



Darwin Initiative Final Report

Darwin project information

Project Reference Number	21-016
Project Title	Alternative sustainable livelihood sources for forest edge hunting communities
Host country	Uganda
Contract Holder Institution	Royal Zoological Society of Scotland (RZSS)
Partner Institution(s)	Budongo Conservation Field Station (BCFS)
Darwin Grant Value	GBP 123,000
Funder (DFID/Defra)	DFID
Start/End dates of Project	1 st April 2014 – 31 st March 2017
Project Leader's Name	Dr Fred Babweteera
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1 Project Rationale

The project was based in and around Budongo Forest Reserve, Masindi District in mid-western Uganda (See Annex 7). The forest reserve forms the northernmost arc of the bio-diverse rich Albertine rift area. Hunters and forest edge community members derive a livelihood from the forest including setting snares to catch antelopes for subsistence and commercial purposes. Endangered species such as chimpanzees accidentally get caught by snares which are one of the major threats to chimpanzees and other wild fauna in protected forests and in the Budongo landscape. Most hunters who are often the lowest income earners lack alternative sources of livelihood yet their farms and those of other forest adjacent communities are often raided by wildlife because of their proximity to the forest edge leading to increased human-wildlife conflicts. These challenges were identified basing on Budongo Conservation Field Station's (BCFS) long term experience working with local communities around Budongo Forest Reserve and from a previous project on vermin control in the Albertine Rift region.

This project was designed to address the need for alternative livelihood sources to enhance household incomes of the most vulnerable households. The project sought to improve household incomes, food security and reduce dependence on forest resources of the lowest income earners in twelve forest edge communities as a result of diversified agricultural produce and access to vocational skills that provide alternatives to indiscriminate hunting. In addition, the project targeted improving buffer zone farming to minimise crop raids by wild animals from the reserve. Interventions to reduce local peoples' dependence on forest resources and crop raiding by

wildlife amidst a growing human population are relevant for CBD programme of work for protected areas in Uganda (POWPA) with reference to human wildlife conflicts and indiscriminate hunting. The project made a contribution to human welfare, conservation of biological diversity and wild habitats.

2 Project Achievements

2.1 Outcome

Outcome:	Hunters and their dependants, in twelve forest edge communities supported to develop alternative sustainable livelihoods that are compatible with wildlife conservation.			
	Baseline	Change by March, 2017	Source of evidence	Comments (if necessary)
Indicator 0.1	No formal conservation agreements between BCFS and project beneficiaries	Nine conservation agreements between project beneficiaries, BCFS, and BSLG, NFA and UWA formally signed	Annex 8.	These cover all the 12 villages where the project was implemented.
Indicator 0.2	Average livestock herd size in ex-hunter households was 0	Average livestock herd size in beneficiary households was at least 7 animals	End line survey of beneficiary livelihoods and adoption of improved agricultural production	The herds would have further increased but were constrained by several other domestic costs
Indicator 0.3	Household incomes in forest dependant communities including hunting communities estimated at \$0.8 per day	Household incomes of project beneficiaries including hunters, other illegal forest users and vulnerable households increased to \$1.29 per day	End line survey of beneficiary livelihoods and adoption of improved agricultural production	Average income per day increased to 1.35\$ in Year 2 but decreased to \$1.29 probably because of low yields and less sales of agricultural produce
Indicator 0.4	Forest dependant households including hunters not trained in vocational skills, with an average income estimated at \$0.8 a day	Twenty three beneficiaries acquired vocational skills and started working. Their household incomes increased to \$2.49 per day. Two other project beneficiaries were trained as agricultural crop protection service providers by MADFA	End line survey of beneficiary livelihoods and adoption of improved agricultural production	Income was analysed in the 3 rd quarter of Year3
Indicator 0.5	Households mainly cultivate traditional crops, even at the forest edge	At least 87 beneficiary households (15%) had planted non-traditional crops at least over two consecutive planting seasons.	End line survey of beneficiary livelihoods and adoption of improved agricultural production	MADFA has enlisted 32 farmers for sunflower growing
Indicator 0.6	Twenty snares recovered from the forest per day	An average of 8 snares recovered from the forest per day	Snare recovery data base/report	Monthly summaries show 5 snares recovered per day by end of February 2017 Snares still exist in the forest and it is possible some community members still engage in illegal hunting.

Indicator 0.7	20% of forest edge community households have functional sanitation facilities	100% of beneficiary households have functional sanitation facilities.	End line survey of beneficiary livelihoods and adoption of improved agricultural production	11% of beneficiary household sanitation facilities needed some form of repairs
Indicator 0.8	5% community members' livestock receiving periodic veterinary care	The January, 2017 survey showed 76% of the beneficiaries had had their livestock treated at least twice in Year 3	End line survey of beneficiary livelihoods and adoption of improved agricultural production Veterinary treatment records(Annex 10)	334 households had their livestock treated in Year 3.

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

Impact: Household incomes and food security improved among forest edge communities as a result of access to skills and diversified agricultural products that provide alternatives to indiscriminate hunting that threatens iconic wildlife species

The project support on vocational training, livestock management and propagation of non-traditional crops that are less raided by wildlife contributed to food security and to an increase in household income from \$0.8 to \$1.29. This improved peoples' welfare whilst mobilising support for conservation practices. The threat to survival of wildlife due to indiscriminate illegal hunting methods was reduced considering the decreasing number of snares (which would have maimed or killed wild animals) confiscated from the forest. The number of snares recovered reduced from 20 before the project started to 5 snares per day by end of February 2017.

