

Darwin Initiative Main Annual Report

To be completed with reference to the “Writing a Darwin/IWT Report” Information Note:
(<https://www.darwininitiative.org.uk/resources-for-projects/reporting-forms-change-request-forms-and-terms-and-conditions/>).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2021

● Darwin Project Information

Project reference	25-011
Project title	Andean bears and people: coexistence through poverty reduction
Country/ies	Bolivia
Lead organisation	Chester Zoo
Partner institution(s)	PROMETA
Darwin grant value	£266,625
Start/end dates of project	July 1 st 2018 – March 31 st 2021; extended to September 31 st 2021
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	Annual report 3 (April 12020 – March 31 2021)
Project Leader name	Alexandra Zimmermann
Project website/blog/social media	https://www.chesterzoo.org/news/andean-bear-project/
Report author(s) and date	Ximena Velez-Liendo, Alexandra Zimmermann 30 April 2021

1. Project summary

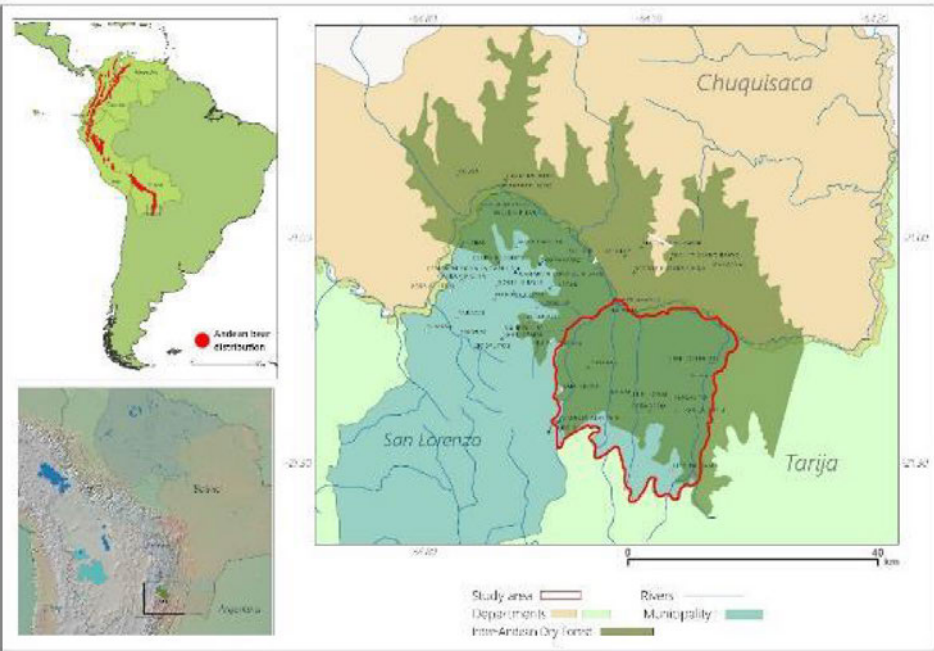
The inter-Andean dry forests of Bolivia are among the most fragmented, fragile and understudied ecosystems. They are highly prone to the effects of climate change, home to the threatened Andean bear, and to some of the poorest and most vulnerable communities of Bolivia. In recent years, severe droughts have affected agriculture, with crop losses of up to 80% in 2015. Consequently, people are increasingly changing their main economic activity from arable agriculture to livestock, which not only impacts on the natural regeneration of the dry forests and demands more land and water, but also increases encounters between people, bears and livestock.

In 2016, conservation scientists from Chester Zoo, PROMETA and WildCRU launched a pilot project to implement bear conflict mitigation and poverty alleviation strategies. This idea won a Whitley Award in 2017, enabling us to carry out a one-year preliminary study focusing on a priority region of Tarija in the southern Bolivian Andes. Furthermore, the press generated by the award attracted full governmental support for a national Andean bear action plan, and the declaration of the species as Bolivian National Heritage.

Through this project, the livelihoods of up to 200 households and the local biodiversity will benefit from an integrated approach that addresses poverty, wellbeing, livestock predation, land-use and acceptance of bears in the dry inter-Andean forests of southern Bolivia. This leads to improved resilience to social and environmental change, linking together action for poverty and conservation and enabling the protection of Bolivia's new national heritage species. The households are selected on needs basis and for their potential to influence neighbouring communities. This encourages eventual self-replication of the project's outcomes, avoiding donor dependency and providing an exit strategy at project end.

This work has revealed that community attitudes towards bears are indeed very negative and that bears, and to a lesser extent pumas, are frequently blamed and retaliated against for livestock and crop losses, yet there is little empirical evidence to support individual claims, and our initial population assessment suggests a low number of seasonally transient bears in the area. Life for the communities in these regions is, however, truly difficult and their attitudes and norms towards biodiversity conservation must be considered against this background of poverty, water shortage, limited infrastructure and few opportunities for income generation. This is where we see an opportunity to prompt a change, one in which development and conservation needs can be addressed together, for a more lasting, positive outcome. This project aims to transform the negative interaction between local people and Andean bears, into one where human-bear co-existence becomes possible. This requires finding ways for the target community to benefit tangibly from the existence of conservation efforts, as well as valuing the existence of bears as natural heritage.

Location: The project location encompasses the Inter-Andean dry forests of San Lorenzo, in Tarija Bolivia. In general terms, this area is characterized by mid-elevated mountains (1,200 and 3,500 masl); it is marked by hot, wet summers, and cool dry winters. Although much of the forest composition has changed due to human intervention, these valleys are considered important centres of endemism, and home of the largest carnivores in South America: the Andean bear, the jaguar and the puma.



Map 1. Study site showing its location in South America and Bolivia.

2. Project partnerships

Project partners include PROMETA (Proteccion del Medio Ambiente, Tarija/Environmental Protection, Tarija), IICA (Farming Research and Training Institute), CERDET (Centre for Regional Studies of Tarija) and the Alcides d'Orbigny Natural History Museum in Bolivia, and WildCRU (Wildlife Conservation Research Unit, University of Oxford) in the UK. PROMETA is Bolivia's second largest non-profit organisation, with a focus on biodiversity conservation and sustainable development. The project concept and its theory of change were developed jointly with Chester Zoo through joint planning and field visits.

PROMETA oversees the implementation of activities including recruitment and field team coordination. It is responsible for managing local finances, acquisition of materials, assistance with reports, and dissemination of outputs within Bolivia. Furthermore, communication with government authorities, the acquisition of permits, dissemination of project outputs and liaison with CBD focal point will also fall under PROMETA's responsibility. During this year, the role of PROMETA to continue with our work with the communities was essential. Permits with local authorities to allow the team to access the communities were obtained through PROMETA. Whilst the role of IICA&CERDET has focused on carrying out market analyses for honey and other products, and to help with the promotion and selling of honey at IICA's shop. WildCRU guides the research, providing technical expertise in carnivore research and monitoring, as well as overall quality control, ensuring that research and M&E are carried out to the best standard whilst the Alcides d'Orbigny Natural History Museum supports the research component by providing technical support in bear ecology, as well as training young biologists in bear monitoring, and community members as parabiologists.

We have benefitted from support from the British Embassy in Bolivia, particularly from the Ambassador, Mr. Jeff Glekin. The Embassy was part of the "Piensa Verde" event, which featured our project and the honey produced by the communities. Ambassador Glekin introduced me to the Environment Minister, who highlighted the role of the British cooperation in Bolivia (photo)

During last year, the project was highlighted on a number of occasions by the Embassy, including the "Climate Ambition Summit 2020" <https://fb.watch/51uuiX4PXd/>

3. Project progress

During year 3, project development was largely affected by COVID-19 pandemic restrictions. Activities related to workshops, interviews with community members and school children were very limited. During the past six months, the situation improved with special permits from central government to visit and work with the communities. Therefore, and adapting to government restrictions the team focused primarily on ongoing capacity building (output 2, activities 2.1, 2.2, 2.3 and 2.4), safe coexistence (output 3, activities 3.3), providing an evidence base for bear and puma presence (output 4, activities 4.1, 4.2, 4.3 and 4.4), and continued advocacy through regular meetings with government and the CBD focal point (output 5, activity 5.2 and 5.3).

