

Darwin Initiative Annual Report Review

Darwin Project Information

Project reference	24-018
Project title	Enhanced biodiversity, water-security, and forest recovery in northern Guinea.
Host country/ies	Guinea
Contract holder institution	Wild Chimpanzee Foundation (WCF)
Partner institution(s)	OGUIPAR, Biotope, Kew Royal Botanic Gardens, Guinean National Herbarium, World Vision Senegal, GRET, INSUCO, PRIDE
Darwin grant value	£334,878
Start/end dates of project	1 April 2017 – 31 March 2021
Reporting period and number	1 April 2018 – 31 March 2019 Annual Report 2
Project Leader name	Professor Dr. Christophe Boesch
Project website/blog	www.wildchimps.org , www.facebook.com/wildchimps
Report author(s) and date	Christophe Boesch, Hedwige Boesch, Arnaud Gotanegre, Pacifique Kizila, Maxime Walens, Julia Riedel – 07/05/2019

1. Project rationale

Guinea is one of the poorest countries in the world, ranking 182nd out of 188 in 2012 according to the Human Development Index. Anthropogenic activities, particularly uncontrolled deforestation for logging, bushfires, and/or slash-and-burn agriculture are enhancing desertification. Biodiversity is highly threatened in this region, with deforestation leading to the destruction and fragmentation of habitats and of essential resources for the critically endangered West African chimpanzees and other endangered wildlife. Protected areas seem to be a solution for biodiversity conservation and poverty alleviation through the application of an integrated and sustainable natural resource management. The Moyen-Bafing National Park (MBNP), in northern Guinea, will cover 6.426 km² and will protect the estimated 5'000 strong largest remaining population of the West African chimpanzee. Sociological studies among Moyen-Bafing communities focused on the relationship between humans, their territory and natural resources, and difficulties in their daily life. These communities living in the MBNP, i.e. about 34.743 inhabitants, mostly traditional farmers with livestock keepers are directly prone to the climate change's negative consequences. This represents a unique opportunity for an integrated conservation project committing local communities for climate change mitigation and poverty alleviation. The Darwin initiative funded project is trying to promote stabilisation of the hydraulic system and ensure long-term food and water security within the MBNP, benefitting both local biodiversity (particularly chimpanzee populations) and human communities.

2. Comments and queries for Project Leader

Do not require a response from the project and are merely for information.

Following the recommendations of the reviewer of the Annual Report 1 (see the reviewer's comments/feedback), we regrouped our activities into three main outputs (instead of 4). An updated logical framework is submitted with this report.

For the reporting period from April 2018 to March 2019, the slowness on the high political level in the Government of Guinea prevented us from having a clear political arbitration regarding the coexistence of mining projects on the periphery of the park, the Koukoutamba dam project inside the park and the creation of the Moyen-Bafing National Park (MBNP). An inter-ministerial meeting was held on July 5, 2018 with representatives from the Ministries of Mines, Environment and Energy to discuss 1) the impacts of mining and hydraulic projects in MBNP area; 2) the cohabitation between MBNP and the Koukoutamba dam; 3) the well-being of the local communities; 4) possible solutions to mitigate and compensate the damage caused by the dam construction. This meeting was organized in preparation of the workshop planned in Bamako on July 10-11, 2018 to present the Social and Environmental Impact Assessment (SEIA) study for the Koukoutamba dam construction area. The conclusions reached at this Bamako meeting, concerning the environmental aspect of the SEIA, were mixed. Many key aspects were not taken into account, such as a compensation mechanism for negatively impacted chimpanzees. Despite these politic issues, the WCF does all its best to work with the inter-ministerial commission for developing relevant solutions.

3. Partnerships

OGUIPAR – “Office Guinéen de Parcs et Réserves”: is the official body within the Ministry of Environment legally in charge of the protection and management of national parks and reserves in Guinea. WCF collaborates with OGUIPAR since the outset of our work in Guinea (2008) to achieve national conservation goals. The Minister of Environment, Water and Forest officially mandated WCF with OGUIPAR to work towards the creation of the Moyen-Bafing National Park (MBNP) in December 2015. On the 28 September, 2017 a decree signed by the Minister of Environment, Water and Forest formalized the process of park creation. OGUIPAR and WCF then engaged on the operational phase for the national park establishment from 2018 to 2020. Some members of the OGUIPAR are part of the teams implementing the activities in the field. They are taking part as data collectors, supervisors and coordinators (one member is permanent as the focal point, one is in charge to support the accountability process, three are included in the biomonitoring programs, one intern is dedicated to the SMART protocol, and seven members are included for the consultation and land mapping activities). The OGUIPAR higher management staff is participating in the training of the local field member staffs.

From 17th to 19th September 2018, WCF and OGUIPAR organized a workshop in Labé to evaluate the first year of activities from the Action Plan (2018-2020), for the creation of the MBNP. Since the beginning of 2018, WCF and OGUIPAR have implemented environmental and community activities in several villages of the future park. In the 3rd quarter of 2018, more than 70% of the actions were realized, but the work will continue, since some of the results foreseen in the Action Plan remain to be achieved. The meeting made it possible to establish a detailed planning of activities to be undertaken for 2018 and 2019. At the end of the 3 days, an interview of the Director General of OGUIPAR was broadcast on community radio to inform the local population on the progress of park creation.