2.3 Outputs

Output 1:	Individual forest dependant community members including hunters, their respective household dependants and livelihood analysis conducted		
	Baseline	Change recorded by March, 2017	Source of evidence
Indicator 1.1	None	Livelihoods analysis report submitted in May 2015. Report on beneficiaries' livelihoods by the end of the project	Baseline Survey Report End line survey of beneficiary livelihoods and adoption of improved agricultural production
Output 2	Conservation agreement/framework to support forest dependant community members including hunters and their dependents established in 12 villages		
Indicator 2.1	None	A register of beneficiaries including 90 ex-hunters, 58 pit-sawyers and 432 poor non-illegal forest users'	Annex 9

		families in 12 villages completed.	
Indicator 2.2	None	21 confidence building meetings and 10 training seminars were held	Photo gallery (Annex 11)
Indicator 2.3	None	Nine conservation agreements between project beneficiaries, BCFS, NFA, UWA and BSLG were signed.	Annex 8
Indicator 2.4	Twenty snares recovered from the forest per patrol day by the BCFS snare patrol team	An average of five snares were recovered from the forest per day by the BCFS snare patrol team	Snare recovery report
Indicator 2.5	At-least five chimpanzees recorded trapped by snares annually	Two records of chimpanzees caught by snare in Yr3.	
Output 3	Household specific alternative livelihoods sources selected through participatory methods with individual beneficiary households; Understanding of economic potential of improved agricultural practice as opposed to illegal hunting practice.		
Indicator 3.1	Agronomic practices heavily relied on indigenous knowledge and revolved around traditional crops	Draft guidelines on improved agronomic practices compiled and shared with local government	Foreword page authenticated by BSLG(Annex 12) Guidelines on improved Agronomic practices for forest edge communities in the Budongo landscape
Indicator 3.2	Forest dependant communities including hunters earned \$0.8 per day	Project beneficiaries including hunters, pit sawyers and vulnerable households earning \$1.29 per day	End line survey of beneficiary livelihoods and adoption of improved agricultural production
Indicator 3.3	None	Vocational training institutions tailored curriculum to suit the training needs of the project beneficiaries	Annex 13
Output 4	Agricultural demonstration farms established to promote adoption of buffer-zone cropping systems that minimize crop loss to wildlife		
Indicator 4.1	None	Three buffer zone cropping demonstration farms of 7 acres established	Copy of Land-use agreement(Annex 14)
Indicator 4.2	None	Guidelines on buffer zone farming were drafted	Authenticated Foreword (Annex 12)
Indicator 4.3	Raids on crops by wildlife including endangered chimpanzees increasing in frequency and	Observations suggest a 30% reduction in crop raiding. However the most 'vulnerable' non-traditional crops were	End line survey of beneficiary livelihoods and adoption of

	intensity accounting for at least 10% of the reductions in crop yield in addition to spending lots of time guarding the garden against attacks from wildlife	vulnerable to raids during 29% of the farming season for soya beans and 10% of the farming season for eggplant	improved agricultural production
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Erratic weather remained the biggest challenge for farmers to adopt new crops especially where these crops were considered vulnerable to weather changes. Crops that are deemed more resistant to the erratic weather conditions such as sunflower, rice and soy-bean were encouraged. Small-holder irrigation using 'watering cans' and use of soil erosion control structures were included on the demonstration gardens as part of training.

3 Project Partnerships

Budongo Sub-county Local Government (BSLG) supported the project through mobilisation of communities and enforcement of certain regulations such as sanitation in homes, formation and registration of the beneficiaries' groups. The National Forestry Authority (NFA) and Uganda Wildlife Authority (UWA) are the mandated agencies for law enforcement in the Budongo landscape. They provided guidance on policy development while sensitising project beneficiaries. The two agencies are positive that the project achievements contributed to conservation efforts by influencing peoples' attitudes in favour of conservation. Technical staff from UWA and NFA took lead in training project participants on relevant laws in wildlife protection. At the demonstration gardens and on selected beneficiary farms, Masindi District Farmers Association (MADFA) took lead in providing technical guidance, training of farmers on best agronomic practices and providing advice on market sourcing.

Both BSLG and MADFA registered the groups under this project and will continue to support them in future. MADFA has continued to enrol the groups for 'market oriented farming' with emphasis on soybean and sunflower for the vegetable oil industry. BSLG started supporting farmers' groups that are venturing into rice growing as an enterprise less vulnerable to raiding by wild animals. BCFS will continue to collaborate with BSLG on livestock treatment and disseminating information on guidelines for Buffer zone farming.