3.1 Progress in carrying out project Activities

Output 1

Activity 1.5 According to the agreed timetable for this project, the quantitative surveys that were developed, piloted and administered in project communities (Output 1, activity 1.5) should have been implemented. However, restrictions on contact with community members have prevented this activity from going ahead.

Output 2

Activities: 2.2 and 2.4

Training and mentoring activities (Output 2) planned for this reporting period were significantly reduced due to the COVID-19 pandemic. Face-to-face activities with local communities were prohibited, as was travel to our study area. These strict measures, including a nationwide nightly curfew, lasted around five months. In August a special permit was granted by San Lorenzo municipality, allowing the project team to visit each community. We were able to examine the state of the apiaries and to harvest honey. Despite projections of national lockdown measures extending beyond the end of May 2021, communities have been able to harvest their honey and benefit from the revenues of sales. During the past 6 months, training, mentoring, diversification and supporting the installation of 26 new beehives have gone ahead, with members of the group demonstrating ability and great interest in developing sustainable livelihoods independently. In April 2021, the second harvest of the year (2020-2021) was carried out bringing more benefits to a very decline local economy.

Output 3

3.3 Depredation rates monitored and recorded monthly

3.5 Social marketing strategy delivered with target communities and behavioural changes observed and recorded

Although travel restrictions have eased compared with last year's lockdown, workshops or meetings with community members are still forbidden. Thus, activities related to output 3 - practices to improve livestock protection have been slowly reinstated, following strict COVID-19 protocols. Information and data related to livestock from community members has been collected via WhatsApp calls. Information about depredation during lockdown was reported by each community's parabiologist. In 2020-2021, a total of twelve cattle have been killed by bears, as well as one no-lethal attack (with verification of the attacks carried out by our technician and parabiologists). Livestock losses resulting from depredation by bears were highest in Hoyadas-Cercado, with five cows and two calves killed this year, followed by San Isidro, with three cows killed in the past month, Hoyadas-Mendez two cows killed, and one cow attacked but not killed in San Lorencito. Despite this, community members have not engaged in any retaliatory action against bears, opting instead for use of fireworks as deterrent, whenever necessary.

Finally, after the revision of our social marketing strategy with education specialists from Chester Zoo and the school situation during this year, where schools were closed and children were receiving home schooling and virtual lessons from teachers through a number of education platforms (Zoom, Google Meet, etc), the team tried to work on developing short radio programmes as a means of supporting the teachers' need to maintain contact with schoolchildren in communities. However, during the past three months, teachers were back to schools and we were able to provide material related to wildlife as well as supporting requests from the teachers for school materials.

Output 4

4.1 Camera traps located following protocol developed by the research team and revision/change memory/batteries plan implemented

4.3 Preliminary findings shared with stakeholders

4.4 Bear and other wildlife identified via camera trap images and observational sightings

Our monitoring program was not affected by COVID-19 restrictions. The parabiologists who were recruited and trained during the first year of Darwin-funded activities have been a crucial asset during this period. Our parabiologists were able to carry out fieldwork in all five field sites independently. Batteries and memory cards were provided and collected through authorised transport to the communities. However, we were unable to share findings with stakeholders due to lockdown restrictions.

Output 5

Meetings with authorities and workshops with stakeholders were completely suspended; in part due to COVID-19 travel restrictions. The Andean bear conservation action plan was published and approved by the Deputy Environment Minister. Finally, bear research initiatives in two national parks in the Boliviano-Tucumano region that had previously received technical support from this project reached their end due to lack of funding and wildfires.

3.2 Progress towards project Outputs

Output 1 Livelihoods and wellbeing are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods

Baseline condition: Baseline qualitative and quantitative data has been collected in seven communities. Sixty-four interviews showed that a majority of villagers are illiterate, and there is a significant number of people with disabilities. Livelihoods are strongly dependent on economic resources generated through seasonal migration to Argentina for agricultural and livestock work.

Change recorded to date: Six communities (82 households) have developed beekeeping as a supplementary livelihood. In 2021, an additional 18 participants have joined the initiative, reaching a total of 100 beneficiaries. In 2019 a total of 156 kg of honey was harvested, some of which was distributed among families (group decision) and the rest was put for sale. Revenues were used to buy equipment for each community (again, a group decision). In 2020-2021, despite the COVID-19 pandemic, a total of 509 kg of honey from four out of our five communities has been harvested.

Source of evidence for this change: Photos of beekeeping, activities and meeting records – see Annex

Output 2 Capacity building and training helps communities improve resilience to environmental changes and foster their ability to develop sustainable livelihoods independently.

Baseline condition: Alternatives to keeping livestock, included fruit and vegetable production. However, water for irrigation is limited, as is road access. Therefore, beekeeping was identified as alternative, due to the demand in local markets, little physical effort involved in production when compared with cattle ranching, and for being a year-round opportunity for income generation. Another alternative, focused primarily on women, is growing lavender; an activity that supports beekeeping, and can provide additional economic support to women in the study area. Training tools and methods for both activities, must take into account limited literacy levels and special learning needs amongst the target audience.

Change recorded to date: In total, thirty-nine workshops have been carried out across all communities. Community apiaries have been built and run accordingly. At this point, all community members are capable to capture wild bee colonies, build hives, and establish their own apiary. Training in business management was introduced this year in three communities. Completion of this training was carried out via WhatsApp with all the other communities. In all communities, people have started building their own apiaries. By the end of 2019, we had a total of 18 new beehives installed, an activity expected to occur at the end of the project. In 2021, the total number of private beehives is 92 in all six communities. Regarding the lavender project initiated in 2020, it has not been so successful, and women have decided to continue with

beekeeping, diversifying into keeping on native species. A total of 8 native beehives have been distributed, with an additional 10 to be installed before winter.

Source of evidence for this change: Photographs. See Annex

Output 3 Safe coexistence of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.

Baseline condition: The main economic activity in the area is extensive cattle ranching: animals graze in the mountains, drink water from rivers and springs, and do not have stables. Information on the amount of cattle in each community has been obtained from government agencies. This information will be used as an indicator of success of this intervention.

Change recorded to date: No bear or puma was killed in the communities where the project is currently working. Although missing and killed livestock have been recorded (bears were blamed on more than one occasion), owners used fireworks to scare off the bear, rather than killing it. Deterrents have worked very well in all cases where ranchers found evidence of bears in the area.

Source of evidence for this change: Personal communications with the principal researcher and to our field technician.

Output 4 Evidence base for bear and puma presence, movement and habitat is generated through participatory monitoring, and the physical and spatiotemporal aspects of human-bear conflict dynamic are better understood.

Baseline condition: There was previously no scientific evidence of a bear population in the area, only anecdotal information. The last bear record in the area was in 2010 (a bear was killed and the skin was photographed and sampled by PROMETA). However, communities had been speaking about the presence of bears, and blaming bears for losses.

Change recorded to date: We have 55 camera trap stations installed across the project area. Andean bears have been photographed at 20 stations. 25 individuals have been identified based on their facial marks, including at least five males, juveniles and several cubs. Seasonal movements have been identified, with a peak of activity during the rainy season (October-April). In February 2020, a complementary biodiversity study was carried out by one of our partner institutions, the Natural History Museum. In ten days of sampling the area, they identified 163 vertebrate species and 53 floral species of interest for beekeeping.

Important findings are: seven species of felids, capybara, neotropical otter, agouti and confirmation of *Abrocoma boliviensis* (Chinchilla rat), a Critically Endangered rodent.

Source of evidence for this change: Lists of species, reports and maps. See Annex.

Output 5 Policy and governance the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan

Baseline condition: Initial meetings with government officials identified two main activities for the first year of the project: 1. Monitoring cattle-bear attacks through calendars distributed throughout the Andean bear's range, and; 2. Assessment of capacities in the Boliviano-Tucumano ecoregion. Meetings were scheduled to take place approximately every three months.