World Vision Sénégal: is an international global Christian humanitarian organization and an important international actor to improve security for children, families, and their communities to improve the fight against poverty and injustice. They have implemented many agricultural projects in Africa, and particularly a farmed-managed natural regeneration (FMNR) project in Senegal. In 2017, WCF developed a collaboration with them to obtain more information about their project, and the first step has been to visit their project in Kaffrine (Senegal). A second mission is still planned with World Vision in Senegal, but it has not yet been organized. The organization of such international missions involving many different people and organisations (WCF, OGUIPAR and local farmers) is very costly and needs a lot of organization. Meanwhile,

we intensified the exchanges with farmers in Guinea. Our team identified farms to be visited and our collaboration with GRET, will help to elaborate the rural development strategy.

GRET: WCF engaged in a partnership with the international NGO GRET (based in France) with the aim to work on agro-ecological development and consultation on natural resource management in the MBNP region. The first mission of GRET took place in May 2018 with international experts. As part of this WCF-GRET partnership, a student working for her final internship (Engineer at the SupAgro school in Montpellier, France), arrived in May 2018.

Due to the need for WCF to scale up the initial strategy developed in this Darwin initiative funded project to the entire park area, the expertise identified within the local NGO SYDEV were no longer consistent with the objectives of the Action Plan (2018-2020). Therefore, the project has looked into a solid and long term partnership, and regarding their national and regional experiences, as well as the integration of the rural dimension into the park management, the GRET appears to strengthen the WCF team skills and to refine its Action Plan. This strategical collaboration, at the scale of the entire park (not only for the pilot villages) aims to obtain essential baseline data to detail and to carry out efficient and innovative actions in accordance with the needs of the communities and the park management.

Other partners involved in the execution of the project are:

- Kew Royal Botanic Gardens (UK) and the Guinean National Herbarium to execute botanical inventories and the classification of ecological habitats (flora study),
- Biotope consulting to realize an ornithological inventory (bird study),
- INSUCO for community consultations and mapping of the limits of rural territories,
- Local NGO PRIDE is involved in supervising the activities of thirty local workers hired after they had been proposed by the “Groupes de travail”, the local workers carry out awareness actions about the MBNP creation, forest protection, and bushfire limitations.

4. Summary of progress

4.1. Implementation of Activities

Output 1. Reforestation / Mise-en-défens: Reforestation of 40 ha of gallery forests and headwaters alongside the creation of 10 ha of orchards and capacity building for creation and maintenance of tree nursery, and assisted natural regeneration for innovative farmers.

a. Establishing and managing tree nurseries:

In September 2018, the tree nursery of Laafa-Boube comprised approximately 12,690 plants, and we have stored more than 40,000 native tree seeds. In September/October 2018, 1,725 saplings have been planted in the MBNP, creating space in the nursery. In March 2019, the tree nursery comprised 9,240 plants, because we also lost over 1700 plants due to unexpected dryness. A second reforestation/planting mission in the MBNP is planned for June 2019, in the beginning of the rainy season. Two local community members were recruited. One WCF supervisor was trained to monitor sapling growth-rate, data entry, and team monitoring and management. Eight more persons have been recruited and trained, and a rotation process with planning and monitoring is implemented in order to guarantee the success of the tree nursery. It is planned to open more tree nurseries in other villages of the MBNP region: Founyany, Balabory, Sobory and Bama, discussions with these villages are ongoing.

b. Tree planting along riverine areas:

To start the reforestation project, we first created in each village a “groupe de travail” last May 2018, which included ten members nominated by the village, to accompany the whole reforestation and forest regeneration process. Of these ten members, six are women (four in Kalinko, one in Laafa and one in Lallabara). These “groupes de travail” were then asked to propose a list of sites for the reforestation and that implied for them to discuss this within the community and obtain their support. The proposed degraded sites were then confirmed by the WCF on basis of an initial analysis of SPOT images and two field missions were organized for confirmation (March 2018). Currently, 12 sites have been selected that both were proposed by the villagers and fulfilled the WCF criteria for ecological restoration, and these were included in

the signed agreements with village representatives and OGUIPAR (Annex Table 1). These sites are located within the territory of our six pilot villages (Annex Map 1). The process of reforestation, forest protection, and bushfire monitoring will be supported through the creation of village committees in these villages. After the signature of the agreements, some villages contacted WCF to propose new sites for reforestation some of which were included in the agreement. In addition, three other reforestation sites located in the Bakoun Classified Forest (CF), two reforestation sites in the Boula CF, all included in the fully protected area of the national park have been selected (these sites won't be part of any agreements because the land is owned by the state). Two sites on the banks of the Bamawol and Baridondéwol rivers in the north of the park, and three spring heads in the villages of Kouly have been registered. The first reforestation project has been launched in September/October 2018: three degraded areas (Dow Faamerai site in Lallabara with 0,34ha; Horè Laafawol in Laafa with 3ha; and Kalinko Ninfè site with 1ha) in the northern corridor of the MBNP have been selected. Therefore, 4.34ha were enriched with the following trees species: *Azelia africana*; *Erythrophleum guineensis*; *Cola cordifolia*; *Tamarindus indica*; *Diospyros mespiliformis*; *Detarium senegalensis*; and *Kaya senegalensis*. The local NGO "PRIDE" is involved in supervising the activities of thirty local workers hired after they had been proposed by the "groupes de travail" following transparently discussed criteria. They have been trained in September 2018 by the WCF and PRIDE to carry on awareness actions about the park creation, forest protection, and bushfire limitations. The identification work will continue in order to include more areas that need to be reforested in the MBNP. We will focus our interventions around 28 villages within the 15 "communes rurales and urbaines" included in the Land Management Plan until final agreements for the park creation are available. Currently, 43ha of rehabilitation forest have been selected with the communities and OGUIPAR.

