project is targeting Quechua Indigenous Peoples and Local communities, which are a significant part of the most vulnerable population within the SHAP region, which face significant climate-related challenges. In addition, this population are part of the most economically disadvantaged in the country with 73 percent of SHAP having a low or very low Human Development Index (HDI), aligning with the broader trend in Peru where higher altitudes correlate with lower HDI levels (PNUD, 2019)

222. Following the GCF IRMF the number of direct beneficiaries were calculated including individuals who will receive i) targeted support from the GCF-funded interventions and ii) a measurable adaptation benefit from a GCF-funded intervention. The estimation of these direct beneficiaries' accounts therefore for:
   a) Individuals that implement Local initiatives that will be financed and supported by the Puna Facility, multiplied by the average number of members of the groups/legal entities supported and the average members per household in the region., representing 31,750 people.
   b) Individuals that will be supported by MIDAGRIs co-finance programs, multiplied by the average members number per household in the region., representing 26,315 people.
   c) Individuals that will receive technical assistance from the GCF- funded intervention (e.g., trainings, support to develop site-specific climate diagnostics and preparation of participatory intervention plans) including.

223. The project will also **indirectly benefit** 2,011,856 people (of which 1,005,928 are women) this includes those that do not receive targeted support from the GCF-funded intervention but will benefit from water generated by the improvement of ecosystems that contribute to water regulation in the upper and lower parts of watersheds which involve main cities such as Cusco, Arequipa, Abancay and Cañete.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

224. Changing the paradigm of highly threatened Puna ecosystems requires a transformation of behaviours and practices in the agriculture and husbandry sector. The project aims at shifting the reality of farming communities in the SHAP from a state characterized by climate vulnerability, lack of opportunities, and ecosystem degradation to a state characterized by conservation of the natural capital, climate resilience and improved economic productivity. This proposal incorporates the transformational pathway of promoting resilient agriculture and husbandry practices in High Andean communities through the implementation of EbA solutions with an mitigation co-benefit in priority landscapes to conserve essential ecosystem services sustaining the livelihoods of neighbouring farming communities and benefiting thousands of people who rely on the water generated by the improvement of ecosystems that contribute to water regulation in the basins. The combined results of improved farming and husbandry practices - by promoting and incorporating EbA measures and climate-resilient approaches in their productive activities, technical assistance, business development, access to finance and improved planning and coordination - will increase the overall resilience of High Andean communities while improving water regulation and maintaining important stocks for global carbon regulation.

D.2.1 Overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans

225. Climate innovation will be catalysed through improved ecosystem management and target Climate Resilient Value Chains (e.g., South American camelid fiber and Andean grains, among others complementary) supported by public and private finance. An inter-sectorial transformational change is supported. So far, conservation and production activities are carried out in isolation by SERNANP and MIDAGRI although many times they are in the same landscape. The project, hence, seeks to enhance coordination of public sector natural resources management in the territory. Moreover, the project aims to transform vulnerable communities' businesses and their usual production system into more sustainable and climate-resilient production systems. Locally generated and targeted innovation for market transformation through MIDAGRI's funds from Agroideas to strengthen producers' organizations and their business ideas, will be complemented by the Puna Facility in providing funding for EbA measures on a repayable basis and technical support to develop complementary interventions to the program in order to create climate-resilient livelihoods. It is important to highlight the strengthening of government institutions, will also support MIDAGRI in meeting its productivity and competitiveness commitments while complying with Peru's NDC targets.

D.2.2 Potential for upscaling and replication

226. The main approach to achieve upscaling and replication is using mobilization of investments at scale. The project aims at aligning and upscaling public and private investment for EbA and Climate Resilient Value Chains under Components 1 and 2. Specially, the Puna Facility will mobilize EbA finance at scale, aiming at putting in place the enabling conditions for additional long-term financing under Component 2 and 3. Sustained investment in the future will be enabled by laying the groundwork for valuing ecosystem services of the Puna ecosystems that will add to the conducive transformational environment. The technical support provided by the project will increase the access to Agroideas and Sierra Azul public programs that promote nature-based solutions' investment projects, business development, product transformation, and value addition in target value chains (i.e., alpaca and vicuña fibers, potato, Andean grains). The project will also offer the option of leveraging public funds from MERESE schemes and subnational governments to the areas where investments are needed to conserve ecosystem services. The capacity building provided to relevant stakeholders (Profonanpe, MIDAGRI, microfinance institutions) will enhance the potential for upscaling and replication.

D.2.3 Potential of knowledge and learning

227. Knowledge and learning will be promoted, enhanced and scaled through several alliance at different levels of intervention. These alliance will support the experiences replication of the project approach in other High Andean communities. Therefore, at local level, transfer of knowledge between target areas, integration of local experiences into larger planning processes, and the improved coordination between actors on the ground will set the stage to expand the EbA approach to communities with similar environmental and development characteristics. The project will focus on strengthening multisectoral institutional capacities and regulatory frameworks. MIDAGRI and MINAM personnel, in charge of national programs and rural extension services, will be trained to include sustainable management and to promote traditional practices.

D.2.2 Contribution to the creation of an enabling environment

228. The main approach towards the creation of an enabling environment relies on transformational planning and programming to scale up EbA. This will be achieved by integrating community-responsive technologies, ancestral practices, and landscape interventions (EbA) into local, regional and national planning processes to enhance the provision of key ecosystem services for the local population and communities downstream. Communities and local leadership, including women and youth, will be strengthened. An increased collaboration between public and private sectors will contribute to transformational planning and programming and support the construction of the desired enabling environment. The project will support MINAM in its efforts to establish a methodology for calculating carbon on the Puna ecosystem and to lay the groundwork for carbon accounting and credit systems for future trading.

D.2.4 Contribution of the regulatory framework and policies

229. The project will facilitate the coordination within MIDAGRI and with other key sectors and actors in the territory. In this context, the project activities will support the mainstreaming of EbA and gender considerations within MIDAGRI'S and MINAM's daily operations. Improved interinstitutional coordination and collaboration will be sought within MIDAGRI and SERNANP, to ensure synergies in the same landscape. The project will contribute to the improvement of regulatory instruments to enhance EbA and climate resilient approach in the agricultural sector and the territory, and will strengthening of the national long-term monitoring and evaluation systems of the different government entities in the high Andean ecosystems and populations, in order to have monitoring protocols and measurement methodologies consistent with the impacts of EbA interventions (including carbon sequestration, climate information and its impacts on water and agriculture). It will also support monitoring systems that provide information on EbA interventions on water and agriculture for decision-making on adaptation responses, such as those developed by MIDAGRI, SENAMHI, ANA, INAIGEM and SUNASS.

D.3. Sustainable development (max. 500 words, approximately 1 page)

D.3.1 Environmental co-benefits

230. The project will have two environmental co-benefits. First co-benefit is the maintenance of ecosystem services in the area benefited through the conservation, restauration or sustainable management of ecosystems. The main ecosystems in the high Andes are peatlands, wetlands and grasslands, which provide a range of ecosystem services that benefit populations throughout the watershed (see Annex 2a, section 13.3 Environmental co-benefits for more details). The Puna ecosystems services include: i) Provisioning services which consist of fiber, fuel, food and fresh water; ii) Regulation services that include climate regulation, water regulation, water purification and erosion protection, resulting in the regulation of greenhouse gases, climatic processes, water storage, groundwater recharge and discharge, retention, recovery and removal of excess nutrients and pollutants and peat blanket protecting the underlying soils from erosion; iii) Supporting services provided by these ecosystems include biodiversity, soil formation, nutrient recycling and carbon storage; iv) Cultural services present in the SHAP are educational, recreational/, landscape beauty, spiritual and inspirational. The project will seek to ensure the long-term provision of these services through the three project components: i) implementation of EbA alternatives and training on sustainable business options and monitoring of ecosystem conditions; ii) increased access to technical assistance and finance, to invest in EbA measures, and iii) mainstreaming of the EbA approach into extension programs and improved participatory planning at the local and basin level. It is expected that 23,914 ha of Puna ecosystems will be conserved, restored or sustainably managed.

231. As second co-benefit, the project recognizes the reduction of GHG emissions, in this context, GHG emissions will be avoided through the conservation, restoration and sustainable management of ecosystems. The proposed intervention measures aim to prevent emissions from existing carbon sources, inappropriate management practices in livestock and crops, and contribute to carbon sequestration in soil and vegetation, through grassland management, forest restoration, Integrated soil fertility management, agroforestry, and wetland restauration and conservation. GHG reductions are calculated using the methodology presented in the IPCC Good Practice Guidance for LULUCF, applied though the tool EX-ACT (version 9.4) developed by FAO. The overall mitigation impact as a co-benefit from the project is a reduction of 407,657 tCO2e in the 15 years analysed, which include five years of implementation phase and ten years of capitalization phase. It is measured against a scenario without project that would have increased by 93,905 tCO2e the GHG emissions in the areas of intervention. These numbers correspond to the impact during the 15 years considered for analysis in a total area of intervention of 23,914 ha. The details on the calculations can be found in the supplementary document GHG calculation sheet (please see Annex 22b for the calculation of

the GHG emissions reduction as a co-benefit from the project and Annex 2a, chapter 13 for further discussion on the climate change mitigation co-benefits).

232. The environmental co-benefits will contribute to the fulfilment of the following Sustainable Development Goals (SDG): SDG 6 Ensure availability and sustainable management of water and sanitation for all (Target 6.6); SDG 13 Take urgent action to combat climate change and its impacts (Target 13.1 and 13.2) and SDG 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Target 15.1 and 15.4).

D.3.2 Social co-benefits including health co-benefits

233. The project will have as a social co-benefit the awareness raising and capacity building of local stakeholders. Awareness raising and capacity building in EbA and gender approach and CRVC are mainstreamed into all components to strengthen capacities to integrate climate change adaptation into planning and actions. In component 1, activities focus on the beneficiaries - they will be trained and supported through the activities 1.1.1 and 1.1.3. Ancient knowledge and local expertise will be integrated through the activities 1.2.1. Local reflecting capacities, community monitoring and reporting will be trained and supported in activity 1.2.2. Institutional capacities will be reinforced through Component 3 and Component 2. In activities 2.1.2 EPS officials will receive technical assistance and training and in activity 2.1.3. Microfinance company officers also will be trained. Within Component 3, activity 3.1.1 public officials will be trained and in activity 3.1.2 support will be provided to strengthen monitoring systems so that lessons learned can be incorporated into decision-making processes.

234. The social co-benefits will contribute to the fulfilment of the following Sustainable Development Goals (SDG): SDG 13 Take urgent action to combat climate change and its impacts (Target 13.3).

D.3.3 Economic co-benefits

235. The activities of the project will support the achievement of the co-benefit 3 “Improvement of local economy through better economic opportunities and poverty reduction”. The indicator designed to measure this co-benefit will be “Number of producers, of whom 50% are women have confirmed an improvement in their income from Climate Resilient Value Chains”. This co-benefit will be done through implementation of the following activities: 1) Activity 1.1.2 will contribute to reduce climate risks supporting the implementation of Local initiatives involving EbA and climate-resilient value chains, helping to maximise economic sustainable opportunities; 2) Activity 1.1.3 will give technical assistance for implementation and promote market access for Local initiatives and integration of climate change adaptation skills into their livelihoods and 3) Activity 2.2.3 will contribute to reduce the barriers to finance for EbA and CRVC.

236. The economic co-benefits will contribute to the fulfilment of the following Sustainable Development Goals (SDG): SDG 1 End poverty in all its forms everywhere (Target 1.5) and SDG 2 End hunger, achieve food security and improve nutrition and promote sustainable agriculture (Target 2.3), SDG 10 Reduce Inequality within and among countries (Target 10.1) and SDG 5 Achieve gender equality and empower all women and girls (Target 5.5).

D.3.4 Gender-sensitive development co-benefit

237. The mainstreaming of gender approach within all the project activities will promote gender equality and enhance living conditions and economic opportunities of Andean women. This is achieved through associative means, promoting Local initiatives (including EbA measures and CRVC) with a gender-sensitive approach, integrating gender issues in platforms of knowledge exchange for ancestral practices and increasing women participation in watershed dialogue decision-making platforms. For this purpose, the project includes a gender action plan with specific activities and indicators that will measure the application of gender approach in a cross-cutting manner. Co-benefit 5 “Gender responsive approaches mainstreamed in EbA and CRVC measures” will be measured trough the indicator “Number of innovative Local initiatives (including EbA and CRVC) with a gender-sensitive approach implemented”.

238. The impact of designing local initiatives with a gender-sensitive approach will reflect on the equally enhancing for men and women of benefits in the local economy. This will be measured in co-benefit 3 “Improvement of local economy through better economic opportunities and poverty reduction”, where the indicator designed to measure this co-benefit will be “Number of producers, of whom 50% are women have confirmed an improvement in their income from climate resilient value chains”.

239. The gender co-benefits will contribute to the fulfilment of the following Sustainable Development Goals (SDG): SDG 5 Achieve gender equality and empower all women and girls (Target 5.5).