4 Contribution to Darwin Initiative Programme Outputs

4.1 Contribution to SDGs

SDG 1 (No Poverty) and SDG15 (Life on land, Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss) are relevant to this project. To SDG1, the project has contributed by providing forest dependent communities including hunters an alternative source of income by encouraging cultivation of high value non-traditional crops, livestock rearing and through vocational training. A 61% increase in beneficiary household incomes has been recorded from \$0.8 to \$1.29 a day which is higher than the presumed \$1.25 a day for extreme poverty by the World Bank. Furthermore, the rate of illegal activities such as pit sawing and hunting has reduced over the project area which in turn reduces the threats to forest biodiversity contributing to SDG15. We have recorded a reduction in the number of snares recovered from the forest from approximately 20 snares per day before the project started to now approximately 5 snares a day.

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

This project focused on a key threat of bush meat hunting on chimpanzees (a highly endangered species). Much as chimpanzees are not the target species for hunters, indiscriminate methods of hunting affect chimpanzee populations. The project aimed at reducing the number of snares set in the forest, in addition to reducing acts of illegal timber harvesting that provides access to other illegal forest users. We have recorded a reduction in the number of snares recovered by

the snare patrol team from approximately 20 per day to approximately 5 per day by February, 2017. In addition, guidelines for buffer zone farming were published and will be used to guide communities in the project area and other areas with similar conservation challenges to promote cultivation of buffer crops that are less palatable to crop raiding wildlife thereby reducing human-wildlife conflicts. BCFS will continue making observations around farmlands to document the frequencies of crop raiding in the long term following the introduction of the less palatable crops.

4.3 Project support to poverty alleviation

Vulnerable members in communities including 90 former hunters, 58 pit sawyers and 432 households considered poor and living adjacent to Budongo Forest Reserve benefited from the project in form of vocational training, farm inputs and training. At least 100 of these households are woman-led households and 8 of the 23 beneficiaries that obtained vocational training were women. The introduction of non-traditional crops such as vegetables, rice and soya bean improved the nutrition status but were also a source of income. Based on pilot/demonstration farmers that we engaged to grow vegetables (non-traditional high value crops) during the first planting season of this project, the farmers recorded a 30% rise in farm produce income using the same farm acreage. Whilst the reduction in time spent by farmers guarding their gardens against crop raiding by wild animals increased household productivity and children had more time at school. During the project time, farmers recorded a 69% rise in household incomes from \$0.8 to \$1.35 a day, though this dropped to \$1.29 per day (61%) in the final year which was attributed to erratic weather changes that affected agricultural production (End line survey of beneficiary livelihoods and adoption of improved agricultural production).

4.4 Gender equality

Most households in the project area were culturally male headed. In some cases women represented their spouses in meetings and project activities. This representation would empower the women to participate in project activities but also learn improved farming methods alongside conservation knowledge. Women beneficiaries participated in group leadership positions for example the Treasurer for Kapeka group is a woman. Conservation agreements were deliberate to state that benefits accruing from the project would serve all the family members including the youth, women and the girl child.

4.5 Programme indicators

Project beneficiaries were organised into groups that signed agreements pledging allegiance to conservation. These agreements were between the project beneficiaries, BCFS and two statutory organisations-the National Forestry Authority and Uganda Wildlife Authority. The beneficiary groups were also registered by the district local government as community based organisations. This is important for the sustainability of the groups as they are formally considered in community based development programmes. In addition, a 61% increase in average household incomes was recorded. The most recent livelihood analysis showed that up to 55% of beneficiary households recorded an improvement in their incomes. Incomes in 6% of the households were at baseline conditions, while 39% of households were still below the average income of \$0.8 recorded in the baseline survey.

4.6 Transfer of knowledge

BCFS is now a member of the technical committee on research in biodiversity hosted by the Uganda National Council of Science and Technology and a member of Poverty and Conservation Learning Group which present a forum for sharing experiences and learning from different organisations and individuals involved in ecosystem conservation but implementing interventions on poverty alleviation. Staff from BCFS participated in a conference of researchers at the African Primatologists Consortium that focused on conservation of biological diversity in the Albertine region of Uganda. We presented a paper on 'Conditioning conservation incentives to reduce threats to great ape survival' in which our experiences and lessons learned during the project time played a central role. BSLG has shown trust in this project's achievements and this has been exhibited by inviting BCFS staff to attend council meetings. In addition two participants on this project, John Paul Okimat (Dresden University, Germany) and Eric Okwir (Makerere

University, Uganda) were enrolled for Master's Degree programs. Twenty beneficiaries (12 men and 8 women) received formal vocational skills training and were awarded certificates in tailoring, brick laying and hair dressing.

4.7 Sustainability and Legacy

Achievements from this project have been shared with Masindi District Production Department in order to share knowledge and influence planning for agricultural production and rural income in the district. The practice of growing non-traditional crops was introduced and will be sustained with partner institutions BSLG and MADFA. BSLG is currently promoting rice and banana farming as high value crops. BCFS will remain a reference point on buffer zone farming and will continue to provide veterinary expertise to livestock keepers. With all of these interventions completed, we believe that the project will have achieved a sustainable end point whereby income from improved agriculture, livestock keeping and vocational skills will provide the incentive to stop engaging in hunting and other illegal activities but focus on the alternative livelihood sources. Project staff will be re-absorbed in the BCFS team in order to keep institutional memory but to also benefit from the knowledge and experience obtained over the project life time. Some funds (£55,000) have been secured from ARCUS Foundation to support additional work under the alternative livelihoods programme.