c. Planting orchards:

The implementation of orchards will be defined through a larger agreement with the communities, as well as the conversion of the wetlands and the creation of market gardens (Output 2., Activities a and b). These activities are part of the Land Management Plan that will be ratified with the different committees and authorities for the six pilot villages in 2019. The first principles of the different committees have been discussed at the village level, at the community level for consultation and conflict management, and at the national level for a general coordination. We added the details about these different committees in the Annex (Annex Figure 1, 2, and 3). The Annex also contains the specific methodology for the establishment of village committees in six villages, which is finalised, and has been launched in 2019. The first results are expected to be reached at the end of 2019.

d. Protection of existing forest:

The process of forest protection, and bushfire monitoring will be supported through the creation of the village committees. A group of community eco-guards will be created and trained for forest's protection in April 2019. A collaboration with the US Forest Service on bushfire management is under discussion. The WCF monitoring of bushfires made it possible to identify the fire dynamics within the park, and to establish a management plan according to the specificities of this area. By including the areas of high conservation value and the areas most affected by bushfires, this study identified the most vulnerable areas and where actions should be prioritized. WCF has been collecting monthly information on burned areas from 2014 to 2018 (Annex Table 2). Densities by zone and Fire Specificity Indices between different zones of the park were calculated (Annex Map 2). An analysis of fire seasonality in MBNP was completed, showing the intensity of fires increasing in the dry season (Annex Figure 4) and a summary of the MBNP areas more susceptible to be burned is available (Annex Map 3). A strategy for bushfire protection is going to be finalized and validated, and some specific activities have been launched during the last months in order to protect the selected reforestation sites. These activities include the implementation of fire breakers, the training of communities how to build fire breakers and awareness raising about the impacts of bushfires, because local communities still use bushfires for their agricultural work. A mission with WCF, OGUIPAR and "Ministère de l'Environnement, des Eaux et Forêts" (MEEF) was launched in March 2019 to raise awareness at the village level in the canton Tougué.

Output 2. Converted wetland on 3-5 ha of showcase converted wetland designed and tested in a participatory process with members of the local community trained in wetland management (Activities of the former Output 2. Converted wetland, and Output 3. Sustainable agriculture practice are now grouped under this Output 2.)

a. Wetlands-related activities, including land management planning:
Wetland conversion must be defined through an agreement with pilot communities including reforestation processes, protection of specific natural resources (as defined in the three zones of the MBNP), as well as the results of agro-ecological diagnostics. The latter will be extended to the whole park thanks to the support of GRET. This process will be carried out through the organisation of collective groups, based on the associations named “Groupement d'Intérêts Economiques” (GIE, economic interest groups) that WCF will reactivate, or create if necessary.

Table 3: trainings launched in 2018/2019

Villages	Theme of the training	Number of participants	Women	Men	Number of dotation (seeds) beneficiaries
Fongagany, Kalinko konkero, Kalinko missira, Koulifakara, Laffa boubhe, Lallabara, Sangan	Composting realization	118	104	14	-
	Market gardening and crop association (carrots and beans)	175	160	15	175
	Manufacture of bio-pesticides and preparation of carrot-based or squash-based foods for the diversification of food for young children	304	277	27	35
Total		597	541	56	210

At the end of 2019, and for the six pilot villages of the farmer management natural regeneration (FMNR) project, the development of the land management plan will be done. The village of Lallabara is in the process of defining their land management plan within the limits of their territories. The development of land management plans involves the upstream analysis of territorial boundaries, land claims, habitats, uses and customs. This mapping project uses satellite image analysis to provide a detailed representation of the village lands. Following the various missions, studies and analyses, we now have a substantial information base on village territories. All this data represents a real decision-making tool for the implementation of the program to support village communities. We present in the Annex a panel of thematic maps that include information on relief, hydrography, land use (habitat classification) and the uses practiced by populations in the various resource areas of their territory (Annex Map 4,5, and 6).

b. Market gardens:

As well as the conversion of the wetlands, the implementation of market gardens will be defined during the elaboration of land management plans in 2019. WCF started a partnership with GRET (an international NGO based in France) to refine its Action Plan 2018-2020, in particular the second objective “Governance and community conservation”. In May 2018 a first diagnostic mission of international experts from GRET was organized to describe the operating systems of rural leaders and to collect information to initiate rural development in communities of MBNP. A document summarising the observations was provided by the partner. A student arrived in May 2018, as part of the WCF-GRET partnership, for her final internship (Engineer at the SupAgro school in Montpellier, France). The aim is to deepen the exploratory diagnosis of agrarian systems by taking into account the specific issues of agro-ecology (Annex Map 7). After reading the geological, pedological, hydrological, topographical and demographic profiles of MBNP area, four interventions areas were identified for this exploratory work. These areas

have been further specified following semi-directive interviews in order to describe the agriculture and livestock activities, and accessibility, particularly during the rainy season. Based on the information gathered and analysed, an agricultural chains development strategy has been validated in order to launch actions on the ground in favour of communities.

c. Innovative farmers:

WCF and OGUIPAR are introducing farmed-managed natural regeneration (FMNR) projects into existing agricultural systems for better rural development and a conversion into innovative and environmentally friendly systems. In two districts of the MBNP, we selected six pilot villages and 12 innovative farmer leaders for a first 48,85 ha FMNR project. In this area 5,553 trees have been numbered as well as 1,253 natural regeneration shafts. For each FMNR plot, 40 trees/hectare will not be destroyed/burned and the new crop is growing in between. These farmers are advisors for the other community members and teach them the new techniques and management of their farm. WCF promotes a participatory approach to ensure the sustainable engagement of the leading farmers. From April to June 2018, participatory agricultural diagnose missions were carried out at the level of the six pilot villages and farms (Lallabara, Sangan, Koulikakara, Kalinko Missira, Kalinko Konkero and Founyani) in order to describe their production systems, the initial situation and identify possible innovative solutions. A selection of the results from these missions can be found in Table 4 in the Annex.

