



## Darwin Initiative: Final

## 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)

### Darwin Project Information

Project reference	23-015
Project title	Guinea-pigs as guinea-pigs, reducing bushmeat hunting while improving communities' well-being
Host country(ies)	Democratic Republic of the Congo
Lead organisation	Wildlife Conservation Society
Partner institution(s)	Union des Eleveurs de Cobayes au Congo Institut Congolais pour la Conservation de la Nature
Darwin grant value	£299,494
Start/end dates of project	April 2016 – March 2019
Project leader's name	Michelle Wieland
Project website/blog/Twitter	
Report author(s) and date	Michelle Wieland, Lucy Ormsby, Fidele Kavuba, Alain Twendilonge, Rebecca Cito, Steeves Buckland, 28 June 2019

## 1 Project Rationale

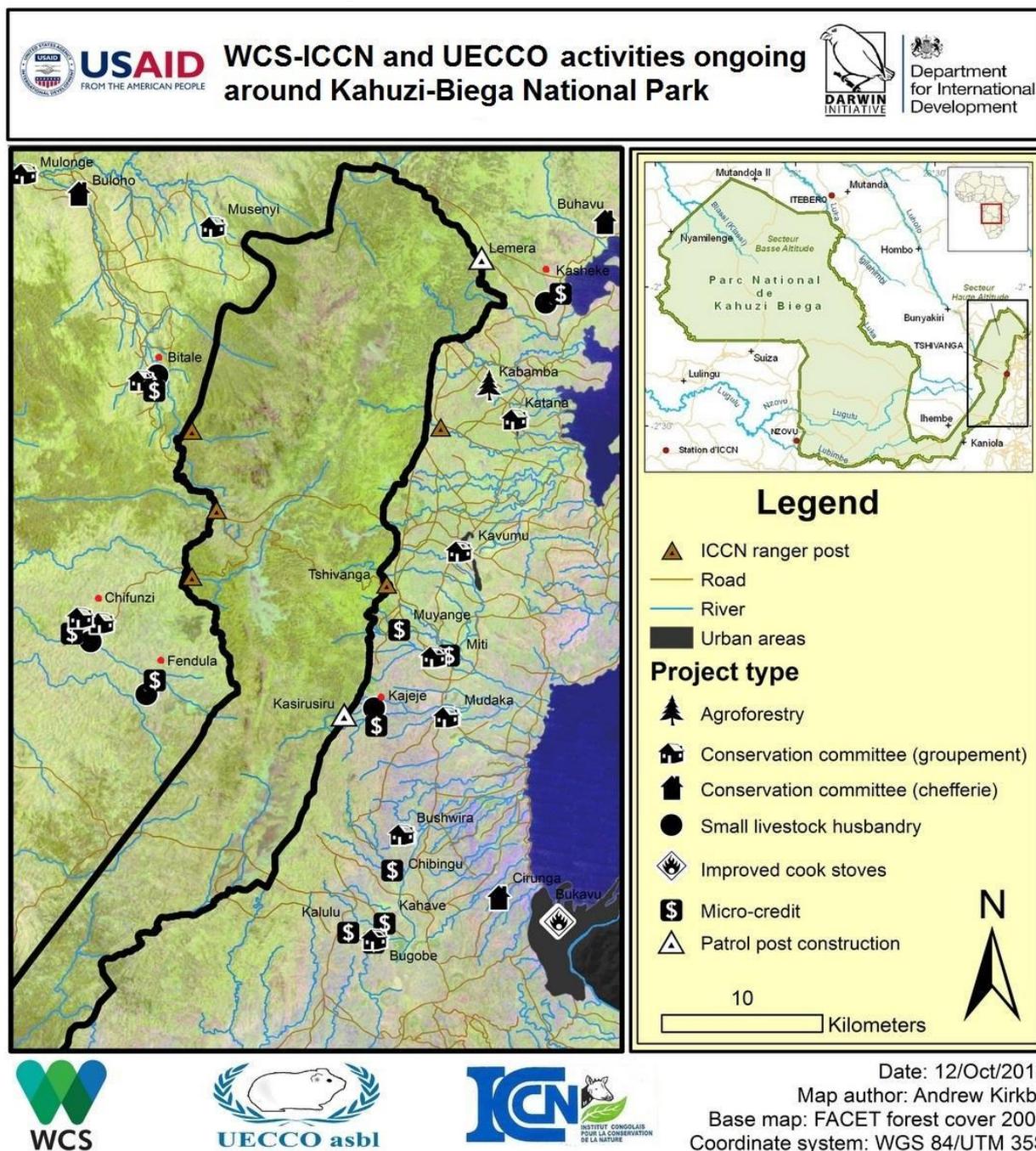
Historically, war and regional insecurity have left many rural communities in DRC without sufficient agricultural or livestock production, leading to aggravated poverty and extreme levels of malnutrition with 46% of children under age five in the Kivu provinces suffering from stunting due to the lack of protein. Without access to domestic meat, bushmeat has become a major protein source for the region's communities.

Recent WCS studies to understand bushmeat hunting and consumption around Kahuzi-Biega National Park (KBNP) found high rates of both, particularly around artisanal mining sites. These sites are often remote, basic and have disconnected economies that demand locally-procured meat. The absence of domestic meats in these sites has led to elevated meat prices that further drive the local bushmeat trade and hunting intensification in KBNP. The Congolese Wildlife Authority (*Institut Congolais pour la Conservation de la Nature*, ICCN), which has gradually regained parts of KBNP after losing control over much of it during the war, still lacks financial resources to effectively enforce hunting laws in key protected areas.

This trend has led conservation authorities to identify bushmeat hunting as the most serious threat to wildlife in KBNP, which is one of Africa's most biodiverse protected areas and a critical refuge for many endangered species. As hunting is conducted indiscriminately, rare and vulnerable species are particularly at risk, including primates such as the vulnerable owl-faced monkey, the endangered eastern chimpanzee and the endemic and critically endangered Grauer's gorilla, with a population of 180 that are concentrated in KBNP's highland sector.

Men and women interviewed in a WCS survey widely recognised that hunting around their villages had caused a decrease, and in some cases disappearance, of mammal populations. The majority of informants stated they would reduce bushmeat consumption if domestic meats became available and if laws prohibiting hunting in KBNP were enforced. Livestock production initiatives have attempted to improve protein supply around the park, but the lack of knowledge of adequate husbandry practices has caused poor production results and therefore yielded only low adoption rates.

This Darwin Initiative supported project aimed to reduce hunting pressures on mammal species in KBNP while improving wellbeing by working with households whose livelihoods threaten wildlife to develop sustainable livestock production and consumption around 5 targeted communities around KBNP’s highland sector.



**Figure 1.** Map identifying Darwin Initiative intervention locations around Kahuzi-Biega National Park, combined with additional USAID-funded projects. The five Darwin interventions sites are Chifunzi, Fendula and Bitale to the west of the park and Kajeje and Kasheke to the east (indicated with a ●).

## 2 Project Partnerships

In 2002, WCS established a site-based conservation programme in KBNP and has since provided technical and financial support to ICCN at KBNP. Our support has been targeted towards park management, research and development and implementation of strategic projects to help reduce threats to the park's wildlife. In 2015, WCS established contact with UECCO, a local NGO specialised in guinea pig husbandry and breeding research, and conceptualized and designed together with ICCN a new project following a series of feasibility studies. At the start of the Darwin project, WCS helped UECCO and ICCN develop a formal partnership through an MOU that would help guide their new relationship.

After the formal Darwin Initiative award was provided, a project launch meeting was organized with the participation of all project partners. During this meeting the project was discussed and the workplan was reviewed as per proposal. It was agreed that in general at least one member of a partner organisation would be invited to participate in training sessions or surveys to make sure that there was a strong coordination in the project. This arrangement has been upheld throughout the project.

During the reporting period a Monitoring & Evaluation (M&E) plan was drafted using already-established data collection methods (Basic Necessities Survey used by WCS, SMART used by the ICCN and livestock production monitoring surveys used by UECCO). In addition, new surveys such as bushmeat consumption surveys using the Unmatched Count Technique and market surveys were developed and tested before being implemented.

During the project, all implementing partners have continued to work as a team. All main field missions (with the exception of monitoring particular project activity results) are conducted jointly by staff members of each partner organisation, each taking charge of their respective activities in the field. Regular meetings were held with all implementing partners to review results and discuss progress and planning.

Building on existing expertise, project partnerships and coordination have been extremely complementary with clear roles and responsibilities outlined from project inception. One major project setback during Y1 though was the departure of KBNP Chief Warden Radar Nishuli who was involved in the conceptualisation of the project just after the project started. His replacement, Lucien Lokumu, worked at the park for about 6 months before he was transferred elsewhere. This caused some delays in the project implementation as activities were halted while the new site director was getting orientated (as ICCN is a fundamental partner, complete buy-in from the chief park warden is very important). The instability in ICCN leadership also required continual engagement to ensure appropriation of guinea pigs as a livestock option--larger livestock are perceived in the patriarchal society as more dignified, yet are not suitable as available protein for poor households (used instead as bank accounts). By Y3 of the project, a new Chief Warden, DeDieu Bya'ombe, had been posted at KBNP, and project activities conducted with ICCN ran smoothly.

We have had some challenges with our partner UECCO, whose rigor in monitoring and evaluation needed strengthening during the second year. In response to this, WCS reviewed its contract with UECCO to opt for shorter deliverable timeframes. An adaptive management meeting led to the adoption of improved monitoring techniques, such as UECCO monitors bringing previous guinea pig production data to monitoring visits to enable a more rapid response to decreases in guinea pig numbers, and training of UECCO in KoboCollect for them to collect georeferenced, timestamp and photograph data in beneficiary households. In addition, five community monitors were recruited at the end of Y2 in the intervention sites (two in Kajeje, two in Kasheke, and one in Bitale) in order to allow more frequent monitoring of beneficiaries' activities, as well as to increase local ownership and involvement in project implementation. UECCO trained the community monitors in husbandry and monitoring techniques and the community monitors then conducted monitoring three times per month, in coordination with UECCO technicians. Community monitors were also trained in KoboCollect by WCS staff, to use tablets and Kobo datasheets to collect monitoring data. WCS continued to

hold regular meetings with UECCO to coordinate data collection, resolve problems and transfer data. UECCO also provided data on guinea pig production in beneficiary households for the final report.

Moving forward, WCS plans to build on the guinea pig project by scaling up successful elements to new areas, and we will continue to engage with UECCO on this. WCS continues to work closely with ICCN under all projects implemented in KBNP.

### **3 Project Achievements**

#### **3.1 Outputs**

##### **Output 1. Project beneficiaries have the financial and technical capacity to set up and manage small enterprises.**

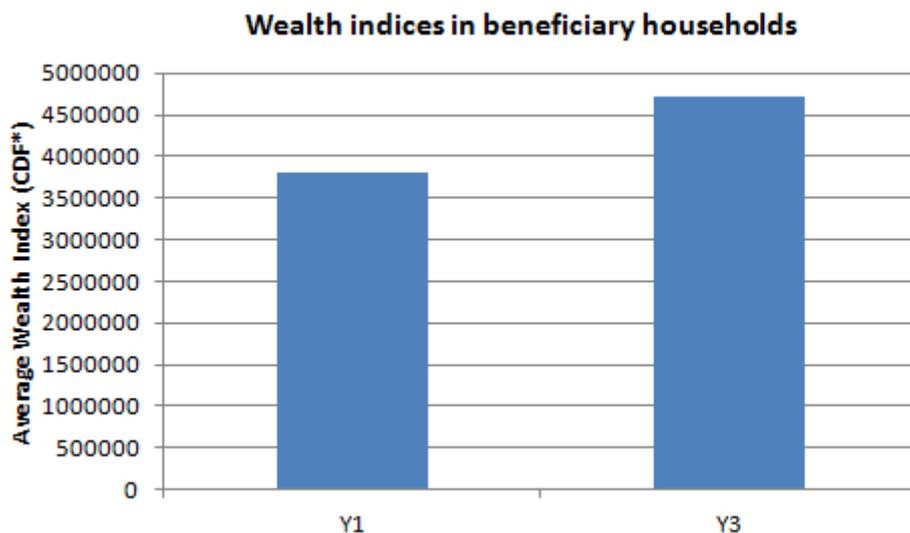
Output 1.1 was to create five community conservation committees (CCCs) by the end of Y1. This was achieved; five CCCs were established in the Y1, through which project beneficiaries were selected.