D.4. Needs of recipient (max. 500 words, approximately 1 page)

D.4.1 Vulnerability of the SHAP region

240. **The vulnerability in the SHAP is increased by a high occurrence of drought due to climate change combined with unsustainable practices.** The vulnerability of High Andean communities is enhanced by their intrinsic characteristics including i) weak organizational structures, ii) geographic dispersion, iii) use of wood, dung, and peat as energy sources, iv) poor infrastructure and availability of basic health, education and sanitation services, resulting in high infant morbidity and malnutrition and v) weak technical capacity in agriculture and husbandry practices, leading to the deterioration of the Puna ecosystems due to overgrazing, expansion of the agricultural frontier, poor management of grasslands and degradation of peatlands and wetlands. The degradation of High Andean grasslands is a widespread phenomenon: more than 40 percent of grazing areas are in poor conditions and acutely deteriorating. Without improved management, an additional 20 percent of grazing areas will be degraded by 2070. With dryer conditions, high-mountain peatlands, which have an important role in water regulation and carbon storage, are more susceptible to fragmentation in the long term (Bury et al., 2010; Polk et al., 2017; Cooper et al., 2019). Although poorly understood, rough projections using the scenarios of precipitation decrease in Southern Peru (Urrutia & Vuille, 2009) suggest strong wetland degradation, locally of about 25 to100 percent (Otto & Gibbons, 2017). Indeed, in the 23 years between 1987 and 2010, wetland ecosystems in the Huascaran National Park decreased from 12,402 to 6,821 hectares, a 45 percent net loss (Polk et al., 2017).In certain areas, higher temperatures partly contribute to land degradation and land-use change by allowing the introduction of sheep and cattle for extensive grazing in natural grasslands, where previously only lower-impact South American camelids were roaming. In order to address the main factor of local vulnerability, the project will promote actions to increase (i) water availability, (ii) resilience to climate change impacts on agricultural activities, (iii) sustainable land management through a landscape approach, (iv) conservation of Puna ecosystems and (v) overall resilience of the local population.

D.4.2 Economic and social needs of the beneficiaries

241. **Target populations are highly vulnerable to climate change.** The main direct beneficiaries of project interventions are local communities in the SHAP, including producers' associations, MSEs, cooperatives, community enterprises and producers' organizations and subnational governments, which are very vulnerable to climate change (MINAM, 2016). These local communities are among the most impoverished in the country (73 percent of the SHAP districts have a low or very low Human Development Index (HDI), confirming the general rule that in Peru the higher the altitude the lower the HDI (PNUD, 2019). This means that target local communities lack basic services such as health, potable water, sanitation, education and financing. The overall consequence is a general lack of capacity to sustainably manage the natural resources that support their livelihoods, which adds to their climate vulnerability. To increase local income, the project will mobilize public and private funding towards the high Andean population and their associated ecosystems. In this context, the project will enhance training of local communities, including producers' associations, MSEs, cooperatives, community enterprises and producers' organizations on business development and access to finance (including financial literacy) to ensure successful alternative and sustainable income-generating activities.

242. **Lack of access to markets**. Many communities in the SHAP face difficulties in accessing markets to sell their products (Fan & Salas Garcia, 2018). Therefore, developing and strengthening market linkages, facilitating commercial networks, and supporting local communities, cooperatives, MSEs community enterprises, producers' associations and organization will support creating opportunities for economic growth. In order to address the need of better market access, the project will strengthen local value chains through sustainable ecosystem management practices, enhanced associative processes, Climate Resilient Value Chains and improved access to finance and business development (including technical assistance in marketing, branding, customer outreach and certification of products). Technical support to local communities, cooperatives, MSEs community enterprises, producers' associations and organization will add value to their products and facilitate access to national and specialized markets.

D.4.3 Financial needs

243. **Limited access to finance.** Financial institutions perceive the investment risk of the agricultural sector as too high and rarely develop products and services adapted to the needs of these vulnerable populations. When available, access to finance is at exorbitant costs via informal lenders named "drop by drop" or "express loans" with low or no requirements but daily rates of 10 to 40 percent (Prestamype, 2023). Rural microfinance institutions in Peru only represent 3.44 percent of the financial system in Peru (Asomif, 2020).

In the SHAP there are some of them that give micro loans to rural people and small-famers i.e. Caja Rural Los Andes and Caja Rural Inka Sur, furthermore, there are is only one cooperative (Fonde Surco) with some small green loans for agriculture and livestock. Also, access of SHAP communities to matching public-private finance mechanism, such as Agroideas, for the development of sustainable agri-business plans is limited. For instance, according to information provided by Agroideas for the 2016-2020 period, only 4.4 percent of the total budget executed for approved business plans towards technological adoption have been channelled to the South American camelid fiber value chain. To address the financial needs, the project will directly support target communities in accessing funds earmarked by MIDAGRI for EbA activities (Agroideas, Agrorural and Sierra Azul) by i) developing simplified material out of programs guidelines to facilitate rural population to access the government support and ii) capacitating producers and local governments to disseminate the information on the different public programs. The project will on the one hand also provide technical assistance to MFIs in order for them to expand their offers in green products and on the other hand capacitate on business development and access to finance (including financial literacy) to local communities, cooperatives, MSEs community enterprises, producers' associations and organization that will allow target populations to access microfinance products and services.

D.4.4 Institutional needs

244. **Access to MIDAGRI programs requires improved associativity**. Producers' associations and communities organizations must become legally established associations to be eligible to access public programs (Perea, 2014). The project will therefore promote and support associativity (through technical assistance provided by the Puna Facility for beneficiaries eligible for the Non-repayable Grant Sub-Window) and strengthen business management for the adoption of climate resilient and environmentally sustainable agricultural technologies, animal husbandry and breeding management practices. Producers' associations, cooperatives, communities and other legally established organizations will be sensitized on the importance of EbA, trained on proper implementation and maintenance practices and supported in the development of Climate Resilient Value Chains.

245. **Public institutional capacity and coordination strengthened to mainstream EbA.** In Component 3 the project focuses on building the capacity of different entities, including MIDAGRI and MINAM to carry out EbA policy implementation in a more coordinated manner, mainstreaming EbA, gender, intercultural and intergenerational considerations in all its programs and to streamline its interventions to increase efficiency and impact towards climate resilience and reduced emissions in the SHAP. Improved coordination with other ministries and government entities at all levels will support the country in meeting its NDC targets.

D.5. Country ownership (max. 500 words, approximately 1 page)

D.5.1 Country prioritizing of the project

246. The project has been prioritized by the NDA to be presented to the GCF and it has the full support of the Peruvian government, through the Ministry of Economy and Finance which is the NDA, the Ministry of Agricultural Development and Irrigation which is the project leading ministry and the Ministry of Environment which leads climate change action in Peru. More recently, during the national message on the Celebration of the Peruvian Independence Day on the 28th of July 2023, the president mentioned the Resilient Puna project as part of the relevant programmes that the country is boosting to support climate change adaptation in the High Andes areas of the country.

D.5.2 Coherence with existing National Climate Strategy, policies and commitments

247. The project will be a major contribution to identified in Peru's first NDC targets. The project will support the fulfilment of adaptation 4 NDCs measures related to **agriculture and water**. NDC measures related to **agriculture** include: i) AGRI7 Natural grassland management to secure feed for livestock and reduce vulnerability to climate change, ii) AGRI11 Management of wild South American camelids (vicuñas) considering the effects of climate change, iii) AGRI16 Implementation of business strategies that incorporate risk and opportunity management in the face of climate change. NDC measures related to **water** include: iv) AGU2 Implementation of interventions related to planting and harvesting water for agricultural water security in watersheds vulnerable to climate change. Since this project have a call for proposal mechanism the exact contributions to the NDCs will be obtained during the implementation phase. However, a contribution estimation to the four identified NDCs are indicated in Section 5.7 Table 21 of Annex 2a.

248. The project is fully aligned with the National Adaptation Plan (NAP). 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. In addition, microfinancing for the promotion of EbA practices has been integrated in the NAP as a means to

increase participation of the private sector and to provide very much needed access to financing for vulnerable populations.

249. The project is fully aligned with the National Agrarian Policy 2021-2030 (Supreme Decree 017-2021 MIDAGRI) which aim is 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.

250. The project contributes to the risk management and climate areas lands at highest risk to drought were taken from the Plan for Risk Management and Adaptation to Climate Change in the Agricultural Sector Period 2012-2021 (Plan GRACC-A) to select target districts.

251. The project aligns with the Road Map for Green Financing and the general guidelines for the National Strategy for Green Growth (ENVA). The ENVA aims to promote sustainable economic development while considering environmental protection and climate change mitigation. In particular, the project aligns with the following main objectives of the ENVA: (i) Sustainable use of natural resources, (ii) Environmental mainstreaming in economic sectors, specifically promote environmentally friendly practices, technologies, and policies that minimize negative environmental impacts, (iii) Conservation and restoration of ecosystems, (iv) Strengthening environmental governance and institutions and (v) Access of communities to environmental services and information.

252. According to the NDA requirement, this project is also in line with the objectives of the National Competitiveness and Productivity Plan 2019-2030 which seeks to a) promote environmental sustainability in economic activities operations and b) boost local and external financial mechanisms.

253. The project is aligned with the GCF's 2020-2023 strategic programming and contributes to sectoral paradigm shift enablers. For Ecosystems and Ecosystem Services, the programme is aligned with Pathway 1: *Ecosystem-based management of terrestrial and freshwater systems,* to achieve a paradigm shift in the landscape management of the SHAP region. The programme uses *transformational planning and programming* via the fostering of an enabling environment for EbA interventions for improved ecosystem services. The project also *catalyses climate innovation* through the support of the development of new mechanisms to finance EbA and resilient livelihoods. It *mobilises finance at scale* through securing public and private financing through the Puna facility, MERESE schemes, and other new financial products.

254. Finally, it is important to highlight, that the project embraced an integrative approach by merging three initiatives. At the request of the Peruvian Government, through the Ministry of Agricultural Development and Irrigation (MIDAGRI), GIZ was assigned to integrate three concepts emerging from different sectors with focus on high Andean communities and ecosystems from slightly different perspectives. This shows the felt need within Peruvian institutions to address climate change vulnerabilities in the SHAP. The present proposal is therefore bringing together previous experience on Natural Protected Areas, focus on South American camelid fiber value chains, and finance at scale to implement ecosystem-based adaptation, thus facilitating complementarity and coherence according to country needs.

D.5.3 Capacity of AE and EEs to deliver

255. **GIZ** with its headquarters in Germany serves as AE, and GIZ with its management structure in Peru as one of the EEs. GIZ is one of the largest international providers of capacity development and technical assistance on climate change worldwide. GIZ as AE already developed and submitted several funding proposals to GCF, with 6 approved proposals under implementation (FP117, FP132, FP103, FP059, FP198 and FP200).

256. In addition, MIDAGRI, SERNANP, Profonanpe and Instituto de Montaña will also serve as EEs.

257. **MIDAGRI** has extensive experience of channelling loan and grant resources for national and sub-national rural development projects from international financial institutions. It is currently implementing several projects from IFAD (e.g., Avanzar Rural), World Bank (e.g., Integrated Water Resources Management in Ten Basins) and IADB (e.g., Agricultural Health and Agrifood Safety Development Program Phase II).

258. **Profonanpe** as one of the main EEs has been accredited by the GCF since 2016. For its accreditation process, Profonanpe received technical support from a GCF Readiness Project with GIZ as delivery partner to become a Direct Access Entity. Profonanpe is implementing two GCF projects: 1) *Building the Resilience of Wetlands in the Province of Datem del Marañón* (FP001) with Profonanpe as the EE managing a total amount of $6,240,000 of GCF grant; and 2) Peruvian Amazon Eco Bio Business Facility (Amazon EBBF) (FP193) with Profonanpe as the Direct Access Entity managing a total amount of $8,972,400 of GCF grant. In addition, Profonanpe has gathered experience in designing and managing several environmental funds will be key, namely a Regional Water Fund in Piura, a competitive fund aimed at PES in high Andean ecosystems, and a MERESE fund for Arequipa. This experience will be key for their role in managing the Puna Facility established for this project and in bringing in their experience in managing PES and MERESE funds for the exit strategy.

259. **SERNANP** is the Government entity, attached to the Ministry of Environment (MINAM) in charge of ensuring the conservation of National Protected Areas (NPAs). As the governing entity of the SINANPE, it

carries out and has experience on project implementation in the NPAs. In the past, it has implemented projects like the EbA Lomas with the support of UNDP. SERNANP will be in charge of the execution of the project activities within the NPAs and buffer zones, ensuring its efficient execution and the articulation of those activities within those areas.

260. **Instituto de Montaña** is a non-profit organization that works for the conservation of the natural, cultural and spiritual values of mountain peoples and ecosystems. They have been working in the Andes since 1995 and in Peru they have and are currently implementing programs in the highlands of Ancash, Piura, Junín and Lima.

261. Additional information on the AE and EEs' capacities to implement the project are provided in Section B.4.

D.5.4 Role of the Ministry of Economy and Finance (NDA)

262. The Ministry of Economy and Finance, as Peru's NDA, has been involved in the process of development and approval by the Government of Peru of the Concept Note and Funding Proposal. MIDAGRI as project proponent, along with Profonanpe, MINAM and GIZ as the AE have introduced the project idea to the NDA before starting the project pre-feasibility and concept note phase. The NDA has been also closely involved during the Funding Proposal development stage participating for example in a validation workshop held in June of 2023 in Lima Peru and will be continued to be involved following the national mechanisms for project selection established by the NDA.

