

## 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: 30<sup>th</sup> April 2019**

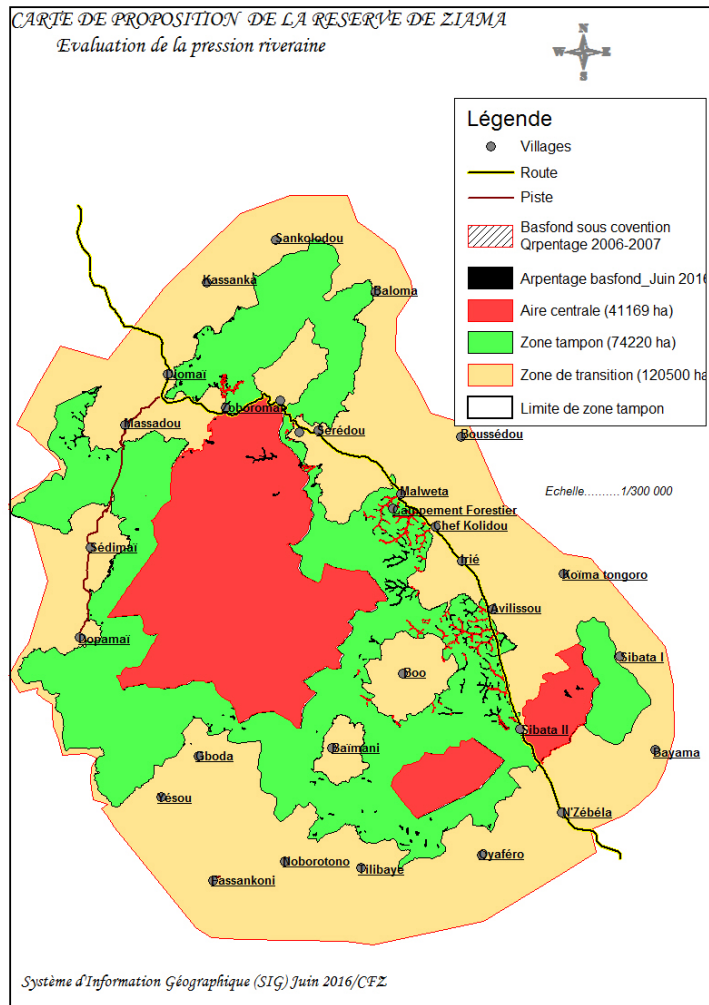
### Darwin Project Information

Project reference	24-004
Project title	Conserving critical forest biodiversity in Guinea through sustainable agricultural livelihoods
Host country/ies	Guinea
Lead organisation	Fauna & Flora International
Partner institution(s)	Centre Forestier de N'Zérékoré (CFZ), L'Institut de Recherche Agronomique de Guinée (IRAG) and Association pour le Développement Communautaire et Agro-Pastorale (ADCAP)
Darwin grant value	£396,869
Start/end dates of project	1 June 2017 / 31 March 2021
Reporting period (e.g., Apr 2018 – Mar 2019) and number (e.g., Annual Report 1, 2, 3)	April 2018 - March 2019 AR 2
Project Leader name	Michelle Villeneuve
Project website/blog/Twitter	<a href="https://www.fauna-flora.org/projects/supporting-effective-management-ziama-man-biosphere-reserve">https://www.fauna-flora.org/projects/supporting-effective-management-ziama-man-biosphere-reserve</a>
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## 1. Project rationale

Ziama Man and Biosphere (MAB) Reserve exists to ensure the viability of Guinea's last population of forest elephants and other key species (including Western chimpanzee), as well as to provide ecosystem services to local, regional and transboundary (Liberian) communities. In this area, rising food insecurity and the 2014 Ebola outbreak have increased pressure on already poor and remote households.

Ziama MAB Reserve contains areas of permanent wetland called 'bas-fonds'. These areas of humid and fertile soil are used by local farmers to grow crops, mainly rice and market vegetables. This practice was once permitted by Centre Forestier de N'Zérékoré (CFZ) at regulated levels, but increasing demand for land has led to illegal clearing of additional areas; current use of bas-fonds far exceeds that which was originally legally permitted. CFZ now wish to halt all agricultural activity within core zones.



Cultivation in the bas-fonds has interrupted about 25% of the corridors used by the forest elephant population to move about. Elephants are increasingly using bas-fonds crops as a food source, leading to human-wildlife conflict (HWC) and retaliatory killing. Continued use and expansion of bas-fonds is considered the most significant threat to the integrity of Ziama forest ecosystem.

