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	24-011
Project title	Wildlife-friendly agroforestry and sustainable forest management in Bolivian indigenous territories
Country/ies	Bolivia
Lead organisation	Wildlife Conservation Society (WCS)
Partner institution(s)	Fundación Teko Kavi
Darwin grant value	£ 398,872
Start/end dates of project	July 1, 2017-March 31, 2021
Reporting period (e.g. Apr 2019 – Mar 2020) and number (e.g. Annual Report 1, 2, 3)	April 2019-March 2020 Annual Report 3
Project Leader name	Oscar Loayza Cossio
Project website/blog/social media	https://bolivia.wcs.org/ https://origentienda.com/
Report author(s) and date	Oscar Loayza Cossio, Ximena Sandy, , Lilian Painter, Nuria Bernal Hoverud, Jaime Ayra

1. Project summary

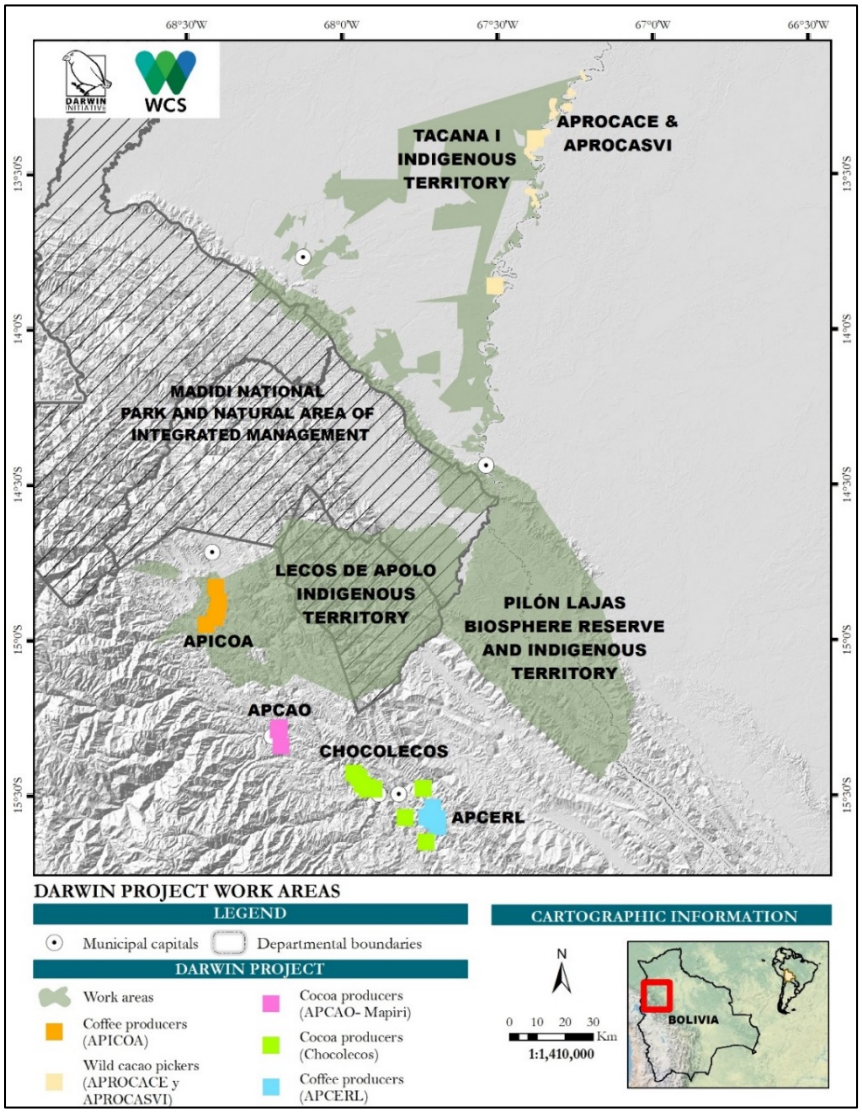
The T'simane Mosetene, Leco, and Tacana indigenous territories in Bolivia cover over one million hectares bordering and overlapping the Madidi and Pilón Lajas protected areas (see Map 1 below). This region is globally important because of its high avian diversity and stronghold populations of vulnerable wide-ranging species, such as jaguar and spectacled bear. However, this region's rich conservation value faces serious threats, such as forest loss due to illegal agricultural clearing and settlements, timber extraction, and gold mining. This degradation perpetuates a cycle of poverty and negatively impacts community livelihoods, which depend on forest resources and are therefore particularly vulnerable to climate change.

Indigenous communities in Northern La Paz benefit from access to collective lands. Our project supports their efforts to maintain control over these areas, ultimately benefiting both biodiversity, by helping to address the abovementioned threats, and local livelihoods. We do so by coupling improvements in control and vigilance of illegal encroachments with investments to support sustainable agroforestry.

We are supporting a decentralized and cost-effective system for control and vigilance of indigenous lands, through improved communication protocols, event/threats mapping, and capacity for rapid collective response against encroachments. Control and vigilance come with high transport costs because communities are widely dispersed. Cacao and coffee-based

agroforestry, identified as strategic within indigenous land use plans, are important livelihood alternatives for indigenous communities. Given that the plantations and natural groves are widely distributed across indigenous lands, active involvement of small-scale local producer organizations in control and surveillance activities can greatly reduce the high transportation costs of control and vigilance. Furthermore, by building technical capacity in sustainable agroforestry, we are able to improve productivity and access to niche markets, generating much needed income, while strengthening their capacity to exert territorial control to protect forests and biodiversity. Finally, marketing strategies, commercial alliances, and awareness building among urban cacao and coffee consumers will allow producers to visualize their role as conservation allies.

Map 1. Darwin project work areas



2. Project partnerships

Teko Kavi, our project partner in Bolivia, is a local NGO that implements environmental education projects and conducts outreach and capacity building to increase local participation and reduce the social and environmental impacts of road improvement in Northern La Paz. It has also assisted WCS's efforts to strengthen protected area monitoring programs in recent years. Since 2017, with support from WCS, Teko Kavi has participated in a consortium led by Danish NGO Nordeco to support climate change mitigation through improved agroforestry practices with local partners in Northern La Paz. This grant provides matching funds to this Darwin Initiative project, under which Teko Kavi is responsible for implementing a communications campaign to develop

an urban consumer constituency in support for indigenous territorial management and sustainable natural resource use.

Local producer organizations approve the specific work plans to implement this project. They include the Association of Ecological Coffee Producers of Larecaja (APCERL), Association of Organic Cacao Producers of Mapiri (APCAO MAPIRI), and Association of Producers of Indigenous Leco Cacao (CHOCOLECOS); the local coffee producers of Apolo in the Lecos Apolo indigenous land (APICOA); and the wild cacao producers of Carmen del Emero, in the Tacana indigenous land (APROCACE). Additionally, WCS implements this project through agreements with three territorial indigenous organizations, namely the Lecos Apolo Indigenous Organization (CIPLA), Tacana Indigenous Council (CIPTA) and T'simane Mosetene Regional Council (CRTM).

3. Project progress

During the third year of the project, WCS and Teko Kavi have continued working with partners to carry out coordinated activities towards fulfilling their third annual work plans, holding regular meetings with producers and their territorial organizations, CIPTA, CIPLA and CRTM, conducting training events and developing capacities among the indigenous producers.

3.1 Progress in carrying out project Activities

During the third year of the project, progress was made towards implementing the following activities according to schedule:

Output 1: Producer organizations and their representative territorial organizations have developed and implemented systems for control and vigilance of their territorial lands (Activity 1.3)

Based on the information generated in Y1 and Y2 on areas vulnerable to illegal encroachment within the three partner indigenous territories, Tacana, Lecos Apolo and T'simane Mosetene, an Android app was fed with the information and designed for reporting and documenting illegal encroachments. CIPTA and CIPLA leadership and local technicians selected by them, received training on the use of the app in their mobile phones and have tested the tool in the field to report illegal activities inside their territories. Improvements continue to be made to reduce the use of cell phone credit and speed of data transmission in order to accomplish the plan to improve their systems of control and vigilance of their territorial lands.

We conducted training sessions with the monitoring technicians from the indigenous organizations and grassroots organizations' leaders on the response process that needs to be followed when an encroachment is reported, taking advantage of opportunities such as community meetings.

During the third year of the project, we have focused on training, testing and adjusting the territorial control digital app through feedback from initial use by both the Tacana and Lecos indigenous people. An evaluation of the use of the app was carried out with CIPTA's board of directors in June 2019, a coordination protocol was established for the use of the control and monitoring devices under the leadership of each community chief "Corregidor" and two "Huarajes" (community police). A plan for training sessions was established, and training sessions were conducted in six Tacana communities located along the road between San Buenaventura and Ixiamas. The sessions had an average participation of 20 people in each community, adding up to an estimated total of 120 participants. In the last semester, 18 encroachment events were registered through the devices, 5 of which involved social conflicts, 5 wildlife poaching, 4 illegal timber extraction, and the remaining 4 illegal fishing and land encroachment. A month later, in July of 2019, a meeting was held in Apolo with CIPLA's leadership in order to plan for the training sessions in the Lecos communities. Since the term of office of the leadership finished in October 2019, training was postponed until then, coinciding with national elections, which ended up in serious political crisis in the country.

Social tensions gradually reduced in the first quarter of 2020 and additional training was planned for march, but this programming has been affected by the Covid-19 pandemic, as all field activities were halted on 21st March 2020. When field activities can resume, we will restart training sessions and continue providing support to the generation of regular reports and follow up of all encroachment events in coordination with assigned local and regional environmental authorities. Effective actions against encroachments require participation of members of the producer organizations, as well as park guards from protected areas with which the territories overlap, such as Madidi, Apolobamba and Pilón Lajas. We are also exploring the use of video conferencing and recorded training videos as alternatives to workshops.

Output 2. Pre-harvest management of agroforestry plots and native cacao forest groves is improved and local capacity built for sustainable agroforestry that is wildlife friendly (Activities 2.1, 2.3 and 2.4)

In Y3, 4 field schools were conducted with coffee producers on control of seedlings in nurseries, plot establishment, management of registries for certification and transplanting of seedlings, establishment and fertilization. Field schools were attended by 205 producer participants from two coffee organizations, APCERL and APICOA, out of which 45 were women and 160 were men, an average ratio of 1:3. The cumulative number of producers trained during the 3 years of the project, add up to 142 women and 416 men (total of 558 participants), keeping a ratio of 1:3 *(Annex 01: Field school pre-harvest reports coffee).*

Similarly, 4 additional pre-harvesting schools were conducted with cacao producers of Guanay (Chocoleco) in 3 different communities (San José de Pelera, Tomachi y Yolosani), with 33 producers participating (12 women and 21 men) (ratio 1:2). These field schools dealt with management of nurseries, pruning, fertilizing and cacao grafting.

For coffee producers, we have reinforced training on requirements for the Smithsonian Bird Friendly certification and monitored compliance with certified producers, as well as offering training to potential new producers interested in certification. Certification is provided by the Smithsonian Migratory Bird Center to coffee initiatives that conserve bird species through the world's first and only scientifically backed shade-grown coffee certification. Coffee producers undergo the organic certification process annually, while the bird-friendly certification is renewed as a group certification every three years, provided that producers keep the annual organic certification valid and up to date. Traceability of Bird Friendly certified coffee is controlled annually during the organic inspection routine through their internal control system.