D.5.5 Engagement with civil society organizations and other relevant stakeholders

263. Several consultations in the target areas have been carried out by GIZ in close coordination with project partners during the different stages of Concept Note and Funding Proposal development. A summary of the consultations held can be found in Annex 7.

264. **During Concept Note stage, engagement have taken place with different stakeholders**. At the national level, meetings were held with national government programs that operate in the territory, such as MIDAGRI's Programs, Textile Camelids Innovation Institute, as well as, with the SERNANP, INAIGEM and the SENAMHI. The project development team engaged for example with cooperatives, with other international cooperation projects such as Swiss Cooperation (Resilient Andes and Andean Forest Program), PNUD (Small Grants GEF program) to integrate lessons learned and best practices into the project design. In addition, consultations were held with NGOs that work in the puna region, such as Water Competence Centre (CCA), DESCOSUR and CONDESAN (Natural Infrastructure for Water Security Project) to understand their perception about communities' necessities in a context of climate change to incorporate it into the project design.

265. **More recently, during the Funding Proposal stage**, consultations with national, regional and local stakeholders were carried out in October 2022, November 2022 and May 2023 by organizing different workshops and meetings in target project departments in order to present the proposal, identify gender gaps and potential project risks and mitigation measures. As part of these consultations (May 2023), the project and relevant activities were presented and validated. Feedback provided by different stakeholders were further integrated into the project design. In general, the project was welcomed by the stakeholders, at subnational, district and community level. In total, the project has consulted 783 people (38% women and 62% men) out of which 65% were members of the main potential direct project beneficiaries (e.g. local communities, producers' associations and cooperatives) most of them Quechua population (see Annex 7). Consultations were conducted and closely coordinated and organized by MIDAGRI and SERNANP with local stakeholders to ensure the participation of communities, producer associations, women, youth, and elderly people.

266. During project inception and implementation, the project will follow a Stakeholder Engagement Plan (see Annex 7) in order to ensure continuous consultations with the stakeholders. The main actions will include i) development and implementation of a culturally adequate consultation and communication strategy, ii) development and implementation of a Grievance Redress Mechanisms and actions during iii) project implementation and monitoring. In addition, in table 8 a list of main actions to engage with the different stakeholders is being presented which includes different stakeholder categories (e.g., local communities, national, local governments, private sector etc.).

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

D.6.1 Efficiency and effectiveness

267. Ecosystem-based Adaptation has been widely viewed as a cost-effective approach to address the challenges communities face when dealing with climate change. A recent study that valued the ecosystem services of peatlands in the Yanque district of Arequipa, concluded that their regulation services could be valued at 450 USD/ha (Mango, 2017). Rolando et al., (2017) analysed the Puna ecosystems' impact by land use and climate changes and proposed "a set of technologies, practices and policies to preserve (or restore) the provision of these key ES: long fallowing, soil amendments, conservation tillage, rotational grazing,

grassland ecological restoration, conservation of agrobiodiversity, modern irrigation and water harvesting, plant breeding, climate change mitigation schemes and payment for ecosystem services, and adapted traditional technologies". Most of these are proposed project interventions as described in Annex 2a, section 9. In the cost-benefit analysis for the management of native grasslands in Chanchayllo and Miraflores, Peru, realized under the Global Mountain EbA project, the benefit-cost ratio was 2.2 and the breakeven point at 10-15 years (Reid at al., 2017). Gammie and De Bievre (2015) show that a subset of proposed EbA interventions for the Lima water supply was deemed as a cost-effective option when compared to grey infrastructure for water provision, with prices below USD 0.25/m3.

268. The GCF investment represents a cost-effective efficient integrated landscape approach to comprehensive obtain adaptation benefits and mitigation co-benefits. The project will support 60,715 people directly, (50 % women) in increasing adaptive capacities and improving overall climate resilience and 1.9 million people indirectly (50 % women) through the maintenance of ecosystem services that sustain economic activities and populations downstream. In addition, through project activities 23,914 ha of Puna ecosystems will be sustainable managed, equivalent to a co-benefit of 407,675 t CO2eq of avoided emissions.

D.6.2 Financial viability

269. For the in-depth justification of the GCF grant, please refer to section B.5. As noted there and in Annex 3, the financial IRR of Local initiatives supported by the Puna Facility is positive even without grants; GCF grants further increase the financial IRR (see table below). However, grants remain essential for the implementation of the Local initiatives for reasons including: subsistence nature of the beneficiaries in the Non-repayable Sub-Window and generally low income for other beneficiaries; no or limited savings to self-fund the initial EbA/CRVC investment; no or limited access to finance to fund EbA measures and CRVC; prohibitive interest rates and other terms of MFI loans; limited financial literacy; lack of beneficiaries' resources to hire technical experts in lieu of the Puna Facility's technical assistance. Importantly, the concessionality of Puna Facility grants is significantly minimized in the Results-based Repayable and Agroideas Matchmaking Sub-Windows through the repayment feature. All Local initiatives funded by the Puna Facility will be financially self-sustaining in the long-term, with no need for further concessionality. This will make them more bankable in the eyes of lenders – bankability will be enhanced also through technical assistance to both Puna Facility beneficiaries and, on the supply side, MFIs. Repayable grants will also instill financial discipline in the recipients, making them more attractive future borrowers.

Table 7. FIRR by Local initiative

Local initiative type	FIRR without grant	FIRR with grant
Non-repayable – Native potatoes	12.6%	121.8%
Non-repayable – Alpacas	8.4%	63.7%
Repayable – Native potatoes	25.8%	84.3%
Repayable – Alpacas	17.1%	48.1%
Agroideas – Alpacas	19.5%	56.8%

270. The economic IRR of the project is 8.2%, which is more than 2 percentage points above the 6% Peru social discount rate estimated by the World Bank and the Ministry of Economy and Finance. The economic NPV, based on the 6% social discount rate, is a positive EUR 11.9 million. Sensitivities have been run on two assumptions: (i) downside sensitivity to the already conservative CO_2 shadow prices and (ii) change in GHG reduction volume and economic benefits of Local Initiatives during the initial 3 calls for proposals. The analysis shows that the EIRR is positive even with extremely low CO2 prices and with a 30% drop in emission savings volume and income generated by the initial calls for proposals. The EIRR remains above the social discount rate of 6% and the economic NPV is therefore positive if the emission savings volume and economic benefits do not drop more than 10%, even at carbon prices substantially lower than the base case assumption of EUR 60/t.

D.6.3 Application of best available technologies and practices

271. The promotion of sustainable landscape management practices, soil amendments, ancestral and modern technologies for water and soil conservation, exclusion zones and communal reserves, among others, will ensure resource conservation for future generations. In this context, the project catalyses climate innovation through the investment in Climate Resilient Value Chains, which integrate resilient practices and technologies. For example, the implemented EbA measures will improve water harvesting during the rainy season for distribution in times of drought by supplementing water from rainfall. This, together with efficient

irrigation technologies, will improve and make sustainable use of water resources as for example for fodder production.

E. LOGICAL FRAMEWORK

E.1. Project/Programme Focus

☐ Reduced emissions (mitigation)
☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	Currently, public and private financing for investing in EbA measures and Climate Resilient Value Chains in the puna ecosystem are limited. Although MIDAGRI has promoted support to the High Andean zones through different programs, they have not been sufficient to reach the most vulnerable populations to climate change in the region. The reasons for the insufficient public	Low	The target scenario with project implementation foresees a paradigm shift to promote the development and maintenance of financial, technical and regulatory support to the implementation of EbA measures and Climate Resilient Value Chains within the puna ecosystem, promoting the enhancement and recognition of ecosystems and their inhabitants. During project implementation, 60,715 direct beneficiaries within 91 districts and 2,011,856 indirect beneficiaries living in the lower parts of the watersheds of the project area will be reached, but project activities will also work on building the conditions to support mainstreaming of EbA and climate resilience, as well as strengthening institutional capacities in Peru. This will enable the development and scale up of financial options and	Through the establishment of the Puna Facility (Outcome 2 / Output 2.1) the project will permit the scaling up of financial incentive for local communities to implement EbA measures and Climate Resilient Value Chains. The Puna Facility will work with different sub-windows to provide financial support for the implementation of EbA measures and Climate Resilient Value Chains (CRVC) to support local most vulnerable communities and improve ecosystem services in the region. Besides providing financial support, through Outcome 3, the project will work on strengthening technical, social, political and institutional capacities of local actors, as well as instruments and norms for the management of ecosystems and their services. Likewise, the project will promote better governance in the prioritized areas, seeking that communities and local governments plan

	and private financing are related to the insufficient valuation of the contributions of the territories and their inhabitants to local and national development, this is based on and feeds back on the little development of enabling conditions, favourable environments and institutions for support local adaptation to climate change in the region, specifically those aimed at reaching the most vulnerable communities.		technical support for local communities to improve its climate resilience and promote climate change adaptation in the region. The successful experiences, the development of capacities and the favourable regulatory frameworks promoted by the project will allow the scale up of similar activities in a broader scope, as well as in the territory itself.	and manage their territories in close coordination. Through the dissemination of successful experiences, the installed capacities and favourable institutional frameworks, the project will make scaling up possible.
Replicability	The Peruvian High Andean region occupies 28% of the national territory and is home to 32% of the country's population. The insufficient and/or non-existent enabling conditions, favorable	Low	The project will be an example of a successful initiative to promote and facilitate the implementation of EbA measures and Climate Resilient Value Chains. Through the improvement of multilevel landscape governance instruments and stakeholder engagement in the project target area, the project will be able to promote replicability and knowledge sharing for similar initiatives not only in Peru, but in	Replicability is closely related to the regulatory, budgetary, and incentive context that favours the reproduction of successful experiences. In this sense, the project will contribute to the replicability of actions through the strengthening of regulatory frameworks, institutional arrangements, development of instruments and procedural mechanisms, as well as the capacity development that will enable local stakeholders to reproduce and improve EbA investments in the territory.

	environment and institutions that promote and guarantee the livelihoods of this part of the population limits the development of EbA measures. Also, limited communication and low knowledge sharing between organizations and stakeholders working with similar initiatives currently hinders the adoption and replicability of similar initiatives. Ancestral and best practices about EbA are not disseminated and replicated enough in the region due to process of emigration of those who know the practices, lack of appreciation and recognition of this knowledge and the adoption of modern		similar ecosystems regionally. As the project will be implemented in a total of 91 districts, of which 58 will be part of the target area of the Puna Facility and 33 will benefit only from the capacity building initiatives, the project will still have the capacity to expand its activities within other districts in the region.	The activities under project's Outcome 3 (output 3.1) will engage in improving governance and capacity development of relevant stakeholders. By implementing activities related to strengthening capacities, participatory platforms and their mechanisms of action, as well as improving coordination and regulatory frameworks, the project will be able to link the results achieved on the ground to national climate change goals, e.g. the country's NDC.

	techniques that are not conforming with the region and are not sustainable.			
Sustainability	Local financial and technical structures to promote the implementation of EbA measures and Climate Resilient Value Chains still face challenges to be implemented and become sustainable, among them: the few financial mechanisms that incorporate an adaptation approach to climate change; the limited regulatory framework, the absence of planning tools that incorporate EbA. All of which hinders the transfer and adoption/adaptation of EbA measures by the high Andean populations.	Low	The establishment of the Puna Facility, with the aim to adopt in a long-term a facilitation role on leverage, mobilization and channelling of different financial resources will enable the continuous implementation of EbA and Climate Resilient Value Chains in the region after the conclusion of the project. The additional financial instruments that the project will support will provide the continued financing needed. By the end of the project's activities local relevant stakeholders will have the needed technical capacity and ownership of the project's results to ensure its continuity and self-sustainment. For example, the Puna Facility will be run by Profonanpe, a national institution that has been involved since the design phase of the project, is accredited as a Direct Access Entity to the GCF and has ample experience in the management of environmental funds.	Through the implementation of technical assistance and capacity building for local relevant stakeholders (outputs 1.1, 1.2 and 3.1), the project will be able to support its sustainability beyond the project's period. All the project's outcomes foresee activities and elements related to capacity building and strengthening of local systems that contribute to a sustainable enabling environment for the implementation of EbA measures and Climate Resilient Value Chains. Above all, sustainability will be achieved by the strengthening of regulatory and institutional frameworks that guarantee the sustainability of current and new EbA measures, as well as self-financing mechanisms for the maintenance and implementation of these measures. Activity 2.1.1 will ensure that all the elements needed for the self-sustainment of the Puna Facility are in place before the end of the project period. This will include the development of plans for continuous improvement of the allocation of resources for the Facility. Activity 3.1.2 will work to strengthen regulatory frameworks at national level to ensure the sustainability after the project implementation period.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final[90]	
ARA1 Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	Annual reports from the Puna Facility and Executing Entities (GIZ, SERNANP, MIDAGRI). Project monitoring and evaluation reports quality assessed by the AE and EEs. Independent interim and final evaluation carried out on the project.	0	**Total direct beneficiaries:** 4,735 out of which 2,367 are women 156,924 **indirect beneficiaries** (of which 78,462 are women)	**Total direct beneficiaries**: 60,715 out of which 30,088 are women 2,011,856 **indirect beneficiaries** (of which 1,005,928 are women)	**Direct beneficiaries** of an adaptation intervention will include all individuals who will receive i) targeted support from the GCF-funded intervention and ii) a measurable adaptation benefit from a GCF-funded intervention, including: a) Individuals that implement Local initiatives that will be financed and supported by the Puna Facility, multiplied by the average number of members of the groups/legal entities supported and the average members per household in the region. b) Individuals that will be supported by MIDAGRIs co-finance programs, multiplied by the average members number per household in the region. c) Individuals that will receive technical assistance from the GCF- funded intervention (e.g trainings, support to develop site-specific climate diagnostics and preparation of participatory intervention plans) d) Public officials that will receive capacity building for adjusting regulations and norms.