5 Lessons learned

The project design identified the necessary partnerships, and approaches of identifying and engaging project participants, some of whom-like hunters-are elusive. The use of ex-hunters and other beneficiaries from the previous phase of this scheme enabled smooth dialogue during the confidence building meetings. It is often difficult to get hunters and other illegal forest users admitting their acts due to fear of being victimised and arrested. Consequently, we give credit to beneficiaries from the previous phase for their contribution in aiding us identify and get other hunters and pit sawyers to join the scheme. BCFS had a team specialised in veterinary practice and conservation but was re-enforced by staff from MADFA who took lead in agronomy, while staff from Budongo Sub-county Local Government took lead in community development issues. This partnership gave the team the appropriate expertise. However, in future, we will consider including expertise in financial management that will guide beneficiaries on how to maximise benefits from income obtained.

The project faced challenges in selecting representative sites for the demonstration farms. Many community members were keen on hosting the demonstration farms, whereas the selection criteria (especially the minimum size of the land required) implied that the selected farms did not belong to the poorest of the community members. To spur adoption of promoted farming practices among the poorer households, it was desirable to locate some demonstration farms on smaller parcels of land that are representative of the average community landholdings. To this effect, we established additional demonstration plots on smaller land holdings to mimic the typical farming conditions of this community. We also observed that when beneficiaries realised an unprecedented rise in household income, many did not know how to manage the success and in many cases they misused the additional income. Unfortunately, the changing weather patterns implied that these high household incomes from farming are never guaranteed. It is therefore important for projects that target poverty reduction to plan for management of increased household incomes. In relation to this, we now believe that a project of three years may not achieve long-term increases in household incomes because there are a number of challenges that affect family livelihoods, erratic weather, inflation and fluctuating prices of farm produce. This is because while farmers may sell agricultural produce at higher prices, high national inflation is likely to wipe-out the gains and consequently affect livelihoods and wellbeing.

During the project initiation phase, we thought when the bulk of snares are removed then injuries due to snares would cease but isolated cases of snare injury can undermine the success rating of the project. In the second year we did not have any record of snared chimpanzees but recorded two in the 3rd year. During the 3rd year, chimpanzees altered their foraging patterns and occasionally went out of Budongo Forest to raid sugar-cane in response to declining fruiting by

forest trees. The ensnared chimpanzees could have got caught in these peripheral areas where patrol efforts were inadequate. This change in animal behaviour is beyond the control of the project. However, the snares in peripheral areas suggest that there are still people that are not yet involved in conservation activities and continue to set these snares. The project scored highly on reducing the risk of exposure to injuries than totally eliminating the incidences of chimpanzee injury (Indicator 2.5).

5.1 Monitoring and evaluation

The Monitoring and Evaluation system provided a practical approach to identifying progress and the pressing challenges encountered by project participants. For instance, changes in household income as well as challenges encountered were identified through surveys, while trends in illegal forest activities were identified through the regular snare patrol data.

An external consultant visited the project and conducted a mid-term review evaluation.

- The evaluation commented on Indicator 4.1; 12 demonstration farms of 12 acres minimum established by end of year 1. Three demonstration gardens were established on 7 acres of land but the project team also used other beneficiary farmers' gardens for demonstration and training purposes. This was cost effective and adapted to farmers' experiences where good practices and slip ups could be identified on peers' gardens and at the demonstration gardens.
- The project team had expressed fear that the quality of seed produced by different project beneficiaries could be compromised by cross pollination with inferior varieties during project time. This could not compromise the output as the available buyer agents want the grain for vegetable oil and poultry feeds. The project team has alerted farmers about the quality of seed in future and MADFA is now sensitizing farmers about credible seed sourcing. MADFA operates a credible seed outlet.
- BCFS is strengthening the exit strategy by handing over some activities to partners MADFA and BSLG. MADFA has maintained farmer recruitment for 'market oriented farming' and by end of February 2017, 32 farmers were enrolled to participate in sunflower farming. MADFA is organizing to establish demonstration gardens in the project area. The groups were registered in Local Government structures and the group leaders were introduced to the technical teams in order for them to lobby for local government funded projects available at the sub-county.
- The project achieved its impact: Household incomes improved from \$0.8 per day to \$1.29. Only 47% of the project beneficiaries reported they had had food of the right quality and quantity throughout the previous year (Year 3, 2016). It is important to note that many Ugandan households faced severe food shortages during the reference year given the harsh weather experienced.
- On indicator 2.4: The number of snares collected from the forest per day reduced from 20 snares/day to 5 snares/day by end of February 2017
- All listed members of beneficiary farmer associations have equal rights on membership. The groups are managed by the members themselves with their own constitution and regulations. This was deliberate for the groups to administer their own affairs while BCFS and other partners come in to provide technical guidance on issues beyond the members' competence.
- Indicator for biodiversity protected: Number of animal sightings increase from 2 animals seen per day to 4 animals seen per day by the 4th Quarter in the third year.

5.2 Actions taken in response to annual report reviews

The Reviewer recommended 're-investing seed into the groups'. Two groups are already re-investing seed among their membership to ensure sustainability of the project. The former hunters that received goats in Year 3 agreed to return one goat that will be given to other reforming hunters. The project beneficiaries concur that this is a positive development for their membership and sustainability of the scheme.