Using bas-fonds requires farmers to travel long distances (up to 10kms) within the forest, with farmers often camping overnight, providing opportunities for poaching and illegal collection of forest products. Farmers have stated they would prefer not to travel to bas-fonds due to the challenging terrain and risk of dangerous wildlife encounters.

The objective of this project is to help CFZ reach their goal of halting cultivation in the bas-fonds by incentivizing farmers to re-establish crops on formerly marginal land close to the villages, using improved agricultural and land restoration techniques.

## 2. Project partnerships

This project launched as a partnership between Fauna & Flora International (FFI), CFZ and l'Institut de Recherche Agronomique de Guinée (IRAG); IRAG was removed as a project partner in Y2 due to fraudulent activity (**Annex 4**).

**CFZ** is the statutory authority in charge of management of Ziama MAB Reserve, and is responsible for managing and patrolling it. Within the scope of the project they are responsible for the development and implementation of a bas-fonds management and restoration plan, the deployment of patrols to monitor use of bas-fonds, communicating project messaging to bas-fonds farmers, and generally putting statutory measures in place to ensure that no further agricultural encroachment into the bas-fonds occurs.

FFI's collaboration with the current Director General of CFZ began midway through Y1, and has gone relatively smoothly throughout Y2. At times there are delays while FFI waits for CFZ approvals, and the deliverables received to date from CFZ have not always been delivered in

completed form and/or on time. On the other hand, CFZ rangers have done exceptional work throughout the course of the project. Overall the collaboration can be considered to be good, with room for improvement.

**IRAG** is a public scientific institution with autonomous management under the aegis of the Ministry of Agriculture and Livestock, Guinea. Within the project IRAG were responsible for setting up the farmer training sites, community nurseries, conducting farmer training on seed selection, supply and distribution, on soil health and maintenance, supporting the irrigation system selection and training, and supply of seeds and seedlings for agroforestry. In year 1 IRAG was also involved in project planning, monitoring and evaluation and decision-making.

Unfortunately, in Q3 Y2, ongoing fraud with Darwin funds on the part of the IRAG focal point was uncovered; the total amount defrauded was 73 718 000 GNF, or approximately £6000 (**Annex 4**). As there was no one qualified and available at IRAG Sereidou to replace the focal point on this project, IRAG has been removed as a partner.

**ADCAP** (Association pour le Développement Communautaire et Agro-Pastorale ; Association for Community and Agro-Pastoral Development) is a Guinean NGO formed in 2009, consisting of a group of university graduates in the sciences who have established a consultancy working in various areas of agriculture and environmental science in the Guinée Forestière region. They have taken on the bulk of Rio Tinto's CSR contracts in the region since 2011. ADCAP as an entity has specific technical knowledge in agricultural yield intensification in the Ziama region of Guinea, and have worked with many of the villages in the region (including several of our target villages).

FFI staff (the current Project Lead, former Project Lead and Acting Programme Manager) interviewed the president of ADCAP, as well as the president of a different local NGO, at the Sereidou office in mid-November 2018 regarding the possibility of becoming a project partner on the Darwin project. ADCAP was selected by FFI staff as the best project partner option moving forward, and FFI and ADCAP worked together closely in the provision of details required for partnership approval within FFI. Once internal approval was achieved, ADCAP were presented to DEFRA as a potential replacement to IRAG on this project. The change in partners was approved in January 2019, and a new sub-grant agreement was signed in March 2019 (**Annex 12**). In March 2019, ADCAP was accompanied by representatives from FFI and CFZ to visit each community, including local authorities, to explain the partner change and to answer any questions (**Annex 7**, March 2019 report).

To date, ADCAP have performed at or above expectations; while they have been an official project partner for less than two months at the time of writing, as an organization they have already invested a significant amount of time in the project, assisting in the planning of the Y3 budget and activities throughout Q3/4 Y2, as FFI approval of the sub-grant agreement could not proceed without these documents.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

##### **Activities undertaken in Y2 to achieve Outputs 1 & 2**

As the activities under Outputs 1 & 2 are linked (in that they are mostly agricultural or farmer-related activities), the activities under these outputs will be described together.

##### ***Compost Training (Activities 1.2, 2.2):***

In the year 2 half-year report, it was reported that a composting training was due to be delivered to the target communities in Y2, Q3 and Q4. Unfortunately, the Cambridge team was made aware several days later that one of the sisters of Sainte Ursule, a group of three nuns who were going to deliver the composting training, was the driver in a motor vehicle accident that killed a child in late October 2018. The sister who was involved felt great shame and was temporarily shunned in the community, which led to the decision between FFI and the sisters not to move forward with the composting training. Instead, the composting training was written

into the sub-grant agreement with new project partner ADCAP, and the training modules are currently being delivered, having begun in the last weeks of Q4 Y2.