[90] The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

						Indirect beneficiaries of the project will be those that do not receive targeted support from the GCF-funded intervention but will benefit from water generated by the improvement of ecosystems that contribute to water regulation in the basin in the main cities of Cusco, Arequipa and Cañete. Mid-term target is expected to be 7,8% of the final target based on the project implementation plan.
ARA1 Most vulnerable people and communities	Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options	Annual reports from the Puna Facility (Profonanpe) and Executing Entities. (GIZ, SERNANP, MIDAGRI). Project monitoring and evaluation reports quality assessed by the AE and EEs. Independent interim and final evaluation carried out on the project.	0	**Total direct beneficiaries:** 4,735 out of which 2,367 are women	**Total direct beneficiaries**: 60,715 out of which 30,088 are women	Executing Entities (MIDAGRI, Instituto de Montaña, GIZ) will collect data on direct beneficiaries. Direct beneficiaries of the Puna Facility were calculated based on the following: a) 127 Local initiatives b) Average number per supported organization c) 5 members per households in High Andes Mid-term target is expected to be 7,8% of the final target based on the project implementation plan.
ARA1 Most vulnerable people and communities	Supplementary 4.2: Number of livestock brought under sustainable	Annual reports from the Puna Facility (Profonanpe) and Executing Entities	0	690 Livestock Unit (LSU)[91]	8,854 LSU	The estimations of alpacas are derived by the hectares of natural grasslands that are expected to be restored through the Puna Facility, multiplied by the carrying capacity of the

[91] An alpaca is estimated as 0.25 LSU/head.

	management practices	(SERNANP, MIDAGRI). Project monitoring and evaluation reports quality assessed by the AE and EE. Independent interim and final evaluation carried out on the project.				pastures. Additional alpacas will be supported through cultivated pastures and greenhouses for the production of fodder. Mid-term target is expected to be 7,8% of the final target based on the project implementation plan.
ARA2 Health, well-being, food and water security	Core 2: Direct and indirect beneficiaries reached	Annual reports from the Puna Facility (Profonanpe) and Executing Entities (SERNANP, MIDAGRI). Project monitoring and evaluation reports quality assessed by the AE and EEs. Independent interim and final evaluation carried out on the project.	0	**Total direct beneficiaries**: 4,735 out of which 2,367 are women 156,924 indirect beneficiaries (of which 78,462 are women)	**Total direct beneficiaries:** 60,715 out of which 30,088 are women 2,011,856 indirect beneficiaries (of which 1,005,928 are women	For direct beneficiaries, agricultural production of local family farms will be improved through the implementation of project activities, contributing to food security. For indirect beneficiaries, water security benefits are expected, derived from the contribution to water regulation of the EbA measures implemented in the upper part of the basin. Mid-term target is expected to be 7,8% of the final target based on the project implementation plan.

ARA2 Health, well-being, food and water security	Supplementary 2.2: Beneficiaries (female/male) with improved food security	Annual reports from the Puna Facility and Executing Entities (GIZ, SERNANP, MIDAGRI). Project monitoring and evaluation reports quality assessed by the AE and EEs. Independent interim and final evaluation carried out on the project.	0	3,546 out of which 1,773 are women	45,463 out of which 22,732 are women	Agricultural production of local family farms will be improved through the implementation of project activities, contributing to food security. The target under this indicator is expected to be 74.88% (percentage of the population estimated to be subsistence farmers) of the total direct beneficiaries supported under sub-activities 1.1.2.1, 1.1.2.2, 1.1.2.3, 1.1.1.2 and 1.2.1.1.
ARA4 Ecosystems and ecosystem services	Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice	Annual reports from the Puna Facility (Profonanpe) and Executing Entities (SERNANP, MIDAGRI). Project monitoring and evaluation reports. Independent interim and final	0	1,865 ha	23,914 ha	Local communities will be interested in being part of the project and implement EbA measures and Climate Resilient Value Chains. Calculations will be based on an analysis of the area that will be brought under management practices restoration according to the area that the Local initiatives will cover in the 58 prioritized districts. Mid-term target is expected to be 7,8% of the final target based on the project implementation plan.

		evaluation carried out on the project.				
ARA4 Ecosystems and ecosystem services	Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems	Annual reports from the Puna Facility (Profonape) and Executing Entities (SERNANP, MIDAGRI). Project monitoring and evaluation reports. Independent interim and final evaluation carried out on the project.	0	1,865 ha	23,914 ha	Calculations will be based on an analysis of the area that will be brought under restoration according to the area that the Local initiatives will cover in the 58 prioritized districts. Local communities will be interested in being part of the project and implement EbA measures and Climate Resilient Value Chains. Mid-term target is expected to be 7,8% of the final target based on the project implementation plan. The area was calculated based on the geospatial analysis of EbA and value chains.

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner	Currently, EbA measures are not sufficiently mainstreamed into local institutional and regulatory frameworks in Peru. There is limited coordination between actors to reinforce the positive impacts of EbA measures in the territory	medium	In the target scenario institutional and regulatory frameworks in Peru will have EbA measures mainstreamed, with local communities' participation to ensure ownership. Local stakeholders will have improved capacities and	The project will actively contribute to the strengthening of institutional and regulatory frameworks through the activities under output 3.1. The objective will be to mainstream EbA	Single sub-national area within a country

	and the regulations do not consider the importance of protecting, restoring and conserving ecosystems. Moreover, local communities do not participate in the decision-making process at the local and regional level, which makes the institutional and regulatory frameworks weaker due to the lack of ownership and participation of local actors.		more awareness of the benefits of EbA measures and Climate Resilient Value Chains. This will enable the implementation of those measures at the local level, as well as the replication and scale up of the initiatives through the dissemination of knowledge and stronger regulatory and M&E frameworks.	approach and community participation into territorial planning instruments at the local and regional levels, and strengthen M&E systems at the national level.	
Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards	The knowledge about methodologies and good practices related to EbA and Climate Resilient Value Chains in the High Andean Region in Peru, including ancestral knowledge, is not well disseminated within local stakeholders. There is a limited overall generation and management of information that hinders the implementation of good practices. This is mostly due to the migration of those who know about the practices, the lack of recognition of the	low	The target scenario with the project implementation will include the support to generate, disseminate and deploy the best practices based on ancestral knowledge. This will enable other family farms, organizations and institutions based in districts that are not part of the project target area to access and disseminate the information, implementing the measures and achieving similar results.	The project will contribute to the effective knowledge generation and use of good practices by recovering and scaling up ancestral knowledge and practices related to EbA measures in the region through output 1.2. Moreover, under output 3.1 the project will work on the development of training and capacity building to local relevant stakeholders, which will support knowledge transfer to the most vulnerable communities	Single sub-national area within a country

	importance of this knowledge by institutions and the adoption of technologies that are not suitable for the puna ecosystem and are not sustainable.			and other regions in the country.	
Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level	In the project target area, most of the agricultural units are family farmers and most of them are categorized as subsistence and extreme poverty. These farmers do not have the capacity to access markets and be included in the value chain due to the lack of financial and technical support in the region.	low	With the appropriate technical and financial support, family farmers in the puna ecosystem will be able to implement best practices and have access to financial instruments that will help them improve their production and secure their livelihoods. The target scenario will be to have Climate Resilient Value Chains implemented in the region, which would be supported through more demand for the specific products coming from the region, which would strengthen and transform the market at the national level.	The financial and technical support provided by the project's activities under output 1.1, 1.2 and 2.1 will enable the family farms in the region to improve their production and increase their resilience to climate change. The activities related to the development of Climate Resilient Value Chains under output 1.1 will support the inclusion of this improved production from family farmers in the region and will support the market transformation at the national level.	National level (one country)

E.5. Project/programme specific indicators (project outcomes and outputs)

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final	
Outcome 1. Puna ecosystems are restored, conserved and better managed through the implementation of EbA measures complemented by CRVC	Hectares of ecosystems restored, conserved and better managed through the implementation of EbA measures	Project monitoring and evaluation reports	0	1,865 ha	23,914 ha	The area was calculated based on the geospatial analysis of EbA and value chains.
Output 1.1 Investments for EbA measures and Climate Resilient Value Chains are implemented at the local landscape level	Value (EUR) of funds to support the implementation of EbA measures and CRVC at the local landscape level	Project monitoring and evaluation reports Signed grant agreements with Puna Facility Integrated financial management system (SIAF): information about public investment projects EMMA integrated management system (Profonanpe): disbursement reports MIDAGRI reporting (e.g., Agroideas, Agrorural, etc)	0	From the Puna Facility: EUR 1.12 million From MIDAGRI: EUR 7.8 million	From the Puna Facility: EUR 14.4 million From MIDAGRI: EUR 22.7 million	58 out of 91 districts prioritized will be part of the Puna Facility target area. Local communities are interested in implementing EbA measures and climate resilient value chains. Mid-term target for the Puna Facility is expected to be 7,8% of the final target based on the project implementation plan. For MIDAGRI programmes include

						Agrorural, Sierra Azul, Directorate for Insurance and Promotion of Agricultural Financing Agroideas, INIA, SERFOR and PSI. Mid-term target for MIDAGRI is expected to be 16,6% of the final target based on the project implementation plan
Output 1.2 The use of EbA knowledge is recovered and disseminated, and local monitoring committees and observation systems are implemented	Number of Local initiatives that implement EbA measures based on ancestral knowledge	Project monitoring and evaluation reports Field surveys results	0	10	100	58 out of 91 districts prioritized will be part of the Puna Facility target area. Local communities are interested in implementing EbA measures and climate resilient value chains.
	Number of local monitoring committees and observation systems established	Minutes of traditional assemblies/organizational assemblies that formalize the monitoring committees	0	10	100	
Outcome 2. Public and private financing for EbA measures and climate resilient livelihoods are	Number of public and private financing modalities to promote EbA and CRVC	Project monitoring and evaluation reports	0	1	3	58 out of 91 districts prioritized will be part of the Puna Facility target area.

accessible and being actively used by vulnerable communities in the Puna Ecosystem	established and being actively used by vulnerable communities in the Puna ecosystem	MIDAGRI reporting (e.g., DSFFA) Integrated financial management system (SIAF): information about public investment projects Implemented by EPS with MERESE Agreements (e.g., MoU) signed between EPS and implementing institutions to implement EbA measures. Agreements (e.g., MoU) signed between financial institutions and the project Proof of disbursement of financial resources from the new financial modalities to the local communities in the Puna ecosystems or invested in EbA and CRVA (contracts, agreement, etc.).				Stakeholders (e.g., rural banks, private microfinance institutions) are interested in developing and/or adjusting financing options for EbA measures and CRVC. Financial institutions such as rural credit banks are interested in developing and/or adjusting credit lines to support EbA and CRVC. Fondo Agroperú supports 14 programs and is interested in partnering with the proposed project. The project will consider as “actively used” the financial mechanisms that have been established and have disbursed financial resources to the local communities in the Puna ecosystem or invested in EbA and CRVC.

