



Darwin Initiative Main Annual Report

Darwin Project Information

Project reference	26-021
Project title	Biodiversity conservation, vicuña health and local livelihoods in Apolobamba, Bolivia
Country/ies	Bolivia
Lead organisation	Wildlife Conservation Society (WCS)
Partner institution(s)	Marka Cololo de Antaquilla, Apolobamba protected area
Darwin grant value	£ 292,302.00
Start/end dates of project	1 April 2019 (July 2019) – 31 March 2022
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	1 April 2020 - 31 March 2021 Annual Report 2
Project Leader name	Oscar Loayza Cossio
Project website/blog/social media	https://bolivia.wcs.org/
Report author(s) and date	Oscar Loayza, Fabián Beltrán, Humber Alberto, Omar Torrico, José Luis Mollericona, Ariel Reinaga & Lilian Painter. 30 April 2021

1. Project summary

This project aims to reduce the cumulative effects of overgrazing of pastures and peatlands, climate change, and mining over 100,000 hectares in the highlands of Apolobamba protected area and Marka Cololo indigenous land in Bolivia by improving pastoral and peatland management.

Apolobamba is a key biodiversity area (KBA) within the Tropical Andes Biodiversity Hotspot, with bird species such as the Royal Cinclodes and Ash-breasted tit-tyrant. Its pastures and peatlands are keystone habitat for the endangered Andean cat, near threatened Chilean flamingo, pampas cat, mauri catfish, and the vulnerable marbled waterfrog. The most important population density of vicuñas in Bolivia is found here. Shearing of vicuña wool results in local earnings of \$158,800 a year for 1,335 people in a region where extreme poverty affects 73% of the population. Both these biodiversity and livelihood values are threatened by poor pasture management and gold mining activity and pollution.

The project will develop participatory pasture management agreements and improve vicuña handling. By improving pasture and peatland management, the project will conserve critical biodiversity habitat, and provide wider ecosystem benefits to pastoralists managing wild and domestic camelids. Specifically, healthy pastures will improve nutritional condition and immune response of vicuña, thereby reducing the impact of mange on animal health and wool production. Rounding up animals close together and poor shearing hygiene lead to mange-mite transmission.

This project will therefore provide veterinary assistance to Marka Cololo to better understand mange dynamics and develop their capacity to independently manage and monitor vicuña health in the future, in coordination with the park guards. It will also increase the capacity of the Regional

Vicuña Managers Association by developing a business and organisational strengthening plan, including an analysis of obstacles and opportunities for women's participation. The experiences will leverage local knowledge and promote regional collaboration to share lessons learnt under different threat and management contexts. It is proposed to share results with camelid managers in Bolivia and Peru, and with the International Union for Conservation of Nature (IUCN).

2. Project partnerships

A key strength of this project and a critical component to its successful long-term implementation, is its ability to create, maintain and foster partnerships. WCS works with the National Service of Protected Areas (SERNAP), the Apolobamba protected area, the Marka Cololo Copacabana Antaquilla indigenous organisation, the Regional Vicuña Managers Association of Apolobamba and the National Community Association for the Commercialization of Vicuña Fiber in Bolivia (ACOFIVB) to implement this project. 'WCS agreed-upon priorities in cooperation agreements with each organisation, signed in August 2019'. The first three partners have rights and responsibilities over the proposed area of intervention, and the last partners has rights and responsibilities over the target vicuña population and management, and all have been involved in discussions about activities to be executed in the project.

The project can be said to be collaborative and working with host country institutions, as demonstrated through the relationship with the national protected area service (SERNAP) and with national vicuña managers (ACOFIVB) to establish baselines. In addition, 26-021 has noted that Vicuña health can be managed at a national scale to leverage the interest and capacities of different institutions, such as ACOFIVB, DGB-AP, SERNAP, departmental governments and vicuña manager regional associations. Utilising, fostering and developing these partnerships will be important for the project moving forward.

3. Project progress

3.1 Progress in carrying out project Activities

During the project, WCS team coordinated activities with the national protected area service (SERNAP) and the ANMIN Apolobamba protected area, the Puquina's indigenous territory of Marka Cololo Copacabana Antaquilla, the National Community Association for the Commercialization of Vicuña Fiber in Bolivia (ACOFIVB) and the Regional Association of Vicuña Managers of Apolobamba (ARMV Apolobamba); and representatives of 12 local vicuña manager communities (VMC): Agua Blanca, Cololo, Cañuhuma, Medallani, Amarka, Puyo Puyo, Apacheta, Antaquilla, Hilo Hilo, Ulla Ulla, Ucha Ucha y Plan Aeropuerto.

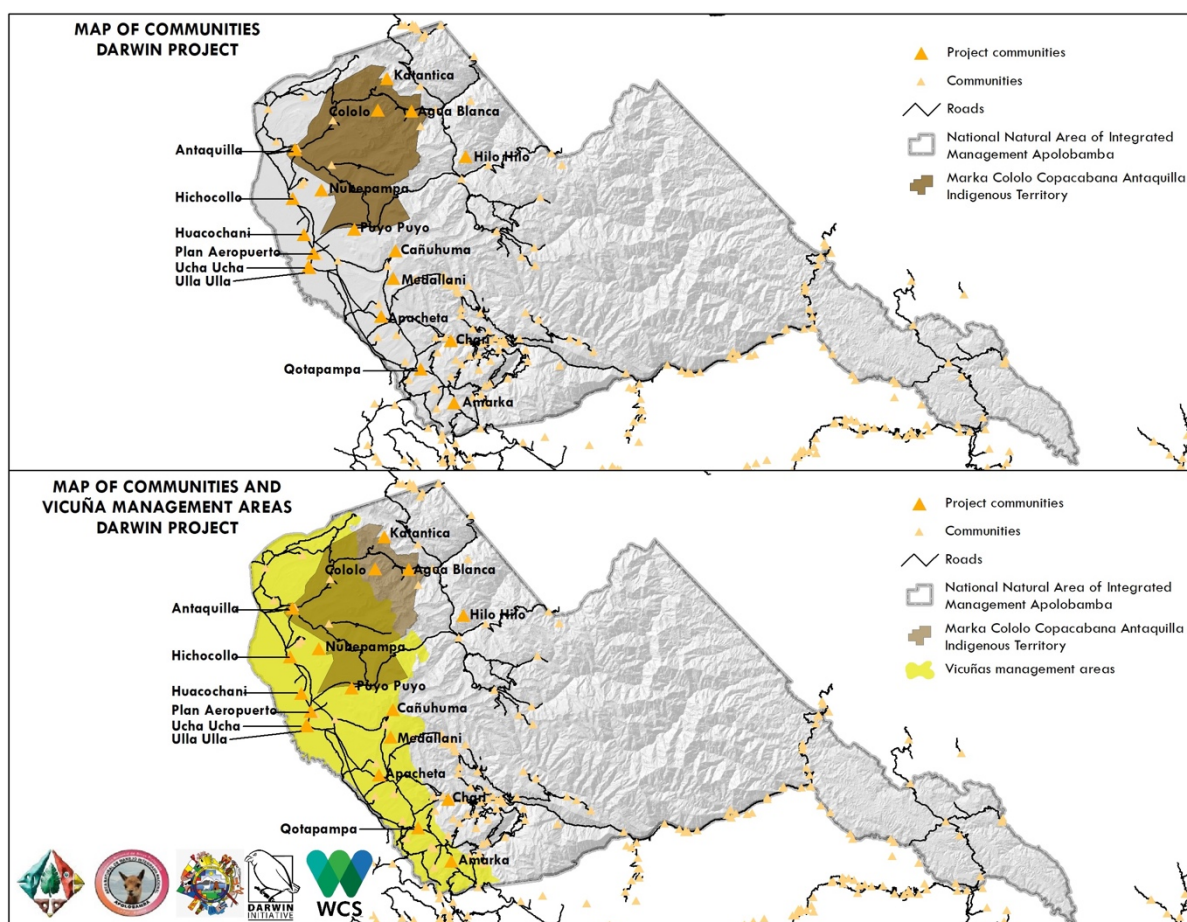


Figure 1: Map of project area

Output 1: Completed diagnostic of peatland and their water sources; native pastures and associated biodiversity indicator species (*Activities 1.1, 1.3*)

Activity 1.1. Baseline survey of stocking rates in native pastures and peatlands.

Transects were conducted in pastures to identify plant species diversity, estimate biomass, productivity, forage availability and animal carrying capacity in both grassland and peatland. This information, together with an analysis of the ecological dynamics is presented in a baseline document on conditions of the grazing grounds in Apolobamba ([Annex 1](#)).

Land transects were complemented with aerial monitoring using drones. Aerial monitoring was conducted during the wet season (March – April 2020), while monitoring during the dry season was interrupted by the COVID-19 pandemic. Monitoring will be carried out during the 2021 dry season to look at this season of forage scarcity. To date, the results of [aerial monitoring report](#) show important fragmentation due to two main causes: overgrazing and reduction of water flow and sediment accumulation due to mining activities.

Activity 1.3. Baseline survey of biodiversity indicator species in peatlands and native grasslands.

Based on the already completed monitoring plan for biodiversity indicators, a [“virtual” workshop](#) was conducted in coordination with Apolobamba protected area personnel (both park guards and the director) in order to include selected indicators into the existing protected area Integral Monitoring Program (PMI). Out of a total of 21 indicator species of plants and animals, that were selected previously based on their high vulnerability to climate change and representativeness of the Andean native grasslands and peatlands (further details are provided in Annual Report 1), an additional 10 species were selected for inclusion within the protected area monitoring plan.