Output 3. Biomonitoring for collection of data that monitors the density and distribution of fauna (chimpanzees, other primates, bovidae, suidae, mammals, carnivores and other rare and threatened species) including birds throughout the MBNP zone. This will be done in view of documenting an increased use of reforested areas and corridors by local wildlife with a specific protocol for pilot sites and a long-term monitoring of data (former Output 4.)

a. Bird study:

The inventory of birds in the park will be completed after a second mission by Biotope in March 2019. Results from the first mission show that 136 bird species were encountered (48 families), with 27 intra-African migrators (5 strict migrators). The first results from the second mission and the support of the WCF biomonitoring system show that 194 species are present in the MBNP (Annex Table 5), with 3 new species detected via camera traps (Grand Duke of the Sahel, Turtledove of Adamaoua and Trogon narina). Of these 194 species, four are on the IUCN red list of endangered species and five are of importance: African Vulture (CR); Scavenger Vulture (CR); Rüppell's Vulture (CR); White-headed Vulture (CR); Savannah boater (NT).

b. Flora study:

A first list of the botanic species of the MBNP is available, and currently includes 293 species, with 21 threatened species according to the IUCN red list of endangered species (3 CR/ 6 EN/ 12 VU). The list of these 21 species can be found in Table 6 in the Annex. A new plant species has been identified at Koukoutamba waterfalls in the MBNP by the Kew Royal Botanic Gardens team: *Lebbiea grandiflora*. Read more: <https://inews.co.uk/news/environment/expedition-planned-to-save-newly-discovered-herb-from-extinction/>

The results enabled Charlotte Couch and Martin Cheek of the Kew Royal Botanic Gardens team to propose an assessment of Tropical Important Plant Areas (ZTIPs) throughout the MBNP and more specifically the Koukoutamba waterfalls. They represent the richest site in Podostemaceae in Guinea with five species. It is the only place known in Guinea for the critically endangered Podostemaceae species *Lebbiea grandifolia*. The species is threatened because of the proposed hydroelectric dam construction project in the MBNP. In addition, *Stonesia taylorii*, which is globally endangered, is also threatened by this dam project.

c. Camera traps / analysis of wildlife movements:

In April 2018, we placed 400 cameras for monitoring large and medium wildlife in the MBNP. With the Capture-Recapture Method (SECR) method based on the individual identification of a given species, we can confirm 39 mammal species (7 primates, 15 carnivores, 8 ungulates, 1 daman, 1 lagomorph, and 7 rodents) in the MBNP (Annex Table 6). 19 species of birds as well as 2 reptiles were also detected. The camera trap study continues in 2019 to cover the whole park at the end of the study and a PhD student Benjamin Debetencourt (WCF/ Max Planck Institute for evolutionary Anthropology) is leading the placement and maintenance of the

cameras, as well as the team of the data analysis which is detecting the wildlife on the thousands of videos. Just as an example during the first phase of the camera trap study over 330 000 videos were collected. It is not possible to analyse these videos just with humans, so we are working with the help of computer detection and the experts from DrivenData.org to exclude videos which are without animals and to apply automated species detection. The forest corridors are monitored continuously with our camera trap monitoring method and the results show animals are moving between the seven classified forests inside the new MBNP, further analysis will show the number of species moving between the forests per year.

4.2. Progress towards Outputs

Output 1. Reforestation / Mise-en-défens: Reforestation of 40 ha of gallery forests and headwaters alongside the creation of 10 ha of orchards and capacity building for creation and maintenance of tree nursery, and assisted natural regeneration for innovative farmers.

One **tree nursery** is well established and organized by the village community of Laafa-Boubé, ten local community members have been recruited to manage and maintain the tree nursery. From 12,690 plants in year 1, we planted 1,725 plants in the MBNP in year 2. The nursery contains 9,240 plants at the moment and the team will plant more saplings in June 2019. We will implement a rotation of saplings growing in the nursery and reforestation of plants in the MBNP when they are robust enough. We are discussing with the village communities of Fougany, Balabory, Sobory and Bama to open tree nurseries in their villages.

For the **reforestation project**, we created a “groupe de travail” in six villages, which included 10 members nominated by the village. They proposed the 12 degraded sites for reforestation, these sites have been confirmed by signed agreements with village representatives and OGUIPAR. In addition, 10 other reforestation sites located in the classified forests or on river banks and spring heads in the MBNP have been selected. In total 43ha (22 sites) of rehabilitation forest have been selected with the communities, WCF and OGUIPAR. In year 2, 1,725 plants were planted on 4.34ha of some of the selected sites in the MBNP, for this activity 30 local workers were hired. They also have been trained to carry on awareness actions about the park creation, forest protection, and bushfire limitations.

The implementation of **orchards** is planned for 2019, when the land management plan is confirmed by the communities of the six pilot villages and the authorities, this depends on the establishment of the village committees, which started in 2019.

The process of **forest protection**, and bushfire monitoring will be supported through the creation of village committees. Community eco-guards will be trained for forest protection in 2019. The WCF monitoring of bushfires from 2014-2018 made it possible to identify the fire dynamics within the park, and to establish a management plan. A strategy for bushfire protection is going to be finalized and activities (implementation of fire breakers, training of communities how to build fire breakers and awareness raising about the impacts of bushfires) have been launched in order to protect the MBNP and the selected reforestation sites.

Output 2. Converted wetland on 3-5 ha of showcase converted wetland designed and tested in a participatory process with members of the local community trained in wetland management

Agriculture related trainings for local communities on composting, market gardening and crop association (carrots and beans), and the manufacture of bio-pesticides have been conducted in seven villages with 597 participants (541 women and 56 men). 210 people have received seeds (carrots, beans, potatoes). Further trainings are planned for year 3.

Wetland conversion must be defined through a community agreement including reforestation processes, protection of natural resources, as well as the results of agro-ecological diagnostics. At the end of 2019, and for the six pilot villages of the farmer management natural regeneration (FMNR) project, the development of the land management plan will be done. The first village (Lallabara) is in process of defining their land management plan within their territory limits.

The implementation of **market gardens** will be defined during the elaboration of land management plans. Together with GRET, WCF finished a first diagnostic mission to describe the operating systems of rural leaders and to collect information to initiate rural development in

communities of MBNP. Based on the information gathered and analysed, an agricultural chains development strategy has been validated in order to launch actions on the ground in 2019.

WCF and OGUIPAR selected six pilot villages with 12 **innovative farmer leaders for the farmed-managed natural regeneration (FMNR)** projects on 48,85ha for rural development and a conversion into innovative and environmentally friendly systems. In 2018, participatory agricultural diagnose missions were carried out at the level of the six villages (Lallabara, Sangan, Koulifakara, Kalinko Missira, Kalinko Konkero and Foungani) in order to describe their production systems, the initial situation and identify possible innovative solutions.

Output 3. Biomonitoring for collection of data that monitors the density and distribution of fauna (chimpanzees, other primates, bovidae, suidae, mammals, carnivores and other rare and threatened species) including birds throughout the MBNP zone. This will be done in view of documenting an increased use of reforested areas and corridors by local wildlife with a specific protocol for pilot sites and a long-term monitoring of data

The **inventory of birds** shows that 194 species are present in the MBNP, of which 4 are on the IUCN red list and 5 are of importance.

A first list of the **botanic species** of the MBNP is available, and includes 293 species, with 21 threatened species according to the IUCN red list. A new species has been identified at Koukoutamba waterfalls by the Kew Royal Botanic Garden team: *Lebbiea grandiflora*.

With the 400 **camera traps** placed inside the MBNP for biomonitoring, we captured during the first phase of the study over 330,000 videos. Thanks to this large dataset, we can confirm 39 mammal species (7 primates, 15 carnivores, 8 ungulates, 1 daman, 1 lagomorph, and 7 rodents) in the MBNP. 19 species of birds as well as 2 reptiles were also detected.

4.3. Progress towards Outcome

Outcome: Environmental rehabilitation through regeneration of 40ha of forest and improved sustainable agricultural practices to increase connectivity and to stabilize the hydraulic system to benefit local biodiversity and human populations as well as a long-term protocol for biomonitoring chimpanzee at Moyen-Bafing NP scale.

0.1 40 ha reforested achieving a 33% increase in forest cover within the valley of the pilot villages by the end of year 4:

Pilot projects have been initiated with six villages inside the MBNP after a participative selection procedure (during the community consultations). The environmental rehabilitation will result through the development of land management plans and agreements with the communities that have been initiated. Remote-sensing analyses with images from 2016 help us to identify the optimal areas around those villages where the prospects for increasing the forest cover seem most promising. In 2018, 4.34ha were enriched with 1725 trees.

0.2 Forest clearance reduced by 80 % through less wood cutting, felling and burning in project pilot areas by the end of year 4:

The evolution of habitats by diachronic comparison, with habitat classification by semi-automatic method, shows a change in habitat surface from 2016 to 2018. Indeed, we observe a negative evolution of forest surfaces (dense and open), in favour of open habitats, including shrubby and grassy savannahs and anthropogenic areas. The evolution of these habitats is due in particular to bushfires, which have a lasting impact on forest habitats, which are more sensitive to bushfires. Indeed, there is a correlation between burned and unburned surfaces. Unburned areas tend to decrease in the area, from 70% to 65% in 10 years, and become increasingly rare. An analysis of bushfire dynamics was carried out over 10 years (Figure 5).

Although the farmed-managed natural regeneration project (FMNR) will help farmers in reducing the rhythm of agricultural rotation, the challenge will be to provide alternative solutions to firewood for household needs, and getting fodder for livestock consumption. The project to bring in our partner GRET with its extended experience in this domain throughout Africa will be crucial to help the communities with such sustainable conversions.

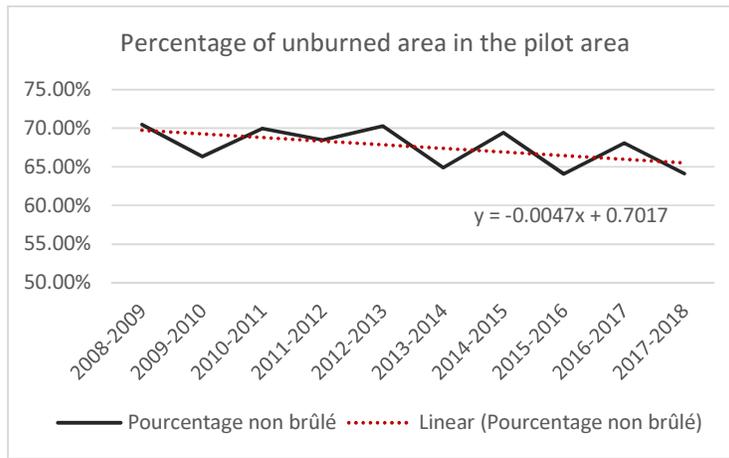


Figure 5: Development of unburned areas between 2008 and 2018 in the Moyen-Bafing NP.

0.3 By end of year 4, chimpanzee population is stabilized in the area of the Moyen-Bafing NP and biodiversity is increasing in the reforested valley with our pilot projects:

Through a combination of decreased hunting pressure, increased reforestation, natural regeneration and decreased bushfires in the park, we expect to increase the carrying capacity of the park for animal species, and especially chimpanzees. This is known to improve reproductive rates and leads to population increase. The biomonitoring will provide us yearly population estimates of the chimpanzee population for the entire area. Combined with yearly estimates of forest cover and encroachment, this will give us the tools to monitor the progress of the project and make necessary adaptations. With the ongoing camera trap monitoring we are not able yet to provide a chimpanzee population estimate, since data analysis is still ongoing. We will be able to provide an estimate in 2019.

0.4 By end of year 4, 30-50 villages are aware of the agro-ecology practice to improve their agricultural practices

Six villages have been selected for the farmed-managed natural regeneration project (FMNR) implementation in the MBNP: Lallabara Centre, Koulifakara and Sangan, Kalinko-Konkero Centre, Foungnany and Kalinko-Missira. Following consultations and discussion rounds, they all selected the agro-ecological model of FMNR as a potential solution to their decreasing yield problems, and twelve farmers were selected for developing it on their own farm. Inter- and intra-village visits will be organised to the FMNR fields to encourage other farmers to adopt the innovation. Each pilot village is expected to spread the innovations toward 5 to 10 neighbouring villages. The project officers will facilitate the organization of such activities. A tour to 30 villages in the MBNP is planned to provide 15 day-trainings about farming practices. 30 villages have been selected during the third phase of communities' consultations. After the first six villages involved in the FMNR project, we will give priority to these 30 villages (Annex Map 8).

0.5 By end of year 4, 11-18% of villages in the Moyen-Bafing NP have a validated land-management plan for their territory

A village territory map from all the 255 villages in the MBNP is available (Annex Map 9). Further studies are underway to refine this knowledge and ensure its validity and plan our activities.

0.6 30% of people attending workshops are woman, including the market garden economic interest groups

The governance model in the MBNP region relies on a gendered power allocation with a strong patriarchal social organisation, which limits women expression. Although many more women than men attended the agricultural trainings and awareness-raising workshops (541 women of 597 participants in total, 91% women), they dared not always to speak freely in public in the presence of men. Based on this experience, the project team always plans specific women-workshops and training for the interventions with communities (in addition to mixed-gender meetings). This should facilitate women to speak out freely.

4.4. Progress towards Impact

One aim of the MBNP creation is to improve the water security for both nature and the human population in the region. Downstream from its source, the Bafing river, which runs through the MBNP, becomes Senegal River, forming one of the major rivers of West Africa. Without ever being dry, the Bafing has a variable flow, depending on the season. Changes in both ground and surface water supply carry severe impacts for domestic and agricultural usage, leading to major negative effects on food supplies, health, economic and environmental losses, and social upheaval. Such impacts are complex, and can be a serious threat to achieving poverty reduction and sustainable development. MBNP communities, particularly the elders, are already concerned and aware of their behaviour impacts on the environment, resulting in local changes (e.g. deforestation, rivers drying up, soil fatigue). Communities are aware that adopting integrated natural resource management, especially for agriculture and livestock keeping and possibly via farmed-managed natural regeneration, will improve their livelihood. Even more awareness needs to be performed to have a higher impact on human behaviour. The project will design and establish an irrigated wetland production system (5-10 ha), and we have launched the feasibility study in Lallabara. Wetlands have important economic functions for crops and gardens. The area will be used for rice paddies and market gardens. The project should have a significant impact on food security. The awareness tour on agricultural good practice will allow to share lessons learnt from the supported communities and encourage others to embrace those sustainable practices. Our communication and awareness-raising tools are being finalised, and with the increasing presence of our teams in the field, the understanding of the issues and good practices will increase.

5. Contribution to Global Goals for Sustainable Development (SDGs)

Table 8: Project activities contributing to the Sustainable Development Goals

Sustainable Development Goal	Project activities contributing to the goal
Goal 1: No Poverty Goal 2: No Hunger	<ul style="list-style-type: none"> - Development of farmed-managed natural regeneration in six villages with 12 innovative farmers, farmers will increase their food production and food security for their families - Capacity building / trainings in agricultural knowledge of 597 participants (of which 91% were women) - 210 persons received carrot, bean and potato seeds - Employment of villagers into the MBNP project as tree nursery staff, reforestation staff, field guides, Club PAN animators, and eco-guards created new income for the villagers in this very remote region of Guinea, where jobs are hard to find and unemployment is high (36% of women and 44% of men over 18 have no income)
Goal 4: Quality Education	<ul style="list-style-type: none"> - Free environmental education and awareness projects in the MBNP region with focus on climate change, forest protection, biodiversity and endangered species (theatre tour 2018/2019 with over 4000 spectators in 30 villages, nature clubs called Club PAN in 8 primary schools 2018/2019 reaching over 600 children and their families each school year)
Goal 6: Clean Water and Sanitation	<ul style="list-style-type: none"> - Securing water availability for humans and nature in the region by protecting the Bafing river and the other spring heads and rivers in the MBNP
Goal 12: Responsible Production and Consumption	<ul style="list-style-type: none"> - Creation of a tree nursery with work for 10 villagers (income), plants from the nursery are used for the reforestation in the MBNP

	<ul style="list-style-type: none"> - Development of farmed-managed natural regeneration in six villages with 12 innovative farmers
<p>Goal 13: Climate Action</p> <p>Goal 15: Life on Land</p>	<ul style="list-style-type: none"> - Creation of a protected area, the Moyon-Bafing National Park (MBNP), which includes water, forest and biodiversity protection - Reforestation of forest, rivers and spring heads with native tree species in the MBNP - Controlling and fighting bushfires in the MBNP - Free environmental education projects in the MBNP with focus on climate change and forest protection (theatre tour 2018/2019, nature clubs called Club PAN in primary schools 2018/2019) - Development of farmed-managed natural regeneration in six villages with 12 innovative farmers

6. Project support to at least one of the Conventions, Treaties or Agreements supported by the fund: the CBD, CITES, the Nagoya Protocol on ABS, ITPGRFA, Ramsar and CMS.

This project helps Guinea in honouring its commitment to the CBD, in particular to achieve the Aichi Targets by contributing to the national goal of placing 15% of its terrestrial areas under protection by 2020. The MBNP represents around 3% of terrestrial protected area of the Guinean territory. The project contributes to the three CBD objectives: 1) To conserve biological diversity; the creation of a protected area will play a vital role in the protection of critically endangered chimpanzees and other threatened flora and fauna (new plant species discovered in the MBNP and already critically endangered). 2) Sustainable use of biodiversity; gazettement of the park and zoning will support the sustainable use of biodiversity currently threatened by habitat degradation and fragmentation. The project aims to enable local communities to protect their environment through capacity building, education, and sustainable micro-projects. 3) Equitable sharing of benefits from biodiversity; communities will be involved in all processes that lead to the establishment and protection of the park, and the value and relevance of their knowledge, innovations and practices towards the conservation and sustainable use of biodiversity are recognised. Employment activities and increased profitability of income generating activities as well as long-term benefits as a result of ecosystem restoration will concomitantly secure a more sustainable future for biodiversity and humans.

7. Project support to poverty alleviation

Due to the broad scale of the MBNP project, over an area of 6426 km² an estimated 36000 inhabitants of 255 villages will be within one of the park's zones and will benefit either directly or indirectly from the project. In the short-term, these communities benefit from educational initiatives (e.g. capacity building, nature club in primary schools, theatre tour), employment opportunities (e.g. field staff, eco-guides, animators) and micro-projects (e.g. tree nursery) put in place. We listed all these details in Table 7 about the project activities contributing to the Sustainable Development Goals. At each field site, a local guide is employed to help undertake the activities and local staffs are already recruited for the tree nursery, guides or translators. Since July 2018, WCF is monitoring the development of indirect employment generated in the MBNP as an indicator of its activities (Table 9). These guides/agents, from the communities, provide essential support to the WCF activities and participate directly in the involvement of the communities in the creation phase of the park. As the park management will increase, throughout the park's territories, these jobs will be more and more frequent, and numerous. This employment is a significant source of income, thus contributing to the improvement of living conditions by increasing the purchasing power of households. The market gardens will be headed by interest-groups contained mainly of women, and the management committees of the community territories include the socio-professional strata for which activities in favour of sustainable environmental management will be promoted. The tree planting/reforestation and cutting of the firebreaks activities have employed around 20 people per village (more than 120 people). A rural development strategy is currently developed with stakeholders (World Vision,

GRET), and should be linked to the poverty alleviation regional strategies. Indeed, each sub-prefecture has a local development plan which will constitute the link with our initiatives and those of the partners. In the long-term, benefit will come from the rehabilitation of the ecosystem contributing to stabilise the water functions and directly combating the ultimate cause of poverty in the region - the decrease crop productivity.

8. Project support to gender equality issues

The WCF recruitment policy includes affirmative action for women and persons living in the MBNP area. WCF-Guinea has 17 women in its 66 persons' team (26% women). The WCF-head office is directed by 3 women and one man, the president. WCF is well aware of the gender issue and always insists in involving more women, however, this is a difficult task in a Muslim country, where women have much less access to education and especially to higher study levels. Results from our socio-economic study in the MBNP region show that strong religious conservatism promotes Koranic rather than secular teaching. 47% of women over 18 have received Koranic education and less than 5% secular education. Of the men, 74% have received Koranic and only 10% secular education. One in two women and one in five men did not go to school at all. During year 2, we conducted capacity building / trainings in agricultural knowledge of 597 participants, of which 541, i.e. 91% were women. The setup of economic interest groups has the focus on woman and during consultations with women alone, WCF is able to learn about their knowledge and perception without the influence of their husbands.

9. Monitoring, evaluation and lessons learnt

The WCF Guinea director (Arnaud Gotanegre) oversees all activities coordinated on the ground, he is supported by an administrative/financial director (Maxime Walens) and a national park manager (Pazifique Kizila) and four program officers. The WCF president Professor Christophe Boesch personally visits the project 4 times/year. The monitoring is based on monthly reports done by the program officers, which indicate the progress of activities and indicators. Field missions have been conducted with Professor Boesch, to ensure that the monitoring of environmental parameters and camera-trapping protocols are functional, and changes in methodology adhere to the highest scientific quality. The arrival of a monitoring and evaluation manager within the team since February 2019 aims to strengthen and support the teams in defining and monitoring results and impact indicators.