Output 1.2 was to train 300 micro-credit beneficiaries and 300 guinea-pig beneficiaries in small enterprise development and financial literacy, of which 60% are women. At the end of Y3, 490 beneficiaries have received training in financial literacy, 55% of which were women, and 240 beneficiaries and 52 non-beneficiary guinea-pig keepers received training in small enterprise development, of which 46% were women. The target for beneficiaries was not attained for two reasons: 1) in Y2 it was decided that new beneficiaries would combine guinea pig husbandry with other income generating activities, as this was found to better enable beneficiaries to increase revenues. Therefore, of the 490 beneficiaries, 3 used micro-credits for alternative income generating activities only (from the first group of beneficiaries in Y1), 147 conducted guinea pig husbandry only, and 340 combined guinea pig husbandry with other income generating activities. 2) Due to the political situation relating to the national elections in DRC from December 2018-January 2019, fieldwork was restricted until mid-February 2019, therefore fewer new beneficiaries than planned were selected during the last six months of the project. The percentage of women to receive training was just below the target; this was largely due to patriarchy in the community. Although efforts were made to encourage women to register interest as beneficiaries, more men registered interest and were selected by CCCs.

Output 1.3 (at least 50% of beneficiary guinea pig keepers have started microenterprises and are selling guinea pigs by the end of Y2) was achieved; 55% of beneficiary guinea pig keepers had started micro-enterprises and were selling guinea pigs by the end of Y2.

Output 1.4 (at least 100 hunters have diversified their livelihoods by the end of Y3) was achieved; a total of 244 beneficiaries (93 ex-bushmeat hunters and 151 women previously involved in bushmeat trade or charcoal production) were able to diversify their livelihoods as a result of the project.

Output 1.5 (beneficiaries to increase revenues by 25% compared to baseline by the end of year 3) was achieved. On average across sites, the wealth index of beneficiaries increased by 25% over the three years of the project, and at the end of the project the average wealth index was 144% higher for beneficiaries than for non-beneficiaries, suggesting that the project resulted in a significant increase in beneficiaries' revenues.

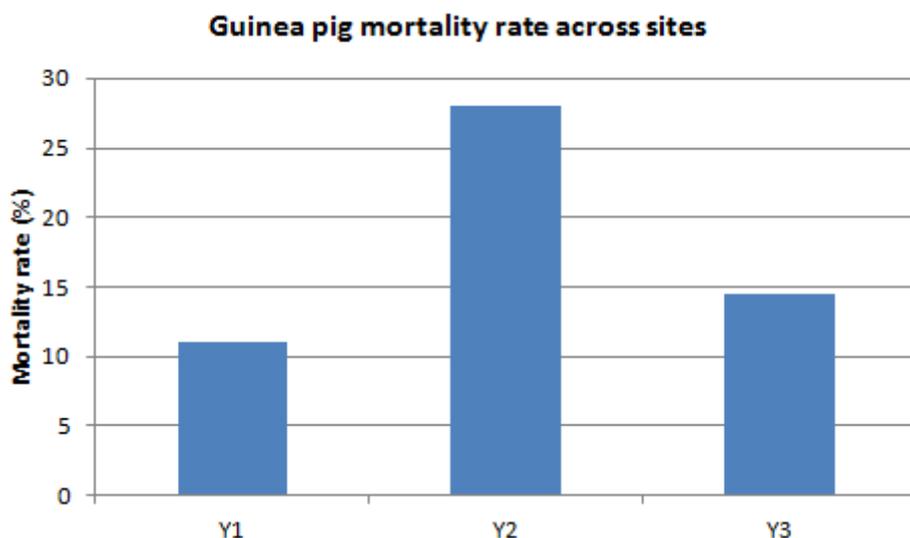


\*average exchange rate = 0.00089 CDF/USD

Overall, Output 1 was achieved, as indicators suggest that the project was successful in providing appropriate training and support to enable beneficiaries to diversify livelihoods and set up micro-enterprises, thus increasing their revenues.

**Output 2. Improved cavy production and breeding techniques in target sites.**

Output 2.1 (guinea pig mortality rates to decrease by at least 20% in beneficiary households compared to baseline) was not achieved. This was due to the increase in mortality rate in Y2 to 28% due to the correct husbandry techniques not being properly implemented by the communities. In response, in Y3 WCS implemented improved monitoring methods and husbandry techniques were improved based on local and expert knowledge and according to the conditions in the different sites. As a result, mortality decreased by 48% compared to Y2. At the end of Y3, the guinea pig mortality rate was 14.5%, a 31.8% increase compared to the baseline.

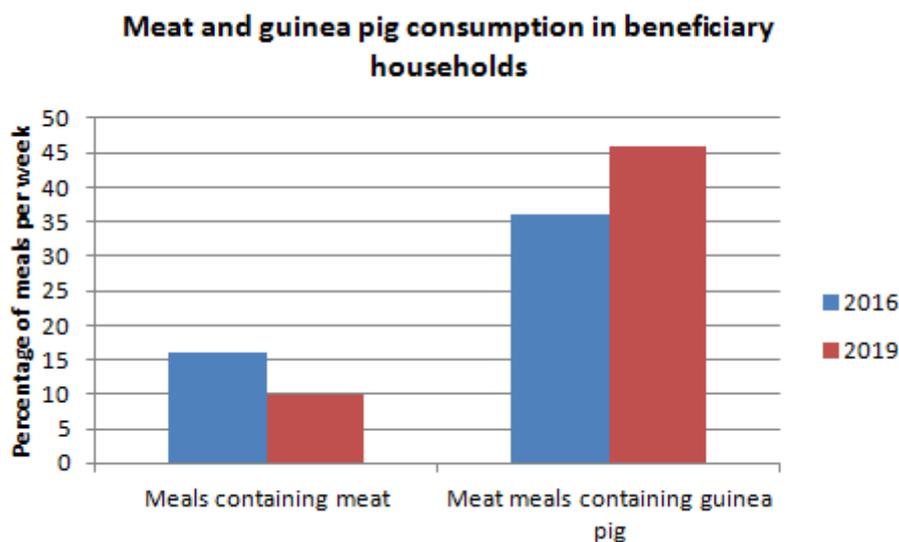


Output 2.2 (30 guinea pigs per participating household by the end of the project) was not achieved. At the end of the project, there was an average of 14.6 guinea pigs per beneficiary household in the villages where the project continued during the Y3. The average number of guinea pigs per household was highest in Kasheke (17.6), followed by Bitale (13.5) and Kajeje (12.6). The maximum number of guinea pigs recorded in a beneficiary household was 200, and the minimum was 0.

Overall, cavy production and breeding techniques in target sites were improved over the course of the project. Results suggest that the improved monitoring and husbandry techniques implemented at the end of Y2 were effective in reducing guinea pig mortality, and was a key lesson for the overall project.

### Output 3. Increased availability and adoption of cavy meat by communities in target sites

Output 3.1 (an average increase of 25% in the proportion of domestic meat in diets of beneficiary guinea pig keepers at end of Y3) was not achieved. On average across sites, the proportion of domestic meat in the diets of beneficiaries at the end of Y3 decreased by 35% from the baseline, from 16% of meals on average containing domestic meat at the start of the project compared to 10.4% of meals at the end of Y3. However, the proportion of meals containing domestic meat which consisted of guinea pig increased by 28.3% from the baseline, with 46.2% of meat meals in beneficiaries' houses containing guinea pig. The result could be because the Congolese Franc depreciated in value by 45% compared to the American Dollar between June 2016 and March 2019, resulting in an increase in the price of goods locally, which may have resulted in domestic meat becoming less affordable. Guinea pig is likely to have been a more affordable option than other protein sources available to beneficiaries during this time. The increase in proportion of meat dishes containing guinea pig meat in beneficiary households suggests that the project was successful in increasing availability of guinea pig meat and creating a viable source of domestic meat in target sites. Another possibility is the creation of new mines in the project site, which resulted in new migration of working men into Bitale (and therefore a big draw for protein in restaurants). Continued availability of existing meat sources was not included in the assumptions for this output. It is possible that the proportion of domestic meat in the diet may have increased had other sources continued to be affordable and available.



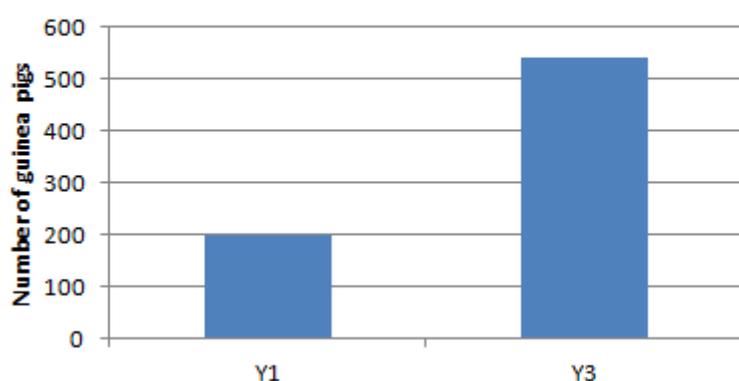
CDF to USD chart (xe.com)



Output 3.2 (at least 25% of local restaurants in intervention sites offer guinea pig dishes on a weekly basis) was not achieved. 13% of local restaurants surveyed in all project sites at the end of Y3 offered guinea pig dishes on a weekly basis, of which 60% were in Bitale, 30% were in Kasheke and 10% in Cifunzi. This is likely to be due to a delay in implementing social marketing activities during the project, with the majority of ‘Guinea Pig Days’ being held in the third year. ‘Guinea Pig Days’ and meetings with restaurant owners planned for Y2 were not carried out, as implementation efforts were instead refocused as a result of the increased guinea pig mortality; as reported above, our work in Y2 was directed towards improving monitoring and guinea pig production to address the guinea pig mortality issue. The celebration days and cooking classes held in Y3 of the project were well received (see supplementary materials), and holding more events such as these will be essential for creating a market.

Output 3.3 (an increase of 50% in the number of guinea pigs available in markets) was achieved. The estimated number of guinea pigs available in markets surveyed at the end of the project is 542, which is an increase of 173% from the baseline. This is an encouraging result, suggesting that there is an increased demand for guinea pig at the intervention sites as a result of project activities.

**Estimated number of guinea pigs available in markets across sites**



Overall, the project succeeded in increasing availability of guinea pig meat and adoption in target sites; the target increase in markets was reached, and availability in restaurants increased from the baseline by 44%. Consumption of guinea pig in beneficiary households also increased by 28.3% from the baseline, and guinea pig production is providing an affordable source of protein in intervention sites, where other forms of domestic meat have become less available.

**Output 4. Law enforcement and awareness raising activities effectively deter bushmeat hunting and the establishment of new mining sites in KBNP.**

Output 4.1 (no new mine sites established from the end of Y1) was not achieved. However, a decrease in the number of mining sites established since Y1 was recorded; 11 new mining sites were established during the first 2 years of the project, which were all shut down before the end of Y2, and one new mining site was established during the Y3. This indicator may not have been an appropriate measure of project success, because the mining in this area is driven by factors outside of the project's influence.

Output 4.2 (25% increase in the number of people surveyed at intervention sites who state that they are discouraged from hunting in the park) was achieved. At the end of Y3, 443 people who were interviewed stated that they were discouraged from hunting in the park due to the risk of being caught and prosecuted. This is an increase of 50% from the baseline.

Output 4.3 (90% of beneficiaries who had been arrested for hunting prior to the project were not arrested again) was achieved. At the end of Y3, none of the beneficiaries who were ex-hunters had been arrested for poaching again.

Output 4.4 (by the end of the project at least 1000 people are aware of the impacts of bushmeat hunting on wildlife populations) has been achieved. At the end of the project, 879 people have been made aware of the impacts of bushmeat hunting on wildlife populations (435 men, 444 women) through participating in awareness raising activities. Approximately 130 additional people attended the awareness raising sessions on an ad hoc basis, bringing the total number of people directly or indirectly made aware of the impacts of hunting to over 1000.

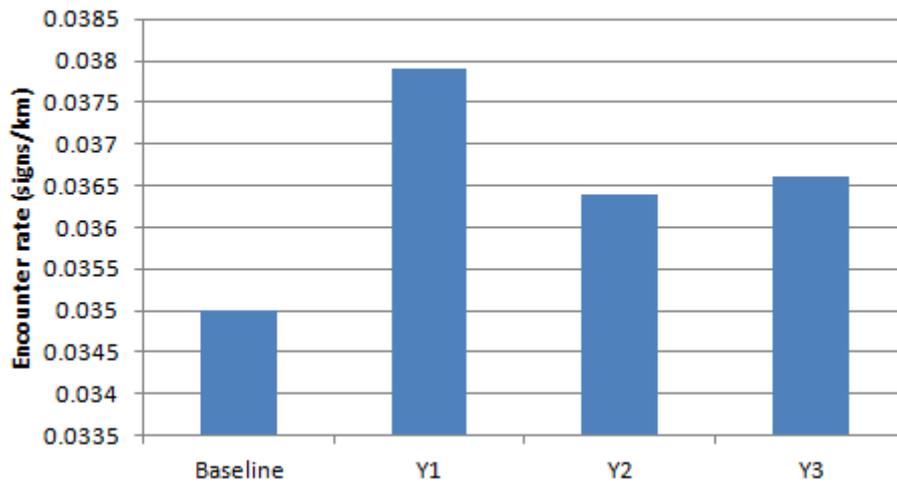
Overall, the project's law enforcement and awareness raising activities have successfully influenced attitudes towards bushmeat hunting, as indicated by the number of people who say that they have been discouraged from hunting, and the lack of new arrests.