The species were selected based on their vulnerability to climate change and the skills the park guards have on identifying them on the ground. These indicator species will be monitored during the patrolling campaigns starting in April 2021 after the realization of a capacity development workshop with the park rangers and the protected area technical team, in order to define the monitoring methodologies to be employed.

The training workshop, whose report is attached ([Annex 2](#)), should have been held in La Cabaña (Ulla Ulla), central camp of ANMIN Apolobamba, in December 2020, but due to the pandemic, was held on March 25th 2021. During the workshop Apolobamba personnel agreed to incorporate "indicator species of grasslands and peatlands" into the Integral Monitoring Program (PMI) of the protected area. Baseline distribution maps of these new indicator species, have been established and are now under field verification. The first field data on these indicators will be presented in the June and December protected area monitoring report. In order to support park guards in the appropriate use of data collection methodologies, technical staff will provide supervision through field visits, the first of which is planned for the month of May.

Output 2: Completed diagnostic of vicuña health condition and mange prevalence as an indicator of carrying capacity and climatic trends (Activities 2.1 & 2.3)

Activity 2.1. Baseline evaluation of mange prevalence and health condition of vicuña.

The baseline document on the prevalence of sarcoptic mange was completed and presented in the previous Annual Report 1.

Activity 2.3. Participatory workshop to identify climate change scenarios and their influence on: pastures, peatlands and their water sources, mange prevalence and vicuña fibre production.

The baseline report on scenarios of climate change and its influence on pastures, peatlands and vicuña health is complete and validated; and was presented in the first annual report.

Output 3: Apolobamba protected area, Marka Cololo Indigenous organization and the regional association of vicuña managers establish a pasture, peatlands and their water sources, and vicuña health management plan (Activities 3.1 & 3.3)

Activity 3.1. Community workshops to present results of baseline evaluations of pastures and peatland condition and develop zoning plan based on three categories of management (conservation, restoration and management).

The different communal diagnostics are the basis for a management plan for vicuña shearing, vicuña health, grasslands and peatlands. We currently have completed technical documents, pending validation with the communities, for the management and use of vicuña, which involves the following pillars: socio-organizational, technical management process, protection and conservation, habitat conservation and health ([Annex 3](#)); and are working on the development of a management plan for grasslands and peatlands ([Annex 4](#)).

Activity 3.2. Community workshops to present results of baseline evaluation of vicuña health and mange prevalence and develop vicuña health management plan.

WCS provided technical support to consolidate the "[Technical Guidelines for the Conservation and Sustainable Use of Vicuña in Bolivia 2020-2021](#)". These guidelines were approved by DGB-AP and were developed through meetings and workshops with ACOFIVB (Community Association for the Commercialization of Vicuña Fibre of Bolivia) and all different regional associations of vicuña management communities, the National Biodiversity and Protected Area Authority (DGB-AP), the National Protected Areas Service (SERNAP) and wildlife departmental authorities.

Considering the restrictions on field work due to COVID-19, the team has focused on developing technical instruments that support the sustainable use of vicuñas and domestic camelids and that are useful, not only at the Apolobamba level, but also at the level of all vicuña communal management areas in the country. Four documents to guide vicuña management have been completed or are in the process of completion:

- a. [Protocol of biosecurity against COVID-19 for vicuña management](#). The protocol provides details of all the biosecurity measures to be implemented in each stage of vicuña management. It has been presented and reviewed in virtual workshops with the participation of the DGB-AP, the Departmental governments of La Paz, Oruro, Potosí, Cochabamba and Tarija; Regional Associations of Vicuña Management Communities and the local NGO, PROMETA. The protocol has been approved by the DGB-AP and it was used during de 2020 vicuña shearing campaign in other areas of the country. It will be used in Apolobamba during the shearing campaign in the last quarter of 2021.
- b. [Technical Manual of Good Practices for Animal Welfare and Sanitary Measures for Vicuña Management](#). A manual for field technicians involved in the management of vicuñas was prepared and includes two protocols: 1) A protocol for the application of animal welfare in the different stages of capture, shearing and release of vicuñas and; 2) [A protocol of preventive](#) and curative sanitary measures to be applied during capture and shearing of vicuña fibre. The manual also includes a methodology for monitoring the health of vicuña populations and their habitat. The technical manual is currently in the final stages of editing. This manual will be accompanied by a non-technical document such as a [flyer/instruction](#) card for good practices for use by all local vicuña managers.

The following two documents are in a technical review stage, previous to editing and layout:

- c. [Photographic guide of plants found in vicuña habitat for the Regional Association of Vicuña Management Communities of Apolobamba](#).
- d. [Manual of good practices for the sanitary and productive management of alpacas for the communities of the ARMV in the Apolobamba ANMIN](#). This document includes four chapters: i) Productive management; ii) Sanitary management; iii) Sanitary and management calendar and; iv) Pasture management. The manual is based on the experience developed during field work with producers affiliated with the Regional Association of Vicuña Management Communities of Apolobamba.

Activity 3.3. *Community workshops to develop monitoring plan for pasture and peatland condition monitoring.*

A workshop was held in March 2021 with representatives of 13 communities of the Regional Association of Vicuñas Apolobamba Management Communities to validate results of the baseline survey of stocking rates in native pastures and peatlands (Activity 1.1) and of the baseline survey of biodiversity indicator species in peatlands and native grasslands (Activity 1.3). During this workshop the monitoring protocol for indicator species of grasslands and peatlands included within the protected area integral monitoring program (PMI) was validated by the communities. The workshop report is attached in [Annex 2](#).

Activity 3.4. *Workshops with miners to agree respect for management plan for pastures, peatlands and their water sources.*

This activity will be carried out once the management plan for pastures and peatlands in concluded and validated.

Output 4: Increased resilient livelihoods through improved business capacity and quality control of the regional association of vicuña managers of Apolobamba

Activity 4.1. *Diagnostic of business and organizational challenges for the regional association of vicuña managers, including opportunities and obstacles for women's participation across the process.*

A diagnosis of the organizational capacity of ACOFIVB is in process and will guide an organizational strengthening plan for the organization. A basic index for the organizational diagnosis ([Annex 5](#)) and for organizational strengthening plan ([Annex 6](#)) were developed.

Activity 4.2. *Workshop to develop business and organizational strengthening, including increasing women's participation across the process.*

A business plan is being developed together with ACOFIVB. The first step was defining a basic index or structure and gathering historical information on vicuña management to date ([Annex 7](#)). The business plan will evaluate the potential internal national market, alternatives and scenarios, as well as exploring segmented markets interested not only in first quality fleece but also in providing added value to the remaining fibre that is currently discarded.

Activity 4.3. *Diagnostic of challenges in management practices to reduce mange and reduce fiber losses during shearing and fiber selection.*

Based on the experience of applying best practices for the management of vicuña fiber after shearing and the pilot application of fiber selection during the 2020 campaign, two technical documents have been generated to provide guidance on these activities for producers:

- a. [Guide for mechanized shearing of vicuñas](#). This document includes the different steps and instructions on how to handle animals correctly as well as the appropriate and safe use of the mechanic razor. The guide provides important considerations for caring for the animals, the equipment and the fibre itself.
- b. [Protocol for fiber handling and fiber selection](#). This document includes all the procedures and good practices for handling the fiber after shearing and for manual fiber selection, a practice aimed at giving added value to the fiber and, therefore improve income for the communities at the time of sale.

Activity 4.4. *Evaluation of effort and additional economic benefit as a result of changes in shearing and fiber selection protocols.*

This evaluation will be part of the scenarios to be analyzed as part of the Business Plan for ACOFIVB.

Activity 4.5. *Workshop to develop vicuña health management plan.*

In December 2020, the results of the study "Evaluation of mange, other external and internal parasites during capture, shearing and release of vicuñas in communities of ANMIN Apolobamba" were shared at the Wari Uta headquarters of the Regional Association of Vicuña Management Communities Apolobamba, during an assembly convened by the Association. Thirteen communities (Amarka, Apacheta, Cañuhuma, Cololo, Chari, Hichocollo, Hilo Hilo, Huacuchani, Medallani, Nube Pampa, Puyo Puyo, Ucha Ucha and Ulla Ulla) participated in the workshop to validate the results. A full technical document of the health management plan has been developed and will be validated in the coming weeks ([Annex 8](#)).

Activities 4.6, 5.1, 5.2 and 5.3 will be carried out during the third year of the project.

3.2 Progress towards project Outputs

Output 1: Completed diagnostic of peatland and their water sources; native pastures and associated biodiversity indicator species (Activities 1.1, 1.3)

Indicator 1.1 Baseline evaluation on the condition and stocking rates over 100,000 hectares of native pastures and 1,400 hectares of peatlands and their water sources established in Year 1.

We determined areas with native grasslands classified by grazing intensity. Grasslands were composed of 31 grass families, 181 species and 15 plant communities. Fifty-four percent of pastures were dominated by vegetation cover and the remaining 45% of the pastures were dominated by soil, gravel, and rocks. The forage production of the pastures is 172.48 kg DM/ha. The peatlands were composed of 21 plant families and 62 species, with 81.75% covered by vegetation, 11.8% by water and the remaining 6.45% by organic matter, bare soil, stones and gravel. Forage production is 943.01 kg DM/ha.