Change recorded to date: During the first year of the project, meetings with government authorities were carried out, leading to the approval of the National Action Plan for the Andean bear, and to it being declared a natural heritage species at the regional level in Tarija.

Meetings with government authorities led to the implementation of action to monitor bear and puma-related related cattle mortalities, and a capacity assessment for the Boliviano-Tucumano ecoregion. Any further action towards this output during the second year of the project have been obstructed by the many challenges that Bolivia has experienced during this time frame. Although a meeting with the Environment Minister was held in early March 2020, with a positive outcome, further disruption was caused by the global COVID-19 pandemic reaching Bolivia. However, the Conservation Action Plan with ministerial resolution is published.

Source of evidence for this change: Photographs of Conservation Action Plan. See Annex

3.3 Progress towards the project Outcome

Outcome	The livelihoods of local communities and the conservation of Andean bears co-benefit from an integrated approach linking and improving livelihoods and coexistence with bears and pumas in the dry forests of the Pilaya watershed, Bolivia			
Indicator	Baseline	Progress to date	Source of evidence	Comments (if necessary)
0.1 Eight communities (up to 200 households) develop supplementary livelihoods to reduce poverty levels and increase wellbeing by end of yr 3	According to the municipality's unsatisfied basic needs indicator, communities in the study area are considered poor.	One hundred participants from six communities: San Isidro, Hoyadas-Mendez, Pajonalcito, San Lorencito, Romerillo (included with San Lorencito for logistical reasons), and Hoyadas - Cercado have developed supplementary livelihood activities (beekeeping). Another economic alternative initially identified in the baseline study was lavender production, but the target group (women) have decided to develop native beekeeping instead.	Interviews, baseline assessment and theory of change maps.	
0.2 Capacity, agency and confidence of at least 100 community members in Pilaya communities to adapt to socio-environmental change in their areas is improved by end of yr 3	Limited opportunities and training to improve their resilience to environmental change and little confidence to pursue ideas with minimal dependence on outside agencies	100 people have been trained, and are capable of continuing beekeeping with minimal assistance. 92 new individual beehives have been installed in all communities.	Photos and records of workshops attendance. Photographs of new apiaries.	Due to the COVID-19 pandemic, workshops and other activities involving gathering people have been postponed. Although government orders have eased access to our communities, PROMETA remains cautious

<p>0.3 Key beneficiary communities show positive changes in acceptance of bears, demonstrated by a 50% increase in tolerance by comparing baseline and final surveys by end of yr 3</p>	<p>Community members show low tolerance to presence of pumas</p>	<p>No incidents of bears being killed or harmed have been registered during this second year. The use of deterrents (fireworks) has worked with bears in San Isidro, Hoyadas-Mendez and San Lorencito.</p>	<p>Quantitative and qualitative social research data collected during the pilot study, at baseline, and completion of project.</p> <p>Personal communications.</p>	<p>about communities like ours, where the majority of residents are senior citizens.</p>
<p>0.4 Understanding of distribution and ecological needs of Andean bears and pumas in inter-Andean dry forest are much improved as a result of the data collected and analysed by the project, including previous years data collected</p>	<p>Only few historical records of bear presence, in the Inter-Andean dry forests have been registered. Puma on the other hand, is seen as a threat to small livestock. There is very little scientific information on the distribution, and ecology of these species.</p>	<p>Knowledge of Andean bear distribution in the study area is improved. Seasonal movements also have been registered, showing bear activity from October-Abril. Pumas on the other hand, have a permanent presence in the area, with attacks to livestock occurring all year round</p> <p>55 stations (115 camera traps) are deployed in 1000 sq km of dry forest. A total of 380G of images have been obtained.</p> <p>25 bear individuals have been identified, as well as 47 small, medium and large mammal species, 20 reptiles sp, 96 bird sp, and 53 plant species of importance for beekeeping have been identified, and will be used by the community members in their floral calendars.</p>	<p>Photographs, identification of bear individuals, identification of pumas and other carnivores. Monitoring seasonal movements through camera-trap stations, as well as cattle.</p>	<p>The role of parabiologists during the past 12 months of COVID-19 pandemic has been crucial. They managed to keep equipment running, providing vital information about the status of our bear population, as well as new records of mammalian species, including the CR <i>Abrocoma boliviensis</i></p>

<p>0.5 Implementation of the national action plan for Andean bears is underway in the project areas through a collaborative effort with government and communities, providing a model for other regions of Bolivia, and resulting in recognised legal protection for the bears and their habitat</p>	<p>There is not implementation of a national action plan, neither legal protection recognition of the bear and its habitat locally.</p>	<p>National action plan for the Andean bear approved and published.</p>	<p>Document included.</p>	
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3.4 Monitoring of assumptions

Indicators	Assumptions	Comments
<p>0.1 - 0.5</p>	<p>Communities are willing and able to participate in the project</p> <p>Government and communities' support for the project continues</p> <p>Communities are willing to work with project researchers to develop supplementary livelihoods</p> <p>Communities are willing and able to adapt to socio-environmental changes in their areas</p>	<p>All communities have been willing to engage and assist with project activities, except one, Pampa Grande. This community decided not to participate for reasons including not having enough time to attend workshops, and a preference for working on an individual basis, instead of developing a communal beekeeping initiative.</p> <p>Despite the challenges of the past 12 months, local government has remained supportive.</p> <p>Yes</p> <p>Adaptation to the COVID-19 pandemic has shown this to be possible: communities have adapted to the situation, making use of communication tools (e.g. WhatsApp) to maintain engagement and support. Therefore, we consider that communities are willing and able to adapt to changes, so long as they have the means to do so..</p>

	<p>No unforeseen extreme events cause further decrease in perceptions about bears and pumas</p> <p>Enough data on bears and pumas have been collected to be analysed yr 2</p> <p>Effective protection against hunting Andean bears in the project region (Dry forests) is enforced</p>	<p>Despite the number of cattle lost by bear, these attacks have not provoked any retaliation.</p> <p>Yes</p> <p>No bears have been killed in any of the communities where the project is currently working.</p>
1.1 - 1.5	<p>Communities are willing and able to engage in participatory theory of change planning</p> <p>Communities are willing and able to adopt alternative livelihoods</p> <p>Various means of verification (surveys, reports, observation, focus groups) allow for triangulation of information to provide robust M&E</p> <p>No major social, economic, political or environmental disaster to significantly impede project progress</p> <p>Through the adoption of new livelihoods human and economic wellbeing increases (measured via social surveys).</p>	<p>Six communities have stayed with our initiative. Our target was eight, but we consider that with the time we have left we will not be able to commit to others who are interested in joining the initiative.</p> <p>All participating communities have installed their apiaries, including private apiaries. Diversification i.e. pollen production, has started with a few members.</p> <p>Yes.</p> <p>Project activities have been delayed due to a number of challenges, with COVID-19 being the biggest impediment to progress.</p> <p>Baseline information regarding income has been collected and it will be compared during the project to assess economic wellbeing.</p>
2.1 - 2.4	<p>Community members are interested in joining the project and the training offered, and work cooperatively with the project team</p>	<p>Interest has been shown, but fewer women have joined the group due to lack of confidence and economic dependency to their husbands. However, the team along with several women of our communities have found a strong interest in carrying out native beekeeping, which is easier in terms of equipment, and commands a higher market value. So far, we have implemented four native beehives in two communities. With eight new native beehives</p>