**Farmer Interest Survey (Activities 1.5, 2.4, 2.5, 2.9):**

A mid-term survey was rolled out in January 2019, surveying 88 farmers in the four target villages (11 men and 11 women in each village) on their areas of agricultural interest and need moving forward. The survey was short and focused, asking farmers which crops were most important to their livelihoods, what kind of agricultural support would be the most beneficial, and what kind of value addition or farm enterprise they thought could best improve their livelihoods (**Annex 6**). Survey results figured into the design of the Y3 farmer field school curriculum, but no significant programmatic changes were made.

**Farmer Field Schools (Activities 1.4, 2.2, 2.3, 2.7, 2.8, 2.9, 2.12):**

Agricultural trainings are the main mode of agricultural outreach to our target communities; these trainings will collectively be referred to as farmers field schools (FFSs). Please see **Annex 15** for a list of FFS groups and focus topics per village for Y2. FFS sessions occur weekly in each village, and sessions are led by a partner organization staff member, with supervision from the Guinea-based FFI staff agronomist.

Modules are reviewed and adjusted yearly based upon project outputs, community feedback and advice from Guinea-based FFI staff. In Y2 the major training modules were on agroforestry, improved rice production and seed selection, market vegetable yield intensification, cassava variety selection, ginger and the use of leguminous crops for yield intensification and land regeneration.

- The agroforestry FFS groups continued without pause in Y2, as the agroforestry officer provided by IRAG was not implicated in the fraudulent activity of Q2/Q3 and was able to continue her work with the communities throughout the turbulent Q3/Q4 period. Two villages focused on coffee, pepper and cocoa agroforestry in Y2, while the other two focussed on coffee and pepper agroforestry. In Y2, agroforestry farmers were trained in nursery construction, construction of heat tunnels for seedling protection, socketing, use of fertilizers in agroforestry and in the care and maintenance of emerging seedlings. In addition to cash crop agroforestry species, farmers began learning about the propagation and multiplication of banana, Moringa, and *Terminalis superba* in Y2 (**Annex 7**, January report). In Y3, 10 people per village will be trained as agroforestry seedling propagation specialists.
- The rice production and seed selection programme was launched with farmers in our target villages in July 2018. The rice training module included information on sustainable rice production, quality seed selection, and included the distribution of improved rice seed. In total, 1460 kg of improved rice seed was distributed to 67 participating farmers in the four target villages (**Annex 10**), and 47 farmers participated in the rice training and seed selection training (**Annex 21**). Unfortunately, extension support for planting was one of the activities that IRAG fraudulently reported activity on, and the window measuring participant farmer rice harvest was missed during the change in project partners. Rice improvement and intensification activities will pick up again in Y3, including the measure of improved rice harvest yield vs baseline.
- Market vegetables are one of the two main crops (besides rice) commonly grown in the bas-fonds, in particular by the women of Avilissou. In total 45 farmers were trained on improved vegetable production in Y2 (**Annex 15**).
- Cassava variety selection was selected by farmers in Avilissou as an area of interest, and in Y2 the project supported a participatory variety selection (PVS) of the various manioc varieties available locally. The PVS, which began in Y1, wrapped up in Y2 with most farmers selecting a mosaic-resistant variety called cassava Toussaint; further work on value-added transformation of cassava will be done using this variety in Y3 (**Annex 13**).
- Interest in ginger as a crop has steadily grown amongst our target farmers since project inception. In Y2, we worked with farmers in Avilissou in ginger production, as it was

specifically requested by farmers in this village as a value-added option in Y1. However, mid-term survey results (**Annex 6**) show that interest has grown in the other villages, and we will be rolling out ginger production and value-added training to all in Y3.

- Finally, we trained farmers on the use of leguminous crops for intercropping and land restoration. Practical work on land restoration was begun in Y2 using mucuna, a nitrogen-fixing crop that is commonly used in land restoration, with added value as fodder. In Y3 we will be continuing work with mucuna, expanding out work with nitrogen-fixing cowpea, and adding work with nitrogen-fixing moringa (*Moringa oleifera*) to our agroforestry programme; we expect the expansion of our work with leguminous and nitrogen-fixing plants to assist in soil improvement.

### **Communications plan (Activity 1.6)**

A communications strategy was defined in Y1 (**Annex 19**), and in Y2 several activities laid out in this strategy were undertaken.