According to the most recent census of vicuñas and domestic camelids in Apolobamba, there are a total of 122,538 camelids. The above production values suggests a carrying capacity of 0.46 camelids/ha/year for pasture, and 2.46 camelids/ha/year for peatlands. We concluded that pastures, with a surface area of 61,342.1 ha, are exceeding carrying capacity by 63%, and peatlands, with a surface area of 19,110.2 ha, are exceeding carrying capacity by 3%.

Indicator 1.3 Baseline survey of biodiversity indicator species in peatlands and native grasslands is established in Year 1.

A workshop was held with the park rangers of Apolobamba protected area, the main result of which was the incorporation of additional indicator species for wetlands and grasslands into the area's integrated monitoring program. During the workshop we worked with the park guards to identify areas of distribution of different species that had not been monitored before or whose distribution was not well defined. As a first result, digital maps of distribution of plant ([Annex 9](#)) species (*Distichia* sp., *Senecio canescens*, *Pycnophyllopsis* sp. and *Werneria lanatifolia*), amphibians ([Annex 10](#)) (*Telmatobius marmoratus*), fish ([Annex 11](#)) (*Orestias agassizii*, *Orestias ispi*, *Trichomycterus rivolatus*), birds ([Annex 12](#)) (*Fulica gigantea*) and mammals ([Annex 13](#)) (*Hippocamelus antisensis*) have been produced. Amongst these, the common aquatic frog (*Telmatobius marmoratus*) has been reported to be drastically reducing its distribution, possibly due to the effects of climate change.

In May, a new visit to the protected area will be made to follow up on the monitoring of indicator species and we expect that by July the first report of the Integrated Monitoring Program will be completed with distribution maps of other indicator species. Finally, in the case of peatlands, drone flights were carried out in December. The resulting report and maps resulting from the overflights can be found in [Annex 2](#).

Output 2: Completed diagnostic of vicuña health condition and mange prevalence as an indicator of carrying capacity and climatic trends (Activities 2.1 & 2.3)

Indicator 2.1 Baseline of vicuña mange prevalence and health condition is established in Y1.

We obtained samples from 331 vicuñas during shearings conducted in 2019 by the ARCMV Apolobamba, and found that the prevalence of external parasites lice and ticks (16%) and sarcoptic mange (12.1%) were low. For internal parasites from 354 vicuñas we observed that the prevalence of helminths (83.4%) and coccidia (84.3%) were high. Finally, by evaluating the presence and absence of lesions consistent with sarcoptic mange in 5,392 vicuñas captured in 2019, we established that the overall prevalence of sarcoptic mange was low (2.2%).

Additionally, through an institutional agreement of the National Association for the Commercialization of Vicuña Fiber (ACOFIV-B), in 2019 we received biological samples from 165 vicuñas captured by ARCMV Colcha K from the municipality of Colcha K, Potosí Department. We established that the prevalence of external parasites ticks and lice (27.9%) and sarcoptic mange (2.4%) were low; and those of helminths (92.1%) and coccidia *Eimeria punoensis* (87.8%) were high. In conclusion, these internal parasites are common, but the overall prevalence of scabies in the vicuña populations in the ARCMV of Colcha K is low.

Indicator 2.3 *Participatory identification of climate change scenarios, with 40% women participants, and their influence on the condition of pastures, peatlands and their water sources; mange prevalence and vicuña fibre production is completed in Y1.*

Historical climate data of vicuña habitat within Apolobamba shows changes such as increased temperatures, in both intensity and frequency, decreased precipitation, seasonal rainfall regimes presenting more intense wet periods in unusual months, and more extreme and extensive dry periods. Additionally, using vulnerability indices, we identified that at least four species of plants in grasslands and peatlands are extremely vulnerable to climate change, and their loss would affect the habitat of vicuñas, frogs, Andean geese and Chilean flamingos, and the regenerative capacity of ecosystems.

According to the perception of Apolobamba's vicuña management communities, climatic events such as drought, frost, winds, lightning and thunder are more frequent and intense, and snowfall has decreased; they also observe that as a result of these changes, domestic camelids are dying more frequently, are less fertile and are more prone to disease.

In this occasion, the results of the baseline of the current state of native grasslands and wet season peatlands were also presented and validated. Twenty-nine community representatives participated in the results and validation workshop, with 6.9% of the participants being women.

On December 10th, 2020, the WCS veterinary team went to Wari Uta Apolobamba, headquarters of the Regional Association of Vicuña Apolobamba Handling Communities to participate in the Assembly convened by ARCMVA. This assembly was attended by 13 communities (Apacheta, Cañuhuma, Cololo, Chari, Hichocollo, Hilo Hilo, Huacuchani, Medallani, Nube Pampa, Puyo Puyo, Ucha Ucha and Ulla Ulla) in which we were given space to present the baseline of climate change in Apolobamba vicuña communities. During the workshop, historical/current climate analysis in the vicuña zone of ANMIN Apolobamba was presented. There is strong evidence of changes in the behavior of certain climatic variables. Future projections show increases of 2°C to 5°C, depending on the scenario, and negative variations in precipitation. It is evident that temperature has increased in both intensity and frequency, in contrast to the behavior of precipitation, which has decreased in both intensity and frequency, with longer dry periods and much less frequent and more intense rainy periods. Droughts, frosts, winds, lightning and thunder have increased in frequency and intensity, while snowfalls are becoming less frequent. Communities also attribute livestock mortality to the effects of climate change.

Although the vicuña area is vulnerable to climate change, it is necessary to promote immediate efforts to mitigate the negative consequences of other factors, such as mining, overgrazing, and land use change. In this sense, it is necessary to establish strategies under a climate change approach for a more integrated and adaptive management of natural resources to address the current and future effects of climate change in this protected area. The report of the presentation of results can be found in the following [annex 8](#). The workshop was attended by 29 people (women 7%).

Output 3: Apolobamba protected area, Marka Cololo Indigenous organization and the regional association of vicuña managers establish a pasture, peatlands and their water sources, and vicuña health management plan (Activities 3.1 & 3.3)

Indicator 3.1 *Pasture, peatlands and their water sources management plan (including monitoring program) established between the Apolobamba protected area, the Marka indigenous organization, and the Regional Association of Vicuña Managers, with 40% women's participation, is approved by Y2.*

Grassland and Peatland Management Plan is currently under development, and will be validated by the next sixth month report

Indicator 3.2 Agreement is established with legal miners on the pasture, peatlands and their water sources management plan by Year 2.

An agreement with legal mining companies for the Management Plan is still pending, due to restrictions caused by the pandemic.

Indicator 3.3 Vicuña health management plan (including monitoring plan) approved between Apolobamba protected area, Marka Cololo indigenous organization, and the regional association of vicuña managers, with 40% women's participation, and their implementation has begun in Year 2.

WCS provided technical support to consolidate "[Technical Guidelines for the Conservation and Sustainable Use of Vicuña in Bolivia 2020-2021](#)", which was approved by DGB-AP for its implementation. And we are working with our partners on four technical documents that will be validated in the coming weeks. Women's participation will be encouraged to achieve the indicator.

Indicator 3.4 Health management protocol presented to the Biodiversity authorities (DGB-AP) for formal approval.

The following protocol has been concluded and presented to ACOFIVB for revision prior to formal presentation to DGB-AP and SERNAP for their final approval and joint publication: [Technical Manual of Good Practices for Animal Welfare and Sanitary Measures for Vicuña Management](#).

Output 4: Increased resilient livelihoods through improved business capacity and quality control of the regional association of vicuña managers of Apolobamba

Indicator 4.1 Business and organizational plan for the regional association of vicuña managers is completed, with 40% women's participation, by the end of Year 2.

The responsibility for the commercialization of vicuña fiber does not fall on the regional association, but on the Community Association for the Commercialization of Vicuña Fiber in Bolivia (ACOFIVB). Hence, the formulation of the Business Plan has been agreed upon at the national level. This decision has delayed its coordination and initiation. However, we believe that it will have a greater impact on the use of vicuña fiber. At the moment, the structure of the business plan has already been agreed with ACOFIVB and an organizational diagnosis of ACOFIVB is being carried out with a view to proposing an institutional strengthening plan for this national organization.

Indicator 4.2 Reduced mange prevalence, improved shearing, and fiber selection increases income of 1,335 vicuña managers (40% women) by at least 20% by the end of Year 3.

To guarantee the quality of the vicuña fiber obtained previously, the fleece from the 2019 shearing campaign was inspected and selected, during four days for sale in 2020. In this activity, 189 people participated (women 22%). As a result the price obtained for this fleece was 19% higher.

To be evaluated after the 2021 shearing campaign

Indicator 4.3 Evaluation of increase in effort and additional economic benefit as a result of changes in shearing and fiber selection protocols.

Indicator 4.4 New market linkages with buyers of high quality fiber

Both these indicators are part of the process of development of the business plan for ACOFIVB, where different marketing strategies will be evaluated.

Output 5: Good practices are shared for sustainable and resilient management of pastures, peatlands and their water sources, biodiversity conservation, improved vicuña health, and resilient livelihoods with other vicuña manager associations and in coordination with the biodiversity national authority (DGB-AP).