Well-managed agroforestry plots with increased tree species diversity is an important target for bird friendly certification, as adding a diverse shade tree canopy provides habitat for migratory songbirds and other wildlife, and increases carbon storage.

We also supported APROCACE wild cacao producers from Carmen del Emero, in the Tacana I indigenous land to monitor their wild cacao groves that are still recovering from the 2014 flooding, and results show an important recovery of the wild stands that suffered an estimated reduction in the wild cacao management area of 19,8% (*Annex 02: May 2019 monitoring report for Carmen del Emero wild cacao stands).*

This year, we produced and distributed two additional booklets on coffee production: Preparation and use of bio-inputs[1], and good practices in coffee harvest and post-harvest. Additional materials are being developed with inputs from the field school topics mentioned above. Each field school report also represents a brief field guide on how to tackle day-to-day challenges (*Annex 03: Field school reports and booklets*).

With matching funds from the Nordic Climate Facility (NCF), in Y3 we have continued working with the T'simane Mosetene communities located along the Quiquibey river, inside the Pilón Lajas Indigenous Territory, in two initiatives: the initiative of processing essential oils and making organic, artisanal soaps, with 33 T'simane Mosetene women. The aim of this initiative is oriented

[1] Bio-input is defined as a biological product obtained from living organisms such as plant material, fungi, enzymes and similar, which is incorporated to the soil as natural organic fertilizer that protects coffee plantations and is friendly with the environment, such as natural composts of different sources, both animal and plants.

specifically towards women, opening a physical space for them to work, and spaces of dialogue and time to share traditional knowledge among themselves. The initiative is strongly supported by the leaders of the six participating communities, Bisal, Corte, San Luis Chico, San Luis Grande, San Bernardo and Aguas Claras. Support to this initiative this year has included application of good practices in packing techniques for soaps and creation of new natural ingredients to give aroma and colour to the soaps they produce. The second initiative is the management of jatata palms for production of high-quality thatch, with the participation of 102 (62 men and 40 women) people from seven communities. This initiative opens up the opportunity to monetize their economy, and consequently get access to medicine, food items not found in the forest, and supplies that are bought in the closest town by boat, Rurrenabaque. Jatata is harvested under an existing management plan inside their territory, and through a rotating fund, their producer association, APAI-RQ (Artisanal Producers of the Quiquibey River) has been able to stock their product in Rurrenabaque, selling products to local buyers and private tourist initiatives and opening markets in different municipalities in the La Paz department.

Output 3. Post-harvest management of cacao and coffee is improved, and local capacity built for diversification of products (Activities 3.2, 3.3, 3.4 and 3.5)

During Y3, we continued placing strong emphasis on cacao post-harvest processing, specifically, on the fermentation process and temperature management, with the 40 affiliated Chocolecos producers who are still well represented by women (21 women and 19 men), a ratio of 1:1. As a new initiative, we conducted a field school in post-harvest management, specifically fermentation, which is a key factor for cacao quality, oriented towards 43 young secondary students from San José de Pelera School, introducing and involving the new generation of cacao producers in training opportunities. The training involved 22 young men and 21 young women. As a result, the school is managing their own cacao plot as a pilot study site (*Annex 04: Coffee field school reports*).

Additionally, 4 post-harvest field schools were conducted with coffee producers from Apolo (APICOA) on sanitary and selective harvesting, coffee storage, and on controls during fermentation of coffee beans. A total of 128 people participated from 6 different communities, 86 men and 42 women (2:1 ratio). Workshops focused specifically on key processing stages such as proper fermentation which will translate into high quality products and prices.

During Year 3, coffee and cacao producers have continued stockpiling dry cacao and parchment coffee beans through a collective rotating fund which has continued growing from a starting capital of 14,000 USD to 21,550 USD with additional support from the Bolivian Bank for the Promotion of Economic Initiatives (Banco FIE S.A.) and contributions by the producers based on established norms and regulations. The rotating fund is managed by WCS and has been running now for five consecutive years (2015-2018). This supports a variety of community based natural resource management organizations, including cacao and coffee producers. The rotating fund enables the purchase of increasing volumes of raw produce with which to produce a roasted coffee and chocolate paste, and soon chocolate bars and bonbons.

In 2019, cacao and coffee production increased significantly. Chocolecos and APCAO Mapiri produced a total of 2.91 tons of dry cacao (APCAO = 0.531 tons and Chocolecos = 2.38 tons) tons), with a yield of 7.24 qq of dry cacao per ha, a 13.26% increase from Y1. APCERL reported a coffee production of 33.37 tons of dry parchment coffee, while APICOA reported 9.48 tons, for a total volume of 42.85 tons, with a total coffee volume increase of 4.82% from Y2. It is important to notice that Both coffee organizations had an increase in production volume of DPC (dry parchment coffee), APICOA increased by 24%, while APCERL had an increase of 17.3% compared from Y2. This year (Y3), the local coffee association Asociación de productores de Café Apolo (APCA), bought 1.8 tons of APICOA's coffee production to sell in their coffee shops in Apolo and La Paz, diversifying their clientele.

Finally, this past September 2019, a group of three cacao producers, all of them women, and three project technicians participated in a "Bean to Bar" training led by the renowned chocolatier, Papá Cacao, Jaime Freire, from Ecuador, to produce bonbons. The new products, a variety of

bonbons and 70% chocolate bars are being tested and sold by request only. Chocolecos is also experimenting with the production of cacao vinegar.

Output 4. Marketing strategies for cacao and coffee are improved and diversified, including wildlife-friendly certification (Activities 4.2, 4.4 and 4.5)

In the third year of the project, 29 coffee producers renewed their yearly organic certification, and it is planned that the thirteen bird friendly coffee producers will be ready to renew their triennial certification in 2021. New producers are being trained and assisted in getting ready for the 2021 bird-friendly certification, and the new plots have gone through the rigorous internal control system to apply for certification. The internal control system applied by APCERL producers is proving effective in monitoring coffee plots and their production (*Annex 05: APCERL's Internal control system*).

In 2019, our field technician Javier Condori has been actively and regularly monitoring birds in the coffee plots of the seven communities that participate in the coffee association of Teoponte. All seven communities lie within an Important Bird and Biodiversity Area (IBA), Bella Vista BO047. To date, documented bird richness has risen to 219 species, representing 15% of all Bolivian bird diversity estimated in 1439 species. To date, the database of bird species has 1,307 records belonging to 46 families, 172 genera, and 219 species, 92 of which have already been photographed, and are being fed into the database regularly. High-quality photographs are also being shared through social media (Facebook) to promote the importance of these forests to conserve biodiversity.

In May 2019, a team of six expert ornithologists visited APCERL´s coffee plots and surrounding mountain forests to report bird diversity in the area and were able to register 400 individuals of 122 species, representing 9% of all the bird species in the country reported in a single day and place.

As part of the marketing strategy, the brand Orygen began operating in April 2018, organized around a board of directors composed by member producers of APCERL (80%) and Chocolecos producers (20%); other community productive initiatives also have the opportunity to sell their products through the Orygen platform under specific agreements with Chomateo, the Limited Liability Partnership created to market products. Chomateo is also in charge of the cacao and coffee roasting laboratory, quality control of products, and creation of new ones, and has fulfilled all formal legal and technical requirements for production and export (eg. sanitation, tax and exporter registrations).

An important part of the commercial strategy is the promotion of the brands and product offering through their website and Facebook, opening up important international markets for the organic, community produced, and environmentally friendly products. In addition to the promotional materials already available (cacao and coffee leaflets), APCERL and Chocolecos producers have actively participated in different venues such as "Yo soy el Chef", "Ñam" and "Eat Out".

As a result of a good national customer demand, coffee and cacao have been sold locally at good prices, resulting in sales agreements to supply roasted coffee and cacao to coffee shops in La Paz such as Gustu and Bronze Brothers, as well as international entrepreneurs such as Kreyol Coffee, based in Washington D.C. USA, and the products can also be bought locally in La Paz in eco-friendly stores. Through the newly established coffee and cacao roasting laboratory, Orygen will be able to offer an interesting experience to the general public to process their coffee and chocolate first-hand (*Annex 06: Promotional Orygen video, Sale invoices for coffee and cacao export*).

In terms of training in coffee roasting and cupping, during the third year of the project, the three young barista women from APCERL have been using their new skills in the processing laboratory in La Paz, testing different varieties of coffees and roasting times from individual harvests of selected APCERL producers. An internal competition among the roasted coffee varieties resulted in the selection of four special coffees from 4 producers: Cristina Macedo, Benito Kea, Santos Alanoca, and Benito Huaylla. These special coffees are being packed separately and include a description of their characteristic aroma and flavors conducted by the three baristas. These

coffees have been sold locally in the city of La Paz in special packaging for Christmas in December 2019, as part of customer diversification marketing strategy. In general, the baristas are gaining a reputation and interacting with other baristas in major Bolivian cities. This past August 2019, a competition called Aeropress Bolivia, authorized by the World Aeropress Championships took place in La Paz to select the best baristas that will represent the country at the World Aeropress championship in London. A total of 33 competitors participated, the two APCERL baristas, Ms. Kea and Ms. Alcon were selected to participate in the second round, and Ms. Kea competed in the finals, wining second place. By Y4, they will develop their own training materials to share their experience and motivate other young producers.

3.2 Progress towards project Outputs

Output 1. Producer organizations and their representative territorial organizations have developed and implemented systems for control and vigilance of their territorial lands.

Traditionally, systems for control and vigilance inside indigenous territorial lands have always been in place and will continue to act upon illegal exploitation of their natural resources. As a way of strengthening these systems, during the past three years, WCS and our indigenous partner organizations have explored different technological alternatives to help improve these systems. The aims of the strategy were twofold: 1) To increase access to key information, such as maps, limits, legal documents of their territories, and 2) Increase reporting and action in response to illegal encroachment.

The first part of the app has been very useful and widely used by the local leaders, while the second component has become too heavy to be uploaded to the basic systems of the local mobile phones, and since there is little communication service in rural areas, the GPS is not able to detect location in real time, finally, there is limited storage capacities in their mobile phones to store information on complaints, images and others.

The Avenza Maps® app is being used to replace the reporting part of the app. This lighter version offers offline maps, GPS location and digital and georeferenced maps in mobile device. It also uses the device's built-in GPS when located out of range of a network or internet connection, and enables attachment of georeferenced photos; and KovoCollect (KovoToolbox) app can be used offline. The use of these light applications will improve the control and vigilance system and overcome the present obstacles.

All information reported by the app so far is being centralized in a control panel stored in a server to be able to retrieve information periodically to systematize all the complaints and store evidence of the complaints.

Output 2. Pre-harvest management of agroforestry plots and native cacao forest groves is improved and local capacity building for sustainable agroforestry that is wildlife friendly.

During the three years of the project, the number of hectares of forests and plots being managed by cacao and coffee producers have increased gradually, as planned. By Y3, 335.54 hectares of a complex matrix of agroforestry systems is managed and protected (115.75 ha of coffee plots and 29.29 ha of cacao plots and additional 190.5 ha of mountain forests that have been set aside for protection as part of the bird-friendly certification requirements), increasing the area under management regimes by 40% from the 241 hectares in Y2 (174 ha of coffee and 67 ha of cacao). Of the 335.54 hectares managed in Y3, 145 hectares are in production, and an additional area of 127.26 hectares (60.21 hectares of coffee and 67.26 hectares of cacao) are in different stages of growth.