Notably, Club d'Ecoute de Seredou (the Listening Club of Seredou) developed short plays on the topics of deforestation and poaching, with an overarching theme of 'the benefits of biodiversity'. These plays were performed in two target villages in Y2, in the local languages. Combined attendance for both villages was 622 people, including 399 women (**Annex 10**).

As the performances were video recorded in two local languages (Toma and Mandinka), one Y3 communications goal is to show the recorded play in the relevant local languages to the 33 other communities around the Ziama area. As our baseline socioeconomic survey in Y1 highlighted that the presence of radios in the villages is scarce, we plan to continue using the video club to reach as many as possible within the communities.

With regards to communication with the aim of enforcement, a poster was printed and affixed around the Ziama MAB Reserve outlining the fact that the use of herbicides is prohibited in the area (it is prohibited by CFZ, who have management responsibility for the MAB Reserve), and that the use of herbicides is dangerous to human health, including the health of children (**Annex 19**).

In Y3 we also plan on doing some radio shows through Radio Macenta. As mentioned above, radio penetration is low in the Ziama area, but we still think this could be a key communications strategy for the farmers it does reach. A full Y3 communications strategy has not yet been developed, but creating one in conjunction with CFZ and ADCAP is a priority activity for a consultant working with us during the month of May 2019.

### **Post-Harvest storage (Activity 2.7, 2.8)**

Post-harvest storage is an issue in the area around Ziama MAB Reserve, as it is extremely wet and humid most of the year, creating ideal conditions for fungus/aflatoxins, rot and/or insect infestation of dried or drying crops. Post-harvest storage was identified at project inception as an ideal means of increasing farmer income, and 8000 PICS hermetic storage bags were purchased in Ghana in Y1. The process of importing these bags proved to be difficult without a broker, as none could be located with access to networks in both Tema/Accra and Conakry. With assistance from CFZ and the Ministry of Environment, Water and Forestry in Conakry, the shipment of PICS bags was received and transported to Seredou at the end of Y2 (March 29 2019).

A distribution and training programme for the PICS bags is currently being planned by ADCAP for Y3. The training will focus on drying and storage methods for key staple and cash crops, and feedback will be solicited from the participants as to alternative and locally-appropriate post-harvest storage solutions. This feedback will be incorporated into the Y4 post-harvest loss prevention training.

### **Distribution of improved rice seed (Activity 2.11)**

1460 kg of improved rice seed was provided to 67 farmers from the four target villages as such:

Village		Variety and amount (kg) of lowland rice		Variety and amount (kg) of upland rice		TOTAL (kg)
		<i>NL19b</i>	<i>Benjamin</i>	<i>NERICA 4</i>	<i>Kologbè</i>	
		<b>Irié</b>	450	450	0	
<b>Boo</b>	60	60	0	120	<b>240</b>	
<b>Sibata II</b>	90	90	0	140	<b>320</b>	

(Annex 7, IRAG April-July 2018 report)

Unfortunately, follow-up on the use of the distributed seed was a responsibility of IRAG's that was falsely reported on in Q3 Y2; resultantly, we don't have any yield of preference data related to the distribution of this seed from Y2. We are planning on repeating the distribution in Y3, this time monitoring how the seed is used, yields, and farmer variety preference.

### **Agricultural buffer zone (Activity 2.14)**

The communities bordering Ziama MAB Reserve comprise mostly of smallholder farmers, who rely upon yields for subsistence. These communities suffer from human-wildlife conflict due to relatively large crop losses that occur due to animal raiding, a lack of understanding of crop protection techniques (particularly against elephants), complete dependence upon agricultural yields, and a lack of access to inputs.

The agricultural buffer zone project of N'Zebela has been conceived of as a means of addressing these concerns, with the ultimate objective of protecting the local elephant population that has begun to call N'Zebela home via the creation of an agricultural environment unappealing to elephants around the perimeter of the town.

See **Annex 9** for the agricultural buffer zone justification and planning document.

### **Community meetings (Activity 2.15)**

In Y2, meetings between the Ziama community, FFI and CFZ rangers to monitor and discuss were not held regularly, but on an as-needed basis. The village of N'Zebela is one of the Ziama communities most affected by HWC, as it is the site of the August 2016 slaying of a nursing mother forest elephant, and is subsequently the site to which her two young return regularly.

FFI has asked for a regular meeting schedule with the N'Zebela community association to discuss HWC in the area, but neither CFZ nor the community of N'Zebela was interested in committing to regular meetings, opting instead to request meetings on an as-needed basis. Five meetings on the topic of crop raiding and HWC were held between FFI, CFZ and the N'Zebela community association in Y2 (see **Annex 9**).