6 Darwin identity

The Darwin Initiative is part of the community conservation programme implemented by the Budongo Conservation Field Station. During presentations to partners and various visitors to BCFS, this project is presented with specific reference to the grant form Darwin Initiative. The demonstration sites are clearly marked with sign posts indicating that they were established with support from the Darwin Initiative. Darwin Initiative will be acknowledged in the publication of Guidelines for buffer zone farming in the Budongo Landscape. The Darwin Initiative logo also appears on BCFS website and this Initiative is clearly spelt out as one of our key funder on this project.

7 Finance and administration

7.1 Project expenditure

Project spend (indicative) since last annual report	2016/17 Grant (£)	2016/17 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			0	
Consultancy costs			0	
Overhead Costs			0.7	
Travel and subsistence			-3.5	
Operating Costs			-2.2	
Capital items (see below)			5.3	
Others (see below)			0	
TOTAL	31,565	31,914		

Staff employed (Name and position)	Cost (£)
Fred Babweteera	
Geoffrey Muhanguzi	
TOTAL	11,755

Capital items – description	Capital items – cost (£)
Knapsack sprayers (16)	
TOTAL	852

7.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Oakland Zoo snare patrol activities	
RZSS core funding for BCFS	
TOTAL	100,795

Source of funding for additional work after project lifetime	Total
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	(£)
ARCUS Foundation	
TOTAL	55,000

7.3 Value for Money

Working within the existing administrative structure of RZSS and BCFS meant that the costs of this project were kept to a minimum. Where possible, the project utilised existing equipment and resources such as vehicles to facilitate the implementation of this project. Extensive travel was done during the implementation of this project. The project used the vehicles and motorcycles at BCFS. Travel expenses covered fuel, maintenance and insurance. Consequently, project costs were kept to a minimum.

The long history of working with local communities in Uganda to establish sustainable conservation projects based on the values, trust and enthusiasm built among the beneficiary communities enabled BCFS to deliver the objectives with minimal hindrances. to

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>Impact: Household incomes and food security improved among forest edge communities as a result of access to skills and diversified agricultural products that provide alternatives to indiscriminate hunting that threatens iconic wildlife species.</p>			
<p>Outcome: Forest dependant communities including hunters and their dependants, in twelve forest edge communities supported to develop alternative sustainable livelihoods that are compatible with wildlife conservation.</p>	<ul style="list-style-type: none"> • Twelve conservation agreements signed and implemented between ex-hunters' associations and Budongo Conservation Field Station/Budongo Sub-county Local Government • Increased farm production of 250 hunting community households with livestock herds increased from 0 to 12 by year 3; The increased farm production shall be a joint effort of all household members including wives and children • House hold incomes of hunting communities increased from \$0.8 per day to \$1.2 per day by year 3 • A minimum of 8 ex-hunters complete vocational skills development programme per year; Household incomes of the trained ex-hunters increased from \$0.8 per day to \$2 per day • A minimum of three non-traditional agricultural crops used for buffer zone cropping adopted by 100 forest edge community households, including ex-hunter households by end of year 3. • The number of snares surrendered by ex-hunters; The number of snares recovered in the forest per 	<ul style="list-style-type: none"> • Signed Conservation Agreements with a list of beneficiary signatories • Household agricultural output survey, Local Government agricultural output reports • Household income surveys • Number of ex-hunters with vocational training and their household incomes; Quality and quantity of commodities (especially wood-based items) produced by the beneficiaries • Household agricultural output survey, Local Government agricultural output reports; Video footage and photographs of homesteads before and after project implementation • Spatial and temporal variations in snare recovery data; Number of new snare injured chimpanzees; Periodic large mammal survey reports by BCFS • Household sanitary facilities' survey; Video footage and photographs of homestead sanitary facilities before and after project implementation • Reports capturing statistics of veterinary rounds and the number 	<ul style="list-style-type: none"> • Full cooperation by the ex-hunters and commitment to sustain the selected livelihoods projects. • Hunters will be willing to donate 2 female goats/pigs for the expansion of the scheme to other villages • Quality of farm produce is good and competitive on the market.

	<p>day reduced from over 20 to less than 5 in the first year; No new records of snare injured chimpanzees and increases in the population of hunted fauna in years two and three of the project</p> <ul style="list-style-type: none"> • 250 ex-hunter's households establish and maintain pit latrines, waste disposal sites and livestock cages/sty; The percentage of beneficiary households with proper homestead sanitary facilities increased from 20% to 100% by year 3; • Livestock for 250 households receiving periodic veterinary care to increase productivity and minimise the risk of zoonotic diseases; The proportion of beneficiaries livestock receiving veterinary care increased from 5% to 75% by year 3. 	of livestock treated; Local government veterinary report	
Outputs 1: List of forest dependant communities including hunters, their respective household dependants and livelihood analysis conducted.	1a: Report of a livelihood analysis of beneficiary households. Parameters assessed to include level of education and income, family size, assets including land, number of snares possessed and hunting frequency.	1a: Report of a livelihoods analysis.	
Output 2: Conservation agreement/framework to support forest dependant communities including hunting communities and their dependants established in 12 villages.	<p>2a: Register of all ex-hunters and their household members in the 12 villages.</p> <p>2b: Forty confidence building meetings and 48 training seminars held with ex-hunters' groups</p> <p>2c: Formally signed conservation agreements between BCFS and hunters' associations.</p> <p>2d: Collections of snares recovered from ex-hunters and within the forest</p> <p>2e: No new record of chimpanzees maimed or killed by snares</p>	<p>2a: Register of all forest dependant community members including ex-hunters and their household members in the 12 villages</p> <p>2b: Report of confidence building meetings and training seminars; Photos of participants in session.</p> <p>2c: Signed agreements</p> <p>2d: Storage facility of recovered snares</p> <p>2e: Records of snare injured chimpanzees.</p>	<ul style="list-style-type: none"> • Beneficiaries will denounce the previous illegal activities and the alternative livelihoods projects provided will be an incentive not to return to the past practices