	<p>Community members attend consultations and share openly their desires and aspirations</p> <p>Community members see value and interest in attending training workshops</p>	<p>implemented in the next couple of months.</p> <p>Yes</p> <p>Yes</p>
3.1 - 3.5	<p>Communities are willing and able to engage in project activities</p> <p>Government partner agencies remain supportive of project activities</p> <p>Community members are willing to attend and participate in human behaviour changing activities</p> <p>Social marketing strategy brings about human behaviour change and raises public awareness that bears are not a threat to their livelihoods</p> <p>Valuing of and tolerance towards bears and pumas increases due to social marketing strategies and doesn't decrease</p>	<p>Yes</p> <p>Yes. However social, political, and COVID-19 has changed government priorities to tackle those issues and concentrate less in biodiversity programs.</p> <p>Yes, but due to COVID-19 pandemic all meetings and workshops were suspended.</p> <p>Yes based on our first year.</p> <p>Yes, but mostly the provision of economic alternatives.</p>
4.1 - 4.4	<p>No more than 10% camera failure during the project</p> <p>Camera trap image quality generates sufficient database of individuals for recognition of facial markings</p> <p>Camera traps do not incur theft and vandalism.</p> <p>Communities, and community members allow camera traps to be set up on their land and support the project.</p>	<p>21% of our cameras have failures. Failure was primarily caused by old cameras (second hand) and brand-related. We found out that Cuddeback did not perform well and were the first ones to suffer mechanical problems. Bushnell cameras, on the other hand, had some problems, but these could be fixed by our local technicians. We recommend use Bushnell only.</p> <p>Yes</p> <p>No cases during this third year.</p> <p>Yes, and in more than one situation, our field assistants request permission on behalf of the project.</p>

	Interest in and uptake of parabiologist initiative and training opportunities (as has been done elsewhere in Bolivia) by community members	Yes, all field assistants were interest in training and exchange of experiences.
5.1 - 5.3	<p>No changes in government authorities or delays in meetings to confirm the actions this project will take in order to implement the Action Plan</p> <p>All multi-stakeholders contribute in the process, have buy-in and commitment to the Action Plan</p> <p>Government authorities continue to support the project and the Andean bear action plan</p> <p>Bolivian protected areas maintain protected status and have government support and enforcement</p>	<p>Environment authorities at the national level have changed twice, which has affected our meetings plans.</p> <p>So far, government agencies and regional governments have shown commitment to the action plan.</p> <p>Yes, local authorities.</p> <p>Yes</p>

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

Our intended impact is defined as: “Linking poverty reduction and biodiversity conservation improves the wellbeing of communities and the population of threatened Andean bears in a key region of its global range.”

At the current stage of this project, beekeeping has proven an effective means of providing a year-round opportunity for income generation, a high-quality food source (honey, propolis, royal jelly, etc.) supporting healthy families, and requires little physical effort when compared with cattle ranching. Confidence in carrying out this economic activity has increased, as demonstrated by the number of new beehives that community members have installed on their land with minimal support.

Since this project initiated in 2018, we have identified more than 25 individual bears, recorded the highest diversity of wildcat species anywhere in Bolivia, and established new distribution records for many other species. Considering the lack of information regarding biodiversity in the interandean dry forest, these are important achievements. Furthermore, confirming reports of the presence of jaguars in the area would even further highlight its conservation value.

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

This project directly contributes to Bolivia’s commitment to the Global Goals for Sustainable Development (SDG) by reducing poverty (SDG1) through improving the livelihoods of people in vulnerable situations affected by economic, social and environmental challenges, and strengthening capacities for climate change adaptation and impact reduction (SDG 13).

5. Project support to the Conventions, Treaties or Agreements

This project directly contributes to Bolivia’s commitment to the Convention on Biological Diversity (CBD) and to the Aichi targets. To date, the project has been addressing Articles 7 and 12, by carrying out high quality scientific research for the conservation of the Andean bear, a threatened species (IUCN Vulnerable) through camera-trap monitoring. The implementation of the National

Conservation Action Plan is currently focused on carrying out research in the Boliviano-Tucumano ecoregion, and to monitor cattle kills caused by bears through calendars distributed to national parks and communities in the area (Strategic goal C, Target 12). The implementation of beekeeping initiatives in four communities has contributed to reducing pressures on dry forest ecosystems through the improvement of livestock management, and conservation agreements with communities (Strategic goal B, Target 7).

Research is carried out by experienced Bolivian and UK scientists, who will also maintain a training program for community members and promote and encourage research for the conservation of the Andean bear and its ecosystem (Article 12). Training programs for community members and park rangers have been carried out as part of the National Conservation Action Plan, and further training will be carried out in year 2. This initiative will raise awareness of the value of the bear and its ecosystem amongst people from the communities and beyond through social marketing, social media, and outreach activities (Strategic goal A, Target 1).

Capacity and leadership opportunities for women in the project team (SDG5) is achieved by having four women out of the six members of the team in Bolivia leading different parts of the project. Capacity is providing by improving practical skills (beekeeping) and postgraduate opportunities (PhD).

6. Project support to poverty alleviation

The project targets communities with poverty levels above 90% (measured by a lack of necessities) within the San Lorenzo Municipality. Like many human-wildlife conflicts, human-bear conflict is only partly about bears or pumas damaging resources; it is more about the many-layered underlying issues of vulnerability to a changing and challenging world and making a living in multidimensional poverty.

Through our project, we expect to be able to support up to 200 households, benefitting from an integrated approach that addresses poverty, wellbeing, livestock predation, land-use and acceptance of bears in the study area. This leads to improved resilience to social and environmental change, linking together action for poverty and conservation and enabling the protection of Bolivia's new national heritage species.

Based on our scoping work, during the past years, the main economic activity in these communities has changed from agriculture to cattle ranching, which also increases negative attitudes towards bears and other carnivores. This project aims to reduce livestock dependency by implementing economic alternatives e.g. beekeeping. By providing economic alternatives to livestock, the project will build capacity amongst community members to carry out new activities that will improve their well-being, and consequently reduce human-bear conflict, and help restore bear habitat.

7. Consideration of gender equality issues

The project strongly promotes the participation of women in all activities. However, social background, economic dependency on their husbands, and lack of self-esteem has resulted in only 38 women taking part in beekeeping activities, out of 97 participants. However, the team has identified activities that may help to motivate greater female engagement, such as growing lavender - an activity that supports beekeeping, and can provide additional economic support to women in the study area.

Looking ahead, we aim to work with Chester Zoo's Botany and Horticulture team to implement capacity-building activities for growing lavender, which will be focussed on encouraging the participation of women. Furthermore, the school outreach programme that we are developing will include a strong emphasis on building bridges between the classroom and households within the community, to which end we will be working with women as a key target audience.

8. Monitoring and evaluation

The project uses the log frame to monitor progress. In addition, monthly reports and skype meetings with Chester Zoo and the project leader are carried out. The team has collected baseline information, interview surveys, stakeholder mapping and situation analysis. All social data will be gender-disaggregated to assess, consider and adapt how we may achieve gender equality. Although some activities have started earlier than expected (i.e. beekeeping), data has been collected at the start of these activities by our socio-economist consultant in order to assess the impact of these activities.

No change to the M&E plan is expected. An M&E consultant has been hired to support in this area, as proposed during the previous yearly report. However, field activities have been postponed due to Bolivia being in lockdown due to the COVID 19 pandemic. In the meantime, the consultant is currently undertaking desk-based activities, working on existing project documentation. The M&E consultant has provided the following feedback:

- a. The project is contributing to the goals of the CBD and the Strategic Objectives of Biological Diversity (SDGs). In that sense it will be necessary to include these elements as a contribution and fulfillment in the Biodiversity Report that the Bolivian Government draws up, such as the report for the CBD. And which may also enrich the fulfillment of the indicators in Outcome 5.
- b. For the continuity and sustainability of the Andean bear's sustainability actions, we recommend to intensify the agenda with the national government and sub national governments. With the intention of connecting the coexistence initiative among humans and species, as an integral public policy, which will favor the local communities towards the sustainability of their livelihoods.
- c. Exploring within the framework of Outcome 3 and 5, the connection of the project's outcomes and the management of water resources, including the conservation of water sources is recommended. In that aspect it would be recommended to seek new efforts between Andean bear conservation and water resources.
- d. By recognizing the creation of protected areas as a strategic response to conservation in Bolivia, the additional support of the San Lorenzo Municipal Government was key in creating the protected area within its territory, this includes the areas within the project and therefore the bear's distribution.
- e. We recommend developing the gender perspective, display on the reporting indicators the participation of women in their roles and in the decision making of the project. The CBD emphasizes the Gender Action Plan 2015 – 2020.
- f. Another element that is not included in the framework, and should be analyzed are the indicators on climate change, considering that the indicator 3.2 foresees the identification and implementation of improved practices on cattle rearing/protection. The dry inter-Andean forest is a vulnerable region to the effects of climate change and this must be analyzed as an element for the forest's adaptation and relief; as well as elements for a change in activities within the communities that may reduce water use and how this affects male and female activities. IUCN's gender reports mention that women tend to be especially vulnerable to the effects of climate change and must not be excluded from decision making when it comes to actions and solutions.
- g. In light of the importance of training activities the work can continue replicating the trainings through a "training trainees" model, where community members can replicate their experience with other communities.
- h. Finally, the visibility of the project's results should be encouraged, in a strategic communication plan at the local, regional and national level. This would encourage ownership and the commitment of the authorities and civil society in Bolivia. This plan would also support quick and effective information to the national government, for their reports to entities related to biodiversity, as well as the communication among the State apparatus linked to biodiversity such as SERNAP, the vice – ministry of Water Resources among others.