As the agricultural buffer zone project in N'Zebela launched in Q4 Y2, and regular work and maintenance will be required, especially during perennial crop establishment in Y3. CFZ, FFI and N'Zebela have agreed to meet quarterly in Y3 and Y4 to discuss high-level issues and strategy related to the buffer zone and HWC in the area. Additional meetings will continue to be held on an as-needed basis.

### ***Activities related to Outputs 1 & 2 not covered above:***

- 1.1- Completed Y1
- 1.7- To be completed Y4, in line with updated logframe change request (**Annex 5**). It was decided that it would not be useful or appropriate to conduct a PIA in the immediate aftermath of the IRAG fraud, and as such have moved the planning of the PIA to Y3, in conjunction with the Cambridge-based gender specialist's visit to Guinea. The actual activity (PIA) will be done in Y4.
- 1.8- Not yet applicable, planned for Y4
- 2.1- In discussions with CFZ in Y1 FFI was told that we should not get involved in land tenure discussions due to local cultural and political issues. This activity has been flagged for removal in a submitted change request (**Annex 5**).
- 2.6- Because we were not able to identify a national laboratory that could test water samples for glyphosate (herbicide), this activity has had a change request submitted to reorient the activity towards directly achieving project outputs via the provision of irrigation systems and associated trainings (**Annex 5**). Irrigation equipment has been purchased and training is underway as part of the FFS curriculum in each target village.
- 2.8- Not yet applicable; Y3
- 2.10- This activity has been flagged for removal in a change request (**Annex 5**), as access to improved varieties is not an issue in the region, and the management of seed exchange groups would be a lot of work without directly contributing to the project outcomes.
- 2.13- One of the activities missed by IRAG during the time that they were falsifying work reports was the collection of yield data in Y2, including rice yield. Therefore, the collection of this data has been pushed to Y3 and Y4.

### **Activities undertaken in Y2 to achieve Outputs 3 & 4:**

Outputs 3 & 4 both cover the patrolling and forest monitoring aspect of the project, and thus the activities under these outputs will be discussed together:

#### ***Monitoring use of bas-fonds/ forest patrols (Activity 3.1, 3.2)***

In Y2, CFZ rangers conducted the following bas-fonds monitoring activities:

- Biomonitoring: 378 field days
- Community monitoring and damage assessment: 152 days of activities
- Camera installation: 10 cameras installed and surveyed during 42 days of deployment
- Poaching patrol: 49 missions for 246 days of field work (see **Annex 20**)

There are no regularly-scheduled bas-fonds user association meetings, and so rangers did not regularly attend these, however CFZ rangers were present at HWC meetings as they occurred (see heading 'Community meetings', above).

#### ***Bas-fonds management and restoration plans (Activity 3.1, 4.1, 4.3)***

CFZ submitted a bas-fonds restoration plan in Y2, but some work will be needed before it can be considered a guide for implementation of restoration activities; this will be completed in Y3.

Work on the Ziama management plan is ongoing, and will be reported upon in Y3. (see **Annex 11** for an overview of recent work towards completing the management plan and next steps)

#### ***Training on the safe use of herbicides and pesticides (Activity 3.3)***

Training related to the safe use of pesticides is planned for Y3. In Y2, an emphasis was put on discouraging farmers from using herbicides in the bas-fonds; to this end, FFI printed posters warning farmers that the use of herbicides in the bas-fonds is prohibited (by CFZ) and affixed them throughout the reserve; see **Annex 19**.

**Activities related to Outputs 3 & 4 not covered above:**

- 3.4- A change request has been submitted to have this activity removed (**Annex 5**)
- 4.2- Not completed in Y2; baseline satellite imagery from Y1 to be compared to Y2/Y3/Y4 imagery to determine change in ground cover and density of vegetation.

### **3.2 Progress towards project Outputs**

**Output 1:** *Bas-fond farmers and current transition zone farmers in 4 villages are trained in improved agricultural practices and apply them to farmland in transition zones*

Two years of targeted agricultural trainings have been delivered to 368 farmers in 4 villages to date, and in January 2019, 94% of surveyed farmers stated that they would like to continue receiving these trainings (**Annex 6**).

Monitoring of adoption will begin in Y3, with about 30% of participant farmers (n = 125) to be surveyed as to whether or not they have adopted any of the land remediation strategies taught on their home farms or rented land; a random subset of this group (n = 40) will then have their claims verified by farm visits. The data collected will give a percentage of adopters for restoration techniques, which will be a proxy for overall adoption and intention to leave the bas-fonds.