In 2019, the WCF team has developed a framework to evaluate its annual operational plans. We work towards improving the processes to achieve the standards in force for 2020, the date aimed to obtain the presidential decree classifying the MBNP. In April 2019, a workshop was held in Labé to support the capacity building of the OGUIPAR in the monitoring and evaluation of operational activities. WCF, in collaboration with OGUIPAR, invited the managers of the National Parks of Upper Niger, Badiar and Ziama Classified Forest, all three labelled Biosphere Reserves by UNESCO, as well as the persons in charge of monitoring and evaluation within the General Directorate of the OGUIPAR in Conakry. For the occasion, Commander Diarrassouba Issa, of the Ivorian Parks and Reserves Office (OIPR), came from Abidjan to train Guinean agents in the implementation of the monitoring and evaluation of the Annual Operation

Plans (AOPs). This visit strengthens collaboration between the park and reserve management offices of Côte d'Ivoire and Guinea. The workshop, led by Commander Diarrassouba, consisted of training in monitoring, evaluation, use of indicators and in setting up a monitoring matrix, then used by the participants to evaluate the first quarter of 2019 of the Annual Operation Plan to create the MBNP. The result show that we have reached 84% of effectiveness performance to implement this first trimester of the 2019 Annual Operation Plan. This capacity building of the OGUIPAR staff on monitoring and evaluation complements the activities of the United Nations Office for Project Services. Together with the OGUIPAR and its other partners, they validated a framework for the development of a standard management plan for the entire protected area network in Guinea. WCF and OGUIPAR will developed it for the implementation of the MBNP's management process to cover the period from 2021 to 2025. Subsequently, within the framework of the MBNP, WCF and OGUIPAR will implement other protected area monitoring and evaluation tools, such as the Integrated Management Effectiveness Tool, to improve the management processes of the MBNP. Close collaborations between the Guinean protected areas will continue within the network to exchange good practices and experiences, always towards better conservation and enhancement of the country's exceptional natural heritage.

10. Actions taken in response to previous reviews

We clarified, that SYDEV is no longer an active partner: due to the need for WCF to scale up the initial strategy developed in this Darwin initiative funded project to the entire park area, the expertise identified within the local NGO SYDEV were no longer consistent with the objectives of the Action Plan (2018-2020), we chose to work with the partner NGO GRET instead.

We followed the recommendations of the reviewer of the Annual Report 1, and regrouped our activities into the three main outputs.

The tree nursery is still run by the project until we have formalized the village committees that will be in charge in the long-term. Then it will be run as a small business by the dedicated economic interest group in the village community. The seeds for the tree nursery were selected in the wild from native and ecologically important tree species. The seeds for the FMNR farms are coming from several providers at Labé (SAREF for the carrots from Europe, 1st generation; beans and potatoes (local seed growers – 2eme generation).

There is no specific exist strategy while the creation of the MBNP will encompass the present community-based strategy. All activities implemented through this Darwin Initiative project will continue after the end of the present fund, and the management unit of the MBNP, and its partners, will continued finding specific funds to support the rural development projects. This will be part of the Management Plan of the MBNP and its already part of the Action Plan for the preliminary phase for its creation.

11. Sustainability and legacy

The development of a sustainable and solid financing scheme is being elaborated with mining companies and the International Finance Corporation of the World Bank Group. The aim is to achieve the adoption of an action plan that should be supported by mining companies in the years to come. WCF is working with the government of Guinea to create a Public-Private Partnership in order to have an independent and transparent management-unit for the MBNP and follow a model of governance acceptable to our international partners. The community consultations and support activities will result in a contractual agreement for the park creation by 2020. The aim is to obtain a presidential decree for the park creation until the end of 2020 that will formalize a unique model of national park governance being financed by the private sector and other partners.

Sustainability for the specific activities funded by the Darwin initiative:

- Tree nursery: we are looking for new funds to continue this activity (proposal to IUCN SOS), WCF will run the tree nursery until we formalized the village committees that will be in charge in the long term (the economic interest groups).
- The innovative farmers are part of the village committees and will help to train other village communities by joining our field missions and teams.

- The economic interest groups will be part of the village committees. They will play a leading role in the development of the land management plan and on its implementation. The community strategy is based on the layers of national, communal and local committees, and as we are developing the land management plans as a specific description of the needs for each village by communes, a link is made with the national framework of local investment through the Local Development Plan.
- The biomonitoring process will continue as it is a strategic aspect of the MBNP management and funding will be secured.

12. Darwin identity

Darwin initiative funding is part of a larger program and it is co-funding activities for the MBNP creation. Darwin is cited in our annual report as a specific donor for Guinea. Darwin is the unique donor for the bird and flora study. WCF has a Facebook and webpage with a news section, we quote the Darwin grant to all activities funded by Darwin. The WCF president, Professor Christophe Boesch had another meeting with the Ambassador of Great Britain in Guinea, Mrs Catherine Inglehearn, the 27th of February 2019 in Conakry. Mrs Inglehearn is always interested to hear about our work supported by the Darwin initiative and helps by informing other ambassadors and national authorities about the creation of the MBNP.

13. Project expenditure

Project spend (indicative) since last annual report	2018/19 Grant (£)	2018/19x Total actual 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)				
Others (see below)				
TOTAL				