9. Lessons learnt

The following are extracts from our M&E evaluation which was discussed within the team:

- Despite the Covid – 19 pandemic, the team has been able to adapt to the scenario using communication tools such as WhatsApp to send and receive information and steer the training processes relevant to the communities. In this scenario, the opportune and continuous information has made the difference in maintaining trust with community members. It is important to mention that the global health scenario peaked in Bolivia during the time of honey harvest in the communities, which highlighted the benefits of having technicians *in – situ*. The ongoing communication among technicians and community members calmed this situation.
- The initial investment of 30% from our members showed an increasing responsibility to attend training and participate in decision making. This also favoured the individual replication of new hives in their communities.
- The instability of national governmental institutions is an important factor to consider during the lifetime of the project. The conversations in this instance should be formal (agreements, intention letters, etc.) and results-focused. The formalities leave a precedent of the process, and of the commitments made in each step.
- Coexistence projects include contextual elements from the human dimension, which require theories and methods from the social sciences to examine the factors that determine how the situation should be handled, and to generate a balance between the conservationist and the person that uses the land. In this sense, to include professionals from the social and agronomy sectors has favoured interaction with the communities. This will also help to measure the welfare of the communities, which is one of the goals of the project. In this aspect, there are elements of continuous learning that will need systematization, as the recommendation states.

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

Feedback from the Y2 report requested more evidence to support claims of the Darwin Initiative being credited at training events and presentations. Photographic evidence is provided with this report as evidence of those claims.

The feedback also raised concerns about how we would adjust Y3 activities to adapt to the COVID-19 pandemic. In Bolivia, a national lockdown from May to September 2020 prevented us from being able to access the field sites and rural communities where project activities take place. During this period, our parabiologists in each community were able to ensure the continuation of bear monitoring activities, and participants in the alternative livelihoods scheme have maintained their community apiaries, with the project team providing support via remote contact. However, the scope of this support has been limited, and all activities that require the direct presence of the project team in the field, or first-person contact with the communities, have had to be postponed. This includes activities relating to ecological research i.e. changing camera traps locations, social research i.e. interviews, workshops, social marketing i.e. working with schools, and alternative livelihoods development, training and ongoing support. As a result of activities being postponed, corresponding funds have not been spent. After a team assessment of next year's activities, review of our communities' commitments, and COVID-19 adjustment measures adopted by community members and our team, we successfully submitted a request for a 6-month extension beyond the project's end date, in order to make use of the unspent funds to complete all proposed activities.

11. Other comments on progress not covered elsewhere

12. Sustainability and legacy

Our strategy for reaching a stable and sustainable end point is to create positive changes in habits and behaviour through our capacity building activities. We seek to ensure that community members will no longer rely entirely on external financial support. We consider that the increased

participation, and willingness to invest in building their own apiaries shows that our strategy is succeeding. However, it is crucial that a secure market for their products will be available. That is why the project and the team created “Valle de Osos”, a certification scheme that guarantees the product’s quality and conservation value to consumers.

Furthermore, we aim to inspire and provide the skills and knowledge necessary to enable communities to develop their own alternative economic livelihoods while coexisting with the Andean bear.

13. Darwin identity

The project has credited Darwin Initiative funding in banners displayed at all training events, PowerPoint presentations, camera trap photographs, and in a presentation to the British Embassy in Bolivia. The Darwin Initiative logo has been displayed in all presentations and printed documents provided during our training events. Tweets were broadcast by Ximena Velez-Liendo and Alexandra Zimmermann using the Darwin Initiative hash tag. Field updates (primarily to highlight bear presence) were broadcast via Facebook. The project is recognized as a “Darwin” project with clear identity both in the field and among conservation oriented organizations.

14. Impact of COVID-19 on project delivery

On March 17th, following Bolivia’s first two confirmed cases of COVID-19, the Bolivian government declared a public health emergency with a series of quarantine measures including: closure of all borders, suspension of international flights, and suspension of all interdepartmental and interprovincial land transport. In addition, all public events were cancelled, and schools were closed indefinitely.

For almost five months a nationwide nightly curfew was declared, with additional measures at the local level (municipalities), depending on their particular situations. In our region, travel was prohibited to communities where the majority of the population are in the >50 year age range. These restrictions, and those implemented by PROMETA to protect communities and their personnel caused considerable delays to our planned activities, particularly those relating to outputs 1, 2 and 3.

Our response to COVID – 19 was to use technologies, such as WhatsApp to support community members in the ongoing management of the apiaries, and to coordinate the monitoring and maintenance of camera traps. Our efforts to maintain contact with our communities strengthened their trust in the project. It was a difficult period for everyone and by maintaining regular contact, we were able to demonstrate our desire to support the communities.

In order to maintain our workplan, we had to adapt to the situation and assess which of our outputs and activities were still feasible. Working with school children in social marketing was the biggest loss. At the moment of writing this report, school children have not yet returned to normal classes. Therefore, we focused on outputs 2, 3 and 4, as activities that can be carried out remotely.

Due to the age group of our communities, there are limitations to the communication tools that we can use. With the exception of Whatsapp, all other web-based communication platforms fall beyond the technological capacity within the communities, or are too expensive to use.

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.

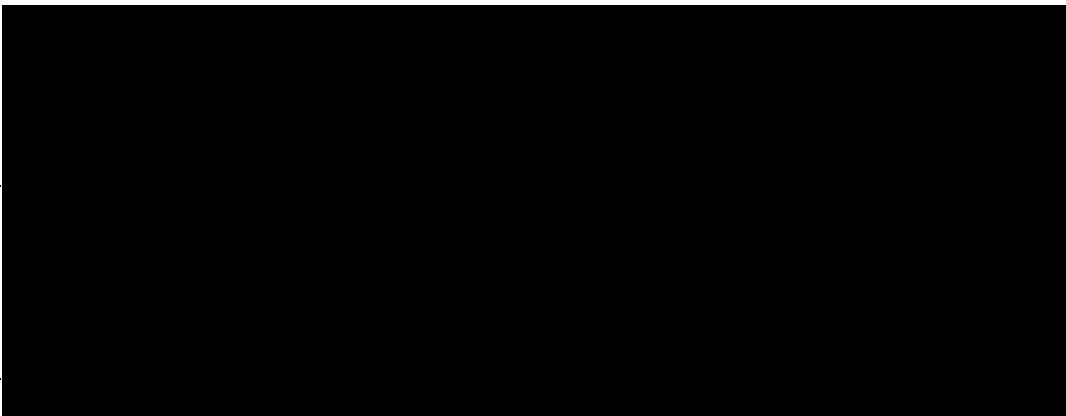
This project will follow Chester Zoo’s Field Programmes Safeguarding Policy. This document is included as an appendix to this report.

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 Costs (£)	Variance %	Comments (please explain significant variances)
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><i>Impact: Linking poverty reduction and biodiversity conservation improves the wellbeing of communities and the population of threatened Andean bears in a key region of its global range.</i></p>		<p>We have reached seven communities out of our target eight. Beekeeping has been developed in six of them as an economic alternative, and one additional community has expressed interest in joining the beekeeping initiative. In our six communities, communal and personal apiaries have been established demonstrating interest and replication of the initiative; all six have harvested honey, and revenues have been used to buy equipment (community decision), and during the COVID-19 pandemic, two communities use the money for their own expenses. Initial replication started with 18 new beehives built and installed by members from our groups in their own lands, now we have 92, which is a great result from our initiative. This demonstrates ability and interest to develop sustainable livelihoods independently. This was a great opportunity to see tangible results of beekeeping.</p> <p>Seasonal movements of bears have been identified, biodiversity assessments have been completed, with a significant number of new species distributions recorded for the first time in this ecosystem.</p> <p>Confirmation of the CR Chinchilla rat, and six wildcat species including the VU <i>Leopardus tigrinus</i> currently with only three records for the country (none of them in this region), put our</p>	

		<p>project as the study with the highest diversity of wild cat species in Bolivia. This is our third year with no bears killed in our study area since our intervention.</p> <p>During this year report, large number of our activities, primarily those involving workshops, meetings, interviews, and working with school children were banned due to COVID-19 pandemic. However, our communication with the communities was not affected, and we relied largely on Whatsapp to keep contact and help communities with the revision of their apiaries and camera trapping.</p>	
<p>Outcome The livelihoods of local communities and the conservation of Andean bears co-benefit from an integrated approach linking and improving livelihoods and co-existence with bears and pumas in the dry forests of the Pilaya watershed, Bolivia.</p>	<p>0.1 Eight communities (up to 200 households) develop supplementary livelihoods to reduce levels of poverty and increase wellbeing by end of yr 3</p> <p>0.2 Capacity, agency and confidence of at least 100 community members in Pilaya communities to adapt to socio-environmental change in their areas is improved by end of yr 3</p> <p>0.3 Key beneficiary communities show positive changes in acceptance of bears, demonstrated by a 50% increase in tolerance by comparing baseline and final surveys by end of yr 3</p>	<p>0.1. One hundred participants across six communities: San Isidro, Hoyadas-Mendez, Pajonalcito, San Lorencito, Romerillo (included with San Lorencito for logistical reasons), and Hoyadas - Cercado have developed supplementary livelihood activities (beekeeping).</p> <p>0.2. One hundred people have been trained in beekeeping.</p> <p>0.3 All our communities, have registered zero bear/puma killings this year. Personal communications with ranchers who previously killed bears and pumas, showed a significant change in their tolerance and attitudes towards bears. The use of fireworks worked with bears, but their</p>	

	<p>0.4 Understanding of distribution and ecological needs of Andean bears and pumas in inter-Andean dry forest are much improved as a result of the data collected and analysed by the project, including previous years data collected</p> <p>0.5 Implementation of the national action plan for Andean bears is underway in the project areas through a collaborative effort with government and communities, providing a model for other regions of Bolivia, resulting in recognised legal protection for the bears and their habitat</p>	<p>effectiveness has not been proved with pumas.</p> <p>0.4 Andean bear distribution and seasonal movements have been registered. A total number of 35 individuals have been identified using bear's facial marks, and this year the first twins have been registered, along with the highest density of wildcat species in the country, and other species with key importance for conservation.</p> <p>0.5 Actions for year 2-3 have been delayed because of COVID-19 pandemic.</p>	
<p>Output 1. Livelihoods and wellbeing are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods.</p>	<p>1.1 Process of participatory theory of change planning with project community members and project team completed by end yr 1.</p> <p>1.2 Alternative livelihoods opportunities explored with 4 communities (approx. 100 households) by end yr 1, with market analysis conducted and report produced by project team/advisors</p> <p>1.3 Wellbeing and livelihoods (current and aspirations) discussed and defined with and by 4 communities by end yr 1 using focus groups and one to one interview</p> <p>1.4 30% of households in the 4 communities have taken up an alternative sustainable livelihood by end of yr 2</p>	<p>1.1, 1.2, 1.3 Theory of change with community members have been carried out as planned with theory of change maps built for each community. Interviews and discussions with focal groups have been registered.</p> <p>1.4 Seventy-four (direct), ninety-seven (indirect) members in six communities have accepted beekeeping as economic alternative.</p>	

	1.5 Participating households' ability to generate income from alternative livelihoods has increased by 15% compared to baseline, by end yr 3	1.5. Income generated has varied among communities. However, the average income from honey was 450 Bs (£45) per harvests, Private community members who invested have had a revenue ranging from 615Bs (£61) (from just one beehive), to 6000 Bs (£600) (from ten beehives)
Activity 1.1 Participatory theory of change plans report completed with input from community members		Completed. Theory of change will be completed for Hoyadas-Cercado.
Activity 1.2 Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities		Completed. Baseline data completed for Hoyadas Cercado.
Activity 1.3 Baseline quantitative survey developed, piloted and administered in project communities		Completed.
Activity 1.4 Viable alternative livelihoods identified, and market assessment and other finance opportunities completed		Alternatives have been identified, and applied in all communities. Market assessment has been largely completed by socio-economist. Complete the market assessment and finance opportunities.
Activity 1.5 Alternative livelihood initiatives established in project communities with supported where necessary by SM campaign and continuing guidance for start-up households/groups provided in yr 2		Beekeeping has been established in all communities. Start-up households have received guidance and support.
Output 2. Capacity building and training helps communities improve resilience to environmental change and fosters their ability to develop sustainable livelihoods independently.	2.1 Community consultations on areas for training, based on initial feedback from above (1.1-1.3) completed in early yr 2. 2.2 Training and mentoring events for alternative livelihoods carried out in 4 communities, reaching out to 100 households, by end of year 2 2.3 50% of project households have at least one member who has attended the workshop events by end yr 2 2.4 Feedback and learning review carried out with communities by yr 3 via stakeholder meetings in project areas	2.1. Consultations have been carried in out in six communities. 2.2 Training and mentoring have been carried out in all six communities, reaching ninety-seven people. 2.3 We have the 100% of at least one member of a households who has attended a workshop 2.4 Due to COVID-19 restrictions, meetings were prohibited.
Activity 2.1 Interim report on areas for training completed		Training has been completed in all communities

<p>Activity 2.2 Training schemes for alternatives/more efficient use practices developed and workshops held in project communities by end of yr 2</p>	<p>Beekeeping and native beekeeping, have been identified as alternatives. Beekeeping training has been delivery in all communities and apiaries have been established. Honey has been harvested in two communities, and new beehives have been built and installed independently by community members.</p> <p>New initiatives with native beekeeping has started with four beehives established, and eight planned for the next months.</p>	
<p>Activity 2.3 Training workshop attendance records collated and produced documenting participation numbers</p>	<p>All training workshops records are available.</p>	
<p>Activity 2.4 Schemes and practices monitored, reviewed (with communities) and adapted as necessary, training and information-sharing events, to which neighbouring communities are invited, held to encourage replication of ideas.</p>	<p>Training schemes and practices have been reviewed and adapted to each community. An exchange of experiences is scheduled for spring this year.</p>	
<p>Output 3. Safe coexistence of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.</p>	<p>3.1 Baseline study using social surveys and focus group discussions on perceptions, values and social norms carried out in the 8 communities by the project's experts by yr 1</p> <p>3.2 Improved livestock protection practices/husbandry identified and implemented among households by yr 2 by providing training and assistance with predator-proof enclosures, water pits and best practice livestock management</p> <p>3.3 80% of households in 4 communities report reduced predation on their livestock by yr 3</p> <p>3.4 Design of social marketing and/or behaviour change strategy to increase valuing and tolerance of bears in the project communities, end of yr 1</p>	<p>3.1 Baseline data has been collected through interviews and focal groups.</p> <p>3.2 Not completed due to COVID-19 restrictions. Resume of activites to be carried out during the next 6 months.</p> <p>3.3 Predation caused by bears has reduced in all communtieis significantly. However, attacks from Pumas has not changed.</p> <p>3.4 Social marketing strategy was developed. Key messages and target audiences were identified, in order tackle social norms regarding bears and the way people behave in response to their presence near the community.</p>

	3.5 Implementation of social marketing strategy in yr 2 and measurable changes in behaviour changes observed, by yr 3	3.5 One of the key audiences that was identified during this process were teachers and schoolchildren, both of which were considered as key influencers to help shape adults' behaviours and change attitudes toward bears. Talks took held in 2019, but education specialists from Chester Zoo visited Tarija in March 2020 (the visit was initially scheduled for October, 2019, but had to be postponed due to the social unrest surrounding the presidential elections) to work with the project team on developing a school outreach programme for target communities. School children have not returned to normal classes, and education has been carried out remotely, which implicates a limited access.
Activity 3.1 Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities		Completed in all communities, except the new community that has been included in the project.
Activity 3.2 Improved livestock protection practices/husbandry rolled out, monitored, reviewed (with communities) and adapted as necessary		Not completed due to COVID-19 restrictions, but it will be resumed in the next couple of months.
Activity 3.3 Depredation rates monitored and recorded monthly leading to identification and viability assessed of livestock protection/husbandry with project communities		Depredation incidents has been monitored through calendars and personal communications.
Activity 3.4 Social marketing strategy developed, piloted and administered in project communities		Social marketing strategy developed.
Activity 3.5 Social marketing strategy delivered with target communities and behavioural changes observed and recorded.		Not implemented due to Covid-19 pandemic.
Output 4. <u>Evidence base</u> for bear and puma presence, movements, and habitat is generated, through participatory monitoring, and the physical and spatiotemporal aspects of human-bear conflict dynamic are better understood.	<p>4.1 Bear and puma monitoring via camera trapping and observation by team conducted throughout project life cycle</p> <p>4.2 At least eight community members, one in each community, recruited and trained as parabiologists to assist with bear research, in yr 1</p> <p>4.3 Community parabiologists and project team share research findings together, facilitating positive interest and engagement also with peers, children and authorities, yr 2-3</p>	<p>4.1 Camera trapping protocol, methods documented and data collected.</p> <p>4.2 & 4.3 Documentation of parabiologist training and activities, plus certification of achievement awards given to nine parabiologists.</p>

	4.4 Camera data allow identification of individuals based on facial marks and other wildlife; analysis completed by yr 3	4.4 Camera trap data collected and catalogued into shareable dataset/base. A total of 25 Andean bear individuals have been identified. Preliminary findings written into project yearly report, in addition to a report for government and presented to communities.
Activity 4.1 Camera traps located following protocol developed by the research team and revision/change memory/batteries plan implemented		Cameras are set according to protocol.
Activity 4.2 Training of new community parabiologists completed		Parabiologists have received training. .
Activity 4.3 Preliminary findings shared with stakeholders		Bear photos, as well as other species have been presented and shared to communities and schools.
Activity 4.4 Bear and other wildlife identified via camera trap images and observational sightings.		Database includes all information on presence of target species.
Output 5. Policy and governance: the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan.	5.1 Joint workshop with government, project partners, and community representatives to plan out implementation of the Andean bear action plan in the project region, yr 1 5.2 Working group to collaborate on oversight of the above established, and regularly meet to review progress yr 2 and 3 5.3 Project senior staff have regular bi-annual meetings with CBD focal point and government authorities to review Andean bear protection and human wildlife conflict and work towards ensuring the protection of protected areas	5.1 Workshop with authorities has been carried out and implementation of the action plan has been agreed. 5.2 & 5.3 Activities planned with government and CBD focal point meetings have been delayed
Activity 5.1 Workshop with government authorities and community representatives to implement the Andean bear Action Plan held		Meetings with government authorities have been carried out to establish implementation of the action plan
Activity 5.2 Activities and regular meetings with the working group held		Activities planned with government and CBD focal point meetings have been delayed due to a number of challenges that we have encountered during COVID-19 pandemic.. As a result, national and local authorities, conservationists and other stakeholder groups have had to prioritise their activities to focus on these issues, and there
Activity 5.3 Meetings with CBD to assess progress held		

	have been extended periods of time when any attempts to coordinate meetings have been impossible due to the country as a whole being paralysed.
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- **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
<p>Impact: (Max 30 words)</p> <p>Linking poverty reduction and biodiversity conservation improves the wellbeing of communities and the population of threatened Andean bears in a key region of its global range.</p>			
<p>Outcome: (Max 30 words)</p> <p>The livelihoods of local communities and the conservation of Andean bears co-benefit from an integrated approach linking and improving livelihoods and co-existence with bears and pumas in the dry forests of the Pilaya watershed, Bolivia.</p>	<p>0.1 Eight communities (up to 200 households) develop supplementary livelihoods to reduce levels of poverty and increase wellbeing by end of yr 3</p> <p>0.2 Capacity, agency and confidence of at least 100 community members in Pilaya communities to adapt to socio-environmental change in their areas is improved by end of yr 3</p> <p>0.3 Key beneficiary communities show positive changes in acceptance of bears, demonstrated by a 50% increase in tolerance by comparing baseline and final surveys by end of yr 3</p> <p>0.4 Understanding of distribution and ecological needs of Andean bears and pumas in inter-Andean</p>	<p>0.1, 0.2, 0.3 Quantitative and qualitative social research data collected during the pilot study and at baseline and completion of project demonstrate changes as a result of the project’s work, indicating progress towards project aim and impact</p> <p>0.4 Ecological and biological data collected and analysed from 2016-2021 provide information for understanding and monitoring the distribution, movements, and ecological needs of Andean bears and pumas in inter-Andean dry forest</p> <p>0.5 Multi-stakeholder consultations and progress reports, documentation and press coverage, show collaboration in implementation of the Andean bear action plan</p>	<p>Communities are willing and able to participate in the project Government and communities support for the project continues Communities are willing to work with project researchers to develop supplementary livelihoods Communities are willing and able to adapt to socio environmental changes in their areas No unforeseen extreme events cause further decrease in perceptions about bears and pumas Enough data on bears and pumas have been collected to be analysed yr 1 Effective protection against hunting Andean bears in the project region (Dry forests) is enforced</p>

	<p>dry forest are much improved as a result of the data collected and analysed by the project, including previous years data collected</p> <p>0.5 Implementation of the national action plan for Andean bears is underway in the project areas through a collaborative effort with government and communities, providing a model for other regions of Bolivia, resulting in recognised legal protection for the bears and their habitat</p>		
<p>Outputs:</p> <p>1. <u>Livelihoods and wellbeing</u> are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods.</p>	<p>1.1 Process of participatory theory of change planning with project community members and project team completed by end yr 1</p> <p>1.2 Alternative livelihoods opportunities explored with 4 communities (approx. 100 households) by end yr 1, with market analysis conducted and report produced by project team/advisors</p> <p>1.3 Wellbeing and livelihoods (current and aspirations) discussed and defined with and by 4 communities by end yr 1 using focus groups and one to one interviews</p> <p>1.4 30% of households in the 4 communities have taken up an alternative sustainable livelihood by end of yr 2</p> <p>1.5 Participating households' ability to generate income from alternative</p>	<p>1.1 Interim report on outcomes from participatory livelihoods exploration, and local/subsistence market analysis with clear theory of change pathways formulated</p> <p>1.2 Baseline and monitoring wellbeing and social data collected via a combination of methods, including focus groups, social surveys, context and social inclusion analyses and national indices</p> <p>1.3 Interview surveys on household economics, knowledge, attitude and behaviour (quantitative) compared to national levels</p> <p>1.4 Participant/staff observation and focus groups (by project staff and at project end by independent evaluator) on alternative sustainable livelihood take up (qualitative) resulting in report in yr 3</p> <p>1.5 Baseline social survey and final survey comparisons</p>	<p>Communities are willing and able to engage in participatory theory of change planning</p> <p>Communities are willing and able to adopt alternative livelihoods</p> <p>Various means of verification (surveys, reports, observation, focus groups) allow for triangulation of information to provide robust M&E</p> <p>No major social, economic, political or environmental disaster to significantly impede project progress</p> <p>Through the adoption of new livelihoods human and economic wellbeing increase (measured via social surveys)</p>