**Output 2:** *The incentives and wellbeing (food security, physical security, time, income, yield) from farming in the transition zone are equal to or greater than farming in the illegal bas-fonds in the core and buffer zones*

In order to assess whether or not this output is on track, we will have to survey beneficiary farmers in Y3, asking both directly and indirectly about changes in socioeconomic indicators of well-being. This is a planned activity in Y3.

We do believe that this output is on track, due in part to the fact that we continue to have a significant number of farmers who want to attend our trainings and no issues with recruitment, despite the fact that many these farmers were harmed by IRAG's fraud (via sudden cessation of training activities and stolen inputs) (**Annex 4**). In addition, in January 2019 94% of surveyed farmers said that they would like to continue receiving trainings from FFI (**Annex 6**). Time is a commodity for Ziama farmers, and the fact that farmers are willing to give up their time is an indication that farmers see value in what is being offered via FFS trainings.

**Output 3:** *Illegal activity within Ziama is reduced through a shift from bas-fonds to farming in transition zones*

Illegal activity within Ziama is stable as of the end of Y2, which is a good outcome in context. As we don't yet have data on farmer departure from the bas-fonds and patrol-reported incidents are stable (not increasing, but not decreasing significantly), it is too early to say that this output is within grasp; by end of Y3 we will know if we are on track to fulfil this output by EoP.

**Output 4:** *Targeted bas-fonds in Ziama MAB are showing signs of forest recovery*

We are not in a position to be able to assess actual forest recovery at this time, but it is a priority project for Y3 for key staff to receive training on modelling changes in forest cover using satellite imagery. This GIS-based assessment of forest cover in Ziama MAB Reserve will then be applied retroactively for Y2 (against Y1 baseline), and will be conducted on-schedule for Y3 and Y4.

If outputs 1-3 are achieved, output 4 should follow, though with the caveat that forest recovery will not be immediate. Nevertheless, signs of forest recovery will be evident in the bas-fonds if output 4 is on track.



### 3.3 Progress towards the project Outcome

**Outcome:** *The relocation and improvement of agricultural practices reduces encroachment and degradation of forest habitats and ecosystems, benefiting elephants, forest resources and biodiversity, while improving the wellbeing of targeted farmers*

**Indicator 0.1:** *Stable or increasing indices of elephant and other key species (compared to baselines collected before start of project and through Y1 for full year)*

The last known incidence of elephant poaching in the Ziama area was recorded in August 2016, though evidence of poaching of non-elephant animals continues to be found in the Reserve (**Annex 20**). As there are few females left in the local elephant population we don't expect an increase in elephant population, but increasing populations of Bongo, Black Duiker and western Chimpanzee (for example) remains a goal and a realistic possibility.

In Y2, the following actions were logged by the forest rangers:

- 388 pieces of evidence of the presence of 17 animal species and their known areas of frequentation;
- Capture of 140 images of animal species for 16 species including elephant, Bongo, dwarf Hippopotamus, Black Duiker;
- 22 suspected poachers were arrested;
- 2068 traps were destroyed and the cables removed;
- 1346 12-gauge cases were collected;
- 17 local weapons of calibre were seized and sealed at the Ziama Site manager's level;
- 23 game [wild animals being kept illegally] were seized (**Annex 10**)

In addition, 622 people, including 399 women, were informed and sensitized on the impacts of deforestation and poaching via the creation and presentation of an anti-poaching play by Club d'Ecoute, a local youth group.

At this stage, barring any catastrophic events with our very small forest elephant population, we are on track for stable forest elephant populations, and stable or increasing populations of key species such as Bongo, Black Duiker and western Chimpanzee.

**Indicator 0.2:** *50% of target bas-fonds in Ziama (250 hectares) show improvements in line with expected patterns of restoration in years 3 and 4 against project baseline.*

We are not in a position to assess the reality of any change in forest cover at this point, as it is a technical process that involves the coding and comparison of satellite imagery; due to the nature of working with satellite imagery, will be able to assess forest cover for Y2 retroactively (in Y3).