Indicator 5.1 *At least 1 inter-institutional agreement for replication of management of pasture, peatland and their water sources for biodiversity conservation and resilient livelihoods signed with other vicuña manager associations elsewhere in Bolivia is signed by project end.*

Since 2019, an inter-institutional cooperation agreement has been signed with national vicuña managers association ACOFIVB with the following objectives:

- Promote joint work in the search for conservation and sustainable use of the vicuña in Bolivia, through the joint management of funding, and facilitate collaborative interaction between the parties, for the promotion of research and action initiatives that contribute to the management and sustainable use of the vicuña at the national level.
- Exchange technical collaborations in relation to the management, welfare and health of vicuñas during capture, shearing, release and processing of the fiber for sale, for the benefit of vicuña management communities and the conservation of these wild populations.
- Contribute to the consolidation and strengthening of the conservation, management and sustainable use of the vicuña and its natural habitat in Bolivia, as a model of wildlife and habitat conservation that contributes to the development of local communities.
- The promotion of research initiatives in jointly prioritized areas and topics that contribute to the conservation, management and sustainable use of the vicuña at the national level.
- Strengthening the socio-organizational, technical and operational capacities of the CMVs and ARCMVs for the development of vicuña conservation and sustainable use activities in compliance with technical guidelines and animal welfare protocols and the exchange of learning, experiences and capacities among vicuña management communities in protected areas and outside of protected areas.
- Strengthening of management tools (territorial management plans, communal plans and others) that contribute to improving the role of the CMV and ARCMV.
- Strengthen ACOFIVB's management capacities aimed at improving its mandate and issues such as improving access to markets, added value and the capacity to coordinate with the State to improve legislation related to the vicuña.

Indicator 5.2 Project results available digitally to the IUCN SSC SAC network.

To be achieved in the final project year

3.3 Progress towards the project Outcome

Outcome 1: *Sustainable and resilient management of pastures and water sources leads to conservation of critical biodiversity habitat, such as peatlands; improved vicuña health, and resilient livelihoods.*

Activities in Y1 have been contributing towards reaching sustainable and resilient management of pastures and water sources by establishing the baseline characteristics of these ecosystems that are key for health and survival of wild vicuña populations and maintenance of local livelihoods.

In Y2, we have completed reports on the diagnostics of pastures, peatlands and water courses and vicuña health and management, and have proposed technically robust management guidelines, and a monitoring system that already has estimated a baseline on the distribution of the indicator species in these key habitats.

So far, the indicators selected to measure progress towards the Outcome are achievable and adequate. We have established a baseline income contribution from vicuña management of 119 USD per year for each family in the 14 Apolobamba communities participating in the project, have established a baseline of the management and health condition of the vicuña population, and have also carried out a vicuña population census. These indicators will allow us to evaluate the desired changes until the conclusion of the project.

3.4 Monitoring of assumptions

Assumption 1: Political conflicts do not prevent travel to Apolobamba.

The political and social conflicts experienced in Bolivia during October and November 2019 and during February and March 2020 have generated several impacts: 1) difficulty in making field trips; 2) radical change in public authorities and, therefore, delay in resuming activities and progress; 3) absence of a specific person responsible for vicuña in the DGB-AP for several months; 4) operational and financial difficulties in protected areas and, therefore, in ANMIN Apolobamba, limiting normal coordination and work. Nevertheless, the team has found ways to continue making progress by having established local capacities in Apolobamba so that local leaders, local technicians and park rangers could continue activities related with their field of expertise. As an example, the vicuña association of Apolobamba, together with park rangers have continued the vicuña fiber management and monitoring of vicuñas and reporting back to WCS's technical support team.

Assumption 2: Continued demand for vicuña fiber.

In the marketing of the 2019 and 2020 shearing season, no demand problems have been identified, despite the global economic crisis caused especially by COVID-19, the prices achieved have been within the framework of what was expected, including preferential prices thanks to the inclusion of fiber pre-selection in much of the fiber obtained in Apolobamba as a strategy to provide added value to the product.

Assumption 3: Legal framework under which wild vicuña populations are managed does not change.

The legal framework under which the vicuña populations are managed has remained as established and clear.

Assumption 4: Extractive activities and conflicts for access and use of natural resources do not prevent agreements on pasture management.

WCS has been working for the last four years on capacity building in the protected areas of the Madidi Landscape to reduce the impacts of gold mining through the use of best practices (technical, social and environmental) in legal gold mining activities. However, the increase of illegal mining activities in protected areas is evident (about 85% of more than 200 identified mining operations are illegal), so this assumption remains valid as it may be very difficult to achieve some kind of agreement with these illegal activities.

Assumption 5: Continued regional interest on this issue.

We have not identified any changes in relation to regional interest on vicuña sustainable management.

All previous Outcome level assumptions also apply to the five Output level results.

3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation

The project will have a positive impact on biodiversity and poverty alleviation. It will contribute to reduce cumulative effects of overgrazing, climate change, and legal gold mining over 100,000 hectares in the Apolobamba protected area and Marka Cololo Copacabana Antaquilla indigenous

land by improving pasture and peatland management and promoting responsible mining standards.

Apolobamba is a key biodiversity area (KBA) within the Tropical Andes Biodiversity Hotspot. The most important density of population of vicuña in Bolivia is found here, and shearing of vicuña wool results in local earnings of ██████████ a year for 1,335 people in a region where extreme poverty affects 73% of the population.

The project proposes to respond to threats to biodiversity and livelihoods by providing technical information on vicuña management and health, and pasture health and supporting vicuñas and pasture management agreements.

We will develop long-term capacity to independently manage and monitor vicuña health in the future, in coordination with park guards. We will also increase the entrepreneurial capacity of vicuña managers at national level by developing a business and organizational strengthening plan for the ACOFIVB national organization, including an analysis of obstacles and opportunities for women's participation.

Finally, we propose to share results with vicuña managers in Bolivia and Peru and with the International Union for Conservation of Nature (IUCN).

4. Contribution to the Global Goals for Sustainable Development (SDGs)

The project will contribute importantly to Goal 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". It will directly address the following targets by reducing wetland degradation, promoting local pasture management, and promoting sustainable management of a CITES Appendix II species such as vicuña. During 2019, we have made progress towards ensuring conservation and sustainable use of natural highland pastures and peatlands, as well as water courses therein, and services they provide for the Andean mountain ecosystem as a whole, including wildlife and local people, in line with obligations under international agreements.

By working with the local stakeholders towards integrated management for vicuñas and habitats they live in, we will also have an impact in reducing poaching and trafficking of the highly valuable vicuña wool, providing ways to conduct well-managed shearing campaigns, resulting in healthy vicuña populations and production of high-quality fibre coming from legal community-run businesses to be sold internationally at good prices. Additionally, we are working towards contributing to other targets of Goal 5 that are included in the project:

- By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

The project will also contribute to Goal 1, "End poverty in all its forms everywhere." It will directly address the following targets by supporting resilient livelihoods of Andean pastoralists:

- By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
- By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

5. Project support to the Conventions, Treaties or Agreements

Activities are contributing or will contribute (both directly and indirectly) to obligations under various conventions, treaties and agreements, both nationally and internationally. As highlighted by 26-021, the following are demonstrations of support:

CBD: through reducing the direct pressures on biodiversity and promoting resilient sustainable use by Andean pastoralist communities in Apolobamba, as well as enhancing benefit sharing and capacity building of an indigenous organisation and pastoralist associations. The project is working closely with the DGB-AP that is part of the focal point of the CBD (Viceministry of Environment, Biodiversity, Climate Change and Forestry Development and Management). In particular we are supporting the national program on vicuña management.

Nagoya Protocol on Access and Benefit Sharing (ABS): by supporting indigenous ownership, and fair and equitable use of a wildlife species.

CITES: through producing information on the importance of pasture management for ecosystem and animal health; and for fibre production for a wild vicuña population listed on CITES Appendix II. The information will be relevant to all others similarly listed, including neighbouring countries.

RAMSAR: through enhancing pasture management to reduce pressure on Andean peatlands, focusing in particular on the effects of mining and overgrazing and on fostering agreements between multiple local stakeholders and the protected area authority

6. Project support to poverty alleviation

Poverty alleviation is an inherent component of this project through its stated impact to improve livelihoods. The project has highlighted 'the most important population density of vicuña in Bolivia is found in Apolobamba and shearing of vicuña wool results in local earnings of \$ [REDACTED] a year for 1,335 people in a region where extreme poverty affects 73% of the population. In the Apolobamba region, traditionally living with vicuñas and sharing the same landscape has been part of their daily lives for forever'. Poor pasture management arising from lack of information on carrying capacity, conflicting land use practices and inadequate animal handling during shearing are all being addressed by this project and will contribute to supporting poverty alleviation as a result. As a lower middle-income country, the business and organisational strengthening planned through this project will support Bolivia's economy, and the experiences will also leverage local knowledge and promote regional collaboration to share lessons learnt under different threat and management contexts. The proposal to share results with camelid managers in Bolivia and Peru, and with the International Union for Conservation of Nature (IUCN) demonstrates further support to poverty alleviation and support to other countries.

7. Consideration of gender equality issues

During year 1, under normal fieldwork conditions, we achieved the participation of 81 people (women 47%). During year 2, due to the limitations caused by COVID-19, we were unable to carry out regular activities. This has affected the participation and number of women attending:

- Collection and review of pre-deseeded fiber for commercialization (four days in December 01 at 04, 2021): 189 people (women 22%). See [list of participants](#).
- Workshop to validate the results of assessments of vicuña health, grasslands and wetlands, and climate change diagnostics (one day in December 20th, 2021): 29 people (women 7%). Included here are the [list of participants](#), [workshop report](#) and [workshop invitations](#).

It is important that improved fibre selection does not result in an increase in work for women that later on is not recognized. We will quantify the resulting gains to ensure this information is considered in the benefit distribution.

In the coming years, we will strengthen the role of women participants (40%) in the short and long term by developing a business and organizational strengthening plan for the Regional Association of Vicuña Managers. We will develop both documents with a focus on gender and productive chains, identifying obstacles and opportunities for women's participation across the productive process and in benefit distribution.

8. Monitoring and evaluation

The monitoring and evaluation plan has been supervised by the project lead, with support from the technical team and monitoring staff of the Marka Cololo Copacabana Antaquilla and Apolobamba protected area.

The current Evaluation and monitoring plan still stand as stated in the project document:

Output 1 will be verified by comparing the exit evaluation with the baseline on the condition of pastures and peatlands and their water sources. We will also carry out baseline and exit evaluations on biodiversity indicator species distribution in peatlands and native grasslands with project staff. Baseline evaluations for these indicators have been concluded.

Output 2 will be verified by comparing baseline and exit evaluations on mange prevalence and health condition; and by the workshop reports on climate change scenarios, including participant lists disaggregated by gender. Baselines have been concluded.

Output 3 will be verified by following up on the implementation of vicuña and grassland and wetland management plans and by including the biodiversity monitoring indicators identified with the project in the protected area's monitoring program. In addition, vicuña management and health plans will be submitted to the biodiversity national authority (DGB-AP).

Output 4 will be verified with the formal approval of the Business Plan and Organizational Strengthening Plan by ACOFIVB and with the evaluation of the 2021 season shearing compared to 2019.

Output 5 will be verified with the signing of at least one agreement with another regional organization of vicuña handlers through ACOFIVB and with the submission of all instruments generated to the IUCN SSC SAC Network.

9. Lessons learnt

The most notable aspect is the level of coordination achieved with all levels of vicuña management, from the national level, through work with ACOFIVB, to the regional level through fluid coordination with ARMVA, and at the local level with all of the vicuña management communities in the protected area.

In spite of changes at the governmental level, there has been close coordination and work with the public agencies involved, the ANMIN Apolobamba protected area, SERNAP and DGB-AP, who value the project's and the institution's contribution to the sustainable use of the vicuña.

The greatest shortcoming has been the restrictions for carrying out face-to-face events due to travel and meeting restrictions during the pandemic. Although we have tried to remedy this partially by means of meetings through virtual platforms, there have been many difficulties due to the irregular, scarce or non-existent internet signal in Apolobamba.

We believe that by carrying out baselines and building management and monitoring plans for vicuña, vicuña health, pastures and wetlands, we have identified the main bottlenecks and proposed the most appropriate courses of action that will improve the management of the species, as well as species and habitat conservation, especially in the medium and long term.

By working on the Business Plan and an Organizational Strengthening Plan at the level of the national organization ACOFIVB, that is directly responsible for the collection and marketing of vicuña fiber in the country, in coordination with the government authorities, we will achieve a significant impact at the level of all the regional organizations and communities that manage vicuñas and not only in the Apolobamba region, as was initially planned.

10. Actions taken in response to previous reviews (if applicable)

Below, we respond to the comments to our previous annual report that required further clarification.

Comment 1. It would be useful for reporting purposes if the project could provide and refer to its workplan or include a Gantt chart when reporting (particularly if delayed due to COVID-19).

We attach [the work plan](#) we use as a team to follow up on activity implementation, including commitments with matching funds.

Comment 3. 'The national protected areas and indigenous organizations have existing monitoring and evaluation plans, developed with WCS technical support, and linked to Management Plans and Life Plans, respectively'. Could the project clarify how these plans and MEL plans are linked with the project MEL, as well as any data collection overlaps / synergies.

The Integrated Monitoring Programs (PMI) of the protected areas have a basic set of indicators established by SERNAP that are obligatory for all national protected areas that have this instrument and the capacity to do so. However, the protected areas, due to their different characteristics, can include additional indicators for measurement, With the project's support, additional indicators related to biodiversity and vicuñas have been identified and are being incorporated into the Apolobamba protected area's PMI so that they can be measured, consolidated in the official database, analyzed, and included in the protected area's biannual monitoring reports.

Comment 7. The project has not commented on its exit strategy, and should do so in its next AR. In particular, the project should highlight the details of how. Which are the relationships and partners that will take aspects of work forward? Would activities cease to exist? How would strengthened alliances support the area moving forward? Etc.

The project is focused on developing capacities and instruments that can strengthen the sustainable management and conservation of vicuña by the ARMV in Apolobamba protected area. Both entities are autonomous and have been functioning since before the project was implemented guarantee that all the instruments developed will continue to be implemented once the project is completed.

Likewise, the work at the national level through ACOFIVB and the public agencies SERNAP and DGB-AP will allow not only the scaling up of the results and instruments developed, but also the continuity of their application, as they will become formal instruments of the national organization of vicuña management communities and of the public authorities responsible for protected areas and wildlife management, respectively.

Finally, WCS has a long-term commitment to the region and to support for vicuña, pasture and peatland management.

Comment 8. The project should comment on its VFM and give examples of this as appropriate.

Initially the project proposed to have an impact improving management capacity over 100,000 hectares and the livelihoods of 1,335 people, as a result of the coordination with the national association of vicuña managers and the national biodiversity authorities our impact will now reach 8,468 (Information from [ACOFIVB 2021](#)) people and all managed vicuña populations in the country. We requested a budget adjustment and we have spent 100% of the budget of Yr 2, which is in line with project implementation to reaching the project's objectives and stated outcomes.

11. Other comments on progress not covered elsewhere

There have been several social and political conflicts and events in Bolivia in the past year and a half that have impacted our work, not only because of travel limitations due to security and biosafety, but because of the change of public authorities and in some cases the change of

absence for a few months of public sector technical counterparts. Social and political conflicts in Bolivia at the end of 2019 and beginning of 2020, resulted in the installation of a transitional government and national elections in September 2020, leading to a new government as of October 2020. Subnational elections (departmental and municipal) were held in March 2021, and will mean new departmental and municipal authorities as of May 3, 2021. As a strategy to respond to political uncertainty WCS has always maintained a technical profile that is valued by public authorities across the political divide. We have therefore been able to quickly resume activities and channel the established processes to minimize the impact on project implementation.

The sanitary emergency in the first quarter of 2020, has been mentioned in Subsection 3.4 above. The fluctuation of the pound has affected the project budget. This year we have absorbed this impact by covering transport costs with matching funds.

12. Sustainability and legacy

Our sustainability strategy remains as proposed. We will ensure sustainability of our actions by:

- 1) Developing capacities in established organizations and institutions that functioned before the project and will continue to function at the end of the project, but with strengthened capacities and with developed technical instruments.
- 2) Working at all levels from the local level with the vicuña management communities and with the park rangers, at the regional level with the ARCMV and the protected area and at the national level through the ACOFIVB and the competent public entities SERNAP and DGB-AP.
- 3) Developing written and approved documents documenting the agreements regarding management of pastures, peatlands and their water sources; as well as vicuña management, shearing, health and fibre processing.
- 4) Incorporating the habitat management agreements and monitoring protocols within the management practices formally approved by Apolobamba protected area in its own integral monitoring program.
- 5) Strengthening alliances for habitat and species management and monitoring between the protected area, the Marka Cololo de Antaquilla, the Regional Association of Vicuña Managers and the National Vicuña Management Program.

13. Darwin identity

The Darwin identity has been acknowledged in communications related to the vicuña management activities, either by recognizing their support in writing, or by adding the logo where appropriate. The Darwin logo has been included in all documents resulting from workshops and relevant technical documents produced as part of the project activities. Finally, the Darwin logo is included in all Participant lists, workshop reports memories and field reports.

The Darwin Initiative Funding is presented as a distinct project within the reporting of WCS to the national authorities. Because of this, as well as the review of management protocols the biodiversity and protected area authorities (DGB-AP and SERNAP) are familiar with this project and its funding.

14. Impact of COVID-19 on project delivery

The impact of the COVID-19 pandemic has been mainly due to the travel restrictions that made travel to the field impossible between March and October 2020 and between January and March 2021. This made holding training workshops, coordination meetings and other face-to-face events impossible and has hence delayed the social validation of several of the management protocols. Efforts have been made to remedy this situation through the use of digital communication platforms. However, these have had limited effectiveness because of connectivity limitations despite the effort and interest of the communities and regional and national organizations there are important connectivity limitations.

In order to address these delays we have advanced in the review of the different management protocols with ACOFIVB and once a meeting can be held with the Apolobamba regional association all documents will be reviewed and approval sought in one meeting. Since the national association has already provided feedback we expect the process of local approval to be quicker.

In order to allow regional associations to proceed with vicuña sheering campaigns and plan for the campaign in Apolobamba later in 2021 a Biosecurity Protocol was developed, presented and approved by the national biodiversity authorities (DGB-AP). Although, digital communication mechanisms were used in a limited way, connectivity is an obstacle in this part of Bolivia. This limitation has raised awareness in the vicuña association, leadership and community members overall of the importance of prioritizing improvement to their access to digital communications in their negotiations with government authorities; due to its importance for education, health, territorial and natural resource management, as well as political participation.

15. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

WCS's policies and procedures are framed by the organization's Code of Conduct, a revised and updated version of which was formally adopted in February 2019. This provides explicit guidance as to how WCS personnel must comport themselves during their work, and applies to all staff at WCS as well as those that act on behalf of WCS. The Code of Conduct covers diverse issues such as conflicts of interest, safeguarding human rights, combatting human trafficking, sexual harassment, protection of whistle-blowers and many others. Under the Code of Conduct WCS personnel are accountable for their actions and the actions of others under their management authority, and for ensuring compliance with the Code of Conduct. The Code of Conduct prohibits bullying, harassment and sexual exploitation and abuse, and child abuse as well as documents WCS's organizational commitment to comply with human rights standards and human subjects' protections as it undertakes its conservation work. WCS follows established national and global standards for safeguarding human rights including the World Bank Social Framework, the UN Declaration on the Rights of Indigenous Peoples, and the Belmont Report that outlines the ethical principles and guidelines for the protection of human subjects of research. WCS has also established a Global Grievance Redress Mechanism to ensure that we respond in a consistent and timely way across the organization to investigate, document and take appropriate action to address complaints of alleged human rights abuses by WCS staff, partners, consultants or anyone working on our behalf.

16. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)

Project spend (indicative since last annual report)	2020/21 Grant (£)	2020/21 Total Darwin	Variance %	Comments (please explain significant)
Staff costs (see below)				
Consultancy costs				

Overhead Costs	
Travel and subsistence	
Operating Costs	
Capital items (see below)	
Monitoring & Evaluation (M&E)	
Others (see below)	
TOTAL	

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
<p>Impact</p> <p>Sustainable pasture management reduces threats to peatlands and their biodiversity; and improves livelihoods of 1,335 vicuña managers (40% women), by improving vicuña nutritional status and reducing mange prevalence.</p>		<p>In Year 1, we made important progress to contribute towards improving the livelihoods of 1,335 vicuña managers by establishing the baseline conditions of both habitat and health conditions of the wild vicuñas in Apolobamba, conducting vicuña censuses and evaluating the health condition for over 42,4% of total estimated vicuña population (12,703 vicuñas censuses and 5,392 animals checked for mange presence). In order to establish the baseline conditions of the grazing areas (native pastures and peatlands) standardized methodologies were tested and applied, sampling a representative area of the adjusted intervention area (108,342 hectares of vicuña distribution area, including 41,395 hectares of native grasslands (38.2%) and 8,456 hectares (7.8%) of peatlands). Additionally, the Regional Association of Vicuña Community Managers of Apolobamba (ARCMV) have already established inter-institutional alliances to achieve long-term sustainable vicuña management, with government support.</p>	

<p>Outcome</p> <p>Sustainable and resilient management of pastures and water sources leads to conservation of critical biodiversity habitat, such as peatlands, improved vicuña health, and resilient livelihoods.</p>	<p>0.1 100,000 hectares of currently unmanaged pastures are under improved management by Year 2.</p> <p>0.2 1,400 hectares of currently unmanaged peatlands and their water sources are under improved management by Year 2.</p> <p>0.3 Distribution of threatened and indicator wildlife species of peatland health increases for at least 25% of species by Year 3, from a baseline to be established in Year 1.</p> <p>0.4 Income of 1,335 vicuña herders (at least 40% women) increases by 20% by Year 3, from a baseline of 119 USD a year.</p> <p>0.5 11,000 vicuña have reduced incidence of mange or increased health condition by at least 10% by Year 3, from a baseline to be established in Year 1.</p>	<p>01 & 02. Diagnostics of pastures and peatlands have covered a representative area of the estimated 108,342 hectares of the distribution area of vicuñas in Apolobamba, with the analysis being conducted for each of the two main grazing areas of vicuñas: native dry grasslands, and peatlands.</p> <p>0.3 A list of 20 biological indicator species has been established (Annex 24. Baseline of indicator species for monitoring).</p> <p>0.4 NA</p> <p>0.5 Baseline study on mange-mite prevalence in vicuñas from Apolobamba has been established and considered low (2,2% on average) (Annex 20. Vicuña health report)</p>	<p>Although fieldwork activity has been concluded, some additional data is being compiled through interviews with local people through the help of local technicians. Laboratory analysis on organic matter and related information is still being processed.</p> <p>Next step is to socialise results with the ANIMIN Apolobamba.</p> <p>Complete analysis on vicuña fibre volumes (offer) and demand, recurring costs, opportunities and limitations; as well as benefit distribution.</p> <p>In the next year, a vicuña health monitoring protocol will be established to be applied in Apolobamba, which will be easily applied elsewhere.</p>
<p>Output 1.</p> <p>Completed diagnostic of peatland and their water sources; native pastures and associated biodiversity indicator species.</p>	<p>1.1 Baseline evaluation on the condition and stocking rates over 100,000 hectares of native pastures and 1,400 hectares of peatlands and their water sources established in Year 1.</p> <p>1.2 Exit evaluation on the condition and stocking rates over 100,000 hectares of</p>	<p>1.1 Baseline evaluation on stocking rates and current conditions has been established (Annex 04. Progress reports on research). Results of a baseline of conditions of the grazing grounds (Annex 1) and aerial monitoring during the dry season (aerial monitoring report) are presented in the current annual report (Y2).</p> <p>1.2 NA</p>	

	<p>native pastures and 1,400 hectares of peatlands and their water sources is established in Year 3.</p> <p>1.3 Baseline survey of biodiversity indicator species in peatlands and native grasslands is established in Year 1.</p> <p>1.4 Exit evaluation of biodiversity indicator species in peatlands and native grasslands is established in Year 3.</p>	<p>1.3 Baseline survey on biodiversity completed. See Annex 24 for further detail. The baseline of 21 indicator species (virtual workshop) was later complemented with 10 species vulnerable to climate change. All this was developed with the park guards (Annex 2).</p> <p>1.4 NA</p>
Activity 1.1 Baseline survey of stocking rates in native pastures and peatlands.	Completed and presented in the first annual report (Annex 04 & 05) and in the second year report (Annex 1 & aerial monitoring report)	Surveys are completed, and analysis of organic matter and identification of species collected is in process. With the additional information, we will be able to establish carrying capacity and determine current grazing impact status.
Activity 1.2 Exit evaluation of stocking rates in native pastures and peatlands.	NA	
Activity 1.3 Baseline survey of biodiversity indicator species in peatlands and native grasslands.	Completed and presented in the first annual report (Annex 24) and in the second annual report (virtual workshop & Annex 2)	
Activity 1.4 Exit evaluation of biodiversity indicator species in peatlands and native grasslands.	NA	
<p>Output 2.</p> <p>Completed diagnostic of vicuña health condition and mange prevalence as an indicator of carrying capacity and climatic trends.</p>	<p>2.1 Baseline of vicuña mange prevalence and health condition is established in Year 1.</p> <p>2.2 By Year 3, exit evaluation shows improved health condition of wild vicuña or a reduction of at least 10% in mange prevalence in vicuña.</p>	<p>2.1 Baseline of mange prevalence has been concluded establishing basic characteristics of population structure of vicuñas in Apolobamba. Health evaluation was concluded as planned, and it was established a mange prevalence of 2,2%, although there is a tendency of higher prevalence in some communities vs. others (See Annex 20 for further details in the first annual report).</p> <p>2.2 NA</p>

	<p>2.3 Participatory identification of climate change scenarios, with 40% women participants, and their influence on the condition of pastures, peatlands and their water sources; mange prevalence and vicuña fibre production is completed in Year 1.</p>	<p>2.3 The participatory workshop on climate change perceptions was conducted in February 2020 with the participation of a representative number of women (39.5%) (Annex 9B). We will feed all the information generated on local perceptions back to the climate change scenarios on of pastures, peatlands and water sources; mange prevalence and vicuña fibre production.</p>	
Activity 2.1 Baseline evaluation of mange prevalence and health condition of vicuña.	Completed in the first year (Annex 20).	Based on the health indicators obtained, a monitoring plan will be established to be able to adapt it to the current integrated monitoring plan conducted by the park guards of Apolobamba.	
Activity 2.2 Exit evaluation of mange prevalence and health condition of vicuña.	NA		
Activity 2.3 Participatory workshop to identify climate change scenarios and their influence on pastures, peatlands and their water sources, mange prevalence and vicuña fibre production.	Completed, with the participation of 45 people, out of which, 39,5% were women in the first year.	Next steps will be to present final climate scenarios to the communities in Apolobamba and visualize the effect of the application of good management practices to the wild vicuña population.	
<p>Output 3.</p> <p>Apolobamba protected area, Marka Cololo indigenous organization, and the regional association of vicuña managers establish a pasture, peatlands and their water sources, and vicuña health management plan.</p>	<p>3.1 Pasture, peatlands and their water sources management plan (including monitoring program) established between the Apolobamba protected area, the Marka indigenous organization, and the regional association of vicuña managers, with 40% women's participation, is approved by Year 2.</p> <p>3.2 Agreement is established with legal miners on the pasture, peatlands and their water sources management plan by Year 2.</p> <p>3.3 Vicuña health management plan (including monitoring plan) approved between Apolobamba protected area, Marka Cololo indigenous organization,</p>	<p>3.1 In the first year, progress towards developing a management plan through a participatory process has started by conducting vicuña censuses in Apolobamba to establish population size and other population characteristics as the baseline information for all the analysis required (See Annexes 11 & 14 for reports on vicuña census and shearing campaigns). In the second year we are working on the development of a management plan for grasslands and peatlands (Annex 4).</p> <p>3.2 Due to the difficulties caused by the pandemic, it is not yet possible to meet with local miners.</p> <p>3.3 In the second year we currently have completed technical documents, pending validation with the communities, for the management and use of vicuña (Annex 3).</p>	

	<p>and the regional association of vicuña managers, with 40% women's participation, and their implementation has begun in Year 2.</p> <p>3.4 Health management protocol presented to the Biodiversity authorities (DGB-AP) for formal approval by Year 3.</p>	<p>3.4 NA.</p>	
<p>Activity 3.1 Community workshops to present results of baseline evaluations of pastures and peatland condition and develop zoning plan based on three categories of management (conservation, restoration and management).</p>		<p>Vicuña censuses were conducted in the different zones of the Apolobamba vicuña distribution areas, as the first step towards developing the diagnostics and management plan (Annex 11). In the second year we are working on the development of a management plan for grasslands and peatlands (Annex 4).</p>	<p>Workshops will be conducted to present and share preliminary results in the first months of Y2, depending on political and COVID-19 sanitary alert conditions.</p>
<p>Activity 3.2 Community workshops to present results of baseline evaluation of vicuña health and mange prevalence and develop vicuña health management plan.</p>		<p>The baseline document on the prevalence of sarcoptic mange was completed and presented in a workshop (December 2020) (Annex 8). WCS provided technical support to consolidate the "Technical Guidelines for the Conservation and Sustainable Use of Vicuña in Bolivia 2020-2021", and considering the restrictions on field work due to COVID-19, the team has focused on developing technical instruments:</p> <ul style="list-style-type: none"> a. Protocol of biosecurity against COVID-19 for vicuña management. b. Technical Manual of Good Practices for Animal Welfare and Sanitary Measures for Vicuña Management. A protocol of preventive and curative sanitary measures to be applied during capture and shearing of vicuña fibre and a flyer/instruction card for good 	<p>Activity is planned to take place during Y2, with meetings schedule to be defined with the ARCMV Apolobamba and the Marka Cololo Copacabana Antaquilla leaders.</p>

		<p>practices for use by all local vicuña managers.</p> <p>The following two documents are in a technical review stage, previous to editing and layout:</p> <p>c. Photographic guide of plants present in vicuña habitat for the Regional Association of Vicuña Management Communities of Apolobamba.</p> <p>d. Manual of good practices for the sanitary and productive management of alpacas for the communities of the ARMV in the Apolobamba ANMIN.</p>	
Activity 3.3 Community workshops to develop monitoring plan for pasture and peatland condition monitoring.		A workshop was held in March 2021 with representatives of 13 communities of the Regional Association of Vicuñas Apolobamba Management Communities (Annex 2)	
Activity 3.4 Workshops with miners to agree respect for management plan for pastures, peatlands and their water sources.		This activity will be carried out once the management plan for pastures and peatlands is concluded and validated	
Activity 3.5 Community workshops to develop monitoring plan for vicuña health and mange prevalence.		NA	
<p>Output 4.</p> <p>Increased resilient livelihoods through improved business capacity and quality control of the regional association of vicuña managers of Apolobamba.</p>	<p>4.1 Business and organizational plan for the regional association of vicuña managers is completed, with 40% women's participation, by the end of Year 2.</p>	<p>4.1 An initial step towards developing a business and organizational plan for ARCMV Apolobamba was the organization of an inter institutional workshop to conduct a joint analysis on the vicuña management situation, and define a work plan towards an integrated management plan of vicuñas in Apolobamba and elsewhere in the other regional vicuña associations in Bolivia. A diagnosis of the organizational capacity of ACOFIVB is in process and will guide an organizational strengthening plan for the organization. A basic index for the organizational diagnosis (Annex 5) and for organizational strengthening plan (Annex 6) were developed. A business plan is being developed together with ACOFIVB. The first step was defining a basic index or structure and gathering historical information on vicuña management to date (Annex 7).</p>	

	<p>4.2 Reduced mange prevalence, improved shearing, and fibre selection increases income of 1,335 vicuña managers (40% women) by at least 20% by the end of Year 3.</p> <p>4.3 Evaluation of increase in effort and additional economic benefit as a result of changes in shearing and fibre selection protocols is conducted by Year 2.</p> <p>4.4 New market linkages with buyers of high quality fibre by Year 3.</p>	<p>4.2 NA</p> <p>4.3 The agreement established between WCS and ACOFIVB in Sep 2019 has opened the door for conducting a joint effort towards improving quality and quantity of vicuña fibre under the premises of good management practices. Since ACOFIVB groups all the affiliated ARCMVs in Bolivia, successful activities conducted in Apolobamba will be applied in other regions and internationally, with agreements with neighbouring countries.</p> <p>4.4 NA</p>
<p>Activity 4.1 Diagnostic of business and organizational challenges for the regional association of vicuña managers, including opportunities and obstacles for women's participation across the process.</p>		<p>In the first year initial activities have been conducted towards establishing priority activities towards ensure the establishment formal alliances with key partners at the government level and scientific institutions. In the second year a diagnosis of the organizational capacity of ACOFIVB is in process and will guide an organizational strengthening plan for the organization. A basic index for the organizational diagnosis (Annex 5) and for organizational strengthening plan (Annex 6) were developed.</p> <p>In Y2, a complete analysis of the business and organizational challenges for the ARCMV Apolobamba will be developed, including the role women managers have in the complete process of vicuña fibre processing.</p>
<p>Activity 4.2 Workshop to develop business and organizational strengthening, including increasing women's participation across the process.</p>		<p>In the second year a business plan is being developed together with ACOFIVB. The first step was defining a basic index or structure and gathering historical information on vicuña management to date (Annex 7).</p>
<p>Activity 4.3 Diagnostic of challenges in management practices to reduce mange and reduce fibre losses during shearing and fibre selection.</p>		<p>In the first year an initial analysis of vicuña management limitations in Apolobamba between WCS and ACOFIVB allowed to take first steps to</p>

	<p>develop capacities in better shearing techniques as well as leaning new techniques of increasing the quality of vicuña fibre such as de-hearing of the fleece (See Annex 17 Report training workshop of vicuña fleece processing). In the second year based on the experience of applying best practices for the management of vicuña fiber after shearing and the pilot application of fiber selection during the 2020 campaign, two technical documents have been generated to provide guidance on these activities for producers: Guide for mechanized shearing of vicuñas. and a Protocol for fiber handling and fiber selection.</p>	
<p>Activity 4.4 Evaluation of effort and additional economic benefit as a result of changes in shearing and fibre selection protocols.</p>	<p>This evaluation will be part of the scenarios to be analyzed as part of the Business Plan for ACOFIVB.</p>	
<p>Activity 4.5 Workshop to develop vicuña health management plan.</p>	<p>In December 2020, the results of the study "Evaluation of mange, other external and internal parasites during capture, shearing and release of vicuñas in communities of ANMIN Apolobamba" were shared at the Wari Uta headquarters of the Regional Association of Vicuña Management Communities Apolobamba, during an assembly convened by the Association. Thirteen communities (Amarka, Apacheta, Cañuhuma, Cololo, Chari, Hichocollo, Hilo Hilo, Huacuchani, Medallani, Nube Pampa, Puyo Puyo, Ucha Ucha and Ulla Ulla) participated in the workshop to validate the results. A full technical document of the health management plan has been developed and will be</p>	

		validated in the coming weeks (Annex 8).	
Activity 4.6 Workshop to present training materials on business and organizational and vicuña health management plan.		NA	
<p>Output 5.</p> <p>Good practices are shared for sustainable and resilient management of pastures, peatlands and their water sources, biodiversity conservation, improved vicuña health, and resilient livelihoods with other vicuña manager associations and in coordination with the biodiversity national authority (DGB-AP).</p>	<p>5.1 At least 1 inter-institutional agreement for replication of management of pasture, peatland and their water sources for biodiversity conservation and resilient livelihoods signed with other vicuña manager associations elsewhere in Bolivia is signed by project end (Year 3).</p> <p>5.2 Project results available digitally to the IUCN SSC SAC network by the end of the project (Year 3).</p>	<p>5.1 Please refer to 4.1 and 4.3 on the agreement established between WCS and ACOFVB and the interinstitutional agreement to work towards improving vicuña management for the good of the species, the habitat and the local communities that watch over them.</p> <p>5.2 NA</p>	
Activity 5.1 Workshop to present results on pasture and peatland condition, biodiversity, vicuña health and livelihoods, including women's participation with the biodiversity authority.		NA	
Activity 5.2 Workshop to present results on pasture and peatland condition, biodiversity, vicuña health and livelihoods, including women's participation to other vicuña associations in coordination with the biodiversity authority.		NA	
Activity 5.3 Develop and share digital documents with the project reports with the IUCN SSC SAC.		NA	

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
Impact: Sustainable pasture management reduces threats to peatlands and their biodiversity; and improves livelihoods of 1,335 vicuña managers (40% women), by improving vicuña nutritional status and reducing mange prevalence.			
Outcome: Sustainable and resilient management of pastures and water sources leads to conservation of critical biodiversity habitat, such as peatlands, improved vicuña health, and resilient livelihoods.	1.1 100,000 hectares of currently unmanaged pastures are under improved management by Year 2. 1.2 1,400 hectares of currently unmanaged peatlands and their water sources are under improved management by Year 2. 1.3 Distribution of threatened and indicator wildlife species of peatland health increases for at least 25% of species by Year 3, from a baseline to be established in Year 1. 1.4 Income of 1,335 vicuña herders (at least 40% women) increases by 20% by Year 3, from a baseline of 119 USD a year. 1.5 11,000 vicuñas have reduced incidence of mange or increased health condition by at least 10% by Year 3, from a baseline to be established in Year 1.	1.1 Report of pasture and peatland management plan implementation. 1.2 Maps of pastures and peatlands under improved management. 1.3 Baseline and exit evaluation of distribution of threatened wildlife and indicator species of peatland health. 1.4 List of beneficiaries of benefit distribution amongst vicuña herders. 1.5 Baseline and exit report of mange prevalence in vicuñas.	Political conflicts do not prevent travel to Apolobamba. Continued demand for vicuña fibre. Legal framework under which wild vicuña populations are managed does not change. Extractive activities and conflicts for access and use of natural resources do not prevent agreements on pasture management.
Outputs: 1. Completed diagnostic of peatland and their water sources; native pastures and associated biodiversity indicator species.	1.1 Baseline evaluation on the condition and stocking rates over 100,000 hectares of native pastures and 1,400 hectares of peatlands and their water sources established in Year 1. 1.2 Exit evaluation on the condition and stocking rates over 100,000 hectares of native pastures and 1,400 hectares of peatlands and their water sources established in Year 3.	1.1 Baseline report of native pastures; peatlands and their water sources condition and stocking rates, and accompanying maps. 1.2 Exit report of native pastures; peatland and their water sources condition and stocking rates, and accompanying maps.	Political conflicts do not prevent travel to Apolobamba.

	<p>1.3 Baseline survey of biodiversity indicator species in peatlands and native grasslands is established in Year 1.</p> <p>1.4 Exit evaluation of biodiversity indicator species in peatlands and native grasslands is established in Year 3.</p>	<p>1.3 Baseline report of distribution of threatened and indicator species of peatlands and native grasslands.</p> <p>1.4 Exit report of distribution of threatened and indicator species of peatlands and native grasslands.</p>	
<p>2. Completed diagnostic of vicuña health condition and mange prevalence as an indicator of carrying capacity and climatic trends.</p>	<p>2.1 Baseline of vicuña mange prevalence and health condition is established in Year 1.</p> <p>2.2 By Year 3, exit evaluation shows improved health condition of wild vicuña or a reduction of at least 10% in mange prevalence in vicuña.</p> <p>2.3 Participatory identification of climate change scenarios, with 40% women participants, and their influence on the condition of pastures, peatlands and their water sources; mange prevalence and vicuña fibre production is completed in Year 1.</p>	<p>2.1 Clinical baseline evaluation of mange and physical condition of at least 30% of sheared vicuña in Apolobamba.</p> <p>2.2 Clinical exit evaluation of mange and physical condition of at least 30% of sheared vicuña in Apolobamba.</p> <p>2.3 Report and list of participants of participatory workshops to identify climate change scenarios and their influence on pastures, peatlands and their water sources; mange prevalence and vicuña fibre production.</p>	<p>Political conflicts do not prevent travel to Apolobamba.</p>
<p>3. Apolobamba protected area, Marka Cololo indigenous organization, and the regional association of vicuña managers establish a pasture, peatlands and their water sources, and vicuña health management plan.</p>	<p>3.1 Pasture, peatlands and their water sources management plan (including monitoring program) established between the Apolobamba protected area, the Marka indigenous organization, and the regional association of vicuña managers, with 40% women's participation, is approved by Year 2.</p> <p>3.2 Agreement is established with legal miners on the pasture, peatlands and their water sources management plan by Year 2.</p> <p>3.3 Vicuña health management plan (including monitoring plan) approved between Apolobamba protected area, Marka Cololo indigenous organization, and the regional association of vicuña</p>	<p>3.1 Management plan, accompanying zoning maps, list of participants, and signed agreement between Apolobamba, Marka indigenous organization and the regional association of vicuña managers.</p> <p>3.2 Signed agreement and list of participant mining cooperatives.</p> <p>3.3 Health management protocol, list of participants, and signed agreement between Apolobamba protected area, Marka indigenous organization and</p>	<p>Political conflicts do not prevent travel to Apolobamba.</p>

	<p>managers, with 40% women's participation, and their implementation has begun in Year 2.</p> <p>3.4 Health management protocol presented to the Biodiversity authorities (DGB-AP) for formal approval.</p>	<p>regional association of vicuña managers.</p> <p>3.4 Letter from the regional association of vicuña managers to the Biodiversity authorities.</p>	
<p>4. Increased resilient livelihoods through improved business capacity and quality control of the regional association of vicuña managers of Apolobamba.</p>	<p>4.1 Business and organizational plan for the regional association of vicuña managers is completed, with 40% women's participation, by the end of Year 2.</p> <p>4.2 Reduced mange prevalence, improved shearing, and fibre selection increases income of 1,335 vicuña managers (40% women) by at least 20% by the end of Year 3.</p> <p>4.3 Evaluation of increase in effort and additional economic benefit as a result of changes in shearing and fibre selection protocols.</p> <p>4.4 New market linkages with buyers of high quality fibre.</p>	<p>4.1 Business and organizational plan document, list of participants, and signed approval by the regional association of vicuña managers.</p> <p>4.2 Shearing campaign and sales reports.</p> <p>4.3 Report of increased effort by women and men and additional economic benefit of changes in shearing and fibre selection.</p> <p>4.4 Offers to buy high quality fibre.</p>	<p>Legal framework under which wild vicuña populations are managed does not change.</p> <p>Continued demand for vicuña fibre.</p> <p>Extractive activities and conflicts for access and use of natural resources do not prevent agreements on pasture management.</p>
<p>5. Good practices are shared for sustainable and resilient management of pastures, peatlands and their water sources, biodiversity conservation, improved vicuña health, and resilient livelihoods with other vicuña manager associations and in coordination with the biodiversity national authority (DGB-AP).</p>	<p>5.1 At least 1 inter-institutional agreement for replication of management of pasture, peatland and their water sources for biodiversity conservation and resilient livelihoods signed with other vicuña manager associations elsewhere in Bolivia is signed by project end (Year 3).</p> <p>5.2 Project results available digitally to the IUCN SSC SAC network (Year 3).</p>	<p>5.1 Signed inter-institutional agreement with vicuña managers from elsewhere in Bolivia, as well as protected area and biodiversity authorities (DGB-AP).</p> <p>5.2 Project documents available digitally.</p>	<p>Continued regional interest on this issue.</p>
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.1 Baseline survey of stocking rates in native pastures and peatlands.</p> <p>1.2 Exit evaluation of stocking rates in native pastures and peatlands.</p> <p>1.3 Baseline survey of biodiversity indicator species in peatlands and native grasslands.</p>			

- 1.4 Exit evaluation of biodiversity indicator species in peatlands and native grasslands.
- 2.1 Baseline evaluation of mange prevalence and health condition of vicuña.
- 2.2 Exit evaluation of mange prevalence and health condition of vicuña.
- 2.3 Participatory workshop to identify climate change scenarios and their influence on pastures, peatlands and their water sources, mange prevalence and vicuña fibre production.
- 3.1 Community workshops to present results of baseline evaluations of pastures and peatland condition and develop zoning plan based on three categories of management (conservation, restoration and management).
- 3.2 Community workshops to present results of baseline evaluation of vicuña health and mange prevalence and develop vicuña health management plan.
- 3.3 Community workshops to develop monitoring plan for pasture and peatland condition monitoring.
- 3.4 Workshops with miners to agree respect for management plan for pastures, peatlands and their water sources.
- 3.5 Community workshops to develop monitoring plan for vicuña health and mange prevalence.
- 4.1 Diagnostic of business and organizational challenges for the regional association of vicuña managers, including opportunities and obstacles for women's participation across the process.
- 4.2 Workshop to develop business and organizational strengthening, including increasing women's participation across the process.
- 4.3 Diagnostic of challenges in management practices to reduce mange and reduce fibre losses during shearing and fibre selection.
- 4.4 Evaluation of effort and additional economic benefit as a result of changes in shearing and fibre selection protocols.
- 4.5 Workshop to develop vicuña health management plan.
- 4.6 Workshop to present training materials on business and organizational and vicuña health management plan.
- 5.1 Workshop to present results on pasture and peatland condition, biodiversity, vicuña health and livelihoods, including women's participation with the biodiversity authority.
- 5.2 Workshop to present results on pasture and peatland condition, biodiversity, vicuña health and livelihoods, including women's participation to other vicuña associations in coordination with the biodiversity authority.
- 5.3 Develop and share digital documents with the project reports with the IUCN SSC SAC.

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
3	Undergraduate Engineering students from Engineering Department (Engineering Military University) (<i>Annexes 02 & 04 in the report</i>)	1 woman and 1 man	Bolivians	2	0	0	2	2
6A	Training on improved fleece processing (2 weeks)	Yr 1: 37 (46%) women and 44 (54%) men	Bolivians	81	189	0	270	270
6B	Review and collection of fleece for commercialization (four days)	Yr. 2: 42 (22%) women and 147 (78%) men						
7	Training manuals on best practices for fleece processing.				1			
9	Good practices shared with vicuña managers by Yr 3 Workshop to validate the results of vicuña health, grasslands and wetlands diagnostics, and climate change diagnostics	Yr 2: 2 (7%) women and 27 (93%) men	Bolivians	29	29	0	29	1 29
23	Welttierschutzgesellschaft (WTG)	Funding from all other sources	German	█	█	█	█	█

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	Yes
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	No
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	