Output 2.1 Financial mechanisms for the implementation of EbA measures and improvement of climate resilient livelihoods in the Puna ecosystem are established	Number of public and private financing modalities to promote EbA and CRVC available for vulnerable communities in the region	Project monitoring and evaluation reports MIDAGRI reporting (e.g., DSFFA) Integrated financial management system (SIAF): information about public investment projects Implemented by EPS with MERESE Agreements (e.g., MoU) signed between EPS and implementing institutions to implement EbA measures. Agreements (e.g., MoU) signed between financial institutions and the project	0	2	6	58 out of 91 districts prioritized will be part of the Puna Facility target area. Stakeholders (e.g., rural banks, private microfinance institutions) are interested in developing and/or adjusting financing options for EbA measures and CRVC. Financial institutions such as rural credit banks are interested in developing and/or adjusting credit lines to support EbA and CRVC. Fondo Agroperú supports 14 programs and is interested in partnering with the proposed project.
Outcome 3. EbA and climate resilience are mainstreamed into multilevel landscape governance instruments	Number of regulatory frameworks or public instruments redesigned or strengthened to include EbA and climate resilience	Project monitoring and evaluation reports Public body decisions related to relevant regulatory frameworks	0	2	5	Willingness of the government in improving their regulatory frameworks

		Ministerial/directorial resolutions				
Output 3.1 Multilevel landscape governance is improved through strengthening of national capacity, regulatory frameworks and M&E systems	Number of government officials demonstrating improved capacity in EbA and climate resilience including gender aspects	Reports from pre and post capacity building training surveys	0	50% increase in self-reported awareness levels in population of 300 people capacitated	50% increase in self-reported awareness levels in population of 605 (182 women and 423 men)[92] people capacitated	Engagement of government officials to participate in the online and presential training provided by the project
Project/programme co-benefit indicators						
Co-benefit 1 Maintenance of ecosystem services in the project area	Area within the project target districts that are important for ecosystem services where EbA measures are implemented	Project reports	0	1,865 ha	23,914 ha	
Co-benefit 2 GHG emissions are avoided through the conservation and restoration of degraded ecosystems	Avoided GHG emissions in tCO2eq	ExACT tool	0	31,797 tCO2e	407,657 tCO2e	The overall mitigation impact as a co-benefit from the projects is a reduction of 407,657 tCO2e in the 15 years analysed, which include five years of implementation phase and ten years of capitalisation phase. It is measured against a scenario without project that would have increased by 93,905 tCO2e the GHG

[92] Based on the ratio of the participation of women and men during the public official engagement events as part of the consultations a 30% women's participation can be expected.

						emissions in the areas of intervention. Mid-term target is expected to be 7,8% of the final target based on the project implementation plan
Co-benefit 3 Improvement of local economy through better economic opportunities and poverty reduction	Number of producers, of whom 50% are women have confirmed an improvement in their income from climate resilient value chains or climate-resilient practices.	Reports from MIDAGRI Pre and post workshop survey	0	0	70% of the local initiative beneficiaries	Implementation of 127 Local initiatives
Co-benefit 4 Awareness raising and capacity building of local stakeholders	Percentage of increase in self-reported awareness levels in population of 10,577 people capacitated	Pre and post workshop survey	0	50% increase in self-reported awareness levels in population of 825 people capacitated	50% increase in self-reported awareness levels in population of 10,577 people capacitated	Under capacitated people the project counts following: • 9647 producers trained through MIDAGRI (activity 1.1.3) • 910 local experts (273 women and 637 men)[93] capacitated (activity 1.2.1) • 20 Local actors capacitated (activity 2.1.2). Mid-term target is expected to be 7,8% of

[93] Based on reported information from Agrorural a 30% women's participation is expected.

						the final target based on the project implementation plan considering that the project implementation
Co-benefit 5 Gender responsive approaches mainstreamed in EbA and CRVC measures	Number of innovative Local initiatives (including EbA and CRVC) with a gender-sensitive approach implemented	Reports from Profonanpe	0	10	127 innovative Local initiatives (with EbA and CRVC) with a gender-sensitive approach implemented	Mid-term target is expected to be 7,8% of the final target based on the project implementation plan.

E.6. Project/programme activities and deliverables

Activities	Description	Sub-activities	Deliverables
Activity 1.1.1. Setting up the basis for financing and implementing EbA measures and Climate Resilient Value Chains	A communication strategy will be created to develop awareness about the project and create the basis for the implementation of EbA measures and CRVC through the Puna Facility. Technical support for local stakeholders (associations, CSOs, cooperatives) will be provided in order to participate in the call for proposals.	Sub-activity 1.1.1.1 Inform and identify communities, associations, cooperatives and Civil Society Organisations interested in participating in the project Sub-activity 1.1.1.2 Development of site-specific climate diagnostics and preparation of participatory intervention plans	• 1 Communication and engagement strategy developed • At least 100 Communities, associations, cooperatives and/or micro and small enterprises to be supported in 1.1.1.2 selected • 1 Training for project staff on concept standardization implemented • 1 Guideline (including participatory methodology)

			developed for site specific climate diagnostics and project intervention plans • At least 100 Local initiative intervention plans prepared • 3 Trainings for project staff on site-specific climate diagnostics implemented
Activity 1.1.2. Financing and implementing of EbA measures and Climate Resilient Value Chains	This activity will focus on promoting climate resilient Puna ecosystems and CRVC through of the implementation of climate-focused Local initiatives at local landscape level. The activity will provide financial support for Local initiatives through the Puna Facility (established under Activity 2.1.1) and through public resources (MIDAGRI's programmes). The two types of financial support are complementary and contribute to a general objective of improving the climate resilience of the local communities in the target territories.	Sub-activity 1.1.2.1 Implementation of Local initiatives financed by the Puna Facility Sub-activity 1.1.2.2 Financial support through MIDAGRI	• 127 Local initiative Grant Agreements signed • At least 8 public investment projects implemented
Activity 1.1.3. Technical Assistance for implementing EbA measures and Climate Resilient Value Chains at local landscape level	This activity will focus on providing technical assistance for implementing EbA measures and CRVC through MIDAGRI and the Puna Facility and enhance the market access and economic opportunities for the Climate Resilient and Sustainable Value Chains.	Sub-activity 1.1.3.1 Technical assistance for the refinement of proposals and Local initiative implementation (including EbA implementation, business development and access to finance) through the Puna Facility Sub-activity 1.1.3.2 Technical assistance through MIDAGRI	• 127 tailored TA packages offered • 9,647 producers trained • 1 Digital platform for sale of Puna products operating

		Sub-activity 1.1.3.3 Promote market access and economic opportunities for Climate Resilient and Sustainable Value Chains	
Activity 1.2.1 Recover, innovate and scale up ancestral knowledge and practices	This activity seeks to develop and strengthen the capacities of communities, local experts (called yachachiqs or kamayocs), and technical experts from national and regional institutions to increase the implementation of ancestral water and land management practices and technologies. The dialogue on ancient practices, knowledge and innovation will build intergenerational memory (children, youth and adults) at the community level on ancestral practices and innovation in a context of change (climate and markets, among others) and support the recognition and appreciation of people's own values, knowledge and practices, improving their self-esteem and strengthening their identity with the territory. It will also expand on gender roles to reflect on their place in and relationship with ecosystems. For this to be effective, studies and communication materials in native languages will be produced to capture lessons learned and promote replication of success stories. Exchange between communities will be financed by the project to encourage peer-to-peer learning and ownership of implemented solutions. Of particular importance is the transfer of experience already gathered from recuperating ancient practices and promoting participatory agreements in the Nor Yauyos Cochas landscape reserve.	Sub-activity 1.2.1.1 Capacity building of local experts for the transfer of ancestral and innovative knowledge linked to EbA and Climate Resilient Value Chains (CRVC) measures Sub-activity 1.2.1.2 Production and dissemination of information materials on lessons learned from ancestral practices and innovation in a context of change Sub-activity 1.2.1.3 Knowledge sharing among beneficiary communities with a gender perspective Sub-activity 1.2.1.4 Facilitating intergenerational dialogue on ancestral practices and innovation in a changing context	• At least 910 local experts (273 women and 637 men)[94] capacitated • 2 sets of communication materials in native languages on lessons learned from ancestral practices and innovation are published • At least 5 dissemination events about lessons learned from ancestral practices and innovation are carried out • 1 Knowledge exchange plan with gender perspective developed • 1 Report on community exchanges with gender perspective developed

[94] Based on reported information from Agrorural a 30% women's participation is expected.

			• 1 Intergenerational Dialogue Plan developed • 1 Systematization report on conducted intergenerational dialogues developed
Activity 1.2.2 Implement community monitoring and observation systems to measure the impact of EbA measures and provide feedback on regional and national policies	Instituto de Montaña, partnering with CSOs and local stakeholders, will reinforce stakeholders' capacities to support the establishment of community monitoring committees (based on the participatory action research approach, and previously identified in sub-activity 1.1.1.2). These committees will be responsible for community impact monitoring activities based on local knowledge and for liaising with the community for different project activities. The community monitoring committees' capacities will be strengthened, enabling knowledge weaving and coproduction on EbA, traditional practices and climate resilience. Target populations will establish climate vulnerability social and biophysical indicators based on local knowledge, complementing the local climate diagnostics. They will prepare participatory Local initiative intervention plans under sub-activity 1.1.1.2, and a baseline in their own communities, including conditions and trends of ecosystem services in the surrounding landscapes. Committees will develop local indicators and technical protocols to assess changes in ecosystem service provision over time as the EbA measures are implemented and mature. The data produced by the local monitoring system will feed regional and national institutions studies and research on impacts and effectiveness of EbA interventions, thus contribute to policy decision making processes. Technical assistance will be provided for the establishment of a methodology to calculate carbon in the Puna ecosystems and	Sub-activity 1.2.2.1 Training and implementation of Community Monitoring Committees to develop local monitoring systems Sub-activity 1.2.2.2 Development and implementation of a local data-driven information management system using digital technologies innovation measures Sub-activity 1.2.2.3 Analyse collected information on the impact of EbA measures	• 1 Community monitoring guideline developed • 1 Baseline report developed • 1 Final report of community monitoring progress developed • 1 Protocol to feed existing governmental Information Management Systems from a Cloud Database with local data developed • 1 Existing governmental Information Management Systems fed with local data • At least 1 study on the impact of EbA

	provide capacity building for local actors (e.g. communities, local government, academia) aligned with national *legal and institutional arrangements for carbon markets.*		measures completed • Methodology for the quantification of the carbon stock change cause by the EbA measures developed • At least 20 local actors capacitated
Activity 2.1.1 Establish the Puna Facility for the long-term financing of EbA measures and Climate Resilient Value Chains	This activity will establish the Puna Facility (linked to the operationalisation of the Facility in sub-activity 1.1.2.1.), managed by Profonanpe, to unlock investment for EbA measures in Puna ecosystems and climate resilient agrobusiness. The Puna Facility will be composed of one financial window (linked to sub-activity 1.1.2.1.) to receive funds from private sources and finance implementation of EbA and CRVC Local initiatives. This window will be supported by technical assistance (linked to sub-activity 1.1.3.1). The project will develop and implement other innovative financial mechanisms to mobilise resources from the private sector and different donors. This will be achieved through the design of a Private Sector Engagement Strategy, including criteria for selecting the companies in which advocacy actions will be deployed (for example, companies committed to social and environmental responsibility, without potential conflicts, linked to CRVC), criteria for selecting demonstration sites, and an effective communication and marketing strategy to engage the private sector. Finally, in order to increase the use of state funds for actions related to climate change adaptation, the activity will seek to mobilise resources from public programmes for the High Andean population and their associated ecosystems. To this end, access to and alignment of investments from MIDAGRI and MINAM and other government programmes will be promoted for EbA and CRVC measures through the development of improved instructions for access to public financing.	Sub-activity 2.1.1.1 Preparation and continuous improvement of the allocation of resources of the Puna Facility Sub-activity 2.1.1.2 Development and implementation of an innovative strategy to mobilize resources from the private sector and different donors Sub-activity 2.1.1.3 Promote access and alignment of public investments and other government programmes for EbA and Climate Resilient Value Chains (CRVC) measures	• Puna Facility Management Unit established • 1 Report on systematized lessons learned developed • At least two MoUs to secure new funding sources for the Puna Facility are signed • Sustainable financing strategy for Profonanpe to access private and international financing developed • Dissemination material (e.g., Flyers) developed • 1 Final report about the increased execution of public funds for

			actions/measures related to climate change adaptation developed
Activity 2.1.2 Strengthen capacities to develop and implement innovative mechanisms for EbA in high Andean ecosystems	The activity will seek to overcome the barriers faced by public water utilities that have established or are willing to establish a mechanism for retribution for ecosystem services (MERESE) schemes. Therefore, activities will be focused on strengthening stakeholders' capacities to identify and overcome bottlenecks and gaps in the implementation of MERESE. These activities will be developed in close coordination with the Ministry of Environment and the National Superintendence of Water Supply and Sanitation of Peru (SUNASS).	Sub-activity 2.1.2.1 Technical assistance to improve existing hydrological MERESE processes in the project areas	• 1 Capacity Building Program for water utilities personal developed • Technical assistance (e.g., EbA approach and public investment) implemented in at least three MERESE
Activity 2.1.3 Support the greening of microcredits to promote EbA and Climate Resilient Value Chains	This activity will focus on two main topics: (1) Supporting the greening of microcredit lines and business models and (2) supporting the dissemination of green financial products and services. In order to increase the supply of microfinance products and services to finance integrated EbA and CRVC initiatives, the project will support either the development of specific financial products or the greening of existing financial products for EbA measures and CRVC (aligned with the lists of EbA measures and CRVC developed in sub-activity 1.2.1.1) in Puna ecosystems. This will include strengthening the capacities of the officials who will offer the financial products. In addition, a strategy to disseminate the green financial products will be implemented, focusing on the beneficiaries of the project.	Sub-activity 2.1.3.1 Support to financial institutions in greening microcredits Sub-activity 2.1.3.2 Raise awareness of greener microcredits to promote EbA and Climate Resilient Value Chains	• At least 2 business model EbA and CVCR by specific chain (according to the Project catalogue) elaborated • At least 2 adapted microcredits for EbA and CVCR business models developed and disseminated with microfinance institutions • 1 Communication strategy for microfinance institutions developed

			• Al least 2 specific financial products for EbA and CVCR business models disseminated with microfinance institutions
Activity 3.1.1 Strengthen the capacities for territorial planning and governance processes integrating EbA and climate resilience	The new approaches that will be promoted by Resilient Puna require progressive development of capacities of implementers, local actors, and subnational governments to promote the replicability and sustainability of the changes introduced by the project. Therefore, in order to mainstream EbA and climate resilience approaches into planning processes (i.e. local and regional development plans, including budgets and investment project planning), official capacities at different levels (national, regional and local) will be strengthened and gender perspectives will be considered. The activity aims to strengthen participatory sectoral and territorial platforms so that the project EbA measures and CRVC developed by project beneficiaries can be replicated and scaled up. Lessons learned from the community´s experiences in EbA and CRVC planning, and implementation will be integrated.	Sub-activity 3.1.1.1 Strengthen the capacities of relevant national, regional and local government stakeholders for the incorporation of EbA and Climate Resilient Value Chains measures, integrating the gender perspective in their processes and interventions in the territory Sub-activity 3.1.1.2 Strengthen participatory sectoral and territorial platforms for the articulation and scaling up of EbA measures and Climate Resilient Value Chains within the scope of the project Sub-activity 3.1.1.3 Integration of EbA measures and Climate Resilient Value Chains in territorial planning and management instruments	• Online and/or presential training modules on how to mainstream Gender and EbA/CRVC approaches are developed • At least 605 (182 women and 423 men)95 relevant officials from the national (SERNANP and MIDAGRI officials), regional (5 regional government officials) and local (at least 50 local governments) government trained • Participatory mechanisms to involve communities/associations/cooperatives in the sectoral or

[95] Based on the ratio of the participation of women and men during the public official engagement events as part of the consultations a 30% women's participation can be expected.

			territorial platform decision making processes are developed • Framework planning and projects documents at the regional and local levels with an EbA/CRVC and gender approach are developed
Activity 3.1.2 Strengthen regulatory frameworks and M&E systems at national level	The activity aims to provide technical support to MIDAGRI and MINAM to improve the regulatory framework for the promotion and implementation of EbA measures and CRVC in the High Andean areas of the country. In addition, it will provide technical support for the national long-term M&E systems of the different government entities to measure impact of EbA interventions. Partnerships will be established with local universities and research institutes to support the monitoring of progress resulting from the interventions implemented by the different actors in the territory. This output will also support MIDAGRI in meeting its productivity and competitiveness commitments while complying with Peru's NDC targets.	Sub-activity 3.1.2.1 Improving national regulatory frameworks linked to EbA measures and Climate Resilient Value Chains Sub-activity 3.1.2.2 Improve coordination of EbA monitoring and evaluation (M&E) systems at the national level linked to project and NDC purposes	• Regulatory framework which includes the promotion EbA and CVCR interventions in the high Andean areas of the country are developed • NDC Monitoring system in the national scope with adequate protocols and methodologies to measure the impacts of EbA interventions on water and agriculture is implemented
E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)			
E.7.1. Monitoring, reporting and evaluation arrangements			

272. Monitoring, reporting and evaluation arrangements (in addition to the ESMP, IPLCEP and GAP) will comply with the relevant GCF policies, as stipulated in the AMA, FAA and project-related Financing Agreements and Implementation Agreements with Executing Entities and final beneficiaries, which EEs forward funds.

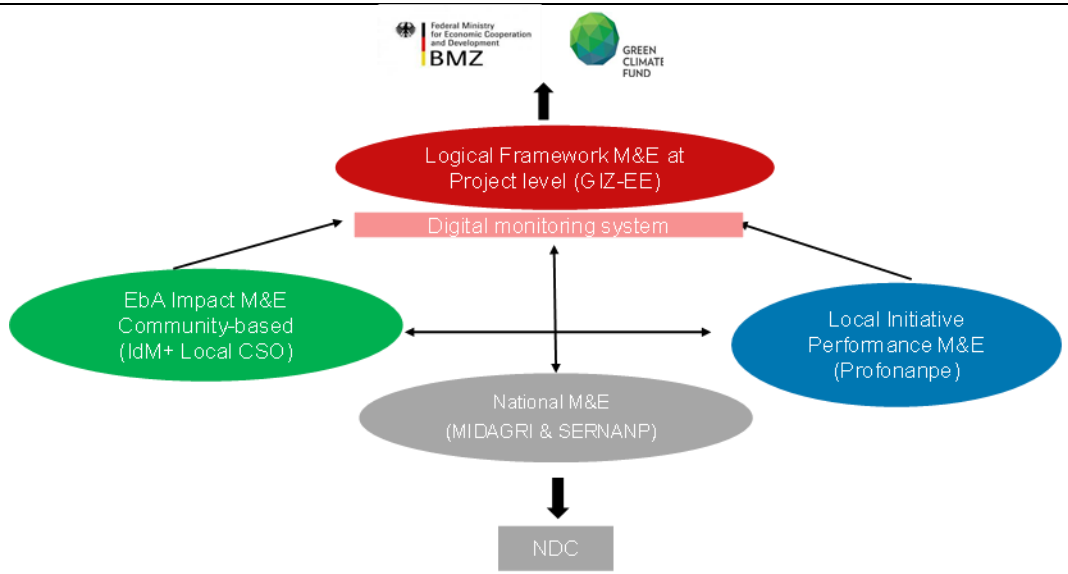
273. The project will apply a customized results-based monitoring and evaluation (M&E) system. The M&E system will track project inputs, activities and sub-activities. Outputs and impacts, as well as associated financial flows across all outputs in all project interventions areas.

274. This system will be based on:

- GIZ Standard Operating Procedures ("GIZ's evaluation policy – principles, guidelines and requirements")
- Monitoring and evaluation plan (Annex 11)
- Integrated results management framework and logical framework
- Implementation timetable *(*Annex 5*)*
- Requirements of GCF's Annual Performance Report
- Local and national monitoring systems
- Procedures and requirements of project partners and stakeholders in Puna and at national level

275. The oversight for M&E and reporting lies within the GIZ GCF AE. On the other hand, GIZ Peru as EE will ensure that appropriate monitoring and evaluation procedures are implemented. A digital tool (e.g., dashboard) for the project M&E system that will follow-up the progress of all results, indicators Logframe, activities and deliverables will be developed. This dashboard will also include different modules to monitor ESMP, GAP and Stakeholder Consultation Plan. Access to all EEs will be provided to collect data generated by the implementation of their activities and sub-activities. Additionally, Profonanpe as EE will supervise implementation and prepare periodic reports on the technical and financial achievements of the Local initiatives to be financed through the Puna Facility, as input to feed the project M&E system; Instituto de Montaña will support this work through the implementation and strengthening of community- based monitoring systems. The information collected at the local level will be integrated into the project monitoring system. Community monitoring committees will collect data in the field using an app that will be connected to a data-driven information management system which will also be a module of the project M&E system. Finally, since the indicators set in the Logframe coincide with the national sectoral indicators, the information produced by the M&E project system will be used to report MIDAGRI and SERNANP national monitoring systems that contributes to the NDCs.

Figure 18. Project M&E system



276. The Project Management Committee (PMC) will be the body responsible for leading the preparation, monitoring and coordination of the Annual Operational Plans and the annual project budget. and discussing monitoring processes and results. Its work will be supported by Project Implementation Unit (PIU) that will coordinate and integrate the Territorial Annual Operating Plan into the overall Annual Operating Planning of the project. It will also oversee the M&E system, monitoring both the technical and budgetary advancements of the project in alignment with the approved Annual Operating Plan and budget. This includes ensuring the timely execution of activities within the territory and providing regular updates to the PMC on the progress in this regard.

E.7.2. Recruitment of M&E staff

277. Immediately when the project commences, GIZ's GCF AE will make available one expert (with gender expertise) to oversee and coordinate the project M&E and reporting routines. As soon as GCF project proceeds become available in Puna, the project will recruit a M&E specialist. The specialist will work closely together and support the management of the M&E system and provide on-the-job training for dedicated M&E experts from PMC and PIU and other stakeholder of the system where requested. In addition, the experts will maintain the Cloud Database, and additional specialist inputs may be required for certain technical areas (e.g., agriculture, ecosystems or livestock).

E.7.3. Independent monitoring and evaluation studies

278. **Mid-term and final evaluation:** GIZ AE will initiate a mid-term evaluation and a final evaluation of the project. GIZ evaluations are carried out by GIZs' independent evaluation unit. This unit is steered by a corporate unit that is separate from operational business and reports directly to the Management Board. Moreover, evaluations are conducted with the support of external evaluators. GIZ applies the 'Evaluation criteria for German bilateral development cooperation' (2006, revised 2020) on a standard basis in project evaluations. These are based on the six evaluation criteria agreed by the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD): relevance, effectiveness, efficiency, overarching development results (impact), coherence and sustainability. Additionally, to the six OECD DAC evaluation criteria, the following five GCF criteria will be evaluated: Gender equity, country ownership, innovativeness in results areas, replication and scalability as well as unexpected results.

279. **GCFs' Evaluation Principle of Impartial, objective and unbiased and relevance, use and participation**: All provisions for upholding the GCF evaluation principles described in Chapter V (a-d) of the Evaluation Policy are followed (see DAC standards and DeGEval evaluation standards). In line with the UNEG norms, evaluation team members selected by GIZ must not be directly responsible for the policy setting, design or management of an evaluation project. An Interim Independent Evaluation Report and a Final Independent Evaluation Report will be submitted to the GCF as per timeline agreed in the funded activity agreement (FAA).
280. **GCFs' Evaluation Principle of Credibility and Robustness:** As a matter of principle, GIZ takes care to use an appropriate combination of quantitative and qualitative methods of empirical social research in evaluations. The mix of methods is adapted to the object of the evaluation and the evaluation questions. To ensure robust evidence, GIZ uses a theory-based approach as a minimum standard for its central project evaluations. The contribution analysis has proven to be a suitable design. The aim of contribution analyses is to collect empirical evidence on whether and to what extent contributions to observed changes can be associated with a project. Furthermore, the analyses should increase the understanding and knowledge of what works, what does not work and why.
281. Projects will be rated based on the six OECD/DAC and on the GCF evaluation criteria. Each of the OECD/DAC and GCF criteria is rated on a scale of 1 to 100. Using a points system serve to increase the transparency of ratings, whilst enabling better comparability between individual projects.
282. Results from the mid-term evaluation should be reflected within the project design, to influence upscaling, and improve overall project implementation (adaptive management).

E.7.4. Data collection and frequency

283. The RTGs will coordinate data collection for implemented activities through responsible executing partner GIZ, MIDAGRI, SERNNAP Profananpe and Instituto de Montaña in charge of leading the monitoring activities at local level. The PMC will supervise and guide the monitoring and evaluation. The PIU will aggregate monitoring reports based on RTG inputs at least every six months and make a summary report available to GIZ's AE unit at head office, again at least every six months.

E.7.5. Measurement and Evaluation (M&E) of implemented Local initiatives through Puna Facility to evaluate increase of resilience of local communities.

284. The M&E of implemented Local initiatives is an essential activity for monitoring the project's efficiency and effectiveness as well as for continued learning across the project. Instituto de Montaña will support in the implementation of the community level M&E (for more information please see activity 1.2.2.).

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

A detailed analysis of the project risks is provided in Chapter 10 of the Feasibility Study (Annex 2a). Environmental and social risks are considered in the Environmental and Social Impact Assessment (ESIA, Annex 6a), Indigenous Peoples and Local Communities Engagement Plan (IPLCEP, Annex 6c) and Environmental and Social Management Plan (ESMP, Annex 6b). Gender-specific risks are considered in the Gender Assessment and Gender Action Plan (Annexes 8a and 8b, respectively).

Selected Risk Factor 1: Insufficient financing may put at risk the long-term sustainability of the public or private investment

Category	Probability	Impact
Technical and operational	Low	Medium

Description

Insufficient public or private financial flows may put at risk the long-term sustainability of the project. Market intake for EbA measures and Climate Resilient Value Chains, especially those promoted via microfinancing may be insufficient. Fluctuations in the market value of cash products (e.g., South American camelid fiber, quinoa) may limit economic activity and entrepreneurship.

Mitigation Measure(s)

From project onset, activities will focus on increasing engagement of private entities (hydroelectric generation enterprises, agribusiness, cement, beverage, fiber and other industry) to leverage and mobilize resources for EbA and CRVC. A communication strategy will be developed to make the case for potential expected losses in these industries if Puna ecosystems are not conserved. Public funding will be increased by building official capacities in MIDAGRI and SERNANP and triggering operation and improving functionality of the hydrological MERESE scheme. The promotion of microfinancing for EbA will be done at both the offer and the demand side. Once microfinance institutions are trained in adjusting existing and/or developing microcredits to support EbA measures and/or Climate Resilient Value Chains they will continue promoting through their own channels. Local communities, producers' associations, cooperatives, MSEs, community enterprises and producers' organizations will be strengthened on business development and access to finance (including financial literacy) to ensure successful income-generating activities. Income diversification will be promoted through technical and financial support to avoid over indebtedness and stimulate investment.

Selected Risk Factor 2: Local stakeholders are not sufficiently organized, engaged and interested in participating in the project

Category	Probability	Impact
Technical and operational	Low	Low

Description

Participation from local stakeholders in the project activities may not be as high as expected due to the lack of interest due to the lack of interest This could happen due to various factors, e.g., not seeing the value of EbA measures or the perception that the Puna Facility does not have an added value to the region. Moreover, there is a risk of 'consultation fatigue' in the districts where other initiatives may have taken place

Mitigation Measure(s)

The project has been designed in close coordination with key local stakeholders, and local consultations with potential project beneficiaries have been caried out to ensure that their interests and views are being addressed in the project. Continuous engagement with relevant stakeholders at all levels will help promote dialogue and ongoing capacity building to facilitate the engagement. The project will develop adequate communication and engagement strategies to ensure reaching out and continuously communicating to stakeholders and potential project beneficiaries about the project interventions throughout the planed project implementation. In addition, the project will emphasize documentation and dissemination of information to facilitate capacity building and knowledge exchange among local stakeholders, which will foster interest in participating in the project activities.

Selected Risk Factor 3: Coordination among regional government stakeholders is insufficient to sustain project results

Category	Probability	Impact
Technical and operational	Low	Low

Description

Coordination among government stakeholders is insufficient and the lack of interest and ownership of the project may limit the sustainability of project results.

Mitigation Measure(s)		
The project is aligned with the priorities of the Government of Peru, and it has been developed in close coordination with Government institutions that will have a key role in its implementation, e.g., MIDAGRI and Profonanpe. Extensive consultations and meetings with government actors and key stakeholders have been carried out during the project design phase. Component 3 of the project will be focusing on strengthening multilevel governance to ensure that the national institutions will have the technical capacity needed to carry out the activities after project completion.		
Selected Risk Factor 4: Risk of continuity due to political instability		
Category	**Probability**	**Impact**
Governance	Low	Medium
Description		
The project is constructed on the assumption of sustained commitment from the Government of Peru to fulfil its NDC goals and from MIDAGRI to continue its open and proactive engagement. Political instability in Peru may affect project continuity.		
Mitigation Measure(s)		
GIZ has carried out a consistent engagement process since it was requested to support the Peruvian government to access GCF financing for this project and will continue to do so throughout project inception and implementation. This approach provides a great strength that allows the project to persist despite the changes in government administration and ensures continuity, as it can be evidenced from the recent change in administration without affecting the project construction process.		
Selected Risk Factor 5: Maladaptation and degradation of ecosystems and social structures		
Category	**Probability**	**Impact**
Technical and operational	Medium	Medium
Description		
Improved economic opportunities in the SHAP may lead to increased pressure on ecosystems (e. g., number of cattle heads increases as a result of business-oriented approaches). Moreover, the support to certain Value chains such as crops may result in maladaptation if they contributed to ecosystems degradation (e.g., use of pesticides). Social structures may continue to deteriorate because of increased ecosystem degradation.		
Mitigation Measure(s)		
All proposed agricultural interventions are intended to increase productivity while ensuring that the carrying capacity of Puna ecosystems is not exceeded. The promotion of sustainable landscape management practices, soil amendments, ancestral and modern technologies for water and soil conservation, exclusion zones and communal reserves, among others, will ensure resource conservation for future generations. Business activities will focus on increasing economic output while decreasing environmental impact. The diagnostic for planning will start from local social characteristics and cultural values that could have an influence on risks and environmental dynamics. Social structures will be strengthened through Outputs 1.2 and 3.1., bringing local successful experiences into planning and decision-making at macro scales. Project beneficiaries will be trained on community-based monitoring processes and indicators. Ecosystem-monitoring capacities of the communities and government partners will be reinforced, integrating the best available science to determine limits in carrying capacity or intensity of agricultural activities.		
Selected Risk Factor 6: Difficulties and delays in unlocking technical and financial support		
Category	**Probability**	**Impact**
Technical and operational	Medium	Low
Description		
Access to MIDAGRI programs as well as technical and financial support from the Puna Facility will be on a voluntary basis. This may limit the ability of the project to meet its targets or have sufficient concentration of interventions to show tangible results. Unlocking of public financing via MERESE schemes may require lengthy negotiations beyond the life of the project.		
Mitigation Measure(s)		
MIDAGRI has committed about 35 percent of project funds. Through the improved coordination obtained from component 3, a more streamlined approach for execution of MIDAGRI's funds will be operational. The project will provide support for project beneficiaries and MIDAGRI officers to facilitate the communication materials for the application process. Complementarity will be ensured with the Puna Facility through the project's Governance Structure as the Project Steering Committee and Project Management Committees will have an active role within the governance structure of the Facility. Participation of all relevant stakeholders (GIZ,		

Profonanpe, MIDAGRI, MINAM) since project conceptualization is ensuring alignment throughout preparation, planning and execution of activities to meet targets. Lessons learned from project execution will be integrated into the procedures of the coordination unit. Local initiatives implementation will be supported by Technical Assistance and in some cases by the support of qualified CSOs and financed by the Puna Facility will be planned as to maximize concentration of positive impacts on ecosystem services. Concerning the MERESE mechanisms, the project will work in watersheds with potential of MERESE at different stages of evolution. Through a systematic and modular approach, the project will build capacities in EPS according to their needs. Those who are already collecting tariffs but do not know how to plan, design, develop, and implement interventions, will be invited to contribute to the Puna facility. For those MERESE where agreements between parties have not been reached, support will be provided to negotiate and finalize such agreements. All this effort will unlock funds for implementation of MERESE. EPS in earlier stages will take longer to fund activities but through the gained experience in the modular approach a speedier process will result.

G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

G.1.1 Environmental and Social Impact Assessment and Environmental and Social Management Plan

285. The Environmental and Social Impact Assessment and Environmental (ESIA) of the project is provided in Annex 6a. According to the ESIA the overall risk of the project has been rated with a category B (medium risk). In general, the project will have a positive environmental and social impact on the beneficiaries in the South High Andes of Peru. Nevertheless, potential adverse environmental and social impacts of the project will mostly site-specific, but due to the nature of the interventions these impacts will not be irreversible or complex in nature and will be easily remediable through preventive and mitigation measures. Therefore, respective plans including an Environmental and Social Management Plan (ESMP) (Annex 6b) and the Indigenous Peoples and Local Communities Engagement Plan (Annex 6c were developed).

286. The ESIA primarily relies on primary data obtained through stakeholder consultations and secondary information researched. The Puna area has been subject to comprehensive study, resulting in a wide range of available literature concerning its ecosystems and social aspects. In parallel to the ESIA, stakeholder consultations have been conducted which are summarized in Annex 7 Summary of consultations and stakeholder engagement plan. This document provides next to an extensive mapping of stakeholders a summary of three missions which were carried out in the field. These three missions allowed the recollection of qualitative data that were used to better understand the potential risk from social and environmental point of view and the sensibility of the stakeholders, which were used amongst others for the development of the ESIA.

287. In general, stakeholders interviewed during fieldwork approved the project and its main components. Stakeholders met during fieldwork recognized perceiving the effects of climate change in their livelihoods. In addition, producers expressed their concern about a collective approach versus individual support, as most of the production is individual. They recognize that some actions must be carried out at larger scale when interventions such as building of qochas and/or irrigation investments are being considered. In particular, women are interested in transformation and commercialization of locally product raw material.

288. Furthermore, based on the analysis in general, the impacts of the project can be assessed as low to medium, these are mostly to the activities within component 1 (regarding activity 1.1.2 Implementation of EbA measures and Climate Resilient Value Chains) and component 2 (regarding activity 2.1.1. establish the Puna Facility for the long-term financing of EbA measures and Climate Resilient Value Chains), since the competition for funds could be a conflict driver, therefore and based on the results an ESMP and IPLCEP has been designed for the management of the identified risks (an overview of environmental and social (E&S) risks and impacts, and mitigation measure can be found in **¡Error! No se encuentra el origen de la referencia.** below, for ESS 7 Indigenous Peoples Table 9 details the respective mitigations actions). The implementation of the ESMP will be monitoring. This will involve tracking compliance with the Environmental and Social Standards (ESS) and assessing the advancement of ESMP implementation through bi-annual Results-Based Monitoring (RbM) workshops and the Environmental and Social Safeguards Management and Monitoring System (ESS MS system). The ESS MS system encompasses specific procedures, plans, organizational structures, planning activities, and resources geared toward establishing, executing, attaining, reviewing, and sustaining the Environmental and Social Requirements. Its development will take place during the inception phase, led by GIZ and in close collaboration with all EE ESS focal points.

289. In addition, ESS1 requires the establishment of an external communication and grievance redress mechanism (GRM) for the project to address grievances from affected communities and individuals, as well as external communications from stakeholders. At the GCF level, the independent Redress Mechanism handles complaints related to adverse impacts resulting from the GCF-financed activities' failure to adhere to GCF operational policies and procedures, including ESS standards. If a complaint is filed with the Independent Redress Mechanism, GIZ, as the Accredited Entity, will cooperate with both the Independent Redress Mechanism and the GCF. The GRM will be finalized during the project's inception phase and will be aligned with existing systems of Profonanpe and MIDAGRI. It will also incorporate cultural sensitivity aspects such as being available in the Quechua and will be presented in different forms to ensure that it is accessible to all stakeholders (e.g., online, physical in form of a complain box, etc.). The GRM will also include aspects related to Gender-based Violence (GbV) and Sexual Exploitation Abuse and Harassment (SEAH) in line with the Gender Analysis and Gender Action Plan, ensuring gender and cultural sensitivity and protecting the anonymity of complainants.

290. The table below shows the proposed mitigation measures E&S risks and impacts as shown in Annex 6b).

Table 8. Overview of environmental and social (E&S) risks and impacts, and mitigation measures

ESS	ESS Risks and impacts	Mitigation measures

ESS1	Environmental and social risks primarily pertain to the list of Ecosystem-based Adaptation (EbA) measures and proposed Climate Resilient Value Chains (CRVC). These risks could materialize in the absence of a comprehensive Environmental and Social Safeguards (ESS) review and monitoring process.	- Establishment of an ESS review and monitoring procedure for screening local initiatives in the Puna Facility. - If necessary, particularly for initiatives falling under risk category B, Profonanpe will provide support to beneficiaries in crafting ESS plans for their respective local initiatives.
ESS2	Accidents during construction and land work or contagion could occur, due to the requirement of extensive manual labour. Potentially occupational and safety risks during Local initiative implementation	- Implementation of health and safety measures based on a safety protocol.
ESS3	Risk of GHG emissions and climate change mitigation may arise if the proposed interventions for CRVC involve mechanization measures to boost productivity or for processing, especially when targeting specific overseas markets as part of the market access support. Additionally, the mismanagement of water resources in the watershed, potentially resulting from improperly designed irrigation and drainage systems, can have adverse consequences.	- Adequate following of eligible CRVCs as part of the selection criteria of the Puna Facility. - Promotion access to national markets. - Adequate site-specific climate diagnostics and territorial intervention plan. - Offer of trainings regarding environmental risks.
ESS4	Mismanagement of water resources in the watershed through unproperly designed of irrigation and drainage system could affect downstream users and have negative impacts on water, energy, waste and pollution prevention	- Implement Gender Action Plan and adequate gender responsive GRM considering SEAH. - Strengthen women's empowerment through gender quota as part of the Puna Facility evaluation.
ESS5	Potential sexual exploitation, abuse, harassment (SEAH) towards women's empowerment actions.	- Develop free, prior and informed consent (FPIC) - Confirm ownership through mapping of the community, reviewing individual property and validating with community and interested persons. - Adequate review and eligibility documentation by Profonanpe. - Develop a Risk Management Plan by a risk manager.
ESS6	Risk of unexpected ecosystem degradation due to oil and gas leakage from vehicle, attendance overrun, overgrazing, introduction of alien species among others could occur. Potentially risks of increased frequentation, degradation of existing system/balance and pests and diseases.	- Please refer to measure 4
ESS7	Insufficient engagement and consultation of Indigenous Peoples and Local Communities could generate conflicts during project implementation.	- Implement Indigenous Peoples and Local Communities Engagement Plan (IPLCEP, Annex 6c).
ESS8	Potential risk of unexpected finding of some archaeological rest and artefact, possible unintended negative impacts on cultural heritage.	- Ensure by Profonanpe and MIDAGRI during implementation of Local initiative and public investment projects that unexpected findings are reported to MINCUL and local stakeholders.
ESS9	Risk of high expectations amongst Local initiative beneficiaries could occur due to improper development and organization of stakeholder engagement. Potential risk of insufficient stakeholder engagement and rise of high expectations amongst Local initiative beneficiaries.	- Adequately following and implementation by all EEs of the Stakeholder Engagement Plan (as part of Annex 7) developed for the proposed project.

G.1.2 Indigenous Peoples and Local Communities Engagement Plan (IPLCEP)

291. The project area is targeting mainly the Southern High Andes of Peru (SHAP Region), concentrating on four regions in Southern Peru: Cusco, Apurímac, Puno and Arequipa. The population of the local communities in the SHAP area are mostly part of the of the country's Quechua indigenous population. Nationally, around 5.1 million people consider themselves as part of the Quechua people. Most of the Quechua population lives organized

politically and administratively in peasant communities. They are constituted by families linked by ancestral, social, economic, and cultural features. Almost the entirety of the population in the project area belong to the Quechua Indigenous Peoples Group . There is considerable uniformity in the cultural-socio-economic conditions within this area. As a general profile, the Quechua speaking people of the high Andes are subsistence level agriculturalists, living in poverty or extreme poverty reliant on livestock grazing and limited crop production . While most children attend primary school only a minority continue and complete their secondary education instead withdrawing to support the family's subsistence activities. The Peruvian state has made an initial identification of the Indigenous Peoples Groups (peasant and native communities) and has formally recognised 55 Indigenous or Original Peoples in the whole Peruvian territory . However, in the target area of the Resilient Puna project there is only one Indigenous Peoples Group present: the Quechua.

292. Based on the ESIA and ESMP (please see Annex 6a and b) and the stakeholders' consultations (please see Annex 7) it was shown that the main aspects for risks and impacts related to ESS 7 are: (i) conflicts may arise concerning the ownership and usage rights of the project site, along with the distribution of resulting benefits and employment opportunities., (ii) conflicts with downstream water user over interruption or alteration of water flows and water quality during and after the restoration works, (iii) opposition of landowners, land users and residents over restrictions or lost access to productive, grasslands and other natural resources collection areas and (iv) lack or poor gender consideration and no opportunities proposed to women.

293. The table below shows the proposed mitigation measures addressing ESS7 (for more information see Annex 6c).

Table 9. Proposed mitigation measures addressing ESS7

Risks and potentials concerning Indigenous peoples and local communities	Description of the Measure/Action:
Appropriately consider the local knowledge, especially in the context of ethnic culture diversity in Peru amongst project staff including ensuring the use of local languages (i.e., Quechua)	- Project capacity to implement IPLCEP - Hiring of staff to implement IPLCEP, including amongst others GIZ- ESS specialist with knowledge of Indigenous peoples and Local Communities and Promoters who can speak Quechua. - Hiring of Quechua interpreters to ensure that all communities understand information provided by the project.
Insufficient consideration and/or representation of Indigenous Peoples and local communities in project activities.	- Project guidelines and strategies (e.g., communication and engagement) will be design considering Indigenous Peoples and Local Communities. - Representatives of Indigenous Peoples and local communities will be given opportunity to participate in project activities (e.g., related to community monitoring, recover, innovate and scale up ancestral knowledge and practices).
Insufficient engagement and consultation of Indigenous Peoples and Local communities could generate conflicts during project implementation.	- Set up a consultation register. - Conduct meaningful consultation (e.g. decision-making body) and ensure transparent processes throughout project implementation to ensure a free, prior and informed consent before engaging in project activities. - Provide adequate information as well as engage with and seek the support of those who could be affected by conflicts throughout the whole Local initiative cycle ensuring active, free, effective, meaningful, and informed participation of individuals and groups throughout these processes. - Ensure equal rights for all different Indigenous Peoples and local communities, women, and men, while acknowledging differences between women and men and taking specific measures aimed at accelerating equality when necessary.
Insufficient participation and/or inclusion of Indigenous Peoples and Local communities in regional platforms, territorial planning, dissemination and monitoring process, and technical capacity building.	- Verify and confirm that there are quotas for the participation of Indigenous Peoples and Local communities and increase the number within the regulations of regional platforms. Including awareness raising about the significance of community involvement. - Prepare Indigenous Peoples and Local Communities for the participation in regional platforms. - Social safeguards specialist to ensure that communication and engagement strategy considers cultural responsiveness and social inclusion. Including on the strategies to project staff and Promoters and CSOs. - The project will pay special attention to culturally and gender sensitivity, considering indigenous groups and gender perspectives in the policy development process by engaging indigenous representatives. - Active engagement of traditional organizations' leaders, in capacity building, and development of territorial plans and other project supported measures.
Culturally inappropriate access and rights to agricultural, bofedales and grassland.	- in cases where the project suggests the restoration or protection of agricultural land, bofedales, grasslands, or other natural resources utilized by local community members (comuneros), careful consideration will be given to discussing and offering alternative access and livelihood options. - Efforts will be made to identify similar areas where poorer and landless households can access and depend on for their livelihoods. The project will employ participatory

	approaches, and project personnel, promoters, and Civil Society Organizations (CSOs) will receive training on gender equality and social inclusion.
Irrespective customary use of lands, territories and resources and rights related to cultural and spiritual heritage and values, traditional knowledge, resource management systems and practices, and livelihoods.	- Respect Indigenous People and Local Communities' spiritual/holy land sites and practices. - Respect customary land tenure rights and institutions.
Possible complaints from Indigenous Peoples and Local Communities, especially women, the youth and the elderly are not being considered.	- Respective trainings for GRM focal points. - GRM will be communicated to all relevant stakeholders, including the Indigenous Peoples and Local Communities as part of project engagement. - GRM developed considering culturally appropriate ways of handling the concerns of Indigenous Peoples and local communities in the project areas. - Use Indigenous People and Local Communities' interpreter for all Indigenous Peoples and Local Communtiies with low Spanish language skills. - Processing of complaints and documentation must include specific timeframe and commitments to resolve issues. - All complaint will be recorded (letter, email, record of conversation) and confidentially and safely stored together, electronically or in hard copy.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

294. The project's Gender Analysis (GA, see Annex 8a) and Gender Action Plan (GAP, see Annex 8b) align with international principles and commitments such as CEDAW, Beijing, Belém do Pará, and the SDGs, as well as national policies like the Gender and Climate Change Action Plan-PACC, National Policy on Gender Equality. These policies support gender equality and non-discrimination of women in various aspects of life, including social, political, cultural, climatic, and economic rights. Recognizing that the impacts of global warming affect men and women differently, the project aims to implement adaptation and mitigation measures that consider these distinct needs. The project's primary approach, Ecosystem-based Adaptation (EbA), emphasizes working with nature to address climate impacts while simultaneously reducing vulnerability and generating social and economic benefits. It's a collaborative process involving communities, public, and private organizations, aimed at creating sustainable opportunities for all parties at the landscape level.

295. Specifically, the gender analysis has identified the main factors that are hindering women's progress and resilience in the face of climate change. Overburdened care and unpaid domestic work; low participation in decision-making; lack of income; vulnerability of their housing and household environment (e.g., health, food, gender-based violence, poor housing) are the main gendered barriers to more equitable climate adaptation.

296. As mentioned in Section D.3, women in the SHAP area face more barriers than men that hinder the achievement of gender equity in climate change adaptation measures. Women face unequal access to resources (use, control) and receive lower income. They also have limited access to microfinance; less opportunities and time for education, training, and technical assistance/capacity to develop and implement nature-based solutions and climate-resilient agri-businesses. It is important not only to work to close these gender gaps but also to address the weaknesses in institutions and regulation policies, to EbA measures and Climate Resilient Value Chains, while also limited gender-sensitive information (data, systematization of experiences, lessons learnt, behavioural changes). For this, it is essential that the actions undertaken within the project do not result in an increased workload for women who already have a double burden between productive and reproductive work (domestic and care work). For this, the project must recognize women's knowledge, needs and expectations to generate effective responses in terms of building social and technical capacities, as well as opportunities for their economic autonomy, participation, and representation in decision-making.

297. Based on the identified gender gaps and recommendations, a Gender Action Plan (GAP) has been developed for the project. Table 10 includes some of the measures and targets that are integrated in the project's GAP (for more detailed information, please see Annex 8b):

Table 10. Overview of gender risks and actions integrated into the design

Risks and potentials concerning gender equality	Description of the Measure/Action:
Risk of not collecting disaggregated data	- Gender-sensitive M&E system to track female and male beneficiaries and ensure gender-sensitive project management.
	- Ensure increasing the participation and capacity building of women and youth in workshops offered by the project.
	- Establish cooperation between gender advisor and communication team to ensure that all project communication materials and guidelines include a gender equality and social inclusion (GESI) perspective. Including, when necessary, training on GESI for the communications team.

Beneficiaries not using the grievance mechanism for fear of harassment.	- Gender based Violence (GbV) and Sexual Exploitation Abuse and Harassment (SEAH) aspects are include in the grievance mechanism (GRM).
	- Ensure that identified beneficiaries (local communities, producers' associations, cooperatives, micro and small enterprises, community enterprises and producers' organizations) include female members.
	- Promoting a gender-sensitive communal planning process for investing in EbA measures and Climate Resilient Value Chains.
Designing EbA measures without considering women´s needs, responsibilities and domestic burden	- Designed and implement of innovative measures for ecosystem-based adaptation with a gender-sensitive approach
Insufficient participation of women in technical trainings provided through the project	- Ensure women's access to technical assistance including financial education, access to markets, implementation of Local initiatives.
Women avoid disclosing ancestral knowledge	- Systematization of best practices of women's knowledge for replication. The project will promote the development of publications together with universities/public institutions, etc.
	- Dissemination of best practices of women's knowledge for replication. The project will promote the development of publications together with universities/public institutions, etc.
	- Ensure the participation of women in the observation, registration, and dissemination of information in the environmental community monitoring committees.
	- Gender criteria considered as part of the Local initiative evaluation.
	- Train water utility (EPS) officers of PES/MERESE to promote the inclusion of gender aspects into the MERESE's processes (agreements, governance platforms, project development, monitoring).
	- Support the design of gender-sensitive financial products to promote EbA and Climate Resilient Value Chains. The design will include a diagnostics identifying gender gaps and needs.
Planning processes do not include gender perspective	- Ensure gender perspective during the planning processes training public officials with an institutionalized training program led by the Peruvian ministry(s).
Women have difficulties in participation in planning processes	- Promote the participation of women in decision making planning processes
	- Strengthening the disaggregation of the M&E system with gender EbA approach at MIDAGRI.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

G.3.1 Financial Management

298. GIZ head office in Germany (GIZ HQ) will serve as the Accredited Entity (AE), administrating project funds and assuming responsibilities of oversight, guidance and quality assurance to the executing entities in accordance with the Accreditation Master Agreement signed between GCF and GIZ. The financial management of the project will follow GIZ's internal rules and regulations. GIZ has bank accounts with Deutsche Bundesbank and Commerzbank. GIZ will not open a specific bank account for the GCF project but will ensure that all funds provided are clearly identifiable and distinguishable from GIZ's other funds by setting up separate cost units exclusively for the funds disbursed by the GCF for each funded activity (ledger accounts). Funds received and expenditures incurred will be booked to the respective cost unit according to generally accepted accounting principles and procedures accepted by the German Government. As a general principle, GIZ disburses funds to recipients in accordance with the progress of the project. Executing Entities receiving GCF proceeds by GIZ (Profonanpe and, Instituto de Montaña) have to report on the proper use of funds and defined progress as a prerequisite for any further disbursement. Independent external auditors will perform annual financial audits of the project in line with International Auditing Standards.

299. Profonanpe will host the public-private Puna Facility and manage the different sub-windows and complementary TA under component 1 and 2. Under GIZ HQ supervision, Profonanpe will ensure that all fiduciary standards of the GCF are followed. The project Steering Committee will provide the necessary orientations to Profonanpe so beneficiaries (e.g., producers' associations, local communities, etc.) and in some cases in partnership with CSOs can apply to the call for proposal and be supported through TA throughout the implementation of Local initiatives. Funds received during, but mainly after the project, from the private sector or other international donors are planned to be channeled through the Puna Facility to ensure the sustainability. Local initiatives will complement MIDAGRI's investments from Sierra Azul, Agrorural, and Agroideas (co-financing).

G.3.2 Procurement

300. In the case of procurement by GIZ, GIZ will follow its own Procurement Guidelines. GIZ is required to comply with the relevant contracting rules as established in the German Act against Restraints of Competition (GWB), the German Regulation on the Award of Public Contracts (VgV) and, if applicable, the Contracting Rules for the Award of Public Service Contracts (VOB, VOL/B and UVgO) when procuring services, construction work and supplies.

301. When awarding contracts for supplies and services (including consultancy services) to be financed in full or in part from the financing contract, the external Executing Entities will observe their own national regulation for public procurement and will in any case comply with the provisions mentioned in the Procurement Guidelines for projects funded by GCF/GIZ.

302. The Procurement Guidelines shall not contradict the applicable national procurement law and/or regulations for public procurement, which apply in the Executing Entities country. In principle, the regulations of the Executing Entities country are to be observed; the procurement procedures mentioned in the Guidelines are obligatory minimum standards (an overview of these minimum standards is available under Annex 10b). While implementing a project with public funds the Executing Entities should take reasonable account of economic efficiency as well as ecological and social aspects.

303. GIZ in its function as AE will have monitoring and oversight responsibility on the procurement activities carried out by the third parties. The monitoring and oversight procedures will follow GIZ's internal rules and regulations to ensure compliance with GIZ procurement guidelines which are contractually agreed and reviewed externally via annual audits.

304. The project's procurement plan is available in Annex 10a.

G.4. Disclosure of funding proposal

☒ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

☐ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

☒	Annex 1	NDA no-objection letter(s) **(template provided)**
☒	Annex 2	Feasibility study - and a market study, if applicable
☒	Annex 3	Economic and/or financial analyses in spreadsheet format
☒	Annex 4	Detailed budget plan **(template provided)**
☒	Annex 5	Implementation timetable including key project/programme milestones **(template provided)**
☒	Annex 6	E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3): **(ESS disclosure form provided)** ☒ Environmental and Social Impact Assessment (ESIA) or ☒ Environmental and Social Management Plan (ESMP) or ☐ Environmental and Social Management System (ESMS) ☒ Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.)
☒	Annex 7	Summary of consultations and stakeholder engagement plan
☒	Annex 8	Gender assessment and project/programme-level action plan **(template provided)**
☒	Annex 9	Legal due diligence (regulation, taxation and insurance)
☒	Annex 10	Procurement plan **(template provided)**
☒	Annex 11	Monitoring and evaluation plan **(template provided)**
☒	Annex 12	AE fee request **(template provided)**
☒	Annex 13	Co-financing commitment letter, if applicable **(template provided)**
☐	Annex 14	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

☒	Annex 15	Evidence of internal approval **(template provided)**
☒	Annex 16	Map(s) indicating the location of proposed interventions
☐	Annex 17	Multi-country project/programme information **(template provided)**
☐	Annex 18	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☒	Annex 19	Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
☒	Annex 20	First level AML/CFT (KYC) assessment
☒	Annex 21	Operations manual (Operations and maintenance)
☒	Annex 22	Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)[96]
☐	Annex X	Other references

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

[96] Annex 22 is mandatory for mitigation and cross-cutting projects.