During this period, pre-harvesting activities and training on coffee management were conducted regularly, applying 4 additional training workshops on control of seedlings in nurseries, plot establishment, management of registries for certification and transplanting of seedlings, establishment and soil fertilization. Of the 205 participants that participated in Y3, 45 were women and 160 were men (ratio 1:3), and cumulative number of producers trained during the 3 years of the project, add up to 142 women and 416 men (total of 558 participants), keeping a ratio of 1:3.

Technology packages are applied on a case by case basis given that individual producers are at different stages of establishing their agroforestry plots, and to allow all producers to achieve the same high-quality standards.

Similarly, 4 additional pre-harvesting schools were conducted with cacao producers of Guanay (Chocoleco) in 3 different communities (San José de Pelera, Tomachi y Yolosani), with 33 producers participating (12 women and 21 men) (ratio 1:2). The field schools dealt with management of nurseries, pruning, fertilizing and cacao grafting, activities that are prioritized based on the producers' needs and the phenology of the plants in the plots.

A standard pre-harvesting activity is the maintenance of local nurseries and production of seedlings for expansion and renewal of their plots, and during Y3, a total of 140,000 coffee seedlings were produced and transplanted to permanent coffee plots in Teoponte (APCERL), and 70,000 seedlings in Apolo (APICOA). Nurseries are family-run and are well kept. On the other hand, Chocolecos produced 10,500 cacao seedlings in community-run nurseries.

Output 3. Post-harvest management of cacao and coffee is improved, and local capacity built for diversification of products

Post-harvest management activities for cacao and coffee have centred in the establishment of processing modules for controlled fermentation and drying of the cacao beans.

By Y1, two cacao processing modules were implemented, one for Chocolecos and 1 for APCAO Mapiri, resulting in a reduction of half the time usually required for cacao fermentation, from 4 to 2 days. Currently, this infrastructure is benefitting an average of 48 direct producers currently affiliated with Chocolecos and APCAO (40 from Chocolecos and 8 from APCAO Mapiri). Each module was built based on a previously tested prototype, and have allowed significant improvements in the quality of the fermentation, since temperature can be kept stable, humidity is kept at a standard 8%, and anaerobic and aerobic fermentation can take place in a controlled space. The drying module improved cacao quality and allowed larger amounts of cacao to be processed simultaneously.

In Y3, we continued placing strong emphasis on the controlled cacao processing, specifically, fermentation process and temperature with the Chocolecos producers (40 producers: 21 women and 19 men). Additionally, we conducted a field school in post harvesting oriented towards 43 young secondary students from San José de Pelera School, introducing and involving the new generation of cacao producers in training opportunities. The training was on fermentation management, a key factor in cacao quality, and involved 22 young men and 21 young women. As a result, the school is managing their own cacao plot as a pilot study site *(Annex 07: Participant lists and photos of training event with young secondary students*).

In the case of coffee producers, in Y1, four family modules were built for wet coffee processing in the Lecos de Apolo indigenous land. During Year 2, and using matching funds, 12 additional family and bi-family modules were established, benefitting 37 APICOA coffee affiliates. In Y3, 4 additional post-harvest field schools were conducted with APICOA on sanitary and selective harvesting, coffee storage, and on fermentation of coffee beans. A total of 128 people participated from 6 different communities, 86 men and 42 women, (2:1 ratio).

All cacao and coffee modules are in full use, and as a result, production yields and quality of the cacao and coffee beans are improving, as shown in Section 3.1. Workshops are focusing specifically in key processing stages such as proper fermentation and drying which will translate into high quality products and prices.

During 2019, preparation of the chocolate paste and chocolate tablets have continued to be an important task. All coffee and cacao processed products such as roasted coffee and chocolate pastes have now completed sanitary registration and can be sold in regular stores and markets. Women producers are leading production of chocolate bars, mixing flavors and bonbon production. The sales price for the 100g chocolate bar in fairs was USD 2 a year ago, and by 2019 the price has risen to USD 3, which indicates a high demand by costumers in the city of La

Paz. Chocolate paste is also sold in local fairs at a lower price (USD 2) to a different consumer market, with a “Chocolecos” label and packaging. One kg of cacao beans now generates USD 21, while part of the high-quality cacao is being sold to Origen Store, for a value of USD 35 per kg, reaching and surpassing the expected benchmark of USD 5 per kg.

Output 4. Marketing strategies for cacao and coffee are improved and diversified, including wildlife-friendly certification

As a result of the three years of the project, the application of a new marketing strategy already in place since Y2, has opened up new marketing channels and established links with specialized market niches for both coffee and cacao. Through participation in fairs, coffee and cacao producers have been able to present their products through leaflets and audiovisual materials, as well as strong virtual campaigns through Orygen’s web page www.origentienda.com and Facebook, today there are already more than 1,200 followers, and initial sales have been conducted through the virtual store. By the end of Y3, a new promotional video of all the products supported by Orygen Store will be released to the public, telling the stories behind the products.

In addition to the sales to Celler de Can Roca in Gerona (Spain) in Y2, in Y3, new alliances have been established with renowned Bolivian restaurants such as Gustu to produce 70% cacao desserts, and coffee in their restaurant in La Paz, as well as in a 5-star hotel in the Uyuni Salt Lake; additionally, the high-end coffee shop Bronze Brothers is buying both cacao and coffee.

We conducted commercialization tests with national and international private companies, successfully selling the first 2.8 tons of dry parchment coffee from APICOA to Kreyol Coffee, with a good price of USD 6.83 per kg and a gross profit of USD 19,135.

During Y4 of the project, as a new initiative to connect urban customers with the products they buy, a new laboratory is being implemented in the center of La Paz run by Chomateo, which will allow customers to experience and participate in the process of roasting coffee and making chocolates.

The continuous control of organically produced cacao and coffee has rendered good yields and high-quality products and volumes as shown in Section 3.1, and the special green markets have proved to offer an almost threefold increase in sales prices for both commodities (cacao and coffee). In the case of coffee, although prices vary daily, the difference goes from USD 1.15/kg to USD 3.15/kg, and in case of cacao, price increases from about USD 1.8/kg to USD 4.99/kg.

Through regular monitoring of bird diversity in the coffee plots of APCERL since Y1, when a baseline list of bird species was established (162 species), there has been a continuous increase in the list of bird diversity by year, increasing to a new total of 219 species by Y3, out of which, 207 are resident species (94%). These results show the importance of the coffee areas of APCERL for biodiversity protection and the conservation value of 190.5 hectares of intact forests at the headwaters of the mountains, as part of the complex matrix of agroforestry systems being managed. These monitoring reports have been feeding back into a database on bird diversity to be shared with potential buyers from the special markets, APCERL’s Facebook and website, and the ARMONIA Association, the Birdlife partner in Bolivia. By Y3, 13 coffee producers have been certified bird-friendly, and 6 additional producers are getting ready for certification in 2021.

The three APCERL expert baristas have continued gaining experience in coffee roasting and cupping and have selected the four best specialty coffees. Thanks to their tasting experience and skills, they have been able to conduct different roasting timings and experiment with the coffee beans from the different producers. Coffee prices are differentiated by producer and quality of the beans, and the coffee that was valued the highest in coffee tasting in 2019, Benito Huallpa, has been sold at USD 27.30 per kg, while the other blends were sold at USD 24.4 per kg. A new buyer, Kreyol coffee, from Washington D.C. (USA) visited Bolivia and the coffee plots and local producers in Apolo to see first-hand the quality of the product and to get to know the producers, since his enterprise is committed to buy organic and support community-run initiatives. In Y3 of the project the commodity market price for coffee was USD 1.15 per pound, while coffee from

APCERL and APICOA was sold at an average USD 3.17 per pound, almost three times the stock market price in 2019.

3.3 Progress towards the project Outcome

Outcome 1. Sustainable cacao and shade coffee production by indigenous communities in Bolivia results in increased protection of collective lands, strengthened livelihoods, reduced forest loss and increased avian biodiversity in agroforestry areas.

During three out of four years of the project, we made important progress in providing assistance and training, as well as evaluating the applicability of the tools, protocols, and the use of the Android app to report encroachments over more than 600,000 hectares of indigenous lands (Tacana and Lecos Apolo TCOs). We also identified vulnerable areas in the three indigenous territories, which serve as the geographic reference for monitoring illegal activities and establishing control points in accordance with each community's Life Plans (Lecos Apolo, Tacana and Pilón Lajas). Additionally, coordination with indigenous grassroots organizations and protected area directors from Madidi and Pilon Lajas, has helped evaluate the application process. As part of the support provided by WCS through additional funds from the CEPF program and the Moore Foundation, the CRTM indigenous organization was able to update their Life Plan for the Pilón Lajas indigenous territory and have also identified the areas of the territory under highest risk of encroachments and illegal activities. The area encompasses an extension of almost 400,000 hectares. The next step will be to adapt and apply the protocol of monitoring for Pilon Lajas.

During Y3 of the project we supported five productive associations; three indigenous cacao associations, Chocolecos and APCAO Mapiri, both managing native cocoa under agroforestry systems, and the producer families of Carmen del Emero (APROCACE), representing a total of 88 producers from 14 communities. In the 2019 cacao harvest season, the yield reached an average of 333 kg/ha, maintaining the same yield from Y2 which surpasses the baseline numbers (180 kg/ha) by 85%. Yield has been maintained as a result of the application of improved management techniques at the different production stages, and as a result of the application of pre-harvest and post-harvest processes. Average annual household income from cacao production in Y3, reached USD 500 (including Chocolecos and APCAO Mapiri), an increase of 21.9% from Y2 (USD 410), and double income in Y1 (USD 247). Unfortunately, APROCACE producers in Carmen del Emero are still suffering the effects of heavy flooding in 2014, impacting cacao stands and their natural pollinators. However, we have continued to support the producer families in their efforts to monitor these stands to evaluate appropriate interventions when conditions improve. The floods' impact has resulted in broader changes in the course of the Beni river, which have clearly damaged and even caused partial disappearance of some cacao groves that had been previously identified in the management plan of 2013. Monitoring results from 2019 show an important loss in the area covered by the wild stands (19.8 %) with respect to the baseline, with some stands losing 75% of their extension. (*Annex 02: Field report visit to wild cacao stands May 2019).*

On the other hand, the two partner coffee associations, APCERL from the municipality of Teoponte, and APICOA, from the Lecos Apolo Indigenous Territory participated through their 81 coffee producers (65 men and 16 women), 47 from APCERL in Teoponte (40 men and 7 women), and 35 from APICOA in Apolo (26 men and 9 women). In 2019, coffee harvest yielded an average of 639 kg/ha, surpassing the baseline numbers of 211 kg/ha by 3 times, and a 11% increase from the previous year (575 kg/ha). However, household income did not increase in the same proportion due to fluctuations in market prices, highlighting the importance of diversifying the market strategy by selling roasted coffee in addition to green grains (USD 2,100/family in 2019, USD 1,974.90/family in 2018, and USD 2,159/family in 2017, and baseline income of USD 2,852/family). Fluctuations have affected producers, despite the project securing preferential prices for green grains, with important premiums above the average sale price of in the stock exchange (USD 2.65 /lb. in comparison to USD 1.7/lb.).

In the 2019 harvest season, 84 coffee producers received technical assistance from the project; these consisted of 67 men and 17 women, 47 producers from APCERL in Teoponte and 37 from

APICOA in Apolo, representing 13 total communities. In 2018, we reported an average coffee harvest yield of 575 kg/ ha, surpassing baseline numbers by 2.7 times and representing a 10% increase from the previous year.

In Y3, the total number of indigenous producers working as partners or beneficiaries in the project was 169, slightly down due to reduced participation from cacao producers from Carmen del Emero, who have been affected by flooding; and in the case of APCAO Mapiri, who have been affected by gold mining. In Y3, the total number of indigenous producers included 102 T'simane mosetene beneficiaries from Pilón Lajas, both jatata family producers whose women also participate in the aromatic oil and soaps initiative, add the total number of beneficiaries to 271 people. By Year 4, we aim to reach the target number of producers (280), with a normal fluctuation from year to year. By Year 4, we still aim to reach 280 producers by including more cacao and coffee producers and continue supporting additional productive activities with the T'simane Mosetene communities.

To date, 13 producers (12 men and one woman) have been certified as bird friendly for the next three years (2017-2019). Five additional new producers are receiving technical assistance and preparing their plots for bird friendly certification in 2020.

To evaluate the project's impact on biodiversity conservation we developed a standard protocol and producer capacities to monitor bird diversity in their own plots, using a baseline of 162 species. To date, the number of bird species has increased to 219, and we expect an additional 27+ species as the structural complexity of the plots matures and greater landscape connectivity is established. We compared the diversity in the complex agroforestry plots with that of the monoculture plots and found a difference in species diversity of 69% (219 species vs. 67 species). In 2018, we collaborated with a graduate student from the Technological University of Dresden, Germany, who analysed ecosystem services within three types of coffee plots in Teoponte, monoculture simple coffee plots, complex agroforestry systems, and bird-friendly certified plots grown under forest canopy. He documented the relationship between increased bird diversity and lower coffee pest incidence, as well as the important role of the different coffee plantation systems for maintenance of water sources (*Annex 08: Summary of study results by Carlos Landivar*).

The project's producers, partners, and beneficiaries continue to receive national and international recognition for the quality of their products (coffee and cacao). In 2017, the Chocolecos received an award in Paris (France) at the International Cocoa Award competition for being among the 18 best cacaos in the world, and in February 2019, the Chocolecos competed in the Bolivian version of the Salon del Chocolate 2019 (*Annex 09: Salon del Chocolate, images on social media)*, under the leadership of Bolivia´s Ministry of Foreign Affairs in Bolivia, Ministry of Rural Development and Land, and the Bolivian Coordination Committee of Cacao (COPRACAO), on which WCS is a member. Renowned Ecuadorian chocolatier Jaime Freire (Papá Cacao) (*Annex 10: Papá Cacao jury in cacao competition 2019)* was part of a first-class jury to evaluate the different Bolivian cacaos competing.

Finally, by Year 4 of the project, and based on monitoring of deforestation rates, we will monitor the estimated carbon absorbed in the new agroforestry plots and avoided carbon emissions by avoided forest loss through the analysis of satellite imagery and field verification.

3.4 Monitoring of assumptions

The three Outcome level assumptions originally described for the project still hold true:

Assumption 1: Institutional stability in the producer organizations and indigenous territorial organizations.

Institutional stability is crucial in order to coordinate activities, especially for projects that last for long periods of time, which render long term results. During the three years of the project, conditions have been kept stable until the end of Y3 and the beginning of Y4.

Assumption 2: Extreme flooding does not occur in more than 1 year.

The 2014 flooding in northern La Paz has continued to impact the wild cacao groves of Carmen del Emero (Tacana I Indigenous Territory). Although during monitoring in Year 2, the wild cacao stands were about to start recovering their productivity, the new monitoring in Y3 shows a reduction in total area under management plan of 19,8% of the total, and most of the adult individuals have not produced fruits this year. Nevertheless, the number of saplings around the mother plants, assure the optimal reposition of the cacao population (*Annex 02*). It is clear that wild cacao stands have adapted to regular flooding but not extreme conditions that affect their survival several years in a row.

Output level assumptions:

Assumption 1: The producer organizations and indigenous organizations are not affected by social conflicts related to increased pressure from extractive and infrastructure projects.

This assumption holds true, since the pressure from large infrastructure projects as well as economically important extractive activities such as mining, illegal timber logging, and wildlife trafficking have not resulted in internal social conflicts. However, gold mining in the Mapiri and Teoponte region has resulted in a reduction in the number of producers interested in cacao production due to the high prices of gold. A strong base of producers has still been maintained, despite lower participation rates.

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

WCS plans to achieve significant outcomes for biodiversity, measured as number of hectares under improved indigenous control, number of agroforestry plots with increased avian biodiversity, and a reduction of carbon emissions due to forest conservation. Although, this level of impact will not be met until the end of the project (Year 4), we are progressively adding to it.

Assistance and training provided to producers is increasing the yields of coffee and cacao production, which translates into economic benefits. Poverty alleviation is measured as the number of cacao and coffee family producers with annual improved income. The improvement in production and prices of the two main commodities, cacao and coffee, will have a direct impact in poverty alleviation and encourage producers to continue valuing organic production over traditional monoculture crops, and be able to convince/attract other producers to follow the same path.

During this third period, annual income per household in 2019 was USD 2,000 from coffee production and USD 500 from cacao production. We worked with 168 indigenous producers, who are producing in plots covering an area of 335.5 hectares under agroforestry management and managing an additional 127.47 hectares in the growth stage; and 13 bird friendly producers. Additionally, we have improved indigenous control over 636,466 hectares, resulting in 6,932 indigenous people with improved control over their collective ancestral lands.

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

Our activities address Goal 1 (No poverty: End poverty in all its forms everywhere) by increasing vulnerable indigenous communities' control over their territories and natural resources and developing their resilience to climate-related extreme events and other economic, social, and environmental impacts and disasters through territorial management and sustainable livelihoods. We also contribute to Goal 12 (Responsible production and consumption: Ensure sustainable consumption and production patterns) by supporting the sustainable management of natural resources. Finally, the project addresses Goal 15 (Life on land: Sustainably manage forests, halt and reverse land degradation, halt biodiversity loss) by promoting the implementation of sustainable forest management and agroforestry as alternatives for gold mining and short-term aggressive extractive activities such as timber extraction, or intense commercial agricultures.

During this reporting period, income increased for 169 indigenous producers, 335.54 hectares are under agroforestry management, 636,466 hectares are under improved indigenous control, and 6,932 indigenous people have improved control over their collective ancestral lands (Tacanas and Lecos Apolo peoples). Additionally, bird species diversity reported in the organic bird-friendly certified coffee plots has continued increasing slightly, by 2,8% from the previous year (213 to 2019) and by 69% when compared to baseline bird species reported in simple monoculture coffee plots (67 to 219).

5. Project support to the Conventions, Treaties or Agreements

The project is designed to support the objectives of the Convention on Biological Diversity (CBD) and Aichi Strategic Goals by reducing the direct pressures on biodiversity and promoting sustainable use, as well as enhancing benefit sharing and capacity building of indigenous organizations.

These actions address Strategic Goal B by reducing the direct pressures on forests, promoting the sustainable use of native forest groves, and supporting forest restoration through agroforestry. They also contribute to Strategic Goal E by respecting and supporting the customary use of indigenous lands by the T'simane Mosetene, Tacana and Lecos indigenous communities, since all activities are conducted in agreement with the local stakeholders as direct beneficiaries as well as part of the activities prioritized in their Territorial Life Plans.

The forest types managed and conserved inside the intervention area of the project all foster highly diverse sets of flora and fauna. Through sustainable management, we are guaranteeing their long-term conservation. The mid elevation mountain forests of the eastern slopes of the Andes, where the mountain shade coffee is grown by our partners from APCERL in the municipality of Teoponte, are part of the Andean hotspots and also identified as an Important Bird and Biodiversity Area (IBA) by Birdlife International, including 14 Andean endemics such as the Yungas Manakin (*Chiroxiphia boliviana),* Yungas Antwren *(Myrmotherula grisea)* and Yungas Tyrannulet *(Phyllomyias weedeni).* They are also home to a diverse community of other birds and mammals, including toucans, hummingbirds, woodpeckers, turkeys, parrots, owls, tanagers, squirrels, monkeys, coatis, tapirs, deer and more (See APCERL's Facebook for pictures and videos).

The project contributes to the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) by promoting and supporting the efforts of indigenous and local communities for *in situ* conservation of wild cacao relatives located inside their indigenous lands and in nearby protected areas, for food production.

6. Project support to poverty alleviation

The direct beneficiaries of the activities in the project are the communities and producers of the T'simane Mosetene, Tacana, and Lecos indigenous territories as well as quechua and aymara coffee producers of APCERL, from 7 communities in the municipality of Teoponte.

The project made important progress in providing ways to report on illegal activities in the indigenous territories, which will result in improving indigenous control over the Tacana and Lecos Apolo indigenous lands. Important results have been achieved regarding the income of cacao and coffee producers (See section 3.3). We have increased and diversified our support to the indigenous communities in the area, and have supported specific projects for T'simane Mosetene women, having increased the collective annual income of 33 families to USD 4,600 in second year, almost three times from USD 1,626 the year before; and the collective income of 102 families of T'simane Mosetene managers of jatata palm leaves, leading to a total annual income of USD 11,000 from a similar baseline the year before of USD 11,029. We expect additional poverty alleviation impact with both coffee and cacao producers by Y4.

7. Consideration of gender equality issues

According to our participant lists in community training workshops and meetings, women's participation represented 29% of participants in Y3.

Our impact on promoting women's participation is evident through the support provided to the three female coffee baristas of coffee association APCERL, who represent a new generation of coffee producers, have shown great potential, and have stood out during different training events and coffee cupping tournaments. They have continued their training and shown their leadership by leading coffee processing and roasting in the laboratory in La Paz and continue their participation in coffee and cacao tastings, fairs, and other marketing events. Additionally, through the work with the T'simane Mosetene women's initiative of aromatic oil extraction and artisanal productions of soaps, we have provided assistance to 33 women from six communities in Pilón Lajas Indigenous Reserve, as explained in Section 3.1 above. We are working towards strengthening the economies of the T'simane Mosetene women and opening spaces for them to exchange and value traditional knowledge as well as experimenting with aromas and textures.

8. Monitoring and evaluation

No changes in the monitoring and evaluation plan are required to date; indicators are reported in Annex I. The main indicators used to evaluate progress towards conducting Activities and achieving the Outputs and leading towards the main project Outcome are:

1. Qualitative changes in capacity for reporting and responding to illegal encroachments over 1 million hectares of indigenous land. Final results for this indicator will be reported from the digital reporting system, still being improved.
2. Number of cacao and coffee producers with improved productivity/hectare. This indicator has been used to evaluate productivity during the last two harvest seasons (2017-2018) and is still valid.
3. Increase in household income is measured through recording sales and annual benefits per producer family and has been evaluated for the project's two production years.
4. The number of new certified producers is documented by the existence of actual certificates as well as the regular internal control system that prepares them for certification, segregated by gender, and participant lists in field schools.
5. We registered a bird biodiversity baseline at the start of the project, and a bird monitoring protocol is being implemented by the field technician and individual producers.
6. Forest loss and avoided carbon emissions will be monitored based on the initial area covered by the coffee and cacao plots and stands, as well as deforestation indices reported for the three partner indigenous territories (Tacana I, Lecos Apolo and Pilón Lajas).

