Darwin Initiative Main and Post Project Annual Report

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

Submission Deadline: 30th April 2020

Darwin Project Information

Project reference	24-018
Project title	Enhanced biodiversity, water security, and forest recovery in northern Guinea
Country/ies	Guinea
Lead organisation	Wild Chimpanzee Foundation
Partner institution(s)	*Office Guineen des Parcs et Reserves* (OGPR)
Darwin grant value	£334,878
Start/end dates of project	1 April 2017 – 31 March 2021
Reporting period (e.g. Apr 2019 – Mar 2020) and number (e.g. Annual Report 1, 2, 3)	1 April 2019 – 31 March 2020 Annual Report 3
Project Leader name	Professor Christophe Boesch
Project website/blog/social media	www.wildchimps.org, www.facebook.com/wildchimps
Report author(s) and date	Christophe Boesch, Hedwige Boesch, Arnaud Gotanegre, Shane M. Abeare, Pacifique Kizila – 22/04/2020

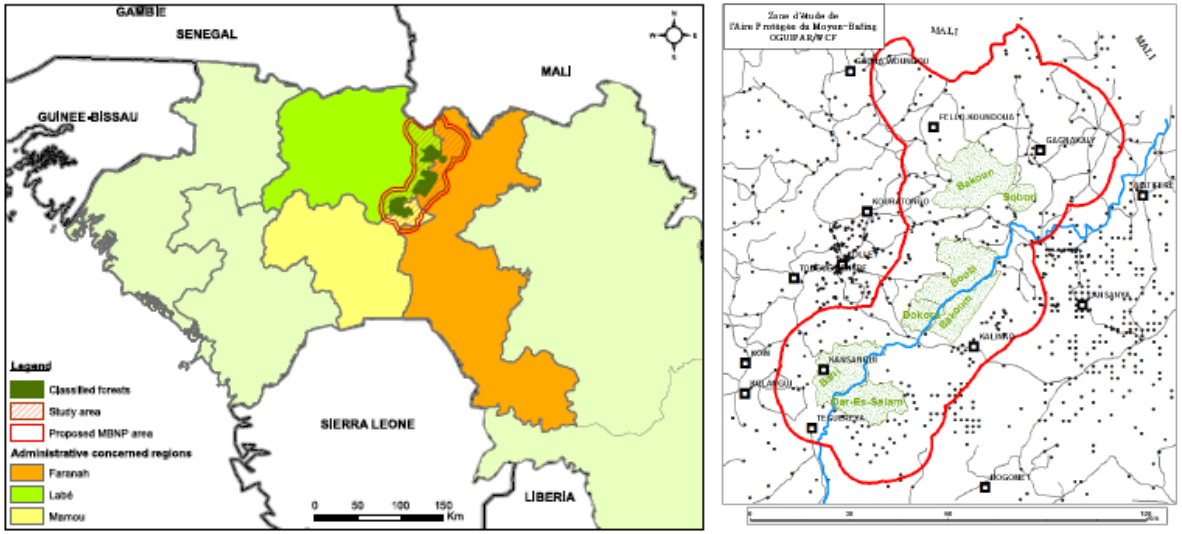
1. Project summary

The Fouta-Djallon Highlands of Guinea are known as the "water tower" of West Africa, providing the source of many of the major rivers in the region: the Senegal River, Gambia river, Niger River, and the Rio Corubal. The water security of eight countries (The Gambia, Guinea, Guinea-Bissau, Mali,

Mauritania, Niger, Sierra Leone and Senegal) is, thus, directly and indirectly effected by the ecosystem services provided by this crucial region of Guinea. However, uncontrolled deforestation associated with illegal logging activities, wildfires, and slash-and-burn agriculture practices are accelerating the desertification process, likely affecting rainfall patterns and regional climatology, thereby threatening the continued provisioning of this critical ecosystem service. The effects of forest loss on water supply are not a mere question environmental theory, as paradoxically, the local communities living on the "Water Tower of West Africa" are currently experiencing localized water shortages of ever-increasing severity. Water shortages, compounded by the loss of soil fertility (i.e. desertification), is resulting in increasing food-security risks for communities living in a country that already ranks 174th out of 189 in terms of Human Development Index (2019).

In addition to the impairment of a regionally- and locally-critical ecosystem service, forest fragmentation and loss in the Fouta-Djallon region of Guinea presents significant threats to regional biodiversity. As the country with the single greatest population of the critically endangered West African chimpanzee, *Pan troglodytes verus*, the forests of Guinea represent one of last remaining strongholds in all of West Africa for Western chimpanzees and many other species of high conservation value.

To protect the forests, wildlife, and ecosystem services of this region, a multi-year project is underway to create a new national park, Moyen-Bafing National Park (MBNP). Covering 6,426 km2, the MBNP is designed to protect: the largest remaining population of the West African chimpanzees, estimated to comprise 5,000 individuals; the rare and unique plant and wildlife species; the ecosystem services found within the park's boundaries that are important to the 255 villages located within the park and beyond. Consequently, there is an urgency to mitigate the environmental and ecological threats presented by unsustainable exploitation, while integrating the needs of the communities whose survival depends on these natural resources.



Regional / national borders and location of the MBNP (red, map left); boundary of MBNP (red), existing forest reserves (green), and the location of villages (black points; map right)

2. Project partnerships

Ministry of Environment, Waters, and Forests - Guinean Office of Parks and Reserves

Given that the creation of a national park is the prerogative of the national government, from the outset, WCF has worked in close partnership with the Ministry of the Environment, and particularly, the Guinean Office of Parks and Reserves (OGPR). To characterise the relationship between WCF-OGPR as a "partnership" could be considered an understatement, as OGPR agents are fully integrated at all levels of WCF-Guinea. This close working-relationship between the two organisations has been invaluable, facilitating communications and progress in all activities – from daily field activities to the development of the legislative framework underpinning the creation of the MBNP.

MBNP Communities
The creation of a national park that includes within its borders 255 villages, such as the case of the MBNP, requires the collective effort of park managers and community stakeholders to work collaboratively towards achieving sustainability in the use of the local natural resources. Given limited human resources, clearly, WCF is unable to work with all of the 36,000 inhabitants of the 255 villages of the MBNP, and thus, over the years has created a hierarchical, community organisational structure to ensure community participation in the on-going process of park creation. Community organisations begin at the village-level, with the formation of village committees, and expand in scope to the communal-level, then inter-communal or park-wide committees.

Other partners involved in implementing project activities in year-2/3, include:
• Kew Royal Botanic Gardens and the Guinean National Herbarium, whom led the implementation of the botanical inventory study.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1. *Reforestation of 40 ha of gallery forests and headwaters, plus the equivalent of 10 ha of fruiting tree species*

The current Darwin Initiative project employs a multi-prong reforestation strategy, which includes: 1) outplanting of nursery-raised trees, 2) natural ecologic regeneration (NRE), 3) community-based protection of forest stands within the village territory (*Mise-en-défense*, fr.), 4) farmer-managed natural regeneration, and 5) the protection of these reforestation efforts and existing forests against the destructive forces of wildfire. In year-3 of the project, the number of nursery sites increased from 1 in Laffa Boubhe to a total of 6 nurseries (Laffa Boubhe, Kalinko Missira, Foungani, Balabory, Sangan, and Koulifakara). Nursery sites within the villages were selected in a participatory manner with the communities, with final selection guided by minimal environmental criteria, such as proximity to water source. Ten community members from each of the 6 villages (60 people trained: 25 women / 35 men) assisted in all stages of the nursery development, construction, and tree planting processes, and were later trained in the upkeep and maintenance of the nursery in each of their respective villages. Within each of the 6 nurseries, there are approximately 20,000 saplings, with the exception of the nursery of Laffa Boubhe whose trees have already been used for outplanting, totalling 101,244 saplings. Species of trees within the nursery are composed of a mix of 18 different genera / species, with all being native species, while some being selected to enhance fruit availability to wildlife, particularly chimpanzees (Annex 4.1).

Another reforestation approach that is currently being implemented is known as Natural Ecological Regeneration (NRE), which is technologically quite simple, yet seemingly very effective. Following the NRE approach, naturally regenerating / sprouting trees are initially nurtured and protected from predation / competition with other plants. These naturally occurring tree sprouts have a significant advantage over the outplanting / transplanting approach in that they maintain substantial below-ground root structures that allow them to regrow much quicker than a transplant. To promote NRE, large areas that have historically suffered from wildfire are protected by creating firebreaks (Annex 4.2). Then, within the NRE site, sprouting trees are marked and all grasses and other vegetation are either cut, trampled, or pressed to lay-down the surrounding vegetation that inhibits growth of saplings through shading. With the help of 200+ local community members, 15 m-wide firebreaks have been created that are currently protecting 80 ha of saplings undergoing the natural regeneration

process. In order estimate the long-term benefits of these efforts, a sampling strategy has been devised in which 223 plots within the NRE site have been marked for growth studies. Within these plots, 1059 trees have been individually marked and their growth is being tracked. (photos, Annex 4.3)

Although, agriculture and reforestation are activities that are often at odds with each other, the current project is promoting an agroecological approach known as Farmer-Managed Natural Regeneration (FMNR). According to the FMNR approach, trees are left on a newly cleared field, or saplings allowed to grow on previously cleared fields, with a spacing maintained between trees of 5-10 m. The benefits of the FMNR approach may be seen as two-fold: 1) naturally-occurring tree species are maintained on farmed fields, thus a minimal tree canopy is maintained; 2) tree litter provides organic matter input, and when combined with other soil enhancement techniques, soil fertility can be improved, thereby prolonging the use of the farm plot and reducing the need to clear more forest, which reduces the rate of deforestation.

Following a training-of-trainers approach, in year-3, WCF Agricultural Outreach Agents (AOAs) visited the World Vision project and International Agricultural Training Centre in Mali to explore the possibility of organizing training for MBNP farmers. Additionally, an FMNR practitioner from Uganda was hired as a consultant to conduct a 15-day training program that benefitted 62 participants, including WCF-AOAs (37 people), Guinean government agriculture outreach agents (12 people), and local farmers (13 people) (photos, Annex 4.4). The multiplication of training efforts that occurred throughout year-3 allowed for a total of 254 community farmers to benefit from training sessions covering the range of FMNR-related topics: erosion control, composting, mulching, soil enhancement, and live-fencing of farm fields.

In year-4, efforts will focus on the further development of Model Farmers that can assist in outreach efforts and provide local examples of good practices, expansion of outreach efforts, and an evaluation of the adoption and implementation of the techniques. Data are currently being collected on farm productivity that will be used, in conjunction with previous socioeconomic surveys, as a baseline for comparison to productivity of FMNR farms.

***Output 2**. 3-5 ha of floodplain developed in an environmentally conscious and participative manner for community gardening cooperative projects*

Over the past year, WCF has been implementing a process of participatory land management planning within these communities, culminating in the production of a Natural Resource Management Plan (NRMP) customised for each village territory. The process of creation of the NRMP follows multiple steps and comprises multiple activities that may occur in no particular order, including: formation of a committee stakeholders that will participate in the process from beginning to end, participatory mapping of natural resources and resource-use, proposition of training (i.e. agroecological techniques) and alternative activities (i.e. vegetable gardening) to mitigate and/or replace unsustainable practices (Annex 4.5). Volunteers interested in pursuing any of the proposed alternative activities (*e.g.* vegetable gardening, apiculture, shea butter production, etc) are encouraged and assisted in forming cooperatives, of which there are currently 20 cooperatives, 7 apiculture and 13 agriculture / gardening cooperatives, comprised of 20-30 people per group. Activities supported by the present Darwin Initiative project include, in general terms: the NRMP development process, training in agroecological agriculture techniques (i.e. FMNR, discussed above) and the formation, training, and technical support to vegetable gardening cooperatives (Annex 4.6).

At present, a total of 19 villages have benefited from the land management planning effort and are in various stages of the development process. Training sessions in agroecological practices has progressed in 26 villages, where specific training related to vegetable gardening, such as composting, preparation of soil, nutrition, and biopesticides have been attended by 1,174 participants, with >90% of attendees being women. Of those participating in the vegetable

garden training series, 13 economic interest groups, or cooperatives, have been formed in 13 villages, benefitting 85 women from the communities, whose vegetable gardens currently cover a total area of 10,550 m^2, or 1.05 ha. Additionally, cooperative members have benefitted from training in financial management and have been supplied equipment and seed. (Appendix 4.7)

Lastly, it is worth noting that the site selection for gardening projects focuses on areas known in French as "*bas-fond*", which translates directly as "lowlands", referring to the rich, alluvial floodplain soils that are associated with rivers and not "wetlands", as translated in earlier reports. Given that gallery forest, or riparian forest, is a high-value conservation target, the current project is ensuring that these forests are not being degraded by the activities that are being promoted. An earlier GIS study has been conducted to identify the occurrence of these areas throughout the park (map, Annex 4.6).

Output 3. *Biodiversity inventories, monitoring system, and habitat classification developed and integrated into a GIS database*

The WCF Biomonitoring program likely ranks amongst the largest, single camera-trapping survey efforts in existence today. The camera-trapping surveys follow 3 different sampling strategies: 1) distance sampling, where 217 - 257 camera traps are deployed according to habitat type, with position being shifted throughout all the regions of the park, 2) capture-recapture, where 103 camera-traps are deployed in 2 arrays that focus on specific areas of interest, 3) corridor-use, where 30 cameras are deployed in 3 arrays to focus on use of forest corridors. In total, the Biomonitoring program employs ca. 400 camera-traps to cover the 6,400 km2 area of the MBNP. From the distance-sampling array of camera-traps alone, on average 33,582 video clips are recorded per month, with each of the clips being visually processed for the presence of wildlife species, specifically mammal species. From the 103 camera-traps in the capture-recapture array, an average of 14,070 videos per month are downloaded, and from the 30 camera-traps monitoring corridor-use, 726 videos are collected on a monthly basis.

The 3 different sampling strategies described, above, are designed to address specific issues relating to the greater MBNP mammal survey effort. Distance sampling will provide park-wide density estimates of mammals, according to habitat type (Annex 4.8). The capture-recapture approach will allow for higher precision estimates, and the determination of correction factors that may be applied to the larger distance sampling effort (Annex 4.9). Lastly, the camera-trap arrays placed inside-outside the forest corridor are intended to provide estimates of corridor use, as an indicator of forest connectivity (Annex 4.10).

The 48,378 videos recorded by camera-traps per month are analysed on a continuous basis. Images collected have provided the first photographic evidence of the presence of a number of rare and reclusive mammals species and have provided a comprehensive inventory of mammals present in the MBNP (Annex 4.11). Analyses of the videos / images collected from the distance-sampling array have allowed for the calculation of density and abundance estimates of key mammal species that will be monitored over the long-term, with estimates being refined and mapped over time as more images are collected (Annex 4.12). Preliminary analyses of images collected from the corridor-use array have allowed for the documenting of mammal species occurring within the forest corridor (Annex 4.13) and will be used as a base of comparison for evaluating any changes in use of the corridor. (photos, Annex 4.14)

In partnership with Kew - Royal Botanical Garden, a botanical survey was completed in year-2, with the final reports and a scientific publication produced in year-3 (Annexes 4.15 - 4.16).

All data collected during the course of the present Darwin Initiative project are integrated into a growing GIS database of species occurrence / abundance. These data, combined with habitat classification maps produced in year-3 (Annex 4.17) will provide an invaluable resource for conservation, wildlife management, and planning during this crucial phase of creation of the Moyen-Bafing National Park and beyond.

3.2 Progress towards project Outputs

***Output 1**. Reforestation of 40 ha of gallery forests and headwaters, plus the equivalent of 10 ha of fruiting tree species*

Natural Ecological Regeneration (NER) activities have focused on the reforestation of a total of 80 ha, including **9 h**a of gallery forests (**target: 40 ha**). In addition, 1,725 of the 101,244 nursery-raised fruiting trees have been transplanted, which is the equivalent of **4.34 ha** (**target: 10 ha**) of reforested land at a prescribed density of 400 trees / ha. Given that deforested sites are selected for reforestation activities, the baseline is considered to be zero. Measurement of reforested area is achieved by summing the area of individual NER sites, which are delimited by GPS and mapped in ArcGIS. Area covered by fruiting trees is based on calculation using a conversion factor of 400 trees per hectare, if transplants are dispersed. If the transplanting occurs over a contiguous area (*i.e.* orchard), actual measurements are taken.

At present, 22.5% of the areal target for the reforestation of gallery forest, and 43.4% for transplantation of fruiting tree species, have been achieved. In year 4, NER efforts will focus exclusively on gallery forest in an effort to attain the targeted area, 40 ha. Given the number the trees currently in the nursery (100,000+), we are confident that we will be able to attain the targeted area, 10 ha, of transplanted fruiting tree species. (Annexes 4.1 – 4.2)

***Output 2.** 3-5 ha of floodplain developed in an environmentally-conscious and participative manner for community gardening cooperative projects*

Results of GIS and satellite image analyses have identified areas within the park as potential sites for vegetable gardening expansion in year 4 (map, Annex 4.6). At present, 1,174 women from the communities have participated in vegetable gardening training sessions, covering multiple topics – from agricultural to nutritional in nature. Amongst the 1,174 women, 85 women from 13 villages are members of the newly formed agricultural cooperatives, with each of the 85 women pursuing their own personnel vegetable garden projects. Individual garden plots range in size from 5 m^2 – 775 m^2, covering a total area of 10,550 m^2 (**1.0 ha; target: 3+ ha**). (Annex 4.7)

At present, 33% of the target (**3+ ha**) in terms of areal coverage of vegetable garden projects has been achieved. Project managers are optimistic that the success of this first group of participants will encourage the expansion of these activities in year 4.

***Output 3.** Biodiversity inventories, monitoring system, and habitat classification developed and integrated into a GIS database*

Initial inventories of bird, plant (Annex 4.16), freshwater fish, and mammal species have been completed and are being regularly updated. In year 3, two notable mammal species have been observed and documented for the first time in the MBNP, the regionally endangered African lion (*Panthera leo leo*) and the spotted hyena (*Crocuta crocuta*) (Annex 4.14). The WCF Biomonitoring program is established, with 400 camera-traps deployed in various grid formations and are rotated periodically throughout the park to ensure complete coverage (Annexes 4.8 – 4.10). Observations of wildlife occurrence have

been integrated into the GIS database (maps, Annex 4.12). There, observations can be analysed in combination with habitat classes (Annex 4.17) to inform management decisions, such as the park zoning structure.

Activities under Output 3 are essentially completed, however, monitoring activities will continue indefinitely.

3.3 Progress towards the project Outcome

Outcome: Reforestation of 50 ha of forest to ensure connectivity and to improve water-retention capacity, thereby stabilising local water supplies to the benefit of local wildlife and human populations

0.1 *50 ha reforested achieving a 33% increase in forest cover*
Recent change detection analyses of satellite images from March 2016 and March 2020 indicate a decline in forest cover from 240.72 km^2 (24,072 ha) in 2016 to 182.3 km^2 (18,230 ha) in 2020 in the management area known as the Laffa Boubhe Sector (Annex 4.18). Using the state of forest cover in 2016 (24,702 ha) as the baseline, the calculated rate of deforestation in this sector equals 6% per year. An increase of 33% of forest cover, relative to 2016 forest cover, would require 8,152 ha of forest benefitting from reforestation efforts.

At present, 80 ha of land are currently under NER and 101 ha of land are under FMNR practices for a total of **181 ha** throughout the MBNP.

0.2 *80% reduction in activities associated with forest cover loss (illegal logging, slash-and-burn)*
At present, 167 farmers (148 men / 19 women) are applying FMNR techniques on 101 ha of farmed fields that are distributed throughout the MBNP (map, Annex 4.4). On these fields, a minimal tree cover is maintained, and improvements to soil fertility are intended to extend the "life" of the field, thereby reducing the frequency of land-clearing activities.

Indicator may require further development, or revision.

0.3 *Chimpanzee population is stabilized in the area and biodiversity is increasing in the reforested areas*
Density estimates for Western chimpanzees (*Pan troglodytes verus*), and other mammalian species are currently being refined by habitat type (Annex 4.12). In year 4, changes in habitat type, as determined by historic satellite imagery, will be used to back-calculate baseline population levels that correspond to the start of the Darwin Initiative project in 2016. Similarly, population projections for 2021 will be calculated to determine the effect of the project on the MBNP chimpanzee population.

0.4 *200 people from the participating villages benefit from agroecological and vegetable gardening outreach*
In year 3, **1,428** community farmers / gardeners have benefited from training sessions related to FMNR agriculture techniques and vegetable gardening (**target: 200 people**). The targeted number of people benefitting from training has, at present, been exceeded and will continue to increase in year 4.

0.5 *11-18% of villages in the Moyen-Bafing NP have a validated Natural Resource Management Plan for their territories*

At present, **19 villages** are in various stages of Natural Resource Management Plan development (**target:** 11% of 255 villages = **28 villages**) (Annex 4.19; example Mission Reports have been included in attachment). In year 4, activities for the development of NRMP will continue.

0.6 *30% of people attending workshops are woman, including the vegetable gardening cooperatives*
In year 3, of the 1,428 community farmers / gardeners that benefited from training sessions related to FMNR agriculture techniques and vegetable gardening, more than1,174 participants were women, representing greater than **82%** participation **(target = 30%)**. The targeted number of women benefitting from training has, at present, been exceeded and will continue to increase in year 4.

3.4 Monitoring of assumptions

Assumption 1: Government Departments continue to support and facilitate the implementation of the National Park
Comment: This is a critical factor that remains true and it appears that it will remain true for the foreseeable future.
Assumption 2: Country remains politically stable
Comment: This assumption has remained largely true. In the past months, there have been some political protests that have periodically blocked project activities temporarily.
Assumption 3: The target local community is willing to partake in novel livelihood strategies
Comment: This assumption remains true. Project managers have received letters and other requests for the project to expand its activities into villages not yet benefitting.
Assumption 4: The targeted local communities remain willing to actively engage in the alternative livelihood strategies and remain committed to the sustainable-use of their natural resources
Comment: This assumption remains true. Project managers have received letters and other requests for the project to expand its activities into villages not yet benefitting.
Assumption 5: Soil perturbation of degraded land does not prevent assisted regeneration of natural occurring trees
Comment: This assumption remains largely true. However, the naturally impoverished soils of the region that are further degraded by unsustainable practices, will likely limit to some extent plant / tree growth, considering the timescale of the project.
Assumption 6: The target community is willing to partake in a reforestation project
Comment: Impacts of desertification / climate change are becoming more obvious to local populations, whom struggle to find drinking water during the dry season. The connection between trees / forest and drinking water security play an important role.
Assumption 7: The target community is willing to adapt their current unsustainable practices by reducing slash and burn/tree cutting in order to facilitate long-term reforestation
Comment: This assumption holds true, which is supported by the interest and participation in the agroecological training and activities.
Assumption 8 (new): Measures and restriction related to COVID-19 will not significantly impact activities planned in year-4.

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

Impact: Promote stabilisation of the hydrologic system and ensure long-term food and water security within the proposed Moyen-Bafing National Park, benefitting local biodiversity (particularly chimpanzee populations) and human communities.

Benefits to biodiversity conservation through the reforestation / forest protection efforts promoted by the present project include the enhanced stability of a critical ecosystem function, water supply / cycle (Annex 4.20), and the restoration of forest cover / habitat (Annexes 4.17 – 4.18).

Long-term benefits of reforestation activities to human well-being include the enhanced resiliency of critical ecosystem services, water supply (Annex 4.20) and the provision of other exploited natural resources, and enhanced livelihoods (food security and revenue increase/ diversification) through agricultural and gardening interventions (Annexes 4.4, 4.6-4.7).

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

Goal 1: No poverty – Alternative, revenue-generating activities are implemented within a community cooperative structure, including vegetable gardening and apiculture
Goal 2: Zero hunger – Training in agroecological techniques to improve soil fertility and productivity, and vegetable gardening, enhance food security for local communities
Goal 5: Gender equality – The participation of women in all activities is highly encouraged, with certain programs and training sessions supporting / enhancing the activities proposed by the women of the communities themselves, such as vegetable gardening, cooking, and nutrition.
Goal 6: Clean Water and Sanitation – Improving year-round access to water and/or water security, as an ecosystem service, is being indirectly promoted through reforestation activities.
Goal 12: Responsible Consumption and Production – Promotion of agroecological, or sustainable, farming techniques
Goal 13: Climate Action – Wildfire control efforts and reforestation
Goal 15: Life on Land – Promotion of sustainable farming practices, reforestation and biodiversity conservation

5. Project support to the Conventions, Treaties or Agreements

The present Darwin Initiative project provides support to the Republic of Guinea in its efforts to honour its commitments under the Convention on Biological Diversity, in particular Aichi Targets:

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: Given that the project is in the process of creating a national park, the results of the biodiversity inventories have demonstrated the unique biodiversity and high conservation value that exists within the proposed park boundaries. Recognition of the value of this area is being mainstreamed and is the very driver of the political process towards the official creation of the park, which will then be communicated / mainstreamed to the wider public.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5-7: Through the promotion of forest restoration activities (Target 5), the sustainable use of aquatic resources (Target 6) and sustainable agriculture practices (Target 7), the present project provides substantial support to Strategic Goal B.

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11-12: The present project significantly expands coverage of protected areas in Guinea (Target 11), while protecting the endangered, and possibly endemic, species of the region, particularly the critically endangered West African chimpanzee (Target 12).

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: Reforestation activities promoted by the project in an area known as the "water tower of West Africa" promotes water security and safeguarding of a critical ecosystem service of regional importance.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 18-19: The present project enhances traditional knowledge and livelihood practices, while implementing mechanisms for the full participation of local communities (Target 18), while wildlife and natural resource monitoring research employs the latest science technologies, e.g. camera-trapping, satellite data, and potentially UAS-based image collection approaches (Target 19).

6. Project support to poverty alleviation

The present Darwin Initiative project is providing direct benefits to the 20+ villages within the Moyen-Bafing National Park in the form of agricultural and gardening training programs, including the necessary equipment and supplies, all of which is designed to improve farm productivity, yield, and thus livelihoods and revenue. Moreover, the field staff working in various roles within the project (i.e. guides, tree nursery attendants, etc.) are paid for their time and services.

In addition to these direct benefits, project activities strive to ensure sustainable natural resource use, thereby the perpetual provision of these crucial natural resources and ecosystem services for the current communities and future generations.

7. Consideration of gender equality issues

The WCF recruitment policy includes affirmative action for women and persons living in the MBNP area. WCF is well aware of gender-related issues and consistently involves women in all project activities, to the extent possible, and encourages women to express their points-of-view in community meetings and other fora. During year 3, the formation of cooperatives and training programs were attended by mostly women of the communities. The only way for highly impoverished societies to escape poverty is with the inclusion of women in their economic development strategy and is the reason for which WCF included a gender-indicator at the Outcome-level of the present project.

8. Monitoring and evaluation

Research on the effects of watershed deforestation on hydrographic stability has indicated that, with the loss of tree cover, the water-retention capacity of the landscape declines. Essentially, impaired water-retention capacity of a watershed increases surface flows from rainfall directly to streams, resulting in a surge of water that would have normally been released over a greater timespan. As indicated by the Outcome statement of the present project:

> *Reforestation of 50 ha of forest to ensure connectivity and to improve water-retention capacity, thereby stabilising local water supplies to the benefit of local wildlife and human populations*,

the present project strives to counteract these effects of deforestation on the hydrological stability of the rivers and tributaries of the MBNP. Stabilization of tributary and river flows is currently being monitored through the monthly monitoring of water-levels of select waterways throughout the MBNP. In addition to improving the water-retention capacity of the watersheds, reforestation efforts are being focused to provide benefits to wildlife through the targeting of gallery forests and other wildlife corridors (Output 1). Given that the lowlands near waterways, floodplains, are fertile and in close proximity to a water supply, these areas are often targeted by local communities for agricultural development. In order to ensure that the conservation efforts being focused on gallery forests is sustainable, the project is participating in these gardening activities with the communities to enhance livelihoods, and at the same time, avoid and/or mitigate any detrimental environmental impacts (Output 2, indicators: mapping / site selection and vegetable garden yields). Effects of reforestation efforts on wildlife are being measured through the biomonitoring program (Output 3), which is an output in itself considering that the program will continue and form part of the essential wildlife monitoring program for the future national park.

WCF and its partner, OGPR, participate collaboratively in all project implementation activities, data collection, and monitoring, as part of a capacity-building program.

9. Lessons learnt

An important lesson learned during the course of year-3 activities relates to the transplanting of nursery-raised trees. While monitoring the growth of nursery transplants, it was observed that naturally regenerating trees at the same location surpassed the growth rates of nursery transplants, resulting in natural regenerants out-competing nursery trees for space and sunlight. This observation validates the efficacity of the Natural Ecological Regeneration (NRE) approach promoted by the project, however, requires that the strategy for transplantation be revisited. In year-4, rather than dedicating entire reforestation sites to nursery transplants, nursery-raised trees will be used in more of a “shotgun” approach in an effort to enhance species diversity on NRE and FMNR sites. Although initial impressions may be that the species diversity and richness of a naturally-regenerated forest would reflect that of the “original forest”, however, due to the selective forces of deforestation (cutting and/or wildfire), differential growth rates and later competition amongst regenerating trees that may not necessarily be the case.

Lastly, it has become abundantly clear in recent years that the fate of all of the reforestation efforts and activities requires a robust wildfire management strategy. Considering the intensity and scale of wildfires in the region, a significant investment will be required, initially, to protect vulnerable saplings until the reach a height that allows them to escape fires of moderate intensity.

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

Responses to some of the comments and queries for the Project Leader, as described in the Annual Report 2 – Review:

Q1. Please ensure you use the Annual Report template (instead of the Annual Report Review template).

R1. Corrective action taken.

Q2. Please complete the "Logical Framework for Financial Year" including columns "Progress and Achievements April 2018 - March 2019" and "Actions required/planned for next period". Please also include numbered Activities. The Activities should be defined so that their progress can be tracked.

R2. Corrective action taken.

Q3. Given the possible serious implications these large-scale interventions may have on the project and entire new National Park, the reviewer asks the project to provide more information on these developments and what is known about their expected impact on the hydraulic systems, water quality, forests and local livelihoods in the area (is the SEIA referred to in the AR available to the project?).

R3. An Inter-ministerial Commission has been formed to address spatial conflicts arising from the creation of the park, mining concessions, and the Koukoutamba Dam project. The issue related to the mining concessions has been largely resolved, with a moratorium placed on any new concessions in the area and the suspension of existing concessions. In regard to the Koukoutamba Dam, there has been a re-initiation of consultation process invoked in which the SEIA for the Dam will be re-opened for amendment.

11. Other comments on progress not covered elsewhere

Does the project face any particular risks?

Over the next 1-2 months, project activities may experience some delays due to COVID-19 precautionary measures. However, at this time, delays are not expected to affect annual accomplishments.

12. Sustainability and legacy

Throughout year-3, the profile of the project has been growing, at both the national and international-level, as the project progresses towards the official creation of the park. In recent weeks, a draft of the presidential decree has been established. As the Moyen-Bafing National Park project progresses towards becoming a reality, there is increasing interest from regional stakeholders, as the MBNP will represent a significant advancement in West African conservation and will play an important role in a regional protected areas landscape strategy.

At this point, there is no planned "exit strategy", as the newly created park will be in-need of continued support for the foreseeable future. Certain activities may be de-prioritised in the future, however, there will be a continued need for community engagement, wildlife monitoring activities, and the development of a financial strategy and/or business plan to ensure the sustainable financing and continued existence of the park.

13. Darwin identity

Darwin Initiative funding forms part of a larger multi-year project, the Moyen-Bafing National Park project. Nonetheless, the Darwin Initiative contribution has been crucial in advancing community engagement and biodiversity inventory activities over the last several years. For activities in which multi-donor funding is used, the Darwin Initiative logo is displayed amongst other donor organizations. For the botanical surveys conducted by Kew Royal Botanical Garden, the Darwin Initiative was the principle funding source, and thus the logo is displayed in associated reports and acknowledged in the scientific publication. (Annex 4.21)

14. Safeguarding

To safeguard and protect local communities, WCF has developed a full set of employee guidelines, policies and a Code of Conduct, addressing numerous subjects of concern including inappropriate behaviour and anti-corruption policies. Additionally, a mechanism has been into place that allows community members to submit any grievances or complaints. Although the system was designed to address complaints associated with human-wildlife conflict, it could indeed be used to submit complaints of any nature.

15. Project expenditure

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

Project spend (indicative) since last annual report	2019/20 Grant (£)	2019/20 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2019-2020

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
Impact: Promote the long-term stability of the local water supply (rivers and tributaries), ensuring improved food and water security within the area of the proposed Moyen-Bafing National Park, to the benefit of local biodiversity (West African chimpanzee populations) and human communities		Reforestation and wildfire protection efforts have substantially contributed to improving watershed health, and thus, the promotion of water security and the safeguarding of biodiversity. Large-scale agricultural training and support programs have significantly contributed to the enhancement of food security among local communities.	[redacted]

Outcome Reforestation of 50 ha of forest to ensure connectivity and to improve water-retention capacity, thereby stabilising local water supplies to the benefit of local wildlife and human populations	**0.1** 50 ha reforested achieving a 33% increase in forest cover **0.2** 80% reduction in activities associated with forest cover loss (illegal logging, slash-and-burn) **0.3** Chimpanzee population is stabilized in the area and biodiversity is increasing in the reforested areas **0.4** 200 people from the participating villages benefit from agroecological and vegetable gardening outreach **0.5** 11-18% of villages in the Moyen-Bafing NP have a validated land management plans for their territory **0.6** 30% of people attending workshops are woman, including the vegetable gardening cooperatives	**0.1** 181 ha are land are currently in various stages of reforestation (80 ha NER) and tree canopy preservation (101 ha FMNR) **0.2** At present, 167 farmers (148 men / 19 women) are applying FMNR techniques on 101 ha of farmed fields that are distributed throughout the MBNP **0.3** Density estimates for Western chimpanzees, and other mammalian species are currently being refined by habitat type **0.4** 1,428 community farmers / gardeners have benefited from FMNR agriculture training sessions and vegetable gardening **0.5** 19 villages are in various stages of Natural Resource Management Plan development **0.6** 82% of the 1,428 community farmers / gardeners that benefited from training sessions were women	Key actions planned for year 4, include 1. Expansion of NER forest protection activities and transplanting of nursery-raised trees, focusing on gallery forest protection and reforestation 2. Refine estimates for indicator 0.2 3. Refine baseline and current population abundance estimates for chimpanzees and other key wildlife 4. Continue progress in the development of village-based Natural Resource Management Plans
Output 1. Reforestation of 40 ha of gallery forests and headwaters, plus the equivalent of 10 ha of fruiting tree species	**1.1** A tree nursery established and 16,000 successful saplings (wild fruit trees used by human and chimpanzee) available for transplanting by year 1 **1.2** An area of 40 ha is protected and reforested after site identification and consultation with community landowners by year 4.	**1.1** Six (6) tree nurseries established containing **101,244 saplings** **1.2** With the help of 200+ local community members, 15 m-wide firebreaks have been created that are currently protecting **80 ha** of saplings	

	1.3 2 members of the local community (1x manager and 1x assistant successfully trained to manage and maintain tree nursery by year 1) and recruited locally **1.4** 24 farmers apply FMNR[1] techniques in their fields, Model Farmers, and 125 people from the community are trained in FMNR techniques by the Model Farmers **1.5** Productivity of FMNR fields is improved 20% by the end of year 4.	**1.3** Sixty (**60**) trained representatives from the communities **1.4** Twelve (**12**) Model Farmers have been trained, with outreach conducted by Model Farmers and WCF-AOAs, training **254** community farmers from the 6 targeted villages, and an additional **535** people from the surrounding villages **1.5** Results on FMNR field productivity available in year 4	
Activity 1.1. Tree Nurseries 1. Village meetings to identify sites for nurseries 2. Evaluation of environmental context of proposed sites, i.e. proximity to water 3. Preparation of site and of soil / manure (500 Kg / site) mixture and filling of nursery bags (20,000 bags per site) 4. Construction of fence and shading structures to protect seedlings 5. Monthly missions for up-keep, maintenance and expansion of nurseries		5 nurseries constructed and functional w/ 100,000 saplings To date: 6 nurseries w/ 106,500 saplings of 18 different species, minus 5,256 outplanted, 101,244 saplings remaining	In year-4, efforts will focus entirely on nursery maintenance and outplanting / reforestation activities. Sites selected for reforestation will be based on prioritisation analyses under the general strategy of restoring forest connectivity.
Activity 1.2. Natural Ecological Regeneration (NER) 1. Potential sites identified and prioritised for NER through satellite imagery analysis and field observations 2. Growth of naturally occurring tree samplings is promoted by the cutting, and/or laying down of grass species competing with identified tree samplings 3. Sites protected from wildfire with the creation of firebreak, minimum width 15 m 4. Sampling plots are created within the site (25 m x 25 m), within which individual trees are inventoried and measured, with growth rate data collected and tracked		- NER activities have implemented on 80 ha with more than 200 people of mixed gender being involved in the implementation process - 223 sampling plots have been installed to measure tree growth rates - A total of 1059 individual samplings have been inventoried and measured	In year-4, expansion of activities implementing the NER approach will continue to new sites, as well as, the continuous work of protecting sites from wildfire. Sufficient growth-rate data will be available in year-4 for analysis.

[1] FMNR : Farmer Management Natural Regeneration

Activity 1.3. Tree Nursery Management: Community Participation 1. Representatives of the 6 nursery-project villages were selected by village committees 2. Selected individuals trained in nursery upkeep and maintenance		10 representatives of the 6 nursery-project villages were selected by village committees and trained To date: 60 trained representatives from the communities assisting, on a rotational basis, the WCF Nursery Manager with nursery maintenance	In year-4, upkeep and maintenance activities will continue until all saplings are outplanted.
Activity 1.4. Farmer-Managed Natural Regeneration (FMNR) Training-of-Trainers 1. Recruitment of WCF Agricultural Outreach Agents (AOAs) 2. Training of AOAs 3. Community farmers selected on a voluntary basis 4. Selected farmers trained in agroecological techniques: selection / spacing of trees to be left on the farm plot, erosion control, mulching, composting, and "living" fence construction – Model Farmers 5. Model Farmers, accompanied by WCF-AOAs, conduct outreach and field trainings		- Recruitment of 30 WCF-AOAs - Training of 30 WCF-AOAs: visit to World Vision and the International Agricultural Research Centre in Mali, FMNR training centre and exposition farms; training program organized by a FMNR practitioner from Uganda - 12 Model Farmers have been trained - Model Farmers and WCF-AOAs conducted outreach and training for 254 community farmers from the 6 targeted villages, and an additional 535 people from the surrounding villages	In year-4, activities will focus on improving the implementation of FMNR techniques amongst Model Farmers, with technical support provided by WCF-AOAs. Additionally, efforts will be made to expand the number of Model Farmers, providing outreach in their own communities.
Activity 1.5. Farmer-Managed Natural Regeneration (FMNR) Implementation 1. Required equipment provided: gloves, boots, machetes, hoe, etc. 2. Technical support, monitoring, and evaluation of the implementation of FMNR techniques by Model Farmers conducted by WCF Agricultural Outreach Agents		- Equipment provided to Model Farmers - An initial evaluation conducted of the implementation of FMNR techniques on the fields of the Model Farmers	In year-4, efforts will be made to continue recruiting, encouraging, and supporting Model Farmers. Model Farmers will be regularly monitored, with technical support provided, where/ when needed.
Output 2. 3-5 ha of floodplain developed in an environmentally conscious and participative manner for community gardening cooperative projects	**2.1** 14 floodplain areas are identified and 7 are selected for the development of garden projects	**2.1** More than 14 potential sites have been identified, and 85 women from the communities are pursuing 85 individual garden projects	
	2.2 1 Natural Resource Management Plans and collaborative management committee created at the village-level for 1 village year 2	**2.2** Completed in year 2	
	2.3 30 Natural Resource Management Plans completed by the end of year 4	**2.3** 19 villages are in various stages of Natural Resource Management Plan development	

	2.4 Development of a 15-day agroecology outreach training program	**2.4** 15-day training program developed	
	2.5 30 community members from 30 villages participating in 10-15 days of agroecological training by end of year 4	**2.5** Community members participated in 15-day NER and FMNR training held in February 2020	
	2.6 Organization of 3+ vegetable gardening cooperatives in which 21+ people are trained by year 3	**2.6** 13 agricultural / gardening cooperatives have been created in 13 villages, including 85 people trained in vegetable gardening	
	2.7 Capacity-building / training of 3 gardening cooperatives on subjects including: seed preparation, transplanting, bio-pesticide / fungicide preparation, cooking and nutrition, including the provision of equipment: wheelbarrow, shovel, seeds, etc., during year 3	**2.7** 13 agricultural / gardening cooperatives have been created in 13 villages, including 85 people trained in vegetable gardening; vegetable gardening training program has touched 1,174 participants, with 99% of attendees being women	
	2.8 10 days of training provided to gardening cooperatives in marketing and financial management by the end of year 3	**2.8** More than 10 days of training provided covering topics: composting, Preparation of soil, sowing seed, and transplanting, Bio-pesticide, bio-fungicide, canning, cooking, and nutrition	
	2.9 8 meetings held in participating villages at the end of year 4 to disseminate results and encourage replication of the combined agroecological and garden cooperative strategy	**2.9** To be conducted end of year 4	
	2.10 A 30% increase in vegetable gardening productivity	**2.10** To be determined end of year 4	
Activity 2.1. Gardening cooperative project: site selection		Completed in year 3, map available (Annex 4.6)	Completed - no further activities planned in year 4

1. Lowland, alluvial floodplain sites identified through satellite image / GIS analyses, with a 10 m buffer placed along waterways to exclude gallery forests from consideration for gardening project development		
Activity 2.2. Village-based Natural Resource Management Planning (development of approach in 1 village) 1. Organization of natural resource management committees 2. Community resource and resource-use mapping	Completed in year 2	Completed - no further activities planned in year 4
Activity 2.3. Village-based Natural Resource Management Planning (implementation of approach in 30 villages) 1. Organization of natural resource management committees 2. Community resource and resource-use mapping	19 villages in varying stages of development of the village-specific Natural Resource Management Plan (Annex 4.19)	In year 4, activities will continue.
Activity 2.4. FMNR and NRE 15-day training program developed 1. Preparation and planning of training program 2. Development of training materials	Program curriculum developed and tested, including: presentations, group discussions, field observations, videos and hands-on exercises	In year 4, training program will be repeated in order to reach a greater number of community farmers.
Activity 2.5. FMNR and NRE 15-day training program implemented 1. Organization of transport, meals and lodging for training participants at the WCF field base, Laafa Boubhe	Training occurred in February 2020 and included 62 participants: - 37 WCF AOAs - 12 Guinean Government Agricultural Advisors - 13 Local farmers from the village of Laffa Boubhe	In year 4, training program will be repeated in order to reach a greater number of community farmers.
Activity 2.6. Organization of Vegetable Garden Cooperatives 1. Formation of village committee 2. Presentation of activities and training schedule	13 villages / 13 Cooperatives 85 women / 85 Vegetable gardens (total area = 10,550 m^2)	In year 4, technical support will continue for existing gardening projects, and expansion of activities is planned.
Activity 2.7. Training of Vegetable Garden Cooperatives in gardening techniques 1. A Garden-to-Table training program designed by WCF-Agricultural Agents with topics including: a. Composting b. Preparation of soil, sowing seed, and transplanting c. Bio-pesticide d. Bio-fungicide e. Conservation of vegetables, canning f. Cooking and nutrition 2. Training sessions conducted in the targeted, and surrounding, villages 3. Equipment and materials provided to training participants	Training sessions, attendance, and equipment provided - Composting - 118 participants provided: shovels and pitchforks - Preparation of soil, sowing seed, and transplanting - 250 participants provided: 800 g of carrot seed, 145 kg of beans, 400 g of cabbage seed - Bio-pesticide – 371 participants provided 40 kg of ginger seed 20 kg of garlic seed - Bio-fungicide – 119 participants - Conservation of vegetables – 95 participants	In year 4, the vegetable gardening program will evaluate the rate of adoption of these techniques introduced and will provide follow-up trainings, if needed.

		- Cooking and nutrition – 221 participants To date: Vegetable gardening program has touched 1,174 participants, with 99% of attendees being women.	
Activity 2.8. Training of Vegetable Garden Cooperatives in accounting and financial management 1. A training session organized by WCF and led by an accounting consultant to provide basic financial management skills to the Treasurers of the community cooperatives. a. Identification / evaluation of potential consultants to lead the training b. Organization of training logistics: transport of community participants, meals, lodging, and meeting room/location.		A 3-day training session was organized by WCF in Labe, led by an accounting consultant, which provided basic financial management skills to the Treasurers of the community cooperatives	In year 4, implement another round of trainings to ensure all vegetable garden cooperatives receive training.
Activity 2.9. Communicate / promote results of FMNR and Gardening Cooperatives to encourage adoption of techniques 1. A tour of the targeted villages will be organized to communicate the agriculture and gardening results and benefits, particularly: a. Field production b. Nutritional and economic benefits		Data on productivity are currently being collected, as April – May are harvest seasons for the vegetable gardens. These data will summarised and presented.	Activities to be conducted in year 4
Activity 2.10. Increase agricultural yields for farmers / gardeners following techniques learned from trainings events: FMNR and Vegetable Gardening 1. A data collection system is in-place to establish the productivity of the agriculture and gardening projects a. WCF-Agriculture agents are present in the villages collecting data on weights of agricultural products at the time of harvest b. Harvest cycles vary depending on project and product c. Analyses of data to be conducted once sufficient data are available		- Gardening projects: often implemented during the dry season when agricultural field activities are low; harvests occurring continuously from March – May - Agricultural projects: implemented in the wet season; harvests occurring from September – November	In year 4, data collection efforts will continue in order establish changes in field productivity / yield.
Output 3. Biodiversity inventories, monitoring system, and habitat classification developed and integrated into a GIS database	**3.1** 20% increase in the frequency of use of the reforested corridor by wildlife in year 4 **3.2** 20% increase in the number of different species using the corridor by year 4 **3.3** First exhaustive list of bird presence in year 2	**3.1** Data relative to the frequency of use of forest corridors will be analysed in year 4 **3.2** 36% increase in the number of mammal species using the forest corridor between 2016 to 2020 **3.3** Completed in year 2	

	3.4 First list of botanic species with focus on threatened species in year 2 **3.5** MBNP habitat classification for principle vegetation classes	**3.4** Completed in year 2-3 (Annexes 4.15-4.16) **3.5** Completed in year 3 (Annex 4.17)
Activity 3.1. 20% increase in the frequency of use of the reforested corridor 1. Sampling design established – 3 grids with 10 cameras in each grid 2. Field teams locate GPS coordinates corresponding to grid cells and install camera traps at GPS locations 3. Camera maintenance and image downloads conducted monthly	Collection of 6,500 videos collected from the corridor camera grid, analysis of frequency of use per species to be conducted in year 4	In year 4, videos will be analysed to determine changes in corridor-use.
Activity 3.2. 20% increase in the number of different species using the corridor 1. Same activities, as above (Activity 3.1)	Collection and analysis of 6,500 videos collected from the corridor camera grid, species list completed	In year 4, monitoring will continue and analyses will be updated.
Activity 3.3. Inventory of bird species 1. A study of bird species was conducted by WCF partner, Biotope, whose objectives were to: a. Conduct 2 missions (June 2018 and February 2019, totalling 30 days) to inventory bird species occurring in MBNP b. Classify species according to IUCN classification system	- 203 species of bird observed, 28% of bird species known to occur in Guinea - 6 nationally protected species - 5 internationally protected species	Completed - no further activities planned in year 4
Activity 3.4. Plant species inventory 2. An inventory of plant species was conducted by WCF partner, Kew Royal Botanic Gardens, which occurred in 3 phases: a. Dry season reconnaissance mission in January 2018 b. Beginning of rainy season in May 2018 c. End of rainy season in November 2018 *Activities reported, here, due to the fact that final reports and publication of results occurred in Darwin Year-3.*	Reports and publication available	Completed - no further activities planned in year 4
Activity 3.5 MBNP habitat classification for principle vegetation classes 1. Sentinel-2 satellite image anlaysis	Analyses completed and map available (Annex 4.17)	Completed - no further activities planned in year 4

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Promote the long-term stability of the local water supply (rivers and tributaries), ensuring improved food and water security within the area of the proposed Moyen-Bafing National Park, to the benefit of local biodiversity (West African chimpanzee populations) and human communities.			
Outcome: (*changes expected from the project and who is expected to benefit*): Reforestation of 50 ha of forest to ensure connectivity and to improve water-retention capacity, thereby stabilising local water supplies to the benefit of local wildlife and human populations	**0.1** 50 ha reforested achieving a 33% increase in forest cover **0.2** 80% reduction in activities associated with forest cover loss (illegal logging, slash-and-burn) **0.3** Chimpanzee population is stabilized in the area and biodiversity is increasing in the reforested areas **0.4** 200 people from the participating villages benefit from agroecological and vegetable gardening outreach **0.5** 11-18% of villages in the Moyen-Bafing NP have a validated land management plans for their territory **0.6** 30% of people attending workshops are woman, including the vegetable gardening cooperatives	**0.1** Data collection from space- air-borne image analysis for assessing baseline forest cover and change **0.2** Data collected from 2017 socioeconomic survey to assess baseline land clearance rates and evaluate improvements throughout the projects duration **0.3** Biomonitoring, camera-trap surveys, to assess the density and distribution of mammals **0.4** Participant lists for training events, training documentation **0.5** Data from 2017 socioeconomic survey assessing current yield levels (yield per hectare) will monitor increase against baseline data **0.6** Workshop reports, and presence list	National government continues to support and facilitate the creation of the national park Country remains politically stable Local communities are willing to partake in novel livelihood strategies Local communities remain willing to actively engage in the proposed alternative livelihood strategies and remain committed to sustainable use of natural resources
Outputs: **1.** Reforestation of 40 ha of gallery forests and headwaters, plus the equivalent of 10 ha of fruiting tree species	**1.1** A tree nursery established and 16,000 successful saplings (wild fruit trees used by human and chimpanzee) available for transplanting by year 1 **1.2** An area of 40ha is protected and reforested after site identification and consultation with community landowners by year 4. **1.3** 2 members of the local community (1x manager and 1x assistant successfully trained to manage and maintain tree nursery by year 1) and recruited locally	**1.1** Tree nursery inventory, productivity data, and photos **1.2** Field reports, photos, aerial / satellite imagery **1.3** FMNR field monitoring report; included number of person initiated/trained	Soil perturbation of degraded land does not prevent assisted regeneration of natural occurring trees The target community is willing to partake in a reforestation project The target community is willing to adapt their current unsustainable practices by reducing slash and

	1.4 24 farmers apply FMNR techniques in their fields, Model Farmers, and 125 people from the community are trained in FMNR techniques by the Model Farmers **1.5** Productivity of FMNR fields is improved 20% by the end of year 4.	**1.4** Field reports on the number of fields under improved techniques/regeneration, photos (on WCF annual). **1.5** WCF socio-economic study analysis and results of data collection on harvested biomass / productivity	burn/tree cutting in order to facilitate long-term reforestation.
2. 3-5 ha of floodplain developed in an environmentally conscious and participative manner for community gardening cooperative projects	**2.1** 14 floodplain areas are identified and 7 are selected for the development of garden projects **2.2** 1 Natural Resource Management Plans and collaborative management committee created at the village-level for 1 village year 2 **2.3** 30 Natural Resource Management Plans completed by the end of year 4 **2.4** Development of a 15-day agroecology outreach training program **2.5** 30 community members from 30 villages participating in 10-15 days of agroecological training by end of year 4 **2.6** Organization of 3+ vegetable gardening cooperatives in which 21+ people are trained by year 3 **2.7** Capacity-building / training of 3 gardening cooperatives on subjects including: seed preparation, transplanting, bio-pesticide / fungicide preparation, cooking and nutrition, including the provision of equipment: wheelbarrow, shovel, seeds, etc., during year 3	**2.1** Floodplain GIS analysis, map, photos **2.2** Land management plan, meeting minutes **2.3** Minutes from community consultation meetings **2.4** Results from training workshop (number of people attended, training agenda, training material **2.5** Participation list, photos **2.6** Meeting minutes, documentation, photos **2.7** Training reports, training material, photos	The target local community is willing to participate in this novel approach and are receptive to adapting their current non-sustainable practices. The showcase converted wetland will be accepted by the local community and will successfully increase crop yields and ultimately yearly income The target local community remain willing to actively engage in the alternative livelihood strategies. Trained individuals from the local community will continue to participate and remain with the project. The target local community groups are first willing, and second, retain willingness to explore alternative livelihood diversification strategies. The success of the pilot project will be encouraging the wider local community to adopt these approaches.

	2.8 10 days of training provided to gardening cooperatives in marketing and financial management by the end of year 3 **2.9** 8 meetings held in participating villages at the end of year 4 to disseminate results and encourage replication of the combined agroecological and garden cooperative strategy **2.10** A 30% increase in vegetable gardening productivity	**2.8** Training materials, participation list, photos **2.9** List of attendees, agenda, and photos **2.10** Results garden harvest surveys and associated economic benefits	
3. Biodiversity inventories, monitoring system, and habitat classification developed and integrated into a GIS database	**3.1** 20% increase in the frequency of use of the reforested corridor by wildlife in year 4 **3.2** 20% increase in the number of different species using the corridor by year 4 **3.3** First exhaustive list of bird presence in year 2 **3.4** First list of botanic species with focus on threatened species in year 2 **3.5** MBNP habitat classification for principle vegetation classes	**3.1** Camera-trap surveys in reforested corridors **3.2** Camera-trap surveys throughout MBNP **3.3** Species list, report of surveys **3.4** Species list, report of surveys, publication **3.5** Analysis results, map	The biomonitoring method used allows to monitor the wildlife in the Moyen-Bafing area The target local community is willing to participate in this novel approach and are receptive to adapting their current non-sustainable practices.

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
Established codes								
6A	Agricultural training		Guinean		500	1500	2000	3000
6B	Agricultural training		Guinean		4	4	8	12
11A	Paper published in peer reviewed journal					1	1	1
12A	Computer-based database					1	1	1
23	Value of resources raised							

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Inversodicraea koukoutamba and *I. tassing* (Podostemaceeae), new waterfall species from Guinea, West africa	journal	Cheek, M., D. Molmou, L. Jennings, S.Magassouba, and X. van der Burgt. 2019.			*Blumea*	

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

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	X
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	X
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	
Have you involved your partners in preparation of the report and named the main contributors	X
Have you completed the Project Expenditure table fully?	X
Do not include claim forms or other communications with this report.	