		2.5 Project Report	
3. Household specific alternative livelihoods sources selected through participatory methods with individual beneficiary households: understanding of economic potential of improved agricultural practice as opposed to illegal hunting practice	3.1 guidelines for improved agronomic practices accepted by the local government Production department 3.2 Income levels of beneficiaries increase from 0.8 to 1.2\$ per day 3.3 Vocational training curriculum tailored for semi-illiterate community members developed by end of Yr 1	3.1 Guidelines on buffer zone farming produced 3.2. Household Survey report 3.3 Curriculum documents Annexed	<ul style="list-style-type: none"> The selected alternative livelihoods projects provide better economic returns and farmers are willing to sustain the projects
4. Agricultural demonstration farms established to promote adoption of buffer zone cropping systems that minimise crop loss to wildlife	4.1 12 demonstration gardens of 12 acres minimum established by end of Yr 1 4.2 Working paper on buffer zone cropping systems accepted by local government Production department 4.3 Frequency and intensity of crop raiding by wildlife reduced by 30% in Yr 3	4.1 Number and/or acreage of demonstration farms. Photos of demonstration farms 4.2 Print of working paper on buffer zone cropping systems 4.3 Report of crop raiding dynamics in project area	<ul style="list-style-type: none"> Selected buffer zone crops are culturally acceptable to the ex-hunters and the poorest forest dependant community households

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)

- Activity 1.1 Identify and register hunters in 10 target villages
- Activity 1.2 Conduct livelihood analysis of ex-hunter households
- Activity 2.1 Confidence building meetings with ex-hunters in their respective villages
- Activity 2.2 Training seminars and workshops
- Activity 2.3 Snare patrol exercises
- Activity 2.4 Formation and registration of ex-hunters associations; Signing of conservation agreements
- Activity 2.5 Biological surveys of spatial and temporal distribution of wildlife especially the hunted species and chimpanzees
- Activity 3.1 Training of ex-hunters in animal husbandry, improved agronomic practices and vocational skills
- Activity 3.2 Procurement and distribution of seed capital including pigs, goats and improved seed varieties
- Activity 3.3 Technical support services to beneficiaries including veterinary rounds and on-farm extension services
- Activity 3.4 Campaign to establish improved homestead sanitations
- Activity 3.5 Economic surveys of household incomes
- Activity 4.1 Sign agreements with 8 farmers for the lease of land and establish demonstrations for buffer zone cropping
- Activity 4.2 Data collection and analysis of yield and income
- Activity 4.3 Develop and submit buffer zone cropping guidelines

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

Note: For projects that commenced after 2012 the terminology used for the logframe was changed to reflect DFID's terminology.

Project summary	Measurable Indicators	Progress and Achievements in the last Financial Year (2016-2017)	Actions required/planned for next period
<p>Goal/Impact: Household incomes and food security improved among forest edge communities as a result of access to skills and diversified agricultural products that provide alternatives to indiscriminate hunting that threatens iconic wildlife species.</p>		<p>Average incomes increased from \$0.8 to \$1.25 in beneficiary households as a result of cultivating non-traditional crops and applying vocational skills.</p>	<p>Not applicable</p>
<p>Purpose/Outcome Forest dependant communities including hunters and their dependants, in twelve forest edge communities supported to develop alternative sustainable livelihoods that are compatible with wildlife conservation.</p>	<ul style="list-style-type: none"> • Twelve conservation agreements signed and implemented between ex-hunters' associations and Budongo Conservation Field Station/Budongo Sub-county Local Government • Increased farm production of 250 hunting community households with livestock herds increased from 0 to 12 by year 3; The increased farm production shall be a joint effort of all household members including wives and children • House hold incomes of hunting communities increased from \$0.8 per day to \$1.2 per day by year 3 • A minimum of 8 ex-hunters complete vocational skills development programme per year; Household incomes of the trained ex-hunters increased from \$0.8 per day to \$2 per day • A minimum of three non-traditional agricultural crops used for buffer zone cropping adopted by 100 forest edge community households, including ex-hunter households by end of year 3. 	<ul style="list-style-type: none"> • Nine conservation agreements were signed between BCFS, beneficiaries and witnessed by mandated government agencies • Average livestock herd size increased to 7 in Yr 3 • Household incomes increased from \$0.8 per day to \$1.29 per day • Up to 23 beneficiaries acquired vocational skills. Their household incomes increased to \$2.49 per day. An additional 2 beneficiaries were trained by MADFA as disease and pest management service providers • At least 84 beneficiaries had planted non-traditional crops over two seasons. • Monthly summaries show 5 snares recovered per day by end of Feb 2017 • All (100%) of households have functional sanitation facilities. • Over 330 households had their livestock treated during the project duration. In Yr 3, 76% of the 	<p>Not applicable</p>