Finally, we evaluated the ecosystem functions of coffee agroforestry plots of APCERL in 2018. This research provided evidence on the importance of coffee production across a matrix of management systems on the provisioning of environmental services in the region, such as forests for water quality and soil maintenance and bird diversity for control of coffee diseases (*Refer to Annex 08: Summary of study results by Carlos Landivar*). Following with the monitoring of ecosystem functions, APCERL producers have been reporting on increase in bird diversity to 219 species as well as reduction in soil erosion and conservation of 190.5 hectares of intact forests at the headwaters of the mountains.

9. Lessons learnt

The socioeconomic impacts arising from gold mining in the Mapiri and Teoponte region continue to be an obstacle for promoting sustainable agroforestry. However, a core group has continued supporting the production of high-quality cacao and coffee. Recognition of this quality value by achieving better prices and recognitions by international experts and events is an opportunity to continue to gradually increase the number of producers.

Climate is always a challenge for all farmers, especially smaller-scale ones, since production is limited and consequences of a bad year can have serious impacts on their narrow economies.

Nevertheless, producers are adapting to changes in climate by diversifying their crops and varieties to plant; for instance, coffee producers are renewing and establishing plots with coffee varieties resistant to pests, soil conditions, and dramatic changes in weather conditions, such as extreme rain and drought. However, in the case of the natural cacao stands in the Tacana Indigenous Territory, the natural dynamics of the river and extreme changing seasons represent a greater challenge. Regular monitoring of the cacao plants both in agroforestry systems and wild stands will enable us to predict productivity, while also taking actions and transplant wild cacao relatives to agroforestry plots in order to increase genetic variability and produce improved varieties of fruits with better qualities for the market.

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

The increase in the price of gold has led to an important increase in the interest of local people in the Mapiri region to participate in this activity, as opposed to agroforestry. As a result, we have refocused our strategy towards one of our partners, APCAO, on strengthening their capacity to attract additional native cacao producers by offering better and more stable prices, and providing assistance upon request.

We have faced the challenge of reducing the amount of coffee sold to private buyers directly by APCERL members through the establishment of a rotating fund. We have also adapted the marketing strategy to access niche markets for roasted coffee to obtain better and more stable prices.

11. Other comments on progress not covered elsewhere

In addition to the comments on the social and political conflicts in the country during the last quarter of 2019, and the sanitary emergency in the first quarter of 2020, which have already been mentioned in Subsection 3.4 above, the fluctuation of the pound has affected the project budget. This year we have absorbed this impact by covering some costs with matching funds. Among the effects, we may need to conclude contracts with staff earlier than expected, and we may have difficulties supporting the certification of the coffee plots in 2020.

We had to reschedule activities due to political conflicts in November and we are as yet unsure about the effects of the presidential elections due to be held later in 2020 and potential social conflicts post elections, as well as those of the Covid-19 pandemic. However, we are developing mechanisms and strategies for remote guidance to local technicians could access to the field prove difficult. The upcoming national elections in Bolivia, which are expected to take place between July and September 2020 may also have impacts in project implementation.

12. Sustainability and legacy

Our activities have a strong focus on securing social sustainability by working with established producer organizations operating under approved and legitimate indigenous management plans and natural resource use regulations. Sustainability and legacy are also supported by committed efforts towards the transference of technical knowledge to producer organizations.

Economic sustainability was addressed in this period through our work developing a cost-effective control and vigilance strategy; increased household incomes through improved production, and market linkages with niche markets. Environmental sustainability is secured by improving pre-harvest management, including bird friendly certification, and via supporting indigenous territorial governance and control.

13. Darwin identity

We have included applying the Darwin logo on forms used in the meetings and workshops; the Darwin Initiative was also recognized as one of the main donors of the project in Orygen's webpage and included in the new promotional video produced on Orygen Store and all the

products offered under its umbrella (*Annex 06: Promotional video of Orygen*), as well as in social networks such as APCERL's Facebook.

14. Safeguarding

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

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				
Partner organization				
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
***Impact*:** Improved territorial control and monitoring of indigenous lands coupled with sustainable agroforestry leads to biodiversity protection, strengthened livelihoods and climate resilience in an approach that can be replicated across Bolivia.		We made progress in improving indigenous capacity for control and monitoring of the Tacana and Lecos indigenous lands over 636,466 total hectares. We also supported management of 335.54 hectares of sustainable agroforestry plots (coffee and cacao). This management increased income and benefitted the livelihoods of 7,096 people. Impacts on biodiversity and ecosystem services include increasing number of birds and wildlife in APCERL's coffee plots (219 bird species to date), and documentation of their role in coffee pest control and improved coffee production and resilience to climate change. Additionally, the improvement in the application of good management protocols in the coffee and cacao plots in consecutive years (Y1 and Y2) have shown to improve and by Y3 almost stabilize production yield, as well as improved quality, resulting in generation of increasingly better household income for both cacao and coffee (Average annual household income from cacao - USD 500, and average annual household income from coffee – USD 2,100), hence strengthening local livelihoods.	[redacted]
Outcome 1: Sustainable cacao and shade coffee production by indigenous communities in Bolivia result in increased protection of collective lands, strengthened livelihoods, reduced	**0.1** By the end of Year 4, within the 1M ha of indigenous lands, a well-established participatory system for documenting and reporting illegal encroachments into areas managed by producer organizations is in place	**0.1 & 0.2** We made important progress these past 3 years in developing tools and protocols to report encroachments over 636,466 ha of indigenous lands, in the Tacana and Lecos Apolo Territory. We also identified the main vulnerable	**0.1 and 0.2** Replicate and adapt reporting system of illegal activities in the Pilón Lajas indigenous Territory (400,000 ha) and identify opportunities in additional territories.

forest loss and increased avian biodiversity in agroforestry areas.	(Baseline = no such system currently exists). **0.2** By the end of Year 4, illegal encroachments within the 1M ha of indigenous lands are reported and responded to in joint actions by the indigenous territorial organizations and producer organizations (Baseline = no joint actions). **0.3** By the end of Year 4, 280 indigenous Tacana, Lecos and T'simane Mosetene producers (60 women) have increased productivity by 20% (Baseline = 180 kg/ha cacao and 211 kg/ha coffee).	areas in the three indigenous territories that serve as the geographic reference for monitoring illegal activities as well as establishing control points, in accordance with their own Life Plans (Lecos Apolo, Tacana and Pilón Lajas). Additionally, coordination with indigenous grassroots organizations and protected area directors from Madidi and Pilon Lajas, has helped evaluate the application process. As part of the support provided by WCS through additional funds from the CEPF program and the Moore Foundation, the CRTM indigenous organization was able to update their Life Plan for the Pilón Lajas indigenous territory. (400,000 ha.), having identified the areas of the territory under highest risk of encroachments and illegal activities. Next step will be to adapt and apply the protocol in Pilon Lajas and monitoring by using the app and act upon the reports received. **0.3 <u>CACAO</u>:** By Y3, including the two cacao productive associations, Chocolecos and APCAO-Mapiri, both managing native cocoa under agroforestry systems, and 40 family cacao producers of Carmen del Emero (APROCACE), there are a total of 88 producers from 14 communities. In the 2019 cacao harvest season, yield reached an average of 333 kg/ha, maintaining the yield from Y2 which surpasses the baseline numbers (180 kg/ha) by 85%. Yield has been maintained as a result of the application of improved management	**0.3** During the three years of the project, both cacao and coffee producers reached and surpassed the projected target productivity (kg/ha) and in Y3 stabilizing yields. The challenge is to stabilize production and quality and engage more producers towards organic and conservation oriented products.

		techniques at the different production stages. **COFFEE:** During the 2019 harvest season, 81 coffee producers received technical support (65 men and 16 women, 47 from APCERL in Teoponte and 34 producers from APICOA in Apolo). This represents a 3,5% reduction from Y2 (84), nevertheless, the 2019 coffee harvest yielded an average of 639 kg/ha, surpassing the baseline numbers of 211 kg/ha by 3 times, and a 11% increase from previous year (575 kg/ha).	
	0.4 By the end of Year 4, 280 indigenous Tacana, Lecos and T'simane Mosetene producers (60 women) have increased household income from agroforestry by 20% (Baseline = average annual household income from agroforestry is 131 USD for cacao and 2,852 USD for coffee).	**0.4** The total number of indigenous producers working as partners/ beneficiaries in the project in 2019 increased to 169, and adding the T'simane mosetene communities of Pilon Lajas as additional beneficiaries, the number of producers increases to 271 by Y3. By Year 4, we still aim to reach the target number of producers (280). Average annual household income from **cacao** production in 2017 was USD 247, as a result of access to preferential markets. In 2018, annual household income from cacao increased to USD 410, and by Y3, average annual household income is USD 500 (Average income between Chocolecos and APCAO Mapiri) Average annual household income from **coffee** in 2019 was USD 2,100, which compared to previous years (Y1 was USD 2,159 and Y2 was USD 1,975), it seems stable. This trend	**0.4** We continue to expect demand to rise as a result of the marketing strategy, diversification of products and increased interest of producers in certification. In Y4 (2020) a more intense application of the marketing strategy for coffee,

	0.5 By the end of Year 4, 15 coffee producers (8 new, of which 5 women, and 7 recertified) are certified under the Smithsonian standards as "bird friendly" for their contribution to conservation of 162 bird species, including 14 Andean endemics, such as (*Simoxenops striatus), (Myrmotherula grisea*), (*Phyllomyias weedeni*) (Baseline = 7 producers are currently certified, but will need recertification).	highlights the need to adapt the marketing strategy. **0.5** To date, 13 producers (12 men and one woman) have been certified for the next three years (2017-2019). Five additional new producers, two of them women, are receiving technical assistance and preparing their plots for bird friendly certification. The number of registered bird species has risen to 213, and bird monitoring is becoming a standard event under an established protocol and a standard form.	which is being sold successfully roasted and differentiated by producer, with highest price for high cupping values. New markets for raw coffee are also opening up for the new coffee from Apolo, which has a citric aftertaste that is characteristic from Bolivia. **0.5** We will prepare at least 3 more producers to achieve bird-friendly certification, for a total of 15 producers, since certification will take place in 2020.
	0.6 By the end of Year 4, project-supported agroforestry plots show a 15% increase in avian diversity, compared to baseline (to be established in Year 1) and a 30% increase in avian diversity compared to areas following traditional single crop agriculture (Baseline to be established in year 1).	**0.6.** The baseline of bird species in monoculture coffee plantations of APCERL is 67. In 2017, a new bird survey was conducted establishing the number of bird species in shade coffee plantations in 179, and in 2018, the new record of bird species increased to 219 *(Annex 12),* with an increase of 22,3% from baseline. Comparing the 219 species under forest canopy with the baseline number of birds reported in monoculture crops (67), the difference is 69% to date.	Although target indicators have been reached, bird monitoring continues, and additional data show also an increase in the number of other wildlife species such as mammals. The records fed into the database, by Y3 have reached to 1,307 and growing.
	0.7 By the end of Year 4, an estimated 152,672 tCO2e is absorbed in new agroforestry plots (Baseline = 0).	**0.7** N/A for the reporting period.	
	0.8 By the end of Year 4, 80 hectares of avoided forest loss and the associated 46,374 tCO_2e equivalent avoided emissions (Baseline = 0.3% annual forest loss in the region).	**0.8** N/A for the reporting period.	

Output 1: Producer organizations and their representative territorial organizations have developed and implemented systems for control and vigilance of their territorial lands.	**1.1** By the end of Year 1, areas vulnerable to illegal encroachment in three indigenous territories are identified and mapped in a participatory process (Baseline = no such participatory mapping has yet been done in these areas). **1.2** By the end of Year 1, three training workshops are held between producer organizations and their territorial organizations on formal documentation of infractions, with 45 participants overall. (Baseline: no such trainings are currently held with these groups) **1.3** By the end of Year 2, a digital platform (eg. SMART) and clear protocols for coordination of actions against encroachments in three indigenous lands are under implementation (Baseline = such a platform and protocols do not currently exist).	**1.1** Activity completed in Yr. 1 as scheduled. **1.2** Additional training and assistance in using an Android app for reporting illegal activities in their territories was conducted with CIPLA, CRTM, and MCCA. **1.3** Starting in Year 2, a server has been established for receiving the reports from illegal activities in the Tacana I and Lecos Apolo territories.	
Activity 1.1: Facilitate participatory mapping of areas under management by producer organizations vulnerable to illegal encroachment.		Completed.	N/A
Activity 1.2: Hold a training workshop with each of the producer organizations on legal requirements for processing illegal incursions into their management areas.		Delayed. The training workshops with producer organizations and local leader organizations have taken place as part of regular coordination meetings held in their headquarters. Training materials and legal information are made available as “Supporting documentation” in the app. However, the workshops with producer organizations were delayed as a result of political conflict at the end of 2019, followed by the COVID-19 pandemic.	Continue training and support implementation.

Activity 1.3: Test digital platforms and develop protocols for producer organizations and their territorial organizations to take coordinated actions against encroachments.		This activity was planned for Year 3, nevertheless, due to changes in leadership and technological limitations, the team is searching for alternatives to improve the reporting of illegal activities and assure rapid response from authorities in charge.	Continue testing digital platforms and protocols for coordinated actions against encroachments.
Output 2: Pre-harvest management of agroforestry plots and native cacao forest groves is improved, and local capacity built for sustainable agroforestry that is wildlife friendly	**2.1** By the end of Year 2, 283 hectares of existing agroforestry plots and native groves are restored via the implementation of agroforestry systems (pruning, soil management, diversifying canopy shade trees) (Baseline = no restoration work has been done so far).	**2.1** The hectares being managed by cacao and coffee producers by Y2 (174 ha of coffee and 67 ha of cacao) increased by Y3 as a result of the dynamics and appropriateness of the management of the plots, consequently, total coffee and cacao areas restored, protected and managed add up to 335.54 ha (115.75 ha of coffee plots + 29.29 ha of cacao agroforestry plots + 190.5 ha of mountain forests set aside for protection as part of the bird-friendly certification).	
	2.2 By end of Year 3, 200 new hectares of agroforestry systems are established (100 by Year 2) (Baseline = 0).	**2.2** By Y3, a total of 60.21 ha of coffee plots in Teoponte (APCERL) have been implemented for production (in growth from renewed old plots) so no new fallow lands have been cleared up, and 67.26 hectares of cacao plots have been restored and in growth, for a total of 127.47 hectares in growth state from renewed plots. Some plots are entering production in Apolo (APICOA). Additionally, 67.26 hectares of cacao plots are in growth stages, adding up to a total of 127.47 new hectares, some of them will start production in Y4 depending on varieties planted and management regimes.	
	2.3 By end of Year 4, 12 training workshops are implemented (2 in Year 1, 4 in Year 2, 4 in Year 3, and 2 in Year 4) and 280 indigenous producers (including 60 women) are trained in seedling nursery management, shade trees and canopy for bird diversity, soil fertility, pruning, and implementation of the management plan for wild cacao groves (Baseline = 0).	**2.3** Adding to the nine pre-harvest field schools conducted with the coffee producers in Years 1 and 2, we conducted 4 additional training workshops on control of seedlings in nurseries, plot establishment, management of registries for certification and transplanting of seedlings, establishment and fertilization. Of the 205 participants in the workshops, coffee producers (including APCERL and APICOA) that participated in Y3, 45 were women and 160 were men, an average ratio of 1:3. Cumulative number of producers trained during the 3 years of the project, add up to 142 women and 416 men (total of 558 participants), keeping a ratio of 1:3. Similarly, 4 additional pre-harvesting schools were conducted with cacao producers of Guanay (Chocoleco) in 3 different communities (San José de Pelera, Tomachi y Yolosani), with 33 producers participating (12 women and 21 men), almost a ratio of 1:2. The field schools dealt with management of nurseries, pruning, fertilizing and cacao grafting.	

Activity 2.1: Provide technical assistance for producers to restore their agroforestry plots through soil management, pruning and diversification of shade trees.		Activity completed as planned for both Y1 and Y2. Technical assistance is provided regularly to local coffee and cacao producers by the local technician, as part of the field schools and via individual assistance (*Annex 01: Field school reports).*	N/A
Activity 2.2: Develop a training curriculum and associated training materials for pre-harvest management of agroforestry plots and native cacao forest groves.		Five manuals on topics covered during field schools have been consolidated, including all the feedback from the field schools conducted to date. These manuals are: 1. Management in nurseries, 2. Soil management, 3. Establishment of coffee seedlings, 4. Preparation and use of bio-inputs, 5. Coffee harvesting and post-harvesting processes (*Annex 04).*	Two additional manuals covering topics on coffee and cacao roasting and cupping, and on barista techniques are planned for Y4.
Activity 2.3: Implement field schools.		During Year 3, 8 pre-harvest schools were conducted successfully for production of cacao and coffee (See Indicator 2.1 above).	At least 3 harvest schools per year.
Activity 2.4: Install communal seedling nurseries.		Coffee producers keep and manage communal seedling nurseries for coffee, cacao and shade tree species applying the proper practices that were taught, producing seedlings that are then transplanted at the right time. During Y3, a total of 140,000 coffee seedlings were produced and have also been transplanted to permanent coffee plots in Teoponte (APCERL), and 70,000 seedlings in Apolo (APICOA). Nurseries are family-run and are well kept. Additionally, Chocolecos produced 10,500 cacao seedlings in community-run nurseries. *See Indicators 2.2 and 2.3 above).*	Continue implementation as a regular activity to renew and enrich plots.
Output 3: Post-harvest management of cacao and coffee is improved, and local capacity built for diversification of products.	**3.1** 5 community processing infrastructure “modules” for cacao fermentation and drying and 5 community processing infrastructure	**3.1** With the two <u>cacao</u> processing modules already acquired in Year 1 for post-harvest cacao processing, one for the Chocolecos association and the other for the APCAO-Mapiri association, processing has been halved to four days. This	

	"modules" for coffee fruit pulping and fermentation are in place (3 by Year 2, and 2 in Year 3), training 280 producers (Baseline = 0). **3.2** 12 training workshops are implemented for 280 indigenous producers (including 60 women) in quality control protocols for post-harvest processing (2 workshops in Year 1, 4 workshops in Year 2, 4 workshops in Year 3, 2 workshops in Year 4) (Baseline = 0). **3.3** By end of Year 2, women producers develop an artisanal chocolate bar that allows access to local markets fetching prices of 90Bs/Kg. (Baseline = 35 Bs/Kg for raw cacao).	infrastructure is benefitting an average of 58 direct producers currently affiliated with Chocolecos and APCAO (40 from Chocolecos and 18 from APCAO Mapiri). Four family modules were built in Year 1 of the project for wet coffee processing in the TCO Lecos de Apolo. During Year 2, using matching funds, 12 additional family and bi-family modules were established, benefitting 37 coffee affiliates from APICOA. All modules are in full use, and a result, production yields and quality of the cacao and coffee beans are improving, as shown in Section 3.1 above. **3.2** In Y3, we continued placing strong emphasis on the control of cacao processing, specifically, fermentation process and temperature with the Chocolecos producers (21 women and 19 men), a ratio of 1:1. As a new initiative, the field technician conducted a field school in post harvesting oriented towards 43 young secondary students from San José de Pelera School, introducing and involving the new generation of cacao producers in training opportunities. The training was on fermentation management, a key factor in cacao quality, and involved 22 young men and 21 young women. Additionally, 4 post-harvest field schools were conducted with coffee producers from Apolo (APICOA) on sanitary and selective harvesting, coffee storage, and on factors, process and controls during fermentation of coffee beans. A total of 128 people participated from 6 different communities, 86 men and 42 women, in a 2:1 ratio. Workshops are focusing specifically in key processing stages such as proper fermentation which will translate into high quality products and prices. **3.3** Preparation of the chocolate paste and chocolate tablets have continued to be an important task during 2019. All coffee and cacao processed such as roasted coffee and chocolate pastes have now completed sanitary registration and can be sold in regular stores and markets. Women producers are leading production of chocolate bars, mixing flavors and bonbon production. The sales price for the 100g chocolate bar in fairs was USD 2 a year ago, and by 2019 the price has risen to USD 3, which indicates a high demand both by costumers in the city of La Paz. Chocolate paste is also sold in local fairs at a lower price (USD 2) to a different consumer market, with a label that is already being gaining good reputation. One kg of cacao beans now generates USD 21 (145 Bs/Kg.), while part of the high-quality cacao is being sold by kg to Origen Store, for a value of USD 35/kg (240Bs/kg), reaching and surpassing the expected benchmark of 35 Bs/kg of raw cacao.	
Activity 3.1		On time. Activity is in progress.	Continue implementation of good protocols, and teaching peer-to peer as well as feeding back into protocols

Develop training curriculum and associated training materials for post-harvest processing of cacao and coffee.	For coffee production, a main activity conducted in Y3 was the close monitoring of the fermentation process of the beans both in Teoponte and Apolo. Monitoring pH is key in order to achieve the highest quality beans during coffee cupping. Important improvement of coffee cupping from 83 in Y2, to 86 points in Y3, and all protocols are being well established to assure maintaining quality for the coming years. For cacao processing by Chocolecos, fermentation protocols are followed rigorously, and rendering high quality cacao. As a result of high quality, there has been both local, national and international demand for coffee and cacao products.	based on the experience gained with the different coffee and cacao varieties.
Activity 3.2: Implement field schools.	During Year 3, post-harvest field schools were conducted focusing on the fermentation control both for coffee and cacao beans, good drying stages and storage. In Y3 priority has been given to training local producers in chocolate processing into chocolate tablets and other processed products, while coffee producers have been involved in the process of coffee roasting and tasting, and participating actively in fairs and public events to market their products (*See Indicator 3.2 above*).	Continue implementation setting emphasis on keeping the high standards achieved to date.
Activity 3.3: Install community processing infrastructure for cacao fermentation and drying.	Activity completed. Two processing modules for cacao were constructed in Year 1, and in Year 2, Chocolecos infrastructure was expanded with additional funding from FAO.	N/A

Activity 3.4: Provide technical assistance to women producers to produce an artisanal chocolate bar.		On time. Different protocols for preparing chocolates are being tested, and training on chocolate processing has moved to the communities. Juan Carlos Espinoza, our chocolate technician was able to organize a 2-day training course on the complete process of chocolate making, with the participation of 18 people from the community of San José de Pelera (12 women and 6 men). This past September 2019, a group of three cacao producers, all of them women, and three project technicians participated in a "Bean to Bar" training led by the renowned chocolatier, Papá Cacao, Jaime Freire, from Ecuador, to produce bonbons. The new products, a variety of bonbons and 70% chocolate bars are being tested and sold on requests only. Chocolecos is also experimenting with the production of cacao vinegar.	Continue implementation of training events and make the most of the opportunities that open up.
Activity 3.5: Install community processing infrastructure for coffee pulping and fermentation.		Activity completed. Four processing modules for coffee were constructed in Year 1. During Year 2, 12 additional family modules were implemented in Apolo for the coffee producers of APICOA.	N/A.
Output 4: Marketing strategies for cacao and coffee are improved and diversified, including wildlife friendly certification.	**4.1** By end of Year 2, 20 producers are trained on requirements of bird friendly certification and monitoring bird diversity (Baseline = such training is not currently held).	**4.1** In Year 1, a workshop on bird monitoring was conducted with the participation of 25 APCERL coffee producers. A set of 10 species were selected to be monitored monthly. Since Y2, APCERL's local technician, Javier Cruz holds regular training to each individual coffee producer in their own plots on how to use binoculars and the use of bird guides and identification of birds visiting their plots. These reports are being fed into a database on bird diversity, as well as high-quality photographs are shared through social media (Facebook) to promote the importance of the forests and rich biodiversity. By Y3, 13 coffee producers are certified bird-friendly, and 6 additional producers are getting ready for certification in 2021. Certification is not conducted for each individual plot but for the whole APCERL organic plots that fulfill the requirements established for certification, mainly forest canopy and diversity. Certification is renewed every three years.	

	4.2 By end of Year 2, 8 APCERL producers receive barista training to enable them to present their bird friendly coffee in local and international fairs (Baseline = no such training is currently held).	**4.2** Three young women from APCERL were trained as baristas in Year 1. The young baristas have continued gaining experience participating in all available venues, participating in international events with expert coffee entrepreneurs from the US and Spain to promote Bolivian coffee to Bolivian and international customers. As a result, during Year 3 of the project, they have continued practicing in the processing laboratory in La Paz and gaining experience. Also, cacao processing has been prioritized due to the great interest from consumers nationally and internationally, and the process of roasting, grinding and conching[2] has been taught to our cacao technician Juan Carlos Espinoza by a renowned chocolatier, Joan Carbó. The lessons learned have been transferred to 18 cacao producers (Chocolecos) who had the opportunity be trained in chocolate processing (See Indicator 3.4 above) in their own community. Currently, a young student from San José de Pelera has started to work and be trained by Juan Carlos in the laboratory in La Paz. For the coming months of 2020, a training event in Brazil is being planned since all necessary contacts have been established. Both cacao and coffee producers have participated in various events to promote their products, among them, in exclusive fairs such as Ňam, Eat Out and gourmet fairs.
	4.3 By the end of Year 2 a communication campaign targeting urban dwellers as responsible consumers is developed and conducted in La Paz and El Alto (Baseline = no such similar campaign has been conducted in support of indigenous communities engaging in sustainable agroforestry and biodiversity protection).	**4.3** With the marketing strategy already in place and through participation in fairs, coffee and cacao producers have been able to present their products through leaflets and audiovisual materials, as well as strong virtual campaigns through Orygen's web page www.origentienda.com and Facebook, with more than 1200 followers, and initial sales have been conducted through the virtual store. By the end of Y3, a new promotional video of all the products supported by Orygen Store is being released to the public, telling the stories behind the products. As a new initiative to connect urban customers with the products they buy, a new laboratory is being implemented in the center of La Paz, which will allow people experience and participate in the process of roasting coffee and make chocolates.
	4.4 By end of Year 2, at least one new commercial alliance for coffee and at least one new commercial alliance for cacao increases prices for their	**4.4** A variety of new marketing channels have been opened and links have been established with specialized market niches for both coffee and cacao. In Y2, renowned restaurants such as Celler de Can Roca in Gerona, Spain, bough cacao for their Casa del Chocolate in Gerona, Spain, and in Y3, new alliances

[2] Conching of cacao: the continuous stirring of the paste, which liquefies the chocolate and gives it its final aroma and smooth texture.

	products by 10% in comparison to average market prices that year (Baseline to be established in 2019 from commodity markets).	have been established with Bolivian restaurants such as Gustu to produce 70% cacao desserts, and coffee for their clients and to serve in a high-class hotel, the salt domes, in Uyuni Salt Lake, and Bronze Brothers, both cacao and coffee. Cacao and coffee prices for sale are differentiated by producer and quality of the beans. The coffee that was valued the highest in coffee tasting (Benito Huallpa), has been sold at Bs190 per kg, while the other blends at Bs170 per kg. A new buyer, Kreyol coffee, from Washington D.C. (USA) visited Bolivia and the producers in Apolo to see first-hand the quality of the product and to get to know the producers since his enterprise is committed to buy organic and support community-run initiatives. Comparing prices of coffee sold during Y3 of the project, commodity market price for coffee was USD 1.15 per pound, while coffee from APCERL and APICOA was sold at an average USD 3.17 per pound, almost three times the stock market price that tends to vary year by year.	
Activity 4.1: Identify coffee producers managing agroforestry plots closest to the required standard for bird-friendly certification and develop a work plan to support them through the certification process.		Activity completed. The new potential bird-friendly certification producers are already identified. By Y3, there are 13 producers already certified and 5 potential new ones. Next year 2021 is the target year for certification, and activities are being conducted towards getting requirements ready for certification.	N/A
Activity 4.2: Carry out a training program on bird diversity monitoring with these producers.		Activity in progress. Through the regular visits to coffee plots, field technician Javier Condori has been training individual producers at their own coffee plots on using binoculars and bird guides to identify the most notorious bird species. To date, there is a data base of 216 bird species reported, 89 of which have been photographed.	Continue implementation.
Activity 4.3: Implement a marketing strategy for roasted coffee and processed chocolate for the local market.		Activity completed and marketing strategy being implemented progressively (*Annex 06: Promotional video on products being marketed and sold by the Origen Store).*	N/A
Activity 4.4: Train between 5 and 10 coffee producers in roasting and as baristas to assist with marketing in local and national fairs.		Activity in progress. To date, three young women baristas have been trained in roasting and barista techniques, and have gained extensive	Continue implementation.

	experience in coffee roasting and cupping participating in international events with expert coffee entrepreneurs from the US and Spain. Also, cacao processing, roasting, grinding and conching[3] has been taught to the cacao technician Juan Carlos Espinoza by a renowned chocolatier, Joan Carbó. The lessons learned have been transferred to 18 cacao producers (Chocolecos) who had the opportunity to participate and be trained in chocolate processing (See Indicators 3.4 and 4.2 above).	
Activity 4.5: Develop and broadcast audiovisual materials to develop an urban constituency supporting cacao and coffee produced by indigenous groups.	Activity is ongoing, since it deals with the implementation of a marketing strategy and promotional campaigns of the different products and the stories behind the products. Two leaflets on coffee and cacao have been used as promotional materials since Year 1, and are distributed in fairs, and there are two coffee and cacao promotional videos that are shared through social media (Orygen webpage) The cacao promotional video was released at the beginning of 2019 (*See Indicator 4.3 above*), and to date, additional materials are being produced to continue developing an urban constituency, such as a virtual catalogue of products offered online at the Orygen webpage, and a promotional video for promoting all the indigenous products offered through Orygen Store (*Annex 06: Promotional video Origen).*	Continue implementation of marketing strategy. There are already reported 1200 followers in Orygen Store Facebook.

[3] Conching of cacao: the continuous stirring of the paste, which liquefies the chocolate and gives it its final aroma and smooth texture.

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Improved territorial control and monitoring of indigenous lands coupled with sustainable agroforestry leads to biodiversity protection, strengthened livelihoods and climate resilience in an approach that can be replicated across Bolivia.			
Outcome 1: Sustainable cacao and shade coffee production by indigenous communities in Bolivia results in increased protection of collective lands, strengthened livelihoods, reduced forest loss and increased avian biodiversity in agroforestry areas.	**0.1** By the end of Year 4, within the 1M ha of indigenous lands, a well-established participatory system for documenting and reporting illegal encroachments into areas managed by producer organizations is in place (Baseline = no such system currently exists)	**0.1** Digital maps and infraction reports by producer organizations of the Tacana, Lecos and T'simane Mosetene indigenous lands.	Institutional stability in the producer organizations and indigenous territorial organizations. Extreme flooding does not occur in more than 1 year.
	0.2 By the end of Year 4, illegal encroachments within the 1M ha of indigenous lands are reported and responded to in joint actions by the indigenous territorial organizations and producer organizations (Baseline = no joint actions).	**0.2** Number of joint actions between producer organizations and their territorial organizations as documented in technical reports.	
	0.3 By the end of Year 4, 280 indigenous Tacana, Lecos and T'simane Mosetene producers (60 women) have increased productivity by 20% (Baseline = 211 kg/ha coffee and 180 kg/ha cacao).	**0.3** Benefit distribution report of producer organizations and technical monitoring reports.	
	0.4 By the end of Year 4, 280 indigenous Tacana, Lecos and T'simane Mosetene producers (60 women) have increased household income from agroforestry by 20% (Baseline = average annual household income from agroforestry is 131 USD for cacao and 2852 USD for coffee).	**0.4** Benefit distribution report of producer organizations and technical monitoring reports.	
	0.5 By the end of Year 4, 15 coffee producers (8 new, of which 5 women, and 7 recertified) are certified under the Smithsonian standards as "bird friendly" for their contribution to conservation of	**0.5** Certification documents.	

	162 bird species, including 14 Andean endemics, such as (*Simoxenops striatus*), (*Myrmotherula grisea*), (*Phyllomyias weedeni*) (Baseline = 7 producers are currently certified, but will need recertification). **0.6** By the end of Year 4, project-supported agroforestry plots show a 15% increase in avian diversity, compared to baseline (to be established in year 1) and a 30% increase in avian diversity compared to areas following traditional single crop agriculture (Baseline to be established in year 1). **0.7** By the end of Year 4, an estimated 152,672 tCO_2^e is absorbed in new agroforestry plots (Baseline = 0). **0.8** By the end of Year 4, 80 hectares of avoided forest loss and the associated 46,374 tCO_2e equivalent avoided emissions (Baseline 0.3% annual forest loss in the region).	**0.6** Bird diversity monitoring results as documented in technical reports. **0.7** Technical monitoring reports developed by project staff. **0.8** Landsat satellite imagery analysis and field verification.	
Output 1: Producer organizations and their representative territorial organizations have developed and implemented systems for control and vigilance of their territorial lands.	**1.1** By the end of Year 1, areas vulnerable to illegal encroachment in three indigenous territories are identified and mapped in a participatory process (Baseline = no such participatory mapping has yet been done in these areas). **1.2** By the end of Year 1, three training workshops are held between producer organizations and their territorial organizations on formal documentation of infractions, with 45 participants overall. (Baseline: no such trainings are currently held with these groups) **1.3** By the end of Year 2, a digital platform (eg. SMART) and clear protocols for coordination of actions	**1.1** Maps identifying vulnerable perimeters and areas under control by producer organizations. **1.2** Training materials and participant lists. **1.3** Signed agreements between producer organizations and indigenous	The producer organizations and indigenous organizations are not affected by social conflicts related to increased pressure from extractive and infrastructure projects.

	against encroachments in three indigenous lands are under implementation (Baseline = such a platform and protocols do not currently exist).	territorial organizations approving territorial control plans.	
Output 2: Pre-harvest management of agroforestry plots and native cacao forest groves is improved and local capacity built for sustainable agroforestry that is wildlife friendly.	**2.1** By the end of Year 2, 283 hectares of existing agroforestry plots and native groves are restored via the implementation of agroforestry systems (pruning, soil management, diversifying canopy shade trees) (Baseline = no restoration work has been done so far). **2.2** By end of Year 3, 200 new hectares of agroforestry systems are established (100 by Year 2) (Baseline = 0). **2.3** By end of Year 4, 12 training workshops are implemented (2 in Year 1, 4 in Year 2, 4 in year 3, and 2 in Year 4) and 280 indigenous producers (including 60 women) are trained in seedling nursery management, shade trees and canopy for bird diversity, soil fertility, pruning, and implementation of the management plan for wild cacao groves (Baseline = 0).	**2.1** Technical and monitoring reports, maps of interventions. **2.2** Technical and monitoring reports, maps of interventions. **2.3** Training materials, participant lists, course evaluations.	
Output 3: Post-harvest management of cacao and coffee is improved, and local capacity built for diversification of products.	**3.1** 5 community processing infrastructure “modules” for cacao fermentation and drying and 5 community processing infrastructure “modules” for coffee fruit pulping and fermentation are in place (3 by Year 2, and 2 in Year 3), training 280 producers (Baseline = 0). **3.2** 12 training workshops are implemented for 280 indigenous producers (including 60 women) in quality control protocols for post-harvest processing (2 workshops in Year 1, 4 workshops in Year 2, 4 workshops in Year 3, 2 workshops in Year 4)	**3.1** Technical monitoring reports, photographs of infrastructure. **3.2** Training materials, participant lists, course evaluations.	

	(Baseline = 0). **3.3** By end of Year 2, women producers develop an artisanal chocolate bar that allows access to local markets fetching prices of 14USD/Kg. (Baseline = 5 USD/Kg for raw cacao).	 **3.3** Benefit distribution report and project technical reports.	
Output 4: Marketing strategies for cacao and coffee are improved and diversified, including wildlife friendly certification.	**4.1** By end of Year 2, 20 producers are trained on requirements of bird friendly certification and monitoring bird diversity (Baseline = such training is not currently held). **4.2** By end of Year 2, 8 APCERL producers receive barista training to enable them to present their bird friendly coffee in local and international fairs (Baseline = no such training is currently held). **4.3** By the end of Year 2 a communication campaign targeting urban dwellers as responsible consumers is developed and conducted in La Paz and El Alto (Baseline = no such similar campaign has been conducted in support of indigenous communities engaging in sustainable agroforestry and biodiversity protection) **4.4** By end of Year 2, at least one new commercial alliance for coffee and at least one new commercial alliance for cacao increases prices for their products by 10% in comparison to average market prices that year (Baseline to be established in 2019 from commodity markets).	**4.1** Certifications, bird diversity monitoring reports. **4.2** Training evaluation reports, participant lists. **4.3** Audiovisual materials. **4.4** Commercial contracts.	
Activities per Output **Output 1. Producer organizations and their representative territorial organizations have developed and implemented systems for control and vigilance of their territorial lands.**			

1.1 Facilitate participatory mapping of areas under management by producer organizations vulnerable to illegal encroachment. WCS staff will facilitate participatory mapping with producer organizations using supporting satellite imagery. Producers will first map the circuits and areas under their use for both their commercial (cacao and coffee) production and their subsistence (fishing and hunting) activities. Producers will then map existing threats from encroachment and also future threats from planned roads in the region. Overlaying both threats and areas under potential control by different producer organizations and communities will permit an initial distribution of control and vigilance responsibilities according to location.

1.2 Hold a training workshop with each of the producer organizations on legal requirements for processing illegal incursions into their management areas. WCS staff will coordinate with protected areas and indigenous territorial organizations to hold training workshops on the legal framework and processes for processing illegal incursions into natural resource management areas within indigenous lands.

1.3 Test digital platforms and develop protocols for producer organizations and their territorial organizations to take coordinated actions against encroachments. We will work with producer organizations and their territorial organizations exploring the use of SMART and other digital platforms to allow for immediate visualization of incursions and consolidation of reports from different producers. We will also facilitate meetings to develop the necessary protocols for communication, registration of illegal events, and collective response against illegal encroachments.

Output 2: Pre-harvest management of agroforestry plots and native cacao forest groves is improved, and local capacity built for sustainable agroforestry that is wildlife friendly.

2.1 Provide technical assistance for producers to restore their agroforestry plots through soil management, pruning and diversification of shade trees. Based on an initial diagnostic of the individual coffee and cacao producer agroforestry plots we will establish the needs for restoration or renewal, as well as the shade and soil fertility conditions. With this information, we will develop an annual action plan for each producer. The technical assistance will be provided through field schools and demonstration plots. This process will be implemented and monitored by field technicians.

2.2 Develop a training curriculum and associated training materials for pre-harvest management of agroforestry plots and native cacao forest groves. The technical team will leverage their extensive experience to develop a specific training curriculum for cacao and another for coffee agroforestry management. Supporting training materials will also be developed and will include soil management, seedling production, pruning and shade management.

2.3 Implement field schools. The training materials produced under activity 2.2 will be used to implement field schools that will enable peer-to-peer discussion to identify common production problems and alternative solutions. Field schools will be implemented at least once a month according to priorities identified by the producers and organized by geographic location and level of expertise to have a mix of expert producers and new producers.

2.4 Install communal seedling nurseries. As a first step, a diagnostic will be carried out to establish the requirement of seedlings and in the field schools of activity 2.3 we will provide guidance on the use of local materials for the seedling nursery and responsibilities for looking after the seedlings. An important step will be finding certified coffee seeds from Central America or Colombia, since locally available seeds are produced from a very limited genetic stock. Cacao seeds will be obtained by taking advantage of the local genetic diversity and we will establish clonal gardens to source the seeds as well as vegetative materials for grafts.

Output 3: Post-harvest management of cacao and coffee is improved, and local capacity built for diversification of products.

3.1 Develop a training curriculum and associated training materials for post-harvest processing of cacao and coffee. In the same manner, as for the pre-harvest phase the technical team will leverage their extensive experience to develop a training curriculum for coffee and cacao post- harvest processing focusing on quality control as required for the target niche markets.

3.2 Implement field schools. Using the above training materials, we will implement field schools focusing on post-harvest processing of cacao and coffee. Field schools will be implemented at least once a month according to priorities identified by the producers and organized by geographic location and level of expertise to have a mix of expert producers and new producers.

3.3 Install community processing infrastructure for cacao fermentation and drying. We will support producers to establish the necessary infrastructure for post-harvest processing of both coffee and cacao. Each community processing module will include fermentation boxes, drying tables, as well quality control equipment such as balances, thermometers and hygrometers. The construction and installation of the fermentation and drying modules will be established with the participation of the producers and also using the field schools to discuss their design.

3.4 Provide technical assistance to women producers to produce an artisanal chocolate bar. We will purchase basic cacao grain roasting, peeling and grinding equipment in order to allow women members of the cacao producing organizations to produce high quality cacao paste. We will also bring specialists to train these producers in the production of granola, chocolate bars and chocolate nibs for the local market.

3.5 Install community processing infrastructure for coffee pulping and fermentation. We will provide technical guidance and materials to the coffee producers to establish communal post harvesting processing modules for coffee, consisting of fermentation pits, washing channels and drying tables. We will work closely with the producers to design the modules taking into account the best distribution depending on distance to the different production plots, distance to de-pulping machines and volume produced.

Output 4: Marketing strategies for cacao and coffee are improved and diversified, including wildlife-friendly certification.

4.1 Identify coffee producers managing agroforestry plots closest to the required standard for bird-friendly certification and develop a work plan to support them through the certification process. We will Identify new coffee producers with a potential for bird-friendly certification and provide them with technical assistance throughout the certification process and compliance during the implementation phase. Bird-friendly certification is carried out every two years and will require organic certification that is renewed annually. An internal control system will be developed in order to fulfil requirements of both certifications.

4.2 Carry out a training program on bird diversity monitoring with these producers. We will work with newly certified bird-friendly producers and previously certified producers on the use of a bird monitoring protocol based on indicator species of good quality montane forests of the Central Andes and that are mostly recognizable by their distinctive calls. This monitoring is based on a simple monitoring form and is carried out with minimum additional effort in the agroforestry plots. Indicator species include 14 Andean endemics, such as *Simoxenops striatus*, *Myrmotherula grisea*, and *Phyllomyias weedeni*.

4.3 Implement a marketing strategy for roasted coffee and processed chocolate for the local market. We will implement a marketing strategy for roasted coffee and processed chocolate for the local market that will involve developing the capacity of producer organizations to manage production flows, have solid administrative capacity and form market linkages for product distribution and sale.

4.4 Train between 5 and 10 coffee producers in roasting and as baristas to assist with marketing in local and national fairs. This activity is part of the marketing strategy for roasted coffee and will allow product placement in local fairs, enabling the producers to promote the quality and the story behind the bird-friendly coffee with urban Bolivian consumers.

4.5 Develop and broadcast audiovisual materials to develop an urban constituency supporting cacao and coffee produced by indigenous groups. The audiovisual materials will tell the story behind sustainable coffee and cacao to support the marketing strategy. High quality visual materials will be used to develop short spots to be transmitted through television and digital platforms, such as Facebook and YouTube.

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relev)	Y1 Total	Y2 Total	Y 3 Total	Y 4 Total	Total to date	Total planned during the project
7	Manuals for producers and other users on 1) nursery management for coffee seedlings, 2) Soil management, 3) Establishment of coffee plots, 4) Preparation and use of bio-inputs, 5) Coffee harvesting and post harvesting process.	0	-	0	3	2	1	5	6
12A	Database of bird diversity *(Annex 12 Updated database)*	0	-	0	1	0	0	1	1
23	Value of resources in USD raised from 4 additional sources for cacao and coffee production (apart from Darwin funding for project work)	0	-						

Names of funding sources from Code 23: 1) NCF-NORDECO/Teko Kavi; 2) DANIDA_FOSC; 3) NCF-NORDECO/WCS; 4) Banco FIE; 5) FAO

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Details (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. web link or publisher if not available online)
Rescate de saberes locales de adaptación al cambio climático mediante el manejo de germoplasma forestal y agroforestal de la Asociación de Productores de Café Ecológico Regional Larecaja, Municipio de Teoponte (La Paz, Bolivia)	Scientific magazine	Kea Alanoca, S.; Perez Mamani, J.; Tariqui Alanoca, S.; Condori Chipana, J.; Rojas Acebey, J.; Peñafield R. Mario & Quiroga Sossa, B.	Female	Bolivian	Universidad Mayor de San Andrés (UMSA), School of Agronomy, Department of Agronomy engineering, IIAREN, La Paz (Bolivia).	Annex 13
Ecosystem Services provided by coffee production strategies: Actual State and considerations for its management	Peer reviewed journal Draft	Landivar Albis C,M, Schlicht, R., Rojas, J. & Painter, L.	Male	Bolivian	To be submitted, still not determined	Annex 11

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.	X
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 need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	X
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.	
Have you involved your partners in preparation of the report and named the main contributors	X
Have you completed the Project Expenditure table fully?	X
Do not include claim forms or other communications with this report.	