

Darwin Initiative Main and Post Project Annual Report

To be completed with reference to the “Writing a Darwin Report” guidance: (<http://www.darwininitiative.org.uk/resources-for-projects/reporting-forms>). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2020

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
Reporting period (e.g. Apr 2019 – Mar 2020) and number (e.g. Annual Report 1, 2, 3)	Annual report 2 (April 1 2019 – 31 Mar 2020)
Project Leader name	Alexandra Zimmermann
Project website/blog/social media	https://www.chesterzoo.org/conservation-and-science/where-we-work/latin-america/andean-bear-project
Report author(s) and date	Ximena Velez-Liendo, Alexandra Zimmermann 30 April 2020

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.

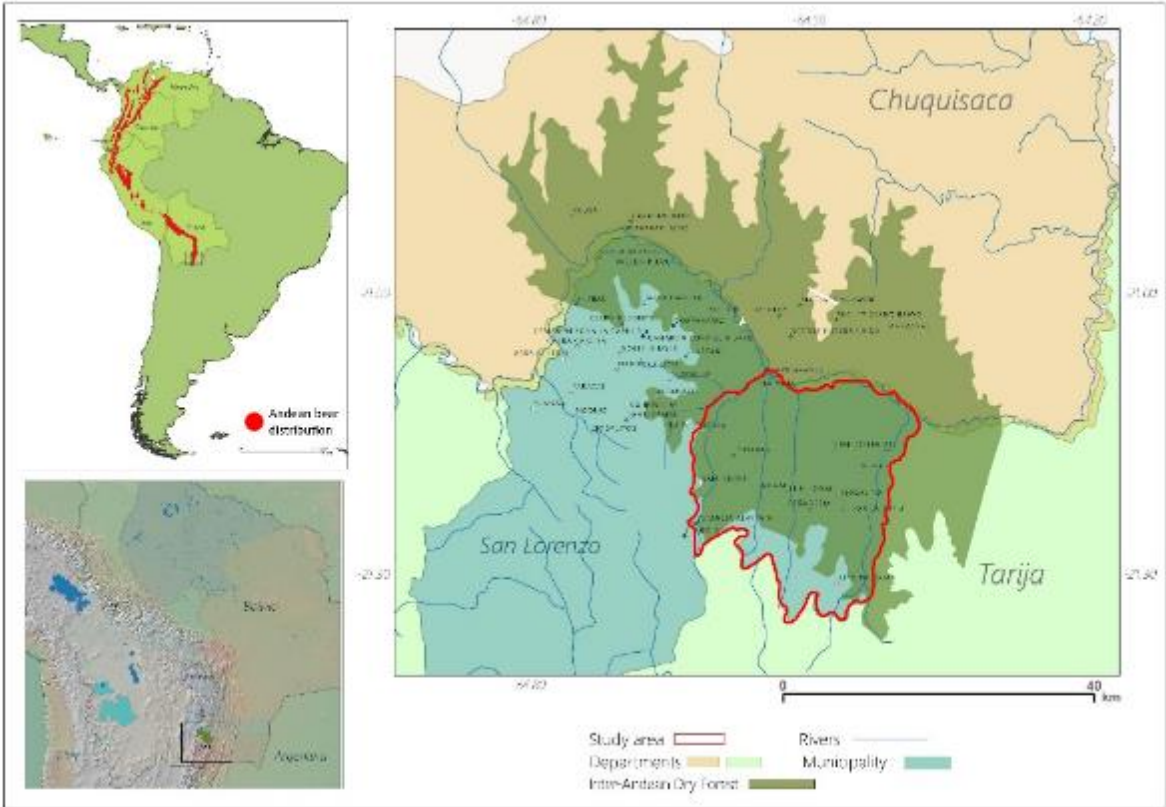
This work has revealed that community attitudes towards bears are indeed very negative and that bears, and to a lesser extent pumas, are frequently blamed and retaliated against for livestock and crop losses, yet there is little empirical evidence to support individual claims, and our initial population 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.

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 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, IICA, CERDET and the Natural History Museum Alcides d’Orbigny in Bolivia, and WildCRU in the UK. PROMETA is Bolivia’s second largest non-profit organisation that focuses 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. 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. The Centre for Regional Studies of Tarija (CERDET) is a non-profit civil organization focused on socio-economic development at local and regional levels, and providing critical and specialized advice. The Farming Research and Training Institute (IICA) is a non-profit organization that promotes and facilitates collective processes in the political, social, educational and economic sector to rural communities of Tarija. IICA and CERDET provide technical advice for capacity building and livelihood improvement amongst participating households during the second year of the proposed project. Finally, the Natural History Museum Alcides d'Orbigny (NHM AdO) support the research component by providing technical support in bear ecology, as well as training young biologists in bear monitoring, and community members as parabiologists.

3. Project progress

3.1 Progress in carrying out project Activities

During year 2, project priorities were focused on capacity building (output 2, activities 2.1, 2.2, 2.3 and 2.4), safe coexistence and social marketing (output 3, activities 3.2, 3.3 and 3.5), 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 CBD focal point (output 5, activity 5.2 and 5.3).

Unfortunately, wild fires, social-political unrest and the current COVID-19 pandemic have to date added up to fourteen weeks of delays in our activities.

Activities 2.1, 2.2, 2.3 and 2.4

Community consultations, training and mentoring events took place in year 1. In these, people identified beekeeping as an economic 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. During year 2, thirty-nine beekeeping training events were carried out in all communities involved except one which after two training workshops, decided to not form part in this initiative. A new community (Hoyadas-Cercado) was incorporated; workshops and meetings took place accordingly, an apiary was installed, and camera trap stations deployed. Wildfire emergencies in July-October causing a nationwide health threat, and leading to demonstrations and protests, disputed elections and social-political unrest in October-November. By the time the socio-political situation returned to normal, the project team had only a few weeks to carry out workshops and training with all communities before the Christmas and new year holidays. Nevertheless, at the end of year 2, the project had 5 community apiaries (46 beehives) with a projected honey production of 1,840 kg. for 2020. In 2019 the production of two community apiaries was 156kg and proceeds of the sales were used to buy more beekeeping equipment (a community decision). Replication of the initiative has started with 18 beehives built and installed by members from our groups in their own land. This demonstrates ability and interest to develop sustainable livelihoods independently.

However, the current COVID-19 pandemic has led to a complete lockdown in all of Bolivia since March 16th prohibiting any transportation between municipalities preventing the team from carrying out any field work. If the lockdown continues until the end of May (beginning of the dry season), communities will not be able to harvest the honey and benefit from the revenues of the sales. Nevertheless, our team is in constant contact with our communities, and there is general agreement that this is an extraordinary situation that requires all to stay at home. Our beekeepers are in regular contact with community members in order to assess the situation of each apiary.

Activities 3.2 and 3.5

Improved livestock protection practices were planned for September-December 2019, and monitoring and review activities at the end of year 2. Social unrest, including a national strike, road blockades, protests and marches questioning the integrity of the national election results started in October until late November, and the current Covid-19 pandemic have not allowed us to carry out either the workshops or livestock census. The veterinary team however, has collected the baseline data, and a census will be carried out as soon as authorities lift the travel ban. Depredation rates are monitored at each community through the use of calendars, but also through direct communications to team members.

A social marketing strategy for the project was developed with Dr. Diogo Verissimo from the University of Oxford, during his visit to Tarija in May 5th–15th 2019. Key messages and target audiences were identified, in order to understand and address social norms regarding bears and the way people behave in response to their presence near the community. One of the key audiences identified were teachers and schoolchildren, both of which were considered as key influencers to help shape adults' behaviours and change attitudes toward bears. To build on this, 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; and was cut short in March due to COVID-19) to work with the project team to develop a school outreach programme for target communities. At present, this work is on hold due to the global COVID 19 pandemic, but as soon as conditions become favourable, it is expected to continue and reach the project goals.

Activities 4.1, 4.3 and 4.4

Camera trapping and monitoring biodiversity was conducted as planned. Sharing preliminary findings with stakeholders (primarily community members, school teachers and students) was carried out accordingly. Photograph sheets with images of individual bears and other species recorded by camera traps have been designed and printed, and are being handed out to communities. Where possible, these are individualised with each community receiving images of the bears that have been identified in their local area, and using common names of species that are used by that community. Findings are being disseminated in community meetings. Identification of bear individuals and other wildlife have been identified and currently manuscripts for publication are prepared.

Activities 5.2 and 5.3

Activities planned with government and CBD focal point meetings have been delayed due to a number of challenges encountered during the second year of the project. From July through to October, as forest fires were raging across the Amazon and beyond, Bolivia too experienced widespread wildfires that affected over four million hectares of land (<https://www.sciencealert.com/its-not-just-brazil-s-amazon-bolivia-s-vital-forests-are-on-fire-too>). Although our study site was not directly affected, our activities programmed with national environment authorities were postponed because all their human resources were put on the emergency. In October, questions surrounding the presidential elections led to widespread social unrest and disruption throughout the country, which continued into November; repercussions of this are still being felt in some areas of the country now, and a permanent president has not yet been elected. This caused, not only cancelation of our programmed meetings, but new authorities were appointed and all activities involving central government were postponed. Further delays were caused by the global COVID 19 pandemic, which prompted a national lockdown from mid-March 2020, and which will continue until at least the end of April, with a potential extension until mid May. 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 have been extended periods of time when any attempts to coordinate meetings have been impossible due to the country as a whole being paralysed.

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 were 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 (73 households) have developed beekeeping as a supplementary livelihood. In 2019 a total of 156 kg of honey was harvested, some part 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).

Source of evidence for this change: Photo 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 on women (primarily) identified is growing lavender as 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 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. It is expected this training will be completed by the end of 2020. In all communities, except San Isidro, people has started building their own apiary. A total of 18 new beehives have been installed, an activity expected to occur at the end of the project. The lavender project has identified its pilot group, 4 women in three communities, plots have been identified, and lavender seedlings will be transported as soon as authorities allow it.

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, with the exception of the newest community, Hoyadas Cercado, where a bear cub was killed weeks before our first community meeting. Although records of missing and killed livestock were recorded (in more than one occasion the bear was blamed), owners used fireworks to scare the bear out rather than killing the bear.

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 has been photographed at 20 stations. 19 individuals have been identified based on their facial marks, which include at least three males (one of them a juvenile) and three cubs. Seasonal movements have been identified, with a peak of activity in the rainy season (October-April). In February 2020, a complementary biodiversity study was carried out by one of our partner institution, the Natural History Museum. In ten days of sampling the area, they identified 163 vertebrate species and 53 floral species of interest for beekeeping.

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, starting with the wildfires that affected the country from July through to October 2019, followed by the widespread social unrest surrounding the presidential elections in October and November, and finally as a result of the country going into lockdown during March and April 2020 to prevent the spread of the COVID 19 virus.

Source of evidence for this change: Photographs and emails from our first meetings. 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 unsatisfied basic needs indicator, communities in the study area are considered poor.	Seven communities: San Isidro, Hoyadas-Mendez, Pajonalcito, San Lorencito, Romerillo (included with San Lorencito for logistic reasons), Pampa Grande and Hoyadas - Cercado (131 members) have developed supplementary livelihoods (beekeeping).	Interviews, baseline assessment and theory of change maps.	The community of Pampa Grande decided to not participate after the second workshop. Reasons varied from not having enough time to attend the workshops, to demanding personal beehives rather than an apiary

		Other economic alternatives identified in the baseline study are lavender production (primarily focused to be carried out by women)		for the community.
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	97 people have been trained, and they are capable to continue beekeeping with minimal assistance. 18 new individual apiaries have been installed in all communities except one (San Isidro).	Photos and records of workshops attendance. Photographs of new apiaries.	This crisis is an extremely challenging situation and the health and welfare of the staff and local communities are top priority as COVID-19 progresses in Bolivia. Therefore, workshops and other further training has been postponed. Depending on government orders (to lift or not the lockdown), all our work with communities will have a significant delay.
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	Community members show low tolerance to presence of pumas and bears.	No killing or harming of bears have been registered during this second year. However, in the new community, Hoyadas-Cercado, a bear cub was killed (mother and another cub escape). This event occurred weeks before our first meeting with the community. In two communities (San Isidro and Hoyadas-Mendez) fireworks have been used to scare off bears.	Quantitative and qualitative social research data collected during the pilot study, at baseline, and completion of project Personal communications.	
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	Only few historical records of bear presence, in the Inter-Andean dry forests have been registered. Puma on the other hand, is seeing as a threat to small cattle. Very little scientific information on the distribution, and ecology of these species.	Knowledge of Andean bear distribution in the study area is improved. Seasonal movements also have been registered, showing bear activity from October-May. Pumas on the other hand, have a permanent presence in the area, with attacks to livestock	Photographs, identification of bear individuals, identification of pumas and other carnivores. Monitoring seasonal movements through camera-trap stations, as well as cattle.	Due to locked down orders both our ability to visit local communities and access to the field to monitor bear populations are restricted. For now, the 108 camera traps are still running and collecting valuable data. However, if

		<p>occurring all year round</p> <p>108 camera traps are deployed in fifty-one stations, encompassing more than 700 sq km of dry forest. A total of 536G of images.</p> <p>19 bear individuals have been identified, as well as 47 small, medium and large mammal species, 20 reptiles sp, 96 bird sp, and 53 species with importance for beekeeping have been identified, and will be used by the community members in their floral calendars.</p>		<p>quarantine orders continue, most cameras will either run out of batteries or memory. In such a situation, the team will have to find ways to send new batteries and memory cards to the field in collaboration with local authorities.</p> <p>A rapid assessment of biodiversity was carried out early 2020. Small and flying mammals, reptiles, birds and botany data and samples have been recorded with several new species's distributions. These findings are currently analysed for publications. One manuscript has been submitted focused on the critical endangered <i>Abrocoma c.f. 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 by the government, and at regional level (Tarija), the Andean bear has been declared a natural heritage species increasing its protection and supporting conservation initiatives.</p>	<p>Progress reports, and agreements between government agencies and other organizations.</p>	

3.4 Monitoring of assumptions

Indicators	Assumptions	Comments
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<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>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>All communities, except one, have been willing to engage and assist with project activities.</p> <p>Due to the challenges that have affected Bolivia over the past 12 months, it has been very difficult to maintain a working relationship with national government authorities. Nonetheless, local government partners have remained supportive, as have community members.</p> <p>Yes</p> <p>Yes, they are. However, it is difficult to assess the effect of COVID-19 on our communities' responses.</p> <p>Cattle (3) have been lost only in one village (Hoyadas Cercado).</p> <p>Yes</p> <p>No bear was killed in any of the communities where the project is currently working. Except Hoyadas Cercado, where a bear cub was killed weeks before our first community meeting.</p>
<p>1.1 - 1.5</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>Six out of the eight targeted communities are willing to join the initiative.</p> <p>Six communities (five apiaries) have already adopted beekeeping as alternative</p> <p>Yes.</p> <p>Project activities have been delayed due to a number of challenges the project has encountered during this second year. From July through to October, Bolivia experienced widespread wildfires that affected over four million hectares of land. In October, widespread social unrest</p>

	<p>Through the adoption of new livelihoods human and economic wellbeing increases (measured via social surveys).</p>	<p>and disruption throughout the country caused by a fraudulent national election continued into November. Further delays were caused by the global COVID 19 pandemic, which prompted a national lockdown from mid-March 2020, and which will continue until at least end of April. 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 have been extended periods of time when any attempts to coordinate meetings have been impossible due to the country as a whole being paralysed.</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>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>Interest has been shown, but fewer women have joined the group due to lack of confidence and economic dependency to their husbands.</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, in particular school children.</p> <p>Yes</p> <p>Yes.</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>Interest in and uptake of parabiologist initiative and training opportunities (as has been done elsewhere in Bolivia) by community members</p>	<p>21% of our cameras have failures.</p> <p>Yes</p> <p>We had three cases, in two occasions cameras were returned to our field assistants.</p> <p>Yes, and in more than one situation, our field assistants request permission on behalf of the project.</p> <p>Yes, in February all field assistants attended a workshop where they exchange experiences and received their certificates and equipment.</p>
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 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</p> <p>Yes</p>

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

At the current stage of this project, beekeeping has demonstrated to provide a year-round opportunity for income generation, a high-quality food source (honey, propolis, royal jelly, etc.), and requires little physical effort when compared with cattle ranching. People in target communities are confident to continue in this activity. For instance, 18 new beehives have been built, and installed by community members in their lands with minimal support.

Although COVID-19 is currently preventing the team to continue with training and capacity building, members have the knowledge and confidence to check and looking after the colonies.

Although anecdotal observations, some of the most influential community members (those with more cattle and/or with more assets) have shown subtle changes in attitudes towards bears in so far as they have started referring to bears and “the” bear, rather than the more polarized previous wordings of calling them “your” bear.

Key information regarding bear population and ecology has been produced during this time. Nineteen individuals have been identified, monitoring seasonality has showed lower bear activity during the dry months which can have an implication when developing and improving livestock management; we have identified areas where cubs are more frequently photographed, which could bring conservation implications by proposing an special protection of the area by the community. Finally, a biodiversity assessment was carried out primarily focused on carry out an inventory of flower species with importance for beekeeping, additional assessment on birds, reptiles and small and flying mammals was carried out with several new distribution records.

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). So far, the project has successfully trained 75 people in four communities in beekeeping, an economic alternative to livestock. Our project will address SDG 15 by reducing bear hunting, poaching and strengthening conservation efforts to save the Andean bear. Research will be carried out to conserve the Andean bear and the dry forests by providing people with economic alternatives to activities that cause deforestation (SDG 15). The project has registered a record number of bear individuals through camera traps (eight), including two cubs since the beginning of the project, and not a single bear kill since 2017. This project strongly emphasises the full and effective participation and empowerment of women, not only by working extensively with women in the beneficiary communities, but also by providing capacity and leadership opportunities within the project team itself (SDG 5).

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 confidence has resulted in only 38 out of 97 people involved in beekeeping being women so far. However, the team has identified activities such as growing lavender as an activity that supports beekeeping, and can provide additional economic support to women in the study area.

During the third year of the project, 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 schools 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.

9. Lessons learnt

This year we have learned a great deal about how external factors can impact on a project such as this one. The challenges that we have faced, including forest fires, social and political unrest, and a global pandemic, have affected project activities over most of the year, and we have had to adjust and adapt our activities to make up for these. This has provided a rich source of experience and reflection, highlighting the importance of being aware of the assumptions under which the project operates, monitoring these assumptions and being prepared to implement adaptive management where necessary.

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

Interviews and theory of change are included as requested in previous assessment (PDF).

11. Other comments on progress not covered elsewhere

As mentioned in other sections of the report, education specialists from Chester Zoo have been working on a schools' outreach programme for the project. As this is currently work in early stages of development, which has been temporarily paused due to the COVID 19 pandemic, little information has been provided elsewhere in this document, so some information will be given here.

The initial planning process for this took part during a visit to Tarija by Chester Zoo staff during the first half of March 2020. The planning process was intended to include visits to the

communities and field sites, meetings and interviews with relevant stakeholders and a co-creation workshop with teachers from schools in the target communities. However, these activities had to be cut short due to the Bolivian government announcing measures to control the spread of COVID 19.

As a result, a reduced planning workshop was carried out with the project team in which an overall project programme, made up of 6 visits, to be carried out over the course of the academic year to each of the schools in the communities where the project operates. Over the course of the visits, project staff will facilitate sessions at the schools that start off learning about the Andean bear and the dry forest ecosystem, before starting to think more critically about their own relationship with Andean bears and wildlife as a whole. They will then learn how the wellbeing of the community is related to ecosystem health, and how the project aims to work for the benefit of people and nature, before identifying ways in which they can take action for the benefit of their families and wildlife. The programme of visits will finish with a celebration day where they will share with their families everything that they have learned.

To date the overall thematic structure of the programme has been drafted with an objective and learning outcomes for each of the visits. As soon as normal activities resume, we will continue developing the content and activities for each one of the visits, along with an implementation schedule.

12. Sustainability and legacy

Our strategy for reaching a stable and sustainable end-point is through building capacity amongst community members in economic alternatives to livestock. Beekeeping has been adopted in six out of our eight target communities, and all have received the training to carry out this initiative independently. In fact, at this moment, there are 18 beehives, built, and installed independently by community members in their lands. This was expected to occur at the end of this project. Beehives and other material provided during this first stage of the project are properly used and kept in a secure place under inventory. Each community organizes its members so that each one has a role (check the beehives, feed the bees, clean the apiary, etc.)

The following stage is to develop a business plan so they can decide how to commercialize the products and reduce the need for external financial support. In order to commercialise the products, the project has created a brand (currently under registration process) which will be used not only for beekeeping products, but to other economic initiatives that under this initiative.

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. Safeguarding

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

15. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2019 – 31 March 2020)

Project spend (indicative) since last annual report	2019/20 Grant (£)	2019/20 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 2019-2020

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
<p>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.</p>		<p>At this stage of the project, six out of eight target communities have established their own apiaries; two communities have harvest honey, and revenues have been used to buy equipment (community decision). Replication has started with 18 new beehives built and installed by members from our groups in their own lands. 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 this ecosystem first time. This information is prepared in manuscripts, as well as it has been socialized with community's members, school's teachers and students.</p> <p>No bear has been killed in our study area since our intervention.</p> <p>Despite 2019 socio-political unrest and wildfires affecting Bolivia, the team reached large part of the year's goals. However, COVID-19 is preventing the team attending important meetings with communities, monitoring and evaluation, livestock management workshop and harvest and sell honey. These implications are still in an evaluation stage, but extension of our presence in these communities will be necessary in order to achieve our</p>	

		<p>impact, but most of all, to meet our commitment with communities.</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>0.4 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>0.1. Six communities (74 members) have adopted beekeeping as economic alternative.</p> <p>0.2. Ninety-seven 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 perfectly.</p> <p>0.4 Andean bear distribution and seasonal movements have been registered.</p> <p>0.5 Actions for year 2 have been delayed because of wildfires, political-social unrest, and COVID-19 pandemic.</p>	<p>0.2. Reach our 100 community members goal. This year aim will be to increase the number of individual apiaries and reduce the number of cattle.</p> <p>0.3 Positive changes in acceptance of bears are expected to increase during this last year.</p> <p>0.5. Organize virtual meetings with authorities.</p>
<p>Output 1. Livelihoods and wellbeing are improved among the project communities as a result of villagers</p>	<p>1.1 Process of participatory theory of change planning with project</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>adopting improved livestock management practices and developing supplementary livelihoods.</p>	<p>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>1.5 Participating households' ability to generate income from alternative livelihoods has increased by 15% compared to baseline, by end yr 3</p>	<p>1.4 Seventy-four (direct), ninety-seven (indirect) members in six communities have accepted beekeeping as economic alternative.</p> <p>1.5. Too early to report.</p>	
<p>1.1. Participatory theory of change plans report completed with input from community members;</p>	<p>Completed.</p>	<p>Theory of change will be completed for a new community.</p>	
<p>1.2. Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;</p>	<p>Completed.</p>	<p>Baseline data will be completed for a new community.</p>	
<p>1.3 Baseline quantitative survey developed, piloted and administered in project communities;</p>	<p>Completed.</p>		
<p>1.4. Viable alternative livelihoods identified, and market assessment and other finance opportunities completed;</p>	<p>Alternatives have been identified, and applied in all communities. Market assessment has been largely completed by socio-economist.</p>	<p>Complete the market assessment and finance opportunities.</p>	
<p>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</p>	<p>Beekeeping has been established in all communities. Start-up households have received guidance and support.</p>		
<p>Output 2. <u>Capacity building and training</u> helps communities improve resilience to environmental change and fosters their ability to develop sustainable livelihoods independently.</p>	<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>2.1. Consultations have been carried in out in six communities.</p> <p>2.2 Training and mentoring have been carried out in all six communities, reaching ninety-seven people.</p> <p>2.3 Too early to report</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>	2.4 Too early to report
2.1 Interim report on areas for training completed;		Training has been completed in all communities
2.2 Training schemes for alternatives/more efficient use practices developed and workshops held in project communities by end of yr 2;		Beekeeping and potentially, lavender production, 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 18 new beehives have been built and installed independently by community members.
2.3. Training workshop attendance records collated and produced documenting participation numbers;		All training workshops records are available.
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.		Training schemes and practices have been reviewed and adapted to each community. An exchange of experiences is scheduled for spring this year.
Output 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>3.1 Baseline data has been collected through interviews and focal groups.</p> <p>3.2 Not completed due to COVID-19 restrictions.</p> <p>3.3 Too early to report.</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> <p>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</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 changes in behaviour changes observed, by yr 3</p>	<p>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. At present, this work is on hold due to the global COVID 19 pandemic, but as soon as conditions become favourable, it is expected to continue and reach the project goals.</p>
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.
3.2 Improved livestock protection practices/husbandry rolled out, monitored, reviewed (with communities) and adapted as necessary;		Not completed due to COVID-19 restrictions.
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.
3.4 Social marketing strategy developed, piloted and administered in project communities;		Social marketing strategy developed.
3.5 Social marketing strategy delivered with target communities and behavioural changes observed and recorded.		Too early to report
Output 4.	<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>4.4 Camera data allow identification of individuals based on facial marks and</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> <p>4.4 Camera trap data collected and catalogued into shareable dataset/base. A total of 19 Andean bear individuals have been identified. Preliminary findings written into project yearly report, in addition to a report for government and presented to communities.</p>

	other wildlife; analysis completed by yr 3	
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.
4.2 Training of new community parabiologists completed;		Parabiologists have received training. .
4.3 Preliminary findings shared with stakeholders;		Bear photos, as well as other species have been presented and shared to communities and schools.
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 <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.	<p>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</p> <p>5.2 Working group to collaborate on oversight of the above established, and regularly meet to review progress yr 2 and 3</p> <p>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</p>	<p>5.1 Workshop with authorities has been carried out and implementation of the action plan has been agreed.</p> <p>5.2 & 5.3 Activities planned with government and CBD focal point meetings have been delayed</p>
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
5.2 Activities and regular meetings with the working group held;		<p>Activities planned with government and CBD focal point meetings have been delayed due to a number of challenges that we have encountered during the second year of the project. Wildfires, social unrest due to national elections and COVID-19.</p> <p>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 have been extended periods of time when any attempts to coordinate meetings have been impossible due to the country as a whole being paralysed.</p>
5.3 Meetings with CBD to assess progress held		

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 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</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</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>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 1</p> <p>Effective protection against hunting Andean bears in the project region (Dry forests) is enforced</p>

	other regions of Bolivia, resulting in recognised legal protection for the bears and their habitat		
<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 livelihoods has increased by 15% compared to baseline, by end yr 3</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>
<p>2. <u>Capacity building and training</u> helps communities improve resilience to environmental changes and foster their ability to develop sustainable livelihoods independently.</p>	<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>2.1 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>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>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>2.3 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 see value and interest in attending training workshops</p>
<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>	<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 changes in behaviour changes observed, by yr 3</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>
<p>4. <u>Evidence base</u> for bear and puma presence, movements, and habitat is generated, through participatory monitoring, and the physical and</p>	<p>4.1 Bear and puma monitoring via camera trapping and observation by team conducted through out project life cycle</p>	<p>4.1 Camera trapping study protocol, methods documented and data collected</p>	<p>No more than 10% camera failure during the project</p>

<p>spatiotemporal aspects of human-bear conflict dynamic are better understood.</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>4.4 Camera data allow identification of individuals based on facial marks and other wildlife; analysis completed by yr 3</p>	<p>4.2 & 4.3 Documentation of parabiologist training and activities, plus certification of achievement awards given to parabiologists</p> <p>4.4 Camera trap data collected and catalogued into shareable dataset/base</p> <p>4.4 Preliminary findings written into project yearly report, in addition to a report for government authorities</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>Interest in and uptake of parabiologist initiative and training opportunities (as has been done elsewhere in Bolivia) by community members</p>
<p>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.</p>	<p>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</p> <p>5.2 Working group to collaborate on oversight of the above established, and regularly meet to review progress yr 2 and 3</p> <p>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</p>	<p>5.1 Workshop reports created with next step action points identified and appropriate level of local and national press publications</p> <p>5.2 Documentation/notes from follow-up meetings and activities of working group and government focal points.</p> <p>5.3 Meeting minutes and progress reports produced</p>	<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>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>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>1.3. Participatory theory of change plans report completed with input from community members;</p> <p>1.4. 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> <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.</p>			

- 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

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
4A	Number of undergraduate students to receive training *	2 female	Bolivians	0	2		2	4
4B	Number of training weeks to be provided				14			
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) *			75	97		97	200
6B	Number of training weeks to be provided				8-10			
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			
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 to species identification, classification and recording			1				3
11A	Number of papers to be published in peer reviewed journals							
11B	Number of papers to be submitted to peer reviewed journals				1			
12A	Number of computer based databases to be established and handed over to the host country				1			
12B	Number of computer based databases to be enhanced and handed over to the host country				1			

14A	Number of conferences/seminars/workshops to be organised to present/disseminate findings				Field assistants' workshop:1 Education workshop:1 planned but suspended due to COVID			
14B	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/disseminated.							
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)							
22	Number of permanent field plots and sites to be established during the project and continued after Darwin funding has ceased				2			

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)
Manual del Apicultor	Manual			Bolivian	PROMETA	
Small mammals and camera traps: how much we can get to learn about <i>Abrocoma boliviensis</i> , through photographic records	Journal	Hidalgo Marisol, Quiroga Carmen Julia, Velez-Liendo Ximena	Female	Bolivian	Theria	

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.	no
Have you included means of verification? You need 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 want 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.	