	<ul style="list-style-type: none"> The number of snares surrendered by ex-hunters; The number of snares recovered in the forest per day reduced from over 20 to less than 5 in the first year; No new records of snare injured chimpanzees and increases in the population of hunted fauna in years two and three of the project 250 ex-hunter's households establish and maintain pit latrines, waste disposal sites and livestock cages/sty; The percentage of beneficiary households with proper homestead sanitary facilities increased from 20% to 100% by year 3; Livestock for 250 households receiving periodic veterinary care to increase productivity and minimise the risk of zoonotic diseases; The proportion of beneficiaries livestock receiving veterinary care increased from 5% to 75% by year 3. 	households owning livestock had their animals treated.	
Output 1. List of forest dependant communities including hunters, their respective household dependants and livelihood analysis conducted	1.1 Report of a livelihood analysis of beneficiary households. Parameters assessed to include level of education and income, family size, assets including land, number of snares possessed and hunting frequency.	<ul style="list-style-type: none"> A baseline livelihoods analysis was conducted in 2014. An endline survey of beneficiary livelihoods and adoption of improved agricultural practices was conducted in 2017. The indicator helped the project team track changes in household income and adoption of improved agricultural practices. However, no records of snare wires possessed were obtained during the baseline because hunters never stocked snares in their homes but set them in the forest, and had abandoned hunting when the endline survey was conducted. 	
Activity 1.1 Identify and register hunters in 10 target villages		<ul style="list-style-type: none"> 576 beneficiaries were identified and registered by the project and comprised 90 hunters, 58 pit-sawyers and 432 poor non-illegal forest users. Four beneficiaries practices both hunting and pit sawying. 	
Activity 1.2. Conduct livelihood analysis of ex-hunter households		<ul style="list-style-type: none"> Baseline and endline livelihood surveys of beneficiary households were conducted. 	
Output 2. Conservation agreement/framework to support forest	2a: Register of all ex-hunters and their household members in the 12 villages.	<ul style="list-style-type: none"> A register of 576 households and their dependants compiled. The indicator was appropriate. It facilitated follow-up of beneficiary categories. 	

<p>dependant communities including hunting communities and their dependants established in 12 villages.</p>	<p>2b: Forty confidence building meetings and 48 training seminars held with ex-hunters' groups</p> <p>2c: Formally signed conservation agreements between BCFS and hunters' associations.</p> <p>2d: Collections of snares recovered from ex-hunters and within the forest</p> <p>2e: No new record of chimpanzees maimed or killed by snares</p>	<ul style="list-style-type: none"> • Sixty seven confidence building meetings were held with ex-hunters and other project beneficiaries. While the indicator hinted a threshold number of meetings would be needed to 'break the ice' before enrolling hunters into the project, it underestimated the number of required meetings. • Nine conservation agreements were signed between beneficiaries and BCFS, BSLG, NFA and UWA. This indicator was appropriate. • A stockpile of over 8,000 snares were recovered during the project time. Hunters however never stocked their snares at home, but set them in the forest. The indicator was therefore partially inappropriate. • Two chimpanzees were ensnared in Yr 3, but we think these could be because of old snares or because chimpanzees expanded their foraging range in Yr 3 in response to fruiting variations in the forest. The indicator did not consider these additional scenarios.
<p>Activity 2.1. Confidence building meetings with ex-hunters in their respective villages</p>		<ul style="list-style-type: none"> • Sixty seven confidence building meetings were held with ex-hunters and other project beneficiaries
<p>Activity 2.2. Training seminars and workshops.</p>		<ul style="list-style-type: none"> • Project beneficiaries benefited from 50 training seminars conducted together with project partners.
<p>Activity 2.3. Snare patrol exercises</p>		<ul style="list-style-type: none"> • Fifty four joint snare patrol exercises were conducted by BCFS staff and ex-hunters.
<p>Activity 2.4. Formation and registration of ex-hunters associations; Signing of conservation agreements</p>		<ul style="list-style-type: none"> • Nine beneficiary associations were registered with Budongo Sub-county Local government
<p>Activity 2.5. Biological surveys of spatial and temporal distribution of wildlife especially the hunted species and chimpanzees</p>		<ul style="list-style-type: none"> • Preliminary survey was done at the project start, but the on-going animal census (Q4 Yr 3) is strategically synchronised with census in greater Budongo – Bugoma landscape
<p>Output 3. Household specific alternative livelihoods sources selected through participatory methods with individual beneficiary households: understanding of economic potential of improved agricultural practice as opposed to illegal hunting practice</p>	<p>3.1 guidelines for improved agronomic practices accepted by the local government Production department</p> <p>3.2 Income levels of beneficiaries increase from 0.8 to 1.2\$ per day</p> <p>3.3 Vocational training curriculum tailored for semi-illiterate community members developed by end of Yr 1</p>	<ul style="list-style-type: none"> • Draft guidelines on buffer zone farming were accepted by the Budongo sub county local government. Whereas this indicator was appropriate, it should have emphasised acceptance by the sub-county local government, which interacts more and extends government services to beneficiaries • Average incomes of beneficiary households increased from \$0.8 to \$1.29 per day. This indicator was appropriate • Vocational skills training curricula developed for illiterate and semi-illiterate members. This indicator was appropriate
<p>Activity 3.1 Training of ex-hunters in animal husbandry, improved agronomic practices and vocational skills</p>		<ul style="list-style-type: none"> • Training sessions in improved agronomic practices were conducted through practical sessions at the demonstrations gardens, while training in improved livestock management practices was always conducted prior to treatment

		<p>sessions. 23 members received vocational skills training, while 2 were trained by MADFA to offer spray services.</p>
Activity 3.2 Procurement and distribution of seed capital including pigs, goats and improved seed varieties		<ul style="list-style-type: none"> Two hundred sixty five (265) households received agricultural inputs from BCFS, including crops and breeding goats and pigs.
Activity 3.3 Technical support services to beneficiaries including veterinary rounds and on-farm extension services		<ul style="list-style-type: none"> Technical support services were provided through spot-checks of beneficiary gardens and visits to homesteads.
Activity 3.4 Campaign to establish improved homestead sanitations		<ul style="list-style-type: none"> Participating in project activities was conditioned upon having a set of functional sanitation facilities including a pit-latrine, utensil rack, and rubbish pit and bath shelter. We liaised with the NFA to permit beneficiaries access necessary construction materials from the forest.
Activity 3.5 Economic surveys of household incomes		<ul style="list-style-type: none"> Two surveys of household income were conducted. The first was part of the midline project survey, while the second was merged with the endline survey. Merging of surveys enabled assessments to be done after the cropping season, when beneficiaries are certain about their household crop outputs and income.
<p>Output 4. Agricultural demonstration farms established to promote adoption of buffer zone cropping systems that minimise crop loss to wildlife</p>	<p>4.1 Twelve (12) demonstration gardens of 12 acres minimum established by end of Yr 1</p> <p>4.2 Working paper on buffer zone cropping systems accepted by local government Production department</p> <p>4.3 Frequency and intensity of crop raiding by wildlife reduced by 30% in Yr 3</p>	<ul style="list-style-type: none"> Three demonstration farms totalling 5 acres established. The indicator prescribed a fixed plot size (1 acre) for gardens to be used for demonstration, but this was very difficult to implement in the field. Several farmer-owned farms were therefore used, although of a much smaller size. Draft guidelines on buffer-zone cropping were accepted by the Budongo Sub-county Local Government. Comment on appropriateness similar to indicator 3.1. Vulnerability of buffer crops was studied at the demonstration gardens. At the most heavily affected experimental site, soya bean was observed to be vulnerable to raids during just 29% of the farming season, while eggplant was raided during 10% of the farming season. The indicator was appropriate.
Activity 4.1 Sign agreements with 8 farmers for the lease of land and establish demonstrations for buffer zone cropping		<ul style="list-style-type: none"> Short-term land leases were signed between BCFS and willing farmers on whose land demonstration sites were established. Informal consensus was reached prior to using gardens belonging to individual farmers as demonstration sites.
Activity 4.2 Data collection and analysis of yield and income		<ul style="list-style-type: none"> Data on household crop yield and income was collected during both the midline and endline surveys. The data was collected at the end of the cropping season, when farmers were certain of their actual crop yields and incomes.
Activity 4.3 Develop and submit buffer zone cropping guidelines		<ul style="list-style-type: none"> Guidelines on buffer zone cropping were developed by BCFS, MADFA and select farmers. The draft was shared with technical staff of the BSLG, after which it was forwarded and approved by the BSLG leadership.

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis	0					
1b	Number of PhD qualifications obtained						
2	Number of Masters qualifications obtained	2	Ugandan	Male	<ul style="list-style-type: none"> • Buffer zone cropping • Biodiversity Threats Assessment 	English	On-going
3	Number of other qualifications obtained	0					
4a	Number of undergraduate students receiving training	8	Ugandan	5 Female and 3 male	Internship programme	English	
4b	Number of training weeks provided to undergraduate students	4					
4c	Number of postgraduate students receiving training (not 1-3 above)	0					
4d	Number of training weeks for postgraduate students	0					
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(e.g., not categories 1-4 above)	0					
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	23	Ugandan		Vocational skills		
6b	Number of training weeks not leading to formal qualification	14			Buffer zone cropping and improved agronomy		

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
7	Number of types of training materials produced for use by host country(s)(describe training materials)	1			Buffer zone farming guidelines	English	Will be translated to vernacular

Research Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	0					
10	Number of formal documents produced to assist work related to species identification, classification and recording.	0					
11a	Number of papers published or accepted for publication in peer reviewed journals	0					
11b	Number of papers published or accepted for publication elsewhere	0					
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	0					
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	0					
13a	Number of species reference collections established and handed over to host country(s)	0					
13b	Number of species reference collections enhanced and handed over to host country(s)	0					

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	3					
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	2					

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	0	
22	Number of permanent field plots established	0	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						

Annex 4 Aichi Targets

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	X
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	X
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	X
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	X
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	X
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	

14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 5 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link,contactaddresetc)

Annex 6 Darwin Contacts

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