**Indicator 0.3:** *60% reduction (228 individuals) in number of men and number of women (minimum 50% women) using bas-fonds in target villages by project end with a 20% reduction by end of year 2. We anticipate the final 40% to leave within 3 years of project end.*

Due to the staff bandwidth issues encountered in Y2, a methodology to measure farmer departure from the bas-fonds has not yet been designed, and as such we do not yet have any data on farmer departure rates from the bas-fonds. A change request has been submitted suggesting that Indicator 0.3 be changed to read "60% reduction (228 individuals) in number of men and number of women (minimum 50% women) using bas-fonds in target villages by project end with a 30% reduction by end of year 3. We anticipate the final 40% to leave within 3 years of project end." As it does take time to reach farmers and secure buy-in to the idea of leaving the bas-fonds, we believe that beginning the evaluation of farmer departure rates in Y3 is appropriate.

**Indicator 0.4:** *70% (266 individuals) of both male and female farmers targeted (of which at least 50% are women) report an improved sense of wellbeing (material, physical and subjective) by the end of the project*

The project has experienced high rates of engagement in farmer field school, agroforestry and income generating activities, with the number of participating farmers jumping from 368 in Y2 to 412 in Y3. This is an indication that efforts to date have led to positive changes in the lives of farmers.

Indicators 0.1-0.4 remain relevant, useful and achievable in realizing the project Outcome.

### 3.4 Monitoring of assumptions

**Assumption 1:** *That incentives offered in the agricultural transition plan do reflect 'meeting their needs' as reported, and that new law enforcement and education activities are sufficient to dissuade those wanting to continue bas-fond farming, or new farmers moving in.*

We believe the needs of farmers within the scope of the project are being met; as evidence we submit that 96% (25/26) <sup>1</sup>of Y1 farmers surveyed in Q4 of Y2 said that they would like to continue being part of the farmer education activities provided within the Darwin project (see **Annex 6**).

**Assumption 2:** *That there is no significant increase in population beyond natural growth, e.g. due to in-migration from conflict, mining opportunities in the region, etc.*

There is nothing that is currently leading to unusual population growth in the area, and nothing known on the horizon that would lead to a sudden and significant population increase.

**Assumption 3:** *Assume that the bas fond farmers were honest during project scoping of their desire to leave the bas-fonds.*

We still believe this to be true, based on the fact that farmers have to walk some distance to reach the bas-fonds, which is a loss of productive time, an energy output and a potential safety issue. We also have no specific reason to disbelieve farmers.

**Assumption 4:** *That elephant poaching for ivory remains opportunistic and that increasing demand does not lead to professional ivory poaching.*

The known presence of rangers and regular patrols is a disincentive for any professionals considering poaching in the area, and the arrest<sup>2</sup> of 22 suspected poachers in Y2 has likely had an impact.

**Assumption 5:** *There is no extreme weather event (i.e. drought) during the lifetime of the project*

There have been no extreme weather events in Guinee Forestiere since the start of the project, and there is no reason to expect one in the final two years.

**Assumption 6:** *Bas-fond farmers remain committed and open to learning new techniques and have confidence in results demonstrated to fully adopt practices*

After the fraud there was a loss of trust between communities and FFI, but our new agronomist Jonas, and the agroforestry officer Gboulou, have worked extremely hard to regain the trust of the community, and they seem to have achieved it. When surveyed, 94% of Y1 farmers as well as 94% of all farmers surveyed (83/88) said that they would be interested in participating in agricultural trainings provided by FFI (via Darwin funding) moving forward (**Annex 6**).

**Assumption 7:** *Multiple benefits of niebe bean [cowpea] convince farmers to increase production and consumption, as practiced in other West African countries*

Farmers have embraced the benefits of cowpea, with 11% (8/88) of project farmers stating that they wish to continue working with it as a staple crop, and 4.5% (4/88) wishing to develop cowpea production as an enterprise (**Annex 6**).

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<sup>1</sup> 94% of all farmers surveyed and 96% of former participants surveyed

<sup>2</sup> 'Arrest' in this context means that suspected poachers were detained, and the evidence of poaching or intent to poach is presented to local leadership. FFI is not directly involved in prosecution.

**Assumption 8:** *Rainfall remains adequate to feed community irrigation systems for target villages*

Though the rainfall calendar has been a little bit off-schedule since project start, and local farmers commonly blame climate change for the shift in the beginning of the rains, total rainfall remains adequate in and around Ziama MAB Reserve. We don't have any reason to anticipate drought-related issues during the project cycle.

**Assumption 9:** *Re-introduction of improved seed varieties conducted by IRAG for upland rice and niebe [cowpea] are replicated by direct beneficiary farmers as anticipated.*

Improved rice seed was distributed in Q2 Y2, and we have not yet reached the point of being able to assess whether farmers have used the seed-saving techniques they were taught to multiply their improved rice. This will be reported upon in Y3.