	livelihoods has increased by 15% compared to baseline, by end yr 3		
2. <u>Capacity building and training</u> helps communities improve resilience to environmental changes and foster their ability to develop sustainable livelihoods independently.	<p>2.1 Community consultations on areas for training, based on initial feedback from above (1.1-1.3) completed in early yr 2.</p> <p>2.2 Training and mentoring events for alternative livelihoods carried out in 4 communities, reaching out to 100 households, by end of year 2</p> <p>2.3 50% of project households have at least one member who has attended the workshop events by end yr 2</p> <p>2.4 Feedback and learning review carried out with communities by yr 3 via stakeholder meetings in project areas</p>	<p>2.1 Interim report on outcomes from consultation on training needs, and schedule of training events</p> <p>2.2 Attendance records, feedback surveys/discussions</p> <p>2.3 Notes on observations about capacity building and training carried out and attendance records taken</p> <p>2.4 Stakeholder meeting notes recorded and reported</p>	<p>Community members are interested in joining the project and the training offered, and work cooperatively with the project team</p> <p>Community members attend consultations and share openly their desires and aspirations</p> <p>Community members see value and interest in attending training workshops</p>
3. <u>Safe coexistence</u> of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.	<p>3.1 Baseline study using social surveys and focus group discussions on perceptions, values and social norms carried out in the 8 communities by the project's experts by yr 1</p> <p>3.2 Improved livestock protection practices/husbandry identified and implemented among households by yr 2 by providing training and assistance with predator-proof enclosures, water pits and best practice livestock management</p> <p>3.3 80% of households in 4 communities report reduced predation on their livestock by yr 3</p> <p>3.4 Design of social marketing and/or behaviour change strategy to increase valuing and tolerance of bears in the project communities, end of yr 1</p> <p>3.5 Implementation of social marketing strategy in yr 2 and measurable</p>	<p>3.1 Social data baseline and monitoring data collected via questionnaire surveys, focus groups, and participant observation</p> <p>3.2 Observed and documented modifications in livestock keeping to reduce predation by bears or pumas</p> <p>3.3 Record-keeping of livestock attacks by bears, and any other causes of mortality</p> <p>3.4 & 3.5 Qualitative data show changes in perceptions, values and social norms vis-a-vis bears and pumas among community members, as initial indicators of acceptance and co-existence</p>	<p>Communities are willing and able to engage in project activities</p> <p>Government partner agencies remain supportive of project activities</p> <p>Community members are willing to attend and participate in human behaviour changing activities</p> <p>Social marketing strategy brings about human behaviour change and raises public awareness that bears are not a threat to their livelihoods</p> <p>Valuing of and tolerance towards bears and pumas increases due to social marketing strategies and doesn't decrease</p>

	changes in behaviour changes observed, by yr 3		
4. <u>Evidence base</u> for bear and puma presence, movements, and habitat is generated, through participatory monitoring, and the physical and spatiotemporal aspects of human-bear conflict dynamic are better understood.	4.1 Bear and puma monitoring via camera trapping and observation by team conducted through out project life cycle 4.2 At least eight community members, one in each community, recruited and trained as parabiologists to assist with bear research, in yr 1 4.3 Community parabiologists and project team share research findings together, facilitating positive interest and engagement also with peers, children and authorities, yr 2-3 4.4 Camera data allow identification of individuals based on facial marks and other wildlife; analysis completed by yr 3	4.1 Camera trapping study protocol, methods documented and data collected 4.2 & 4.3 Documentation of parabiologist training and activities, plus certification of achievement awards given to parabiologists 4.4 Camera trap data collected and catalogued into shareable dataset/base 4.4 Preliminary findings written into project yearly report, in addition to a report for government authorities	No more than 10% camera failure during the project Camera trap image quality generates sufficient database of individuals for recognition of facial markings Camera traps do not incur theft and vandalism Communities, and community members allow camera traps to be set up on their land and support the project Interest in and uptake of parabiologist initiative and training opportunities (as has been done elsewhere in Bolivia) by community members
5. <u>Policy and governance</u> : the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan.	5.1 Joint workshop with government, project partners, and community representatives to plan out implementation of the Andean bear action plan in the project region, yr 1 5.2 Working group to collaborate on oversight of the above established, and regularly meet to review progress yr 2 and 3 5.3 Project senior staff have regular bi-annual meetings with CBD focal point and government authorities to review Andean bear protection and human wildlife conflict and work towards ensuring the protection of protected areas	5.1 Workshop reports created with next step action points identified and appropriate level of local and national press publications 5.2 Documentation/notes from follow-up meetings and activities of working group and government focal points. 5.3 Meeting minutes and progress reports produced	No changes in government authorities or delays in meetings to confirm the actions this project will take in order to implement the Action Plan All multi-stakeholders contribute in the process, have buy-in and commitment to the Action Plan Government authorities continue to support the project and the Andean bear action plan Bolivian protected areas maintain protected status and have government support and enforcement
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>1.1. Participatory theory of change plans report completed with input from community members;</p> <p>1.2. Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;</p> <p>1.3 Baseline quantitative survey developed, piloted and administered in project communities;</p> <p>1.4. Viable alternative livelihoods identified, and market assessment and other finance opportunities completed;</p>			

1.5. Alternative livelihoods initiatives established in project communities with supported where necessary by SM campaign and continuing guidance for start-up households/groups provided in yr 2.

2.1 Interim report on areas for training completed;

2.2 Training schemes for alternatives/more efficient use practices developed and workshops held in project communities by end of yr 2;

2.3. Training workshop attendance records collated and produced documenting participation numbers;

2.4 Schemes and practices monitored, reviewed (with communities) and adapted as necessary, training and information-sharing events, to which neighbouring communities are invited, held to encourage replication of ideas.

3.1 Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;

3.2 Improved livestock protection practices/husbandry rolled out, monitored, reviewed (with communities) and adapted as necessary;

3.3 Depredation rates monitored and recorded monthly leading to identification and viability assessed of livestock protection/husbandry with project communities;

3.4 Social marketing strategy developed, piloted and administered in project communities;

3.5 Social marketing strategy delivered with target communities and behavioural changes observed and recorded.

4.1 Camera traps located following protocol developed by the research team and revision/change memory/batteries plan implemented;

4.2 Training of new community parabiologists completed;

4.3 Preliminary findings shared with stakeholders;

4.4 Bear and other wildlife identified via camera trap images and observational sightings.

5.1. Workshop with government authorities and community representatives to implement the Andean bear Action Plan held;

5.2 Activities and regular meetings with the working group held;

5.3 Meetings with CBD to assess progress held.

● **Annex 3: Standard Measures**

• **Table 1 Project Standard Output Measures**

Cod e 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
4A 4B	Number of undergraduate students to receive training * Number of training weeks to be provided	2 female	Bolivians	0	2 14	1 10	3	4
6A 6B	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) * Number of training weeks to be provided			75	97 8-10	18	115	200
7	Number of (i.e., different types - not volume - of material produced) training materials to be produced for use by host country				Posters: 3 Leaflets:1 Bears of the community : 4 Our animals: 4 Manual of the beekeeper: 1 Basic accounting for small enterprises :1 Beekeeping accounting book: 1	Andean Bear Action Plan		
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country			1			1	1
10	Number of individual field guides/manuals to be produced to assist work related			1	1	1	3	3

	to species identification, classification and recording							
11A 11B	Number of papers to be published in peer reviewed journals Number of papers to be submitted to peer reviewed journals				1 1	1 1		
12A 12B	Number of computer based databases to be established and handed over to the host country Number of computer based databases to be enhanced and handed over to the host country				1 1			
14A 14B	Number of conferences/seminars/ workshops to be organised to present/disseminate findings Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.				Field assistants' workshop: 1 Education workshop: 1 planned but suspended due to COVID	0		
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)							
22	Number of permanent field plots and sites to				2	0		

	be established during the project and continued after Darwin funding has ceased							
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▪ **Table 2 Publications**

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Contribution of camera trapping to the knowledge of Abrocoma bolivien sis	Journal	Quiroga-Pacheco, J., Hidalgo-Cosio, M, Velez - Liendo, X	Female	Bolivia n	2020	https://www.revistas-conacyt.unam.mx/therya/index.php/THERYA/article/view/1037/html_428



- **Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)**

- **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.	-
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.	