## **3.2 Outcome**

The intended outcome of the project was to reduce hunting pressure on KBNP's wildlife, while improving the wellbeing of 600 marginalised households, through increasing the availability of domestic meat and replacing demand for bushmeat in mining villages.

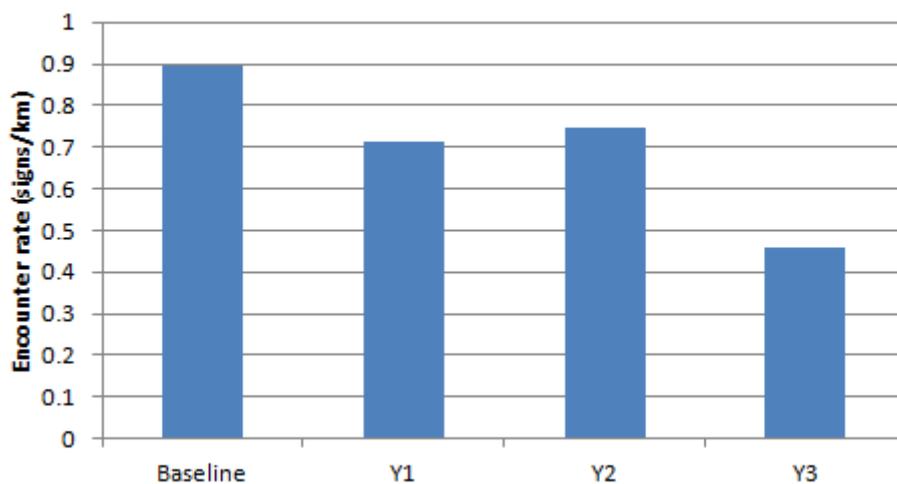
Outcome 0.1 (signs of bushmeat hunting have decreased by 25% compared to baseline) was not achieved. In Y3, the encounter rate of signs of bushmeat hunting increased by 4.6% from the baseline (from 0.035 signs/km to 0.037 signs/km) but then decreased by 3.4% since Y1. The decrease in bushmeat consumption in intervention sites identified under output 0.3 suggests that hunting activity by people in intervention sites is not increasing. It is possible that the assumption for this outcome that hunting leakage from outside of intervention areas would not increase did not hold true, as this sector of the park has encountered increasing incursions from neighbouring communities, resulting in large scale exploitation of forest resources and armed illegal mining. This threat may therefore have been beyond the influence of project activities. Annual fluctuations in the encounter rate of hunting signs may also be a result of changes in patrol coverage; ICCN ecoguards do not survey the park systematically and may have targeted areas in which the incursions from the Batwa communities had increased.

**Encounter rate of hunting signs**

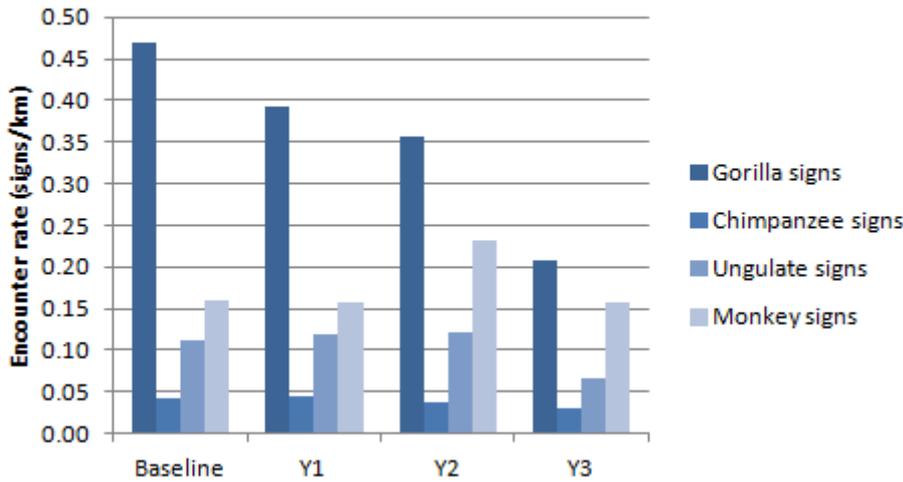


Outcome 0.2 (a 10% increase in encounter rates of signs of large mammal and primate species) was not achieved, with encounter rates of signs of key large mammal and primate species decreasing by 49% from the baseline (from 0.9 signs/km to 0.46 signs/km). This could be a result of increased hunting activity from neighboring communities and miners, or due to increased and better targeted patrol coverage in the areas where more infractions have occurred and where there has been a greater impact on wildlife. Scientific surveys that were conducted in 2011-2015 and 2013-2017 in KBNP recorded an increase in the estimated number of gorillas (from 1096 individuals in 2015 to 1223 individuals in 2017) and chimpanzees (from 1784 individuals in 2015 to 2664 individuals in 2017) in KBNP (Plumptre et al. 2019). This suggests that numbers of great apes have not changed dramatically over the course of this project.

**Encounter rate of mammal signs**

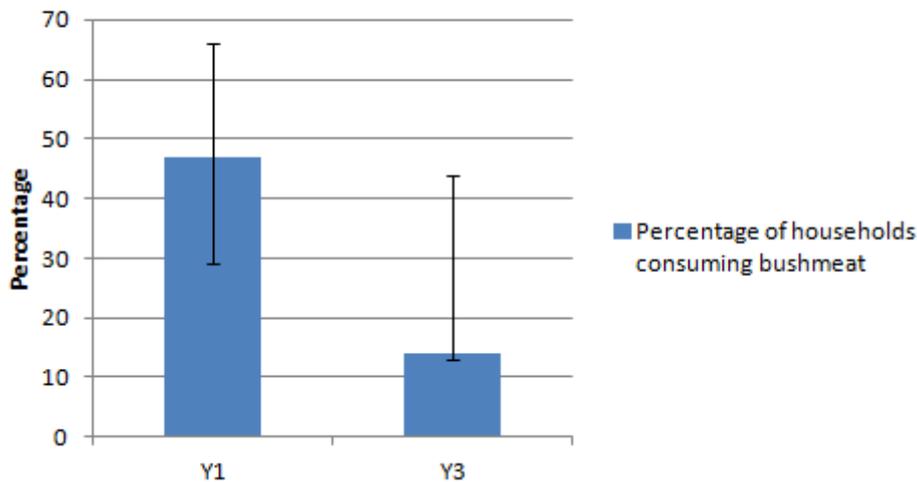


### Encounter rates of mammal signs



The project was successful in achieving Outcome 0.3 (a 30% decrease in the proportion of households consuming bushmeat), with the percentage of households consuming bushmeat in intervention sites having decreased by 70% from the baseline at the end of Y3, from 47% (95% confidence intervals 29%-66%) to 14% (95% confidence intervals 13%-44%) of households. While this demonstrates that project activities had an impact on bushmeat consumption in the target villages, it may also reflect an increase in bushmeat consumption by miners from the new mines, which have reduced the availability of bushmeat in these areas. According to the recent report on artisanal or small-scale mining (ASM) in KBNP, bushmeat is still a popular source of protein in Bitale restaurants, and is the biggest source of revenue for restaurant holders (IPIS 2019).

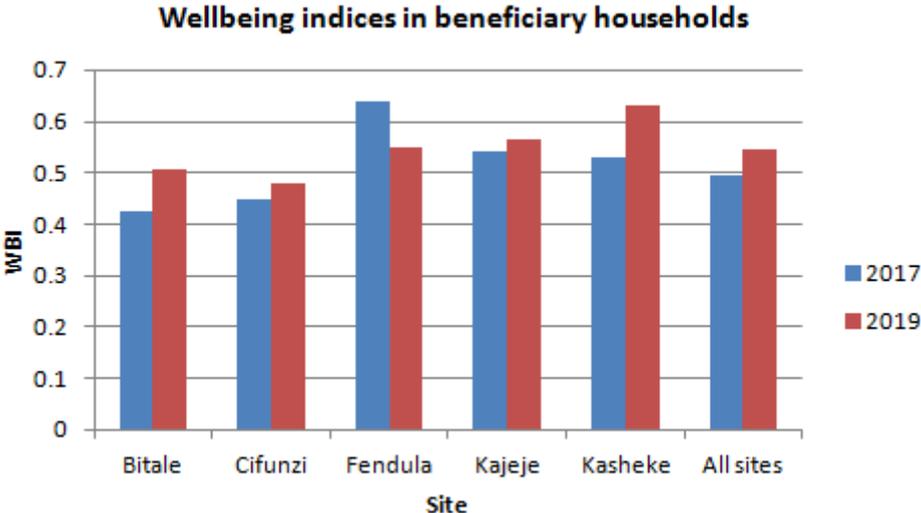
### Bushmeat consumption in intervention sites



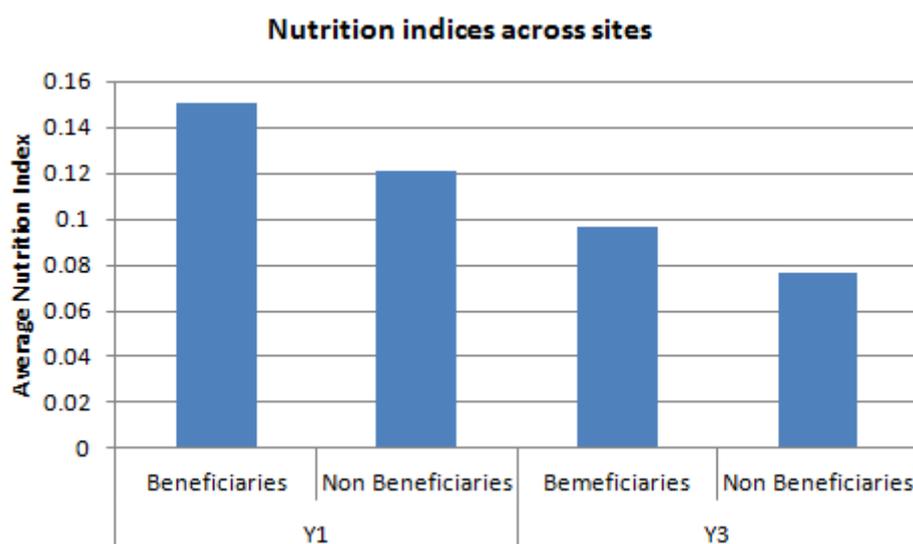
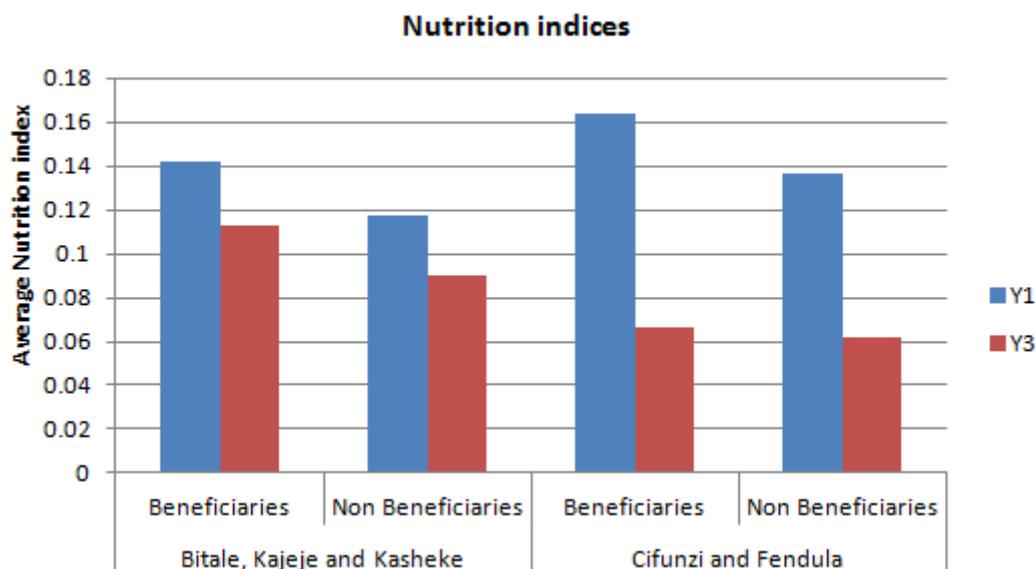
Outcome 0.4 (a 50% increase in the number of guinea pigs available in markets and restaurants by the end of Y3) was largely achieved; the percentage of guinea pigs available in markets increased by 173% from the baseline and exceeded the target of a 50% increase; the percentage of local restaurants offering guinea pig dishes on a weekly basis also increased by 44%, but this was below the 50% target. Although the percentage of restaurants offering guinea pig dishes was just below target, the result demonstrates a substantial increase in availability of guinea pigs in restaurants, and overall the project successfully enabled beneficiaries to sell guinea pigs.

Outcome 0.5 (increased indices for wellbeing compared to baseline data in target communities) was achieved. On average, the wellbeing index has increased by 10.4% from the baseline in beneficiary households, with an increase of 18.7% in Bitale, 18.6% in Kasheke, 6.9% in Cifunzi,

4.2% in Kajeje, but a decrease of 14% in Fendula. The results demonstrate that the project generally had a positive impact on well-being in beneficiary households.



Outcome 0.6 (increased nutrition indices in beneficiary households) was not achieved. The nutrition index was calculated by multiplying the average number of meals consumed per day in the household, by the average number of meat meals consumed per day in the household, divided by the Adult Male Equivalent, a measure of the relative size of the household. The average nutrition index decreased in beneficiary households by 35.7% across intervention sites, which was slightly less than the decrease of 36.6% in non-beneficiary households. The only intervention site in which nutrition index increased in beneficiary households was in Kajeje, where it increased by 2.6% from the baseline. In the three sites in which the project continued for the third year (Bitale, Kajeje and Kasheke), the nutrition index decreased on average by only 20.2% for beneficiaries and 23.2% for non-beneficiaries, compared to a 59.2% decrease on average for beneficiaries and a 54.6% decrease on average for non-beneficiaries in Cifunzi and Fendula, where the project was stopped after Y2 (the project was stopped here due to lack of appropriation by beneficiaries due to historical expectation, see lessons learned). The decrease in nutrition index may be linked to factors causing the decrease in meat consumption in intervention sites, and could be a result of the depreciation of CDF compared to USD since 2016. The results suggest that project interventions have resulted in higher nutrition indices in beneficiary households than non-beneficiary households, and that beneficiaries are better off than non-beneficiaries as a result of the project. It is possible that the assumption for this outcome that increased availability of domestic meat will be sufficient to improve nutrition did not hold true because although availability of guinea pig increased, availability of other meat sources decreased due to external factors. The increase in availability and consumption of guinea pig meat shows that the project activities mitigated against reduced availability of other domestic meat sources for beneficiaries.



Overall, the project has greatly succeeded in improving wellbeing in beneficiary households through increasing availability of domestic meat, and through enabling beneficiaries to increase revenues. Project indicators suggest that in the intervention sites, bushmeat consumption has reduced as a result of project activities. The increased availability of guinea pig meat in markets and restaurants suggests that guinea pig meat has become an alternative to bushmeat in these sites.

### 3.3 Impact: achievement of positive impact on biodiversity and poverty alleviation

The intended impact of the project was that bushmeat hunting would no longer be a threat to wildlife populations and endemic species in KBNP as a result of more effective law enforcement and reduced demand for bushmeat.

The project succeeded in contributing to the higher level impact by reducing bushmeat consumption and dependence on bushmeat in intervention sites, through enabling beneficiaries to set up microenterprises and access alternative sources of protein. The project has succeeded in reducing bushmeat consumption at intervention sites by 70%, and encounter rate of hunting signs has only increased by 4.6% from the baseline. Indicators suggest that availability of guinea pig has increased in markets (by 173%) and restaurants (by 44%) over the course of the project, and that guinea pig has become the main source of domestic meat in the diets of beneficiaries (46.2% of meals containing meat are guinea pig, an increase of 23.8% from baseline). The number of people in intervention sites who state that they are discouraged from hunting has increased by 50% as a result of the project's awareness raising activities. 244

former hunters or women involved in the bushmeat trade diversified their livelihoods, and there were no new arrests of beneficiaries who had previously been arrested for hunting. The project therefore enabled former hunters to diversify their livelihoods and reduce hunting activity; and dependence on bushmeat at intervention sites has been reduced by providing alternative sources of protein.

The project aimed to improve beneficiaries' wellbeing by (1) increasing their revenue through access to micro-credit and strengthened financial training and (2) improving nutrition through increased protein availability. In the long-term, capacity and knowledge will continue to benefit the communities. Results demonstrate that the project had a positive impact on the wellbeing of beneficiaries, as shown by the 10.4% increase in wellbeing indices and 25% increase in wealth indices in beneficiary households, through enabling beneficiaries to increase their revenues and access to goods. The increase in consumption of guinea pig meat demonstrates that the project succeeded in increasing availability of this protein source. Although nutrition indices decreased on average across intervention sites, nutrition indices were higher in beneficiary households than in non-beneficiary households at the end of the project, which also demonstrates that the project had a positive impact on beneficiaries' wellbeing. Overall, beneficiaries have stated that the project enabled them to pay their children's school fees and improve their housing as well as diversify their livelihoods, suggesting a positive social impact of project interventions. These gains of course are site-specific and for general impact for KBNP, continued, renewed efforts on law enforcement, capacity building, and protein development will be necessary.

## **4 Contribution to Darwin Initiative Programme Objectives**

### **4.1 Contribution to Global Goals for Sustainable Development (SDGs)**

SDG 1 (no poverty) – the project contributed to reducing poverty in intervention sites by providing poor households an opportunity to earn revenues and move up the livestock ladder.

SDG 2 (zero hunger) – the project contributed to reducing hunger in intervention sites by increasing the availability of affordable domestic meat at household and market level.

SDG 3 (good health and wellbeing) – the project contributed to household and child health by providing them a source of domestic meat, thereby increasing the amount of protein in their diet, which contributes to child brain and body development. The project also contributed to increasing beneficiary wellbeing by increasing their revenues and ability to provide food, education, and improved housing for their family.

SDG 5 (gender equality) and 10 (reduced inequalities) – the project contributed through specific microfinance targeting and financial capacity building of men and women.

SDG 8 (decent work and economic growth) – the project contributed to economic growth in intervention sites by providing community members the opportunity to develop revenue-generating businesses.

SDG 11 (sustainable cities and communities) – the project contributed to enabling rural communities to adopt sustainable livelihoods.

SDG 13 (climate action) – the project contributed to reducing deforestation by supporting law enforcement efforts in KBNP that contribute to reducing incidences of illegal wood exploitation.

SDG 15 (life on land) – the project contributed to conserving biodiversity and protecting threatened species as well as protecting key ecosystems that provide services to people. Most rivers in the highland sector are sourced in KBNP.

## **4.2 Project support to the Conventions or Treaties (CBD, CITES, Nagoya Protocol, ITPGRFA)**

During the project, work was conducted to support the government of DRC in meeting its responsibilities towards the Convention on Biological Diversity (Goals A, B and C), by contributing to achieving Aichi Targets 1, 4, 5, 11 and 12.

Target 1: ICCN conducted an awareness raising campaign with community leaders, project beneficiaries and local government officials in a key mining zone at all intervention sites. Key topics were values of biodiversity, the environmental laws concerning mining and bushmeat hunting and the benefits of sustainable natural resource use.

Target 4: The project provided micro-credit to 490 beneficiaries including ex-hunters, bushmeat traders and illegal charcoal producers to start sustainable businesses. Beneficiaries were also provided with financial literacy and entrepreneurship training. The support of food rations for park rangers has helped to increase law enforcement efforts within the park, helping to prevent hunting from depleting wildlife populations.

Targets 5 and 12: 5398 ranger patrols were conducted in the park around intervention sites to deter illegal forest clearing to reduce the rate of forest loss and protect vulnerable (L'Hoest monkey, owl-faced monkey), endangered (eastern chimpanzee) and critically endangered (Grauer's gorilla) species.

Target 11: WCS has been working closely with the ICCN in the implementation of activities, in M&E and in reporting, aiming to build the ICCN's capacity to improve park management.

## **4.3 Project support to poverty alleviation**

The project set out to directly improve the wellbeing and household nutrition of poor households in rural DRC by the end of Y3. Targeted households were provided with access to micro-credit, training in guinea pig husbandry, and micro-entrepreneurship development. This combination aimed to increase household access to protein and help kick-start sustainable revenue-generating businesses. Guinea pig breeding is an ideal livelihood option for poor households as it has low start-up and upkeep costs and guinea pigs have high reproduction rates, high levels of protein and the ability to attract high, but affordable, prices in remote areas. As guinea pigs are the lowest rung of the livestock ladder in eastern DRC, this project aimed to act as a stepping stone for the poorest households to acquire certain levels of wealth and eventually upgrade to more complex livestock systems or other income-generating opportunities.

As guinea pig meat has become more available in target sites, the project has also benefited the wider community through better protein availability and food security, as demonstrated by the increased guinea pig consumption in intervention sites over the course of the project by 28.3% from the baseline. Since the beginning of the project, we recorded an increase in guinea pig numbers from 4 to 15 animals on average per household. Beneficiaries used their credit to buy more females from better stock, build larger and better enclosures to keep them, and used their training in husbandry to increase their stock reproductive rates.

Wellbeing surveys (BNS) were part of the project strategy to measure changes over the years. Over the course of the project, 490 households (218 men and 272 women) were provided with credit and training. At the end of the project, wellbeing scores of beneficiaries (obtained through BNS) were 54.5% on average, which was an increase from the baseline of 10.4%. Over the course of the project, beneficiaries increased their wealth index by 25%. These results demonstrate the positive impact of the project on human development and wellbeing, through

providing sources of protein, enabling beneficiaries to increase revenues through their micro-enterprises.

#### **4.4 Gender equality**

Project beneficiaries are targeted to ensure gender integration and equity. 55% of all selected beneficiaries over the three years were women.

Unlike other livestock (chickens, goats or pigs for example) women do not need permission from their husbands or the male head of household to keep, prepare, eat or sell guinea pigs. The day-to-day husbandry of guinea pigs is often conducted by youth or children under the supervision of their mothers, making it a popular activity for students to help pay for their school fees. The project also targeted consumers of guinea pig meat, providing cooking classes to teach guinea pig producers and restaurateurs popular guinea pig recipes. 50% of participants in cooking classes and guinea pig celebration days were women, including women market sellers.

Women are given more of a say in the running of the household when they contribute financially, therefore guinea pig keeping may have improved gender equality within households, although this was not specifically measured. The large number of women who are now keeping guinea pigs in the intervention sites may influence attitudes and expectations regarding women's potential, and make it easier for women in the community to conduct more income generating activities in the future.

#### **4.5 Programme indicators**

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

Establishment of CCCs provided at least six local people from each site with a role in a management structure that contributed to biodiversity protected through this project. Student interns who were involved in the project are now being involved in other conservation activities conducted by WCS

- **Were any management plans for biodiversity developed and were these formally accepted?**

No, not applicable under this project.

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures?**

NA

- **How did the project positively influence household (HH) income and how many HHs saw an increase?**

Household wealth indices increased on average in beneficiary households, but the change in wealth index per household was not recorded. WCS in general does not measure household income given the complexity of measuring household income in rural contexts and instead opts for measuring wellbeing and wealth indices via a simpler, robust tool called the Basic Necessities Survey, which is used across many of our landscapes.

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Household wealth indices increased by 25% over the three years. This index was based on number of goods that the household possesses that were listed as basic necessities in the Basic Necessities Surveys, multiplied by the market price of goods recorded in intervention sites.

#### **4.6 Transfer of knowledge**

Two local students (both male) undertook internships on this project as part of their undergraduate degree. One conducted a project to identify new methods of cooking guinea pig meat, and tested smoking of guinea pig meat, then demonstrated this during cooking classes.

The results of the project have been presented at the ICCN semi-annual meeting, attended by KBNP stakeholders including local community leaders, local and international NGOs, the heads of ICCN in KBNP and representatives from their headquarters in Kinshasa. The project results will also be disseminated to other parks and reserves where WCS currently works, e.g. Kabobo Natural Reserve and Okapi Wildlife Reserve. Eighty KBNP park rangers received paramilitary training during this project with leveraged funding. Training on SMART was also conducted during the course of the project under leveraged funding, which was applied to the project's livelihood interventions. UECCO and community monitors were trained in KoboCollect which was used during the project and will enhance their work in future.

#### **4.7 Capacity building**

The WCS Bukavu SMART technician has increased his status during the project and is now working as the SMART technical advisor and is running SMART workshops at the national level. The socio-economic assistant was promoted from contractor to full-time staff with WCS Bukavu during the project. The interim project manager who worked on the project in 2018 is now the National Technical Director of WCS DRC. UECCO has gained more visibility in Bukavu and in villages in the intervention sites during the project, and its staff also developed skills through training in administration, finance, monitoring and data collection using KoboCollect, building theories of change and using of adaptive management software MIRADI.

### **5 Sustainability and Legacy**

During the project, WCS worked closely with UECCO to build their administrative and finance management skills by giving them training at the beginning of the project and regular technical support. WCS's project head of finance and admin provided UECCO with administrative tools that they were lacking, and WCS has helped UECCO during reporting periods so that they would need minimal support for reporting from project Y2 onwards. The capacity building that UECCO received will continue to benefit the organisation following the end of the project. In addition, both ICCN and UECCO received training on building theories of change, and the process of creating results chains using MIRADI, a conservation software for adaptive management. Although they will likely need further support from WCS, this approach of designing projects will help both groups for future interventions.

The exit strategy from the original proposal is still valid. The project works closely with the existing network of CCCs which also channels other activities from the ICCN besides Darwin project activities, ensuring that the CCCs will continue to function after the project ends. WCS also plans to conduct an evaluation of the project to identify successful elements, and to scale the project up to new sites under a new grant. In this case, project staff will continue to be employed.

Because the credit-based enterprise of project beneficiaries requires guinea pig keepers to buy their own guinea pigs, they take ownership of their investment. By having developed improved financial and husbandry capacity during the project, they will continue to grow their livestock enterprise in the future. The CCCs, with support from ICCN, will be able to sustain this rotational credit after the duration of the project if credit recipients consistently reimburse their credit. During the project, non-beneficiaries were observed to buy their own guinea pigs and seek advice from beneficiaries. This local adoption will be assessed during the project evaluation to provide insight for scaling up to new sites.

At the end of the project, beneficiaries have the technical capacity to develop their enterprises or apply their skills to new trades or income generating activities in the future. Women in intervention sites are more empowered as a result of the project, which will create more opportunities for women in the intervention sites. The increased wealth in beneficiary households will have cascading effects, such as enabling children to have a better education, and improving prospects for the next generation. As a result of project activities, attitudes towards the use of forest resources have changed, and this may be passed to the next

generation. The involvement of ICCN in activities in the intervention sites has demonstrated a more positive role of the park and its administration in the lives of local people, which will promote positive relations between ICCN and local communities going forward.

## 6 Lessons learned

**Local monitoring and adaptive management.** During this project, substantial monitoring and support was required by beneficiaries to successfully breed and keep guinea pigs, as became apparent when mortality rates increased during the second year. Recruitment of five community monitors at each site to assess beneficiaries' activities on a monthly basis enabled more regular assistance, and resulted in a decrease in guinea pig mortality in Y3. Rigorous training, monitoring, and ongoing assistance and support are therefore essential and recommended for similar micro-credit projects. If this project was to be re-done, a larger number of community monitors would be trained from the outset to ensure a better monitoring system in the early stages of the project. Husbandry techniques also had to be adapted because some of the techniques that were promoted at the start of the project were not appropriate at certain sites where temperatures were too low for outdoor guinea pig enclosures. This also highlights the importance of monitoring to enable rapid responses to issues as they arise.

**Diversification of microcredit.** As beneficiaries were not succeeding in increasing revenues sufficiently to enable reimbursement of micro-credits during Y2 due to the high rates of guinea pig mortality and insufficient monitoring, the model of using all microcredit for guinea pig housing was changed. Households used their kitchens for guinea pigs (as is done in much of South America), and thus beneficiaries used the unused microcredit to conduct additional income generating activities alongside guinea pig keeping. This enabled a faster increase in revenue while the issues with guinea pig production were resolved. Using micro-credit to conduct a combination of income-generating activities was found to be a successful approach in this project.

**Historical expectations.** During this project, issues were encountered in two sites, Cifunzi and Fendula, which had received more humanitarian aid previously than the other sites. Villagers in these sites have developed an expectation of receiving free goods (as practiced in the humanitarian sector) and are not accustomed to initiatives that expect them to be proactive and take ownership of their project. Even though the project plan was presented and beneficiaries were selected, trained and understood what was expected of them, appropriation was lacking and the project was stopped at these sites after the second year. In future, the motivation of new beneficiaries could be better assessed and rigorous selection methods employed, to increase the likelihood that beneficiaries will be motivated to set up micro-enterprises, reimburse credit and take responsibility for their project. Selection of intervention sites could also be informed by the degree of previous humanitarian aid that has been received there. On this project, more efforts should also have been made to ensure that 60% of beneficiaries receiving training were women.

**Operational coordination.** Ensuring good coordination between UECCO, WCS and ICCN was an integral and important part of this project. In order to ensure this, missions were coordinated so that all organisations were present as much as possible. However, differences between means of operating and organisational policy such as tariffs to guide reimbursement of transport costs for training participants from a community, local labour or per diem rates were the cause of much discussion and sometimes disagreement. Both ICCN and WCS received other donor funding and attempted to standardise their expenses, while UECCO who received much less funding was less able to meet ICCN's standards. The ICCN also preferred punctual expensive large meetings with communities rather than frequent, more targeted meetings which UECCO could afford. All project partners have experienced difficulties working in DRC villages where if an organisation provides more to a community than another organisation, the communities' expectations are raised and local organisations will struggle to meet them. This has resulted in many discussions between partners to identify the best compromises and ways forward. One of the major lessons learned from this situation is for this important and often

forgotten topic to be discussed at the start of any new funding so that all partners are in agreement and have a common way of operating in the field.

**Social marketing.** The project results highlight the importance of social marketing in enabling beneficiaries to successfully sell guinea pigs. Although guinea pig sales in markets and restaurants increased over the three years of the project and the target for guinea pig availability in markets was achieved, social marketing activities should have been conducted throughout the project to create a better market and increase guinea pig sales and consumption. Guinea pig days were not held until the final year of the project, due to delays in implementation in some sites during Y1, and increased mortality rates of guinea pigs as a result of monitoring issues in Y2 that resulted in project activities to be directed towards improving monitoring and guinea pig production. Cooking classes and guinea pig celebration days in Y3 were successful in: demonstrating different recipes to communities, providing an opportunity for people to try guinea pig meat, for beneficiaries to sell guinea pigs, and give testimony of the projects' impacts. When scaling up the project, greater emphasis will be placed on carrying out further social marketing activities.

**Local innovation.** During the project, an undergraduate student from the Batwa indigenous community undertook an internship on the project and investigated new methods of cooking guinea pig. He proposed that guinea pig meat could be smoked, as an alternative to smoked bushmeat, which may appeal to miners and contribute to reduced demand for bushmeat, and demonstrated this method during guinea pig celebration days and cooking classes.

**Institutional capacity building and support.** Working with CCCs was more challenging than anticipated because lack of remuneration reduced motivation. For the CCCs to act as a link between KBNP and the communities in the future, the CCCs require more capacity building and support. Training in project and financial management and functional support including salaries and operational costs should be provided to improve effectiveness of these institutions.

**External factors.** During the project, a number of external factors had an influence on project activities/results, such as an increase in poaching from neighbouring communities, an influx of illegal miners to new mining sites next to the park, and changes in the security situation in the southern sector of the park, including political uncertainty with election delays. These factors are difficult to manage; however, the project succeeded in improving livelihoods in the intervention zones and guinea pig husbandry was an adaptable activity in this context.

## 6.1 Monitoring and evaluation

A monitoring and evaluation plan was developed at the beginning of the project and social surveys developed to monitor various activities. This included WCS's Basic Necessities Survey, household meat consumption surveys, household guinea pig production surveys, and market and restaurants surveys. The monitoring plan reflects clearly the original proposal, and the change request of Indicator 0.3 from "By the end of year 3, domestic meat has become the main source of protein intake for at least 200 male and female-headed households in intervention sites" to "By the end of year 3, there has been a 30% decrease in the percentage of households who consume bushmeat" was approved by the Darwin Initiative on December 8, 2017.

WCS has transferred social survey forms to the smartphone application KoboCollect (<http://www.kobotoolbox.org>), which is being used to collect data in the field and upload them to a centralised database. This approach has been hugely beneficial in saving time and money as data entry is not needed, data cleaning is quicker, and the data can be uploaded while the survey teams are still in the field, allowing them to move on to other activities as soon as surveys are completed. WCS added a survey to the project's M&E plan to monitor bushmeat prices in project sites, to ensure that guinea pig meat stays the cheapest meat throughout the project. Baseline data was successfully collected at all sites, but end of project data was not collected. This was a project weakness.

For this project, WCS has been using SMART (Spatial Monitoring and Reporting Tool), a ranger-based monitoring software tool that enables patrols to be documented. The tool is combined with a smartphone application, Cybertracker, which rangers use to collect georeferenced point data on wildlife and human signs while they patrol. The data is then uploaded into the SMART software, which gives encounter-rate and descriptive statistics and maps of the data collected, while accounting for patrol effort. WCS has been implementing the SMART software in eastern DRC since 2014 - Kahuzi-Biega National Park being one of the first national parks in the country to use the software and integrate it into its management. In this project SMART has provided a cost effective mechanism to monitor patrol effort, location as well as calculate the relative abundance of wildlife and illegal human activity using encounter rates.

In response to increased guinea pig mortality during the second year resulting from insufficient monitoring of beneficiaries' activities, WCS hired five community monitors to conduct more regular monitoring and provide more immediate guidance, as well as to direct UECCO's efforts to those beneficiaries in need of more support. Husbandry techniques being implemented by beneficiaries were also refined based on site-specific issues encountered during the first year, and informed by local and expert input. This resulted in decreased mortality during the third year.

The monitoring and evaluation plan allowed us to monitor project progress and enable adaptive management. For example, as a result of the assessment of guinea pig mortality in Y2, an improved monitoring system and training approach was effectively implemented in collaboration with partner organisation UECCO at intervention sites.

Successful elements of the project that have been identified during the project evaluation will be incorporated into plans to scale up the project to new sites, which will be carried out under a new grant.

## **6.2 Actions taken in response to annual report reviews**

Information requested in response to the second annual report is provided below. Reviews were discussed with partners and collaborators.

Regarding evidence that UECCO's support has improved: at the end of the project, the guinea pig mortality rate had decreased by 48% since Y2, due to improved monitoring from UECCO and new community monitors.

To improve guinea pig uptake in restaurants, restaurant owners and cooks were invited to guinea pig celebration days and cooking classes in Y3, where recipes were demonstrated and tasted.

Three output-level assumptions were challenged in the second annual report:

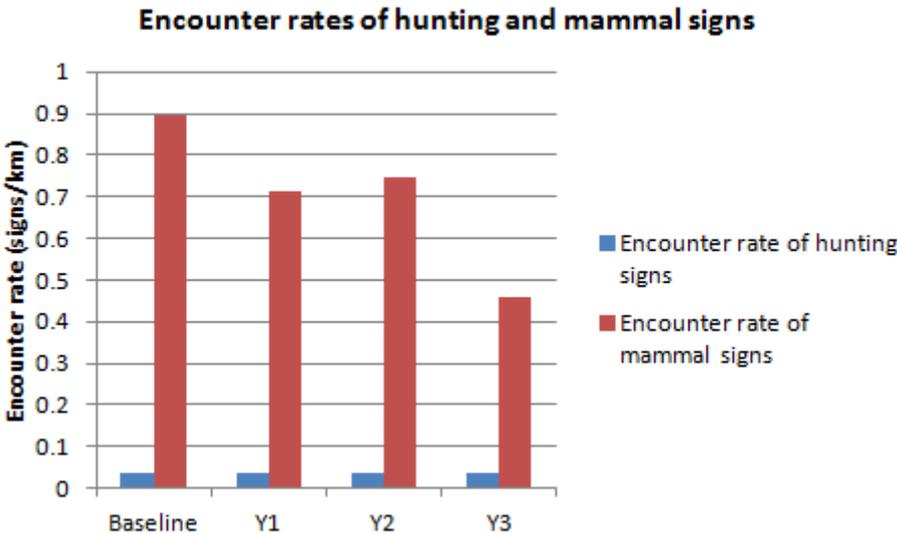
- 1) UECCO will provide regular technical support for breeders to reduce mortality rates.
- 2) Guinea pig supply will reach restaurants.
- 3) ICCN law enforcement efforts will be sufficient to deter the establishment of new mine sites.

Adaptive management was conducted in response to the first challenged assumption, by recruiting additional community monitors in Y3 to increase the level of support to breeders. Mortality rates reduced in the third year as a result. Adaptive measures were not taken to increase the supply of guinea pigs reaching restaurants, aside from holding the planned guinea pig celebration days in the third year in which restaurant owners participated. We believe this type of marketing engagement, once sufficient supply is in place, will be enough to create demand and let market forces take over the supply chain. The percentage of restaurants serving guinea pigs has now increased by 44% from the baseline. As a result of ongoing establishment of mining sites, ICCN law enforcement efforts were considered to be insufficient to deter the establishment of new mine sites. In response to this WCS contracted IPIS (International Peace Information Service) with USAID/GRASP funds to investigate the Artisanal

and Small-scale Mining (ASM) situation within KBNP (results which included mention of finding guinea pigs in camp restaurants!). The data gathered on illegal mining value chain, miner motivations, and bushmeat hunting will inform the development of a Conservation & ASM Strategy to address KBNP mining threats including in the intervention sites of this Darwin project.

Information concerning how the project has been measuring hunting leakage was requested as a result of challenged outcome level assumption 0.1, 'hunting leakage from non-participating areas does not increase'. This was not directly monitored; the proxy measure for this was 'rearrests of project participants by ICCN'. Poaching in KBNP's upland sector is quite dynamic--poachers may come from neighboring villages (Batwa or Bantu), from illegal miners coming from far away, or just anyone taking advantage of changing security situations. SMART surveys demonstrate poaching indicators, which are rarely attributable to originating village unless the poacher is actually arrested. ICCN has reported an increase in incursions in the park since November 2018, and increasing numbers of snares encountered in these areas. It is thought to be carried out by communities in non-participating areas. The Batwa indigenous people recently became landless after a World Bank project failed them; political uncertainty with election delays; new mining sites next to the park bringing an influx of miners; all of these factors contribute to reasons that leakage is almost impossible to calculate. Overall, the increase of insecurity over the course of the project constituted a non-negligible challenge for the project to contend with.

The statistical significance of the increase in signs of bushmeat hunting and wildlife encounter rates was requested. This was in response to the 122% increase in the encounter rate of hunting signs and the 823% increase in the encounter rate of mammal signs reported in Y2. These results were not correct, due to a mistake in the baseline data. Based on the SMART results for the year prior to project start and the three years of the project, the encounter rate of hunting signs has increased by 4.6% and the encounter rate of wildlife signs has decreased by 49% in Y3 compared to the baseline. These results may be due to the incursions in parts of the southern sector of the park that have been reported by ICCN over the course of the project. Survey effort is not standardised, with different areas being targeted during different patrols, and this may have influenced annual fluctuations in encounter rates of mammal and hunting signs. Scientific surveys that have been conducted in KBNP since 2011 have reported that estimated numbers of gorillas and chimpanzees have remained stable between 2015 and 2017, with 1096 (352-3481) gorillas and 1784 (1862-3810) chimpanzees estimated in 2015, compared to 1223 (640-2338) gorillas and 2664 (1862-3810) chimpanzees estimated in 2017 in KBNP (Plumptre et al. 2019).



## 7 Darwin identity

The project has continued to follow its communication plan that was developed in year 1 and highlighted the list of communication products to be developed with appropriate branding. All project partners have made an effort to promote the image of the project with Facebook posts, presentations in Kinshasa as part of larger protein/conservation issues, signboards at project sites, posters and banners during meetings, leaflets on guinea pig husbandry distributed at intervention sites, handouts from training sessions, and t-shirts provided to community participants with logos of the park, the partners, DFID and the Darwin Initiative. WCS has communicated progress with the UK Embassy in Kinshasa, and invited the team for a visit. Unfortunately due to security concerns, this mission was cancelled on two occasions. A final presentation will be made in Kinshasa soon, now that the final results have been analyzed, to which ICCN and the UK Embassy will be invited.

## 8 Finance and administration

### 8.1 Project expenditure

Project spend (indicative) since last annual report	2018/19 Grant (£)	2018/19 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			7%	
Consultancy costs			-19%	Variance is £ - 96.51. Percentage variance is high due to small budget amount.
Overhead Costs			-4%	
Travel and subsistence			-30%	More monitoring visits were required due to high guinea pig mortality during Y2. This also entailed more field visits for project monitoring.
Operating Costs			9%	
Capital items (see below)			0%	
Monitoring & Evaluation (M&E)			-31%	More monitoring visits were required due to high guinea pig mortality during Y2, extra monitors were employed.
Others (see below)			0%	
Audit costs			0%	
<b>TOTAL</b>				

<b>Staff employed (Name and position)</b>	<b>Cost (£)</b>
Richard Tshombe (WCS Country Director)	
Thierry Metre (UECCO head)	
Mugisho Socrate (UECCO husbandry expert)	
Anthelme Mugisho (UECCO finances)	
<b>TOTAL</b>	

<b>Capital items – description</b>	<b>Capital items – cost (£)</b>
N/A	
<b>TOTAL</b>	

<b>Other items – description</b>	<b>Other items – cost (£)</b>
N/A	
<b>TOTAL</b>	

## 8.2 Additional funds or in-kind contributions secured

<b>Source of funding for project lifetime</b>	<b>Total (£)</b>
USAID	
KfW	
<b>TOTAL</b>	

Source of funding for additional work after project lifetime	Total (£)
United States Fish and Wildlife Service	
<b>TOTAL</b>	

### 8.3 Value for Money

The financial contribution from Darwin enabled WCS to provide microcredit loans to beneficiaries in intervention villages, with which to set up microenterprises. Through providing training in small business development and financial literacy, the project enabled beneficiaries to increase their revenues by 25% over the three years, and with the skills that they learned during training and while establishing their businesses they have improved capacity to continue to generate revenue in years to come. This long term socio-economic impact demonstrates the value for money provided by this project. By enabling local people to diversify their livelihoods, the project has reduced pressure on forest resources, as evidenced by the 70% reduction in bushmeat consumption in intervention villages since the project started. This has resulted in a 10% increase in wellbeing in communities around Kahuzi-Biega National Park, and contributed to conservation of One of the largest tropical forest protected areas, which is a stronghold for critically endangered Grauer's gorilla and many other endemic species, and provides key ecosystem services which far exceed the project budget in value.

### References

IPIS. (2019). *Artisanal and Small-scale Mining in and around Kahuzi Biega National Park: Final report*. Unpublished report to GRASP and USAID.

Plumptre, A.J., Kirkby, A., Spira, C., Mitamba, G., Kivono, J., Ngoy, E., Nishuli, R., Maisels, F., Buckland, S., & Kujirakwinja, D. (2019). *Estimates of ape abundance in the Kahuzi-Biega National Park and Oku Community Reserve*. Unpublished report to Arcus Foundation, GFA, USAID and US Fish and Wildlife Service.



## Darwin Initiative: Final Report

### Annex 1 Project’s original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p><b>Impact:</b> Bushmeat hunting is no longer a threat to wildlife populations and endemic species in KBNP as a result of more effective law enforcement and reduced demand for bushmeat.</p> <p>(Max 30 words)</p>			
<p><b>Outcome:</b> (Max 30 words)</p> <p>Reducing hunting pressure on KBNP’s wildlife, while improving the wellbeing of 600 marginalised households, through increasing the availability of domestic meat and replacing demand for bushmeat in mining villages.</p>	<p>0.1. By the end of year 3, signs of bushmeat hunting have decreased by at least 25% within a 5km buffer inside the park boundary compared to early 2016 baselines.</p>	<p>0.1. Results from SMART patrols.</p>	<p>Hunting ‘leakage’ from non-participating areas does not increase. This will be tackled by law enforcement efforts that will spread beyond target areas.</p>
	<p>0.2. By the end of year 3, there has been a 10% increase in encounter rates of signs of key large mammal and primate species, compared to early 2016 baselines.</p>	<p>0.2. Large mammal sign encounter rates collected through SMART patrols.</p>	<p>The number of patrols using SMART will be sufficient to capture changes in mammal sign encounter rates. ICCN will make sure that patrolling rangers use SMART to ensure adequate levels of data collection.</p>
	<p>0.3. By the end of year 3, there has been a 30% decrease in the percentage of households who consume bushmeat.</p>	<p>0.3. Household consumption surveys.</p>	<p>Our survey methods are adequate enough to accurately estimate bushmeat vs domestic meat consumption. WCS has the necessary research capacity and tools to collect sensitive data.</p>

	0.4. By the end of year 3, there has been a 50% increase in the number of guinea pigs available in markets and restaurants compared to the number available at the start of the project.	0.4. Market and restaurant surveys.	Guinea pig production is sufficient for beneficiaries to sell part of their guinea pig supply. UECCO will provide consistent support to ensure guinea pig production is optimal.
	0.5. By the end of year 3, at least 600 households in target communities have increased indices for wellbeing compared to baseline data collected at the start of the project when selecting project beneficiaries.	0.5. Basic Necessities Surveys (BNS).	Improved nutrition and increased revenues are sufficient to improve wellbeing. BNS surveys conducted with communities living around KBNP's high altitude sector showed that household wellbeing is positively affected by the intake of animal proteins, as well as having the financial means to access various basic goods and services. It is therefore likely that this assumption will be met.
	0.6. By the end of year 3, at least 300 beneficiary households have increased nutrition indices compared to year 1 baselines.	0.6. Beneficiary surveys. A nutrition index will be developed based on household composition, frequency of meals and protein consumption.	Increased availability of domestic meat will be sufficient to improve nutrition. Awareness raising and guinea pig husbandry training will aim to encourage beneficiaries to manage their guinea pig stocks so that their households are able to consume them at an optimum rate.
<b>Outputs:</b> 1. Project beneficiaries have the financial and technical capacity to set up and manage small enterprises.	1.1. By the end of year 1, 5 Community Conservation Committees (CCCs) have been established (one per intervention site).	1.1. WCS records; Contracts and agreements signed between CCCs and the ICCN.	Community members are willing to form CCCs. Much effort will be put into establishing CCCs to ensure community members understand its role and to ensure that it synchronizes and makes use of existing structures.
	1.2. By the end of year 1, 200 guinea pig keepers and micro-credit beneficiaries have received training in small enterprise development and	1.2. Project partner training records and reports; micro-credit allocation records.	Training is sufficient for beneficiaries to successfully set up micro-enterprises. Technical support will continue after the training has been

	financial literacy. This will have increased to 300 guinea pig keepers and 300 micro-credit beneficiaries by the end of year 3, of which 60% will be women.		completed to help beneficiaries counter unforeseen difficulties.
	1.3. By the end of year 2, at least 50% of beneficiary guinea pig keepers have started micro-enterprises and are selling guinea pigs.	1.3. Training records; Guinea pig beneficiary surveys.	Training is sufficient for beneficiaries to have excess guinea pigs available for sale. The UECCO and WCS will continue to monitor guinea pig micro-enterprises to provide technical support to help counter any unforeseen problem after training.
	1.4. By the end of year 3, at least 100 hunters have diversified their livelihoods as a result of the micro-credit scheme compared to year 1 baseline.	1.4. Micro-credit beneficiary surveys.	Hunters will be interested and willing to participate in micro-credit schemes. Existing WCS-ICCN micro-credit schemes around KBNP have been successful at attracting hunters, although have shown that community discussions are central in encouraging hunters to participate.
	1.5. By the end of year 3, 600 beneficiaries (micro-credit recipients and guinea pig keepers receiving training in guinea pig marketing) have increased their revenues by at least 25% by having set up micro-enterprises, compared to year 1 baseline.	1.5. Microcredit and guinea pig beneficiary surveys.	Trainings and micro-credits are sufficient for beneficiaries to set up micro-enterprises and generate revenues. Technical support and beneficiary meetings will be held to beneficiaries after training sessions to assist financial literacy and micro-enterprise development.
2. Improved guinea pig production and breeding techniques in target sites.	2.1. By the end of year 2, guinea pig mortality rates have decreased by at least 20% in households that have received guinea pig husbandry training, compared to year 1 baseline.	2.1. Guinea pig production figures; Guinea pig beneficiary surveys.	Training is sufficient for beneficiaries to successfully breed guinea pigs. UECCO has substantial experience in training, however will provide regular technical support for breeders to reduce guinea pig mortality rates.
	2.2. By the end of year 3, the number of guinea pigs per	2.2. Guinea pig beneficiary surveys	Beneficiaries will have a continued interest in the project and training will

	participating household has reached at least 30 individuals, compared to early 2016 baseline.		be sufficient for beneficiaries to successfully breed guinea pigs. UECCO will provide regular technical support and visits to ensure breeding is optimal and to discuss with beneficiaries any concerns or issues relating to guinea pig breeding.
3. Increased availability and adoption of guinea pig meat by communities in target sites.	3.1. Each year, all beneficiary guinea pig keepers will have an average of 25% increase in the proportion of domestic meat in their household diet.	3.1. Guinea pig beneficiary surveys.	Beneficiaries eat their guinea pigs. Guinea pigs are consumed in South Kivu by households who raise them; however awareness will be raised on the health benefits of guinea pigs to encourage new beneficiary households to consume their guinea pigs.
	3.2. By the middle of year 2, at least 25% of local restaurants in intervention sites offer guinea pig dishes on at least a weekly basis.	3.2. Restaurant surveys.	Guinea pig supply will reach restaurants and cooking classes will be sufficient for cooks to prepare guinea pig meat. WCS and UECCO will work with guinea pig keepers to connect them with restaurateurs to help ensure there is a strong link.
	3.3. By the end of year 3, the number of guinea pigs available in markets has increased by at least 50% compared to year 1 baseline.	3.3. Market surveys.	Training is sufficient for beneficiaries to have excess guinea pigs available for sale. The UECCO and WCS will continue to monitor guinea pig micro-enterprises to provide technical support to help counter any unforeseen problem after training.
4. Law enforcement and awareness raising activities effectively deter bushmeat hunting and the establishment of new mining sites in KBNP.	4.1. From the end of year 1 onwards, no new mine sites are established within the park's highland sector.	4.1. SMART patrol data.	ICCN law enforcement efforts will be sufficient to deter the establishment of new mine sites.
	4.2. At the end of year 2, 25% more individuals surveyed at intervention sites state that they are discouraged from hunting in the park due to the risk of being caught and prosecuted,	4.2. Household surveys	

	compared to year 1 baseline data collected at the start of the project.		
	4.3. By the end of year 3, 90% of the beneficiaries who had already been arrested for bushmeat hunting prior to the project period did not get arrested again.	4.3. ICCN arrest records.	Law enforcement is effectively conducted and monitored around intervention sites and efforts are sufficient to deter bushmeat hunting. WCS provides ICCN with technical assistance for SMART and will continue to do so throughout the project to help with monitoring and adaptive management of patrols.
	4.4. By the end of year 3, at least 1000 people including all beneficiaries will be aware of the impacts of bushmeat hunting on wildlife populations.	4.4. Household surveys.	

**Activities** (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

**1.1** Set up Community Conservation Committees: WCS and ICCN visit target communities where village-wide meetings are held to (1) identify all social groups in the village (main socio-professional categories, e.g. teachers, natural resource users, local authorities, health workers, religious representatives, etc. and women, youth and pygmies if they are in the village); and (2) each of the identified social groups then elects one representative to become a member of the CCC.

**1.2** The CCCs sign partnership contracts and loan agreements with ICCN.

**1.3** ICCN, WCS and CCC members select micro-credit beneficiaries: CCCs receive applications from community members willing to receive micro-credit and successful applicants are selected.

**1.4** ICCN and WCS train micro-credit beneficiaries in financial literacy and micro-entrepreneurship development.

**1.5** Provide credit to beneficiaries: WCS provides micro-credit funds to the CCCs and the CCCs allocate credit to selected beneficiaries.

**1.6** ICCN, WCS and the CCCs monitor the micro-credit schemes.

**2.1** Select current guinea pig keepers and new guinea pig keepers (micro-credit beneficiaries) who will receive husbandry training: the CCCs will receive applications from current guinea pig keepers willing to receive husbandry training and assistance, and from new individuals willing to receive micro-credit to start a guinea pig micro-enterprise. Members of the CCCs and WCS then select guinea pig breeding beneficiaries.

**2.2** UECCO provides training to guinea pig breeding beneficiaries in improved guinea pig production, focusing on good husbandry practices and breeding management.

**2.3** UECCO and WCS train guinea pig breeders in guinea pig-based micro-enterprise development.

**2.4** UECCO monitors and provides technical support to guinea pig breeding beneficiaries for guinea pig husbandry and production.

**3.1** UECCO holds guinea pig cooking classes - 2 sessions per site - with restaurant cooks, women who keep guinea pigs and women who do not keep guinea pigs.

**3.2** UECCO holds meetings with guinea pig breeders, meat traders and restaurateurs to connect guinea pig producers with sellers.

**3.3** UECCO develops and distributes pro-guinea pig materials to CCCs and to individuals attending awareness raising events in intervention sites.

**3.4** All project partners carry out annual guinea pig celebration days in each of the five intervention sites.

**3.5** WCS trains community members in research techniques and together conduct market research on guinea pigs to monitor changes in protein availability and consumption.

**4.1** ICCN rangers conduct patrols using SMART, collecting data on wildlife sign encounters and on illegal human activities.

**4.2** ICCN and WCS analyse results from SMART data to adapt patrol effort and orientate patrols.

**4.3** ICCN shows environmental films and communicates environmental laws.

## Annex 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements
<p><b>Impact:</b></p> <p>Bushmeat hunting is no longer a threat to wildlife populations and endemic species in KBNP as a result of more effective law enforcement and reduced demand for bushmeat.</p>		<p>Report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits</p>
<p><b>Outcome</b> Reducing hunting pressure on KBNP's wildlife, while improving the wellbeing of 600 marginalised households, through increasing the availability of domestic meat and replacing demand for bushmeat in mining villages.</p>	<p>0.1. By the end of Y3, signs of bushmeat hunting have decreased by at least 25% within a 5km buffer inside the park boundary compared to early 2016 baselines.</p>	<p>There was an increase of 4.6% in bushmeat hunting sign encounter rate from prior to the project start (0.037 sign/km during Y3 compared to 0.035 sign/km baseline).</p>
	<p>0.2. By the end of Y3, there has been a 10% increase in encounter rates of signs of key large mammal and primate species, compared to early 2016 baselines.</p>	<p>There was a decrease of 49% in the wildlife sign encounter rate from prior to the project start (0.46 sign/km during Y3 compared to 0.9 sign/km baseline).</p>
	<p>0.3. By the end of Y3, there has been a 30% decrease in the percentage of households who consume bushmeat.</p>	<p>Estimated 14% (95% confidence intervals: 13%-44%) of households in intervention sites consume bushmeat (significant difference between treatment and control groups, p=0.04). This is a 70% decrease compared to the baseline.</p> <p>In Bitale, Kajeje and Kasheke, where interventions continued during the third year, an estimated 7% (95% confidence intervals: -8%-36%) of households consumed bushmeat (no significant difference between treatment and control groups, p=0.39). This is a decrease from the baseline of 85%.</p> <p>In Cifunzi and Fendula, where interventions stopped after the Y2, an estimated 27% (95% confidence intervals: 22%-77%) of households consumed bushmeat (significant difference between treatment and control groups, p=0.008). This is a 43% decrease from the baseline.</p>

	<p>0.4. By the end of Y3, there has been a 50% increase in the number of guinea pigs available in markets and restaurants compared to the number available at the start of the project.</p>	<p>13% of local restaurants surveyed in all project sites at the end of Y3 offered guinea pig dishes on a weekly basis (n=10), 60% of which were in Bitale, 30% in Kasheke and 10% in Cifunzi. This is an increase of 44% from the baseline.</p> <p>An estimated 542 guinea pigs were available in markets surveyed at end of Y3, which is an increase of 173% from the baseline.</p> <p>Average number of guinea pigs being sold per meat seller has increased by 728.8% in Bitule, Kajeje and Kasheke (n=1.5), and average number of guinea pigs per guinea pig seller has increased by 35.2% in Bitule Kajeje and Kasheke (n=6.3). In Cifunzi and Fendula, the average number of guinea pigs per meat seller has increased by 18.8% (n=1.8) and the number of guinea pigs per guinea pig seller has increased by 98% (n=9).</p>
	<p>0.5. By the end of Y3, at least 600 households in target communities have increased indices for wellbeing compared to baseline data collected at the start of the project when selecting project beneficiaries.</p>	<p>The average wellbeing index for beneficiaries has increased by 10.4% from the baseline (+18.7% Bitale, +6.9% Cifunzi, -14% Fendula, +4.2% Kajeje, +18.6% Kasheke).</p>
	<p>0.6. By the end of Y3, at least 300 beneficiary households have increased nutrition indices compared to Y1 baselines.</p>	<p>The average nutrition index (NI) for beneficiaries across all sites is 0.097. This is a 35.7% decrease from the baseline. The average beneficiary index decreased in all sites apart from Kajeje, where it increased by 2.6% from the baseline. The average NI for non beneficiaries across all sites is 0.077, which is a 36.6% decrease from the baseline.</p> <p>In Bitale, Kajeje and Kasheke, where the project continued in the third year, the average NI was 0.11 for beneficiaries and 0.09 for non beneficiaries; this was a decrease of 20.2% for beneficiaries and a decrease of 23.2% for non beneficiaries from the baseline. In Cifunzi and Fendula, where interventions stopped at end of 2<sup>nd</sup> year, the average NI was 0.07 for beneficiaries and 0.06 for non beneficiaries; this was a decrease of 59.2% for beneficiaries and 54.6% for non beneficiaries from the baseline.</p>
<p><b>Output 1.</b> Project beneficiaries have the financial and technical capacity to set up and manage small enterprises.</p>	<p>1.1. By the end of Y1, five Community Conservation Committees (CCCs) have been established (one per intervention site).</p>	<p>Already completed in year 1.</p> <p>Target achieved.</p>

	<p>1.2. By the end of Y1, 200 guinea pig keepers and micro-credit beneficiaries have received training in small enterprise development and financial literacy. This will have increased to 300 guinea pig keepers and 300 micro-credit beneficiaries by the end of Y3, of which 60% will be women.</p>	<p>At the end of Y3, 490 beneficiaries have received training in financial literacy, in nine training sessions held during the three years. 240 of these beneficiaries also received training in small enterprise development, along with 52 non-beneficiary guinea-pig keepers, in six training sessions over the three years. 56% (n=272) of beneficiaries to receive training in financial literacy were women, and 46% (n=134) participants in micro-enterprise training were women.</p>
	<p>1.3. By the end of Y2, at least 50% of beneficiary guinea pig keepers have started micro-enterprises and are selling guinea pigs.</p>	<p>55% of beneficiary guinea pig keepers were selling guinea pigs at the end of Y2.</p>
	<p>1.4. By the end of Y3, at least 100 hunters have diversified their livelihoods as a result of the micro-credit scheme compared to Y1 baseline.</p>	<p>At the end of Y3, 93 ex-bushmeat hunters have diversified their livelihoods as a result of the micro-credit scheme; and 151 women who were previously involved in bushmeat trade or charcoal production also diversified their livelihoods.</p>
	<p>1.5. By the end of Y3, 600 beneficiaries (micro-credit recipients and guinea pig keepers receiving training in guinea pig marketing) have increased their revenues by at least 25% by having set up micro-enterprises, compared to Y1 baseline.</p>	<p>Average beneficiaries wealth index at the end of the project is 4,729,628 CF, which is a 25% increase from the baseline. This is 144% higher than the average wealth index for non-beneficiaries at the end of the project.</p>
<p>Activity 1.1 Set up Community Conservation Committees: WCS and ICCN visit target communities where village-wide meetings are held to (1) identify all social groups in the village (main socio-professional categories, e.g. teachers, natural resource users, local authorities, health workers, religious representatives, etc. and women, youth and pygmies if they are in the village); and (2) each of the identified social groups then elects one representative to become a member of the CCC.</p>		<p>Completed. Community Conservation Committees (CCCs) established in all five project sites in Y1.</p>
<p>Activity 1.2. The CCCs sign partnership contracts and loan agreements with ICCN.</p>		<p>Partnership contracts signed between CCCs and ICCN in all project sites and loan agreement signed in three sites in Y1. In Y2, loan agreements were</p>

		signed in the two other sites.
Activity 1.3. ICCN, WCS and CCC members select micro-credit beneficiaries: CCCs receive applications from community members willing to receive micro-credit and successful applicants are selected.		In Y3, 280 beneficiaries (127 men and 153 women) were selected to receive microcredits and training. Over the three years of the project, a total of 490 beneficiaries (218 men and 272 women) were selected and given training.
Activity 1.4. ICCN and WCS train micro-credit beneficiaries in financial literacy and micro-entrepreneurship development.		At the end of Y3, 490 beneficiaries have received training in financial literacy, in 9 training sessions held during the three years. 240 of these beneficiaries also received training in small enterprise development, along with 52 non-beneficiary guinea pig keepers, in 6 training sessions over the three years. 56% (n= 272) of beneficiaries to receive training in financial literacy were women, and 46% (n=134) participants in micro-entreprise training were women.
Activity 1.5. Provide credit to beneficiaries: WCS provides micro-credit funds to the CCCs and the CCCs allocate credit to selected beneficiaries.		For the three years of the project, 490 people selected (218 men and 272 women) received microcredits from WCS through the CCCs.
Activity 1.6. ICCN, WCS and the CCCs monitor the micro-credit schemes.		For the first 2 years, monitoring was conducted at least once per month at each site. In the third year, 5 community monitors were recruited in Kajeje, Kasheke and Bitale to conduct more regular monitoring, in order to improve guinea pig production. Monitoring was then conducted three times per month. Monitoring was conducted a total of 60 times across all sites during the three years of the project.
<b>Output 2.</b> Improved guinea pig production and breeding techniques in target sites.	2.1. By the end of Y2, guinea pig mortality rates have decreased by at least 20% in households that have received guinea pig husbandry training, compared to Y1 baseline.	At the end of Y3, the guinea pig mortality rate is 14.5% in beneficiary households. This is a 31.8% increase from the baseline, and a 48% reduction from Y2, suggesting that the improved monitoring implemented in Y3 was effective in reducing mortality rate.
	2.2. By the end of Y3, the number of guinea pigs per participating household has reached at least 30 individuals, compared to early 2016 baseline.	The average number of guinea pigs per participating household per village at the end of year three is 14.6 for Kajeje, Kasheke and Bitale where the project continued during Y3.
Activity 2.1. Select current guinea pig keepers and new guinea pig keepers (micro-credit beneficiaries) who will receive husbandry training: the CCCs		In Y3, 280 people (127 men and 153 women) were selected, trained and benefited from WCS micro-credit through CCCs to start guinea pig micro-

<p>will receive applications from current guinea pig keepers willing to receive husbandry training and assistance, and from new individuals willing to receive micro-credit to start a guinea pig micro-enterprise. Members of the CCCs and WCS then select guinea pig breeding beneficiaries.</p>	<p>enterprise.</p> <p>During the project, 490 people (218 men and 272 women) have been selected, trained and received micro-credits from WCS through the CCCs to set up a guinea pig microenterprise.</p>	
<p>Activity 2.2. UECCO provides training to guinea pig breeding beneficiaries in improved guinea pig production, focusing on good husbandry practices and breeding management.</p>	<p>During Y3, UECCO trained 280 microcredit beneficiaries (127 men and 153 women) in improved guinea pig production.</p> <p>During the three years of the project, UECCO trained 490 microcredit beneficiaries (218 men and 272 women) and 40 non-beneficiary guinea-pig keepers on improved guinea pig breeding techniques to improve guinea pig production in households in villages bordering Kahuzi-Biega National Park.</p>	
<p>Activity 2.3. UECCO and WCS train guinea pig breeders in guinea pig-based micro-enterprise development.</p>	<p>From 2016 to 2019, UECCO and WCS trained 240 (120 men and 120 women) beneficiary guinea pig keepers and 52 (23 men and 29 women) non-beneficiary guinea pig keepers on microenterprise development.</p>	
<p>Activity 2.4. UECCO monitors and provides technical support to guinea pig breeding beneficiaries for guinea pig husbandry and production.</p>	<p>At the end of Y2, five local monitors were recruited to improve monitoring of guinea pig husbandry; two in Kajeje, two in Kasheke and one in Bitale. Monitoring by community monitors took place three times per month, and three UECCO technicians visited sites for three days once per month or every other month to check on monitoring activities and provide technical assistance to households where issues had been identified by local monitors. Guinea pig mortality rate decreased in the third year as a result of this additional monitoring.</p>	
<p><b>Output 3.</b> Increased availability and adoption of guinea pig meat by communities in target sites.</p>	<p>3.1. Each year, all beneficiary guinea pig keepers will have an average of 25% increase in the proportion of domestic meat in their household diet.</p>	<p>In Y3, 10.4% of meals on average include domestic meat in beneficiary guinea pig keeping households (a decrease of 35% from baseline), of which 46.2% consist of guinea pig meat (an increase of 28.3% from baseline). The Proportion of meat meals containing guinea pig increased by 63.6% in Kasheke, 24.1% in Cifunzi, 22% in Fendula, 20.5% in Kajeje and 15.4% in Bitale.</p>
	<p>3.2. By the middle of Y2, at least 25% of local restaurants in intervention sites offer guinea pig dishes on at least a weekly basis.</p>	<p>13% of local restaurants surveyed in all project sites at the end of Y3 offered guinea pig dishes on a weekly basis, 60% of which were in Bitale, 30% in Kasheke and 10% in Cifunzi.</p>

	3.3. By the end of Y3, the number of guinea pigs available in markets has increased by at least 50% compared to Y1 baseline.	An estimated 542 guinea pigs were available in markets surveyed at end of Y3. This is an increase of 173% from the baseline.
Activity 3.1. UECCO holds cavy cooking classes - 2 sessions per site - with restaurant cooks, women who keep guinea pigs and women who do not keep guinea pigs.		<p>A guinea pig cooking course was held in Kajeje in the first year of 2017, in which 23 beneficiaries (10 men and 13 women) and 8 non-beneficiaries (3 men and 5 women) participated.</p> <p>During Y3, four guinea pig cooking courses were organized in Bitale, Kasheke, Kavumu and Mudaka for 156 beneficiaries (81 men and 75 women) and 157 non-beneficiaries (79 men and 78 women). Non-beneficiaries present included restaurant owners, representatives from nutrition centres, members of local authorities and food security associations, as well as women from the communities who are not yet guinea-pig keepers.</p> <p>In total, five guinea pig cooking courses were organized in Bitale, Kasheke, Kajeje, Kavumu and Mudaka for 179 beneficiaries (91 men and 88 women) and 165 non-beneficiaries (82 men and 83 women).</p>
Activity 3.2. UECCO holds meetings with guinea pig breeders, meat traders and restaurateurs to connect guinea pig producers with sellers.		During the project, one meeting was held in Kajeje with guinea pig producers, sellers and restaurateurs. Four further meetings were held during guinea pig days in Bitale, Kasheke, Kavuma and Mudaka.
Activity 3.3. UECCO develops and distributes pro-guinea pig materials to CCCs and to individuals attending awareness raising events in intervention sites.		1000 guide leaflets on guinea pig breeding have been produced and distributed in intervention sites by UECCO.
Activity 3.4. All project partners carry out annual guinea pig celebration days in each of the five intervention sites.		During Y3, ICCN, WCS, UECCO and the CCC of each village organized guinea pig celebration days, one day each in Bitale, Kasheke, Kavuma and Mudaka. In total 313 people took part in this activity (160 men and 153 women). These celebration days were an opportunity for successful beneficiaries to share their stories with potential guinea pig breeders and buyers, and to sell their guinea pigs.
Activity 3.5. WCS trains community members in research techniques and together conduct market research on guinea pigs to monitor changes in protein availability and consumption.		In Y1, two university students were trained to conduct market surveys. In the third year, five community monitors were recruited and trained on guinea pig husbandry practices and monitoring techniques, in order to improve monitoring of beneficiary guinea pig keeper's progress.
<b>Output 4. Law enforcement and awareness raising activities</b>	4.1. From the end of Y1 onwards, no new mine sites are established	Five mining sites were established in Y1, and six new sites were established in Y2 in the park's highland sector. All were shut down before the end of Y2.

effectively deter bushmeat hunting and the establishment of new mining sites in KBNP.	within the park's highland sector.	One new mining site inside PNKB was established in Y3.
	4.2. At the end of Y2, 25% more individuals surveyed at intervention sites state that they are discouraged from hunting in the park due to the risk of being caught and prosecuted, compared to year 1 baseline data collected at the start of the project.	At the end of Y3, 443 people who were interviewed said that they are discouraged from hunting in the park due to the risk of being caught and prosecuted; this is a 50.2% increase from the baseline.
	4.3. By the end of Y3, 90% of the beneficiaries who had already been arrested for bushmeat hunting prior to the project period did not get arrested again.	At the end of Y3, 100% of the beneficiaries who are ex-hunters had not been arrested for poaching again.
	4.4. By the end of Y3, at least 1000 people including all beneficiaries will be aware of the impacts of bushmeat hunting on wildlife populations.	From 2016 to 2019, 1009 individuals (including 435 men and 444 women as well as 130 people who attended on an ad hoc basis) have been made aware of the impacts of bushmeat hunting on wildlife populations
Activity 4.1. ICCN rangers conduct patrols using SMART, collecting data on wildlife sign encounters and on illegal human activities.		5398 patrols were conducted from 2016 to 2019, with Darwin, USAID and KfW match funding.
Activity 4.2. ICCN and WCS analyse results from SMART data to adapt patrol effort and orientate patrols.		ICCN and WCS analysed SMART data on a quarterly basis to adapt ranger patrol efforts.
Activity 4.3 ICCN shows environmental films and communicates environmental laws.		Environmental films were shown by ICCN during 8 awareness raising sessions on conservation laws.

## Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							

1a	Number of people to submit PhD thesis						
1b	Number of PhD qualifications obtained						
2	Number of Masters qualifications obtained						
3	Number of other qualifications obtained						
4a	Number of undergraduate students receiving training						
4b	Number of training weeks provided to undergraduate students	2	Congolese	Male		French	
4c	Number of postgraduate students receiving training (not 1-3 above)						
4d	Number of training weeks for postgraduate students						
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(e.g., not categories 1-4 above)						
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	542	Congolese	Male (255) Female (287)	Financial literacy and small enterprise development	Swahili	
6b	Number of training weeks not leading to formal qualification						
7	Number of types of training materials produced for use by host country(s)(describe training materials)	5			Pamphlet on guinea pig keeping, Training manual on guinea pig husbandry, Poster, banner and picture board used during training	French, Swahili	

<b>Research Measures</b>		<b>Total</b>	<b>Nationality</b>	<b>Gender</b>	<b>Title</b>	<b>Language</b>	<b>Comments/ Weblink if available</b>
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)						
10	Number of formal documents produced to assist work related to species identification, classification and recording.						
11a	Number of papers published or accepted for publication in peer reviewed journals						
11b	Number of papers published or accepted for publication elsewhere						
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	8			BNS (basic necessities survey), Consumption UCT-unmatched count technique), Guinea pig production, SMART, Market data, Restaurant data, Household wealth, Price of goods	French	
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed						

	over to host country						
13a	Number of species reference collections established and handed over to host country(s)						
13b	Number of species reference collections enhanced and handed over to host country(s)						

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work						Seminar will be conducted after the life of project in capital city and park headquarters
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.						

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)		
21	Number of permanent educational, training, research facilities or organisation established		
22	Number of permanent field plots established		Please describe

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work	242,190					

## Annex 5 Publications

<b>Type *</b> (e.g. journals, manual, CDs)	<b>Detail</b> (title, author, year)	<b>Nationality of lead author</b>	<b>Nationality of institution of lead author</b>	<b>Gender of lead author</b>	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. web link,contact address etc)

## Annex 6 Darwin Contacts

To assist us with future evaluation work and feedback on your report, please provide details for the main project contacts below. Please add new sections to the table if you are able to provide contact information for more people than there are sections below.

Please see our Privacy Notice on how contact details will be used and stored:  
<https://www.gov.uk/government/groups/the-darwin-initiative#privacy-notice>.

<b>Ref No</b>	
<b>Project Title</b>	
<b>Project Leader Details</b>	
Name	
Role within Darwin Project	
Address	
Phone	
Fax/Skype	
Email	
<b>Partner 1</b>	
Name	
Organisation	
Role within Darwin Project	
Address	
Fax/Skype	
Email	
<b>Partner 2 etc.</b>	
Name	
Organisation	
Role within Darwin Project	
Address	
Fax/Skype	
Email	

## **Annex 7 Supplementary material (optional but encouraged as evidence of project achievement)**

This may include outputs of the project, but need not necessarily include all project documentation. For example, the abstract of a conference would be adequate, as would be a summary of a thesis rather than the full document. If we feel that reviewing the full document would be useful, we will contact you again to ask for it to be submitted.

It is important, however, that you include enough evidence of project achievement to allow reassurance that the project is continuing to work towards its objectives. Evidence can be provided in many formats (photos, copies of presentations/press releases/press cuttings, publications, minutes of meetings, questionnaires, reports etc.) and you should ensure you include some of these materials to support the annual report text.

If you are attaching separate documents, please list them here with an Annex reference number so that we can clearly identify the correct documents.

Guinea pig success story, ref 7.1

Guinea pig day factsheet, ref 7.2

Guinea pig leaflet, ref. 7.3

Photos, ref. 7.4

## Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
<b>Do you have hard copies of material you want to submit with the report?</b> 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	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	