**Assumption 10:** *Initial community discussions on availability and access to land hold true and sufficient land can be harmoniously secured inside and outside Transition Zone.*

We hope to remove active negotiations regarding land tenure from the logframe (**Annex 5**), as we learned in Y1, through talks with CFZ, that it was culturally inappropriate for FFI to be involved in the relatively complex local land tenure system. Farmers report that there is enough land for their agricultural activities after leaving the bas-fonds, if the land regeneration and yield intensification trainings provided within the scope of the Darwin project are successful.

**Assumption 11:** *The use of mucuna and other soil improvement and weed management techniques to restore degraded land can be scaled up based on previous successful soil restoration work done by IRAG*

Work is moving forward as planned with mucuna, and while some farmers remain sceptical, we believe that this is because they have not yet had the chance to experience growth and improved yield on regenerated land; farmers are planting on regenerated land in Y3, so we expect more buy-in after the Y3 harvest.

**Assumption 12:** *Tree crops seedlings have high survival rates and farmer shows excellent knowledge in crop management.*

Currently crop management knowledge amongst farmers who have received agroforestry training appears high (unofficially reported by agroforestry extension agents; actual farmer knowledge survey to be run in Y3).

Seedling survival rate has not been ideal in Y2 for three reasons:

- (1) the fraud perpetrated by IRAG involved falsely claiming the socketing of 6000 cocoa seedlings; when it was discovered that this hadn't been done, the implicated extension agents did a rush job of socketing to try to cover their tracks, resulting in 6000+ improperly socketed cocoa seedlings, most of which did not survive (**Annex 4**).
- (2) farmers were, for a period, dis-incentivized from participating in agroforestry upkeep, as IRAG extension agents were charging farmers the same price to purchase trees from nurseries in which they had participated in the upkeep as to purchase directly from IRAG (1500 GNF per seedling). This resulted in farmers making the logical decision to save their time and just purchase directly from IRAG, as the total cost in money+ time was greater with FFI/IRAG than with just IRAG. In order to correct this oversight, farmers will now pay 1000 GNF per seedling purchased from their own agroforestry cooperatives, which represents a savings significant enough to incentivise participation. This has already greatly increased buy-in amongst farmers, as reported in the 23 January 2019 field report (**Annex 7**).
- (3) A tree surgery accident that occurred in one of our villages, Irie, on March 8 2018, resulted in the destruction of a tree nursery and 2084 seedlings; this was an unfortunate accident totally outside of FFI/ADCAP control (**Annex 14**).

All this said, with the elimination of fraudulent activity by IRAG, we believe that tree seedling survival will be higher moving forward, as the extension agents currently working on this aspect of the project are exceptionally talented, and the agroforestry groups in particular are very cohesive and engaged.

**Assumption 13:** *Existing good access to local and regional markets remains stable for project duration*

Despite being in a relatively isolated part of Guinea, far from the capital city (1.5 day drive), the farmers around Zياما MAB Reserve have access to several markets: locally, there is the Seredou market, which is small but adequately serves the local population. There are also two larger markets nearby, 45 and 90 minutes driving, in Macenta and N'Zerekore respectively. Macenta is the prefecture capital and has a thriving market that can be accessed by Zياما-area farmers. The market in N'Zerekore serves not only the local population, but also serves an international population buying from both Cote D'Ivoire and Liberia. Access to these markets should remain stable; there is no reason to think otherwise.

**Assumption 14:** *Participatory demarcation of MAB zones is completed successfully, with communities agreeing access and management.*

Basic demarcation of the MAB zone has been completed, and the next consultation workshop (discussing management of the area) with the communities and CFZ is scheduled for May 2019 (**Annex 11**).

**Assumption 15:** *Reducing dependence on bas-fonds will decrease time spent in forest by farmers for poaching/illegal activity*

In the Y1 household survey, many farmers complained about the time required to get into the bas-fonds for farming activities; based upon this we assume that it remains true that farmers would prefer to avoid the time spent getting to and from the bas-fonds.

**Assumption 16:** *Training on safe use of agrichemicals including application of herbicides is effective.*

Training in this area is planned for Y3; the approach will be to completely discourage use of herbicides and the pesticide Carbofuran, to teach the fundamentals of Integrated Pest Management as a means of pest control, and to underline the importance of wearing protective gear with the use of other pesticides (including botanicals). In Y2 we mounted an awareness campaign related to the use of herbicides within Zياما MAB Reserve; **Annex 19**. We believe that farmers will remain receptive to these messages, as long as viable alternatives are presented.

**Assumption 17:** *Restoration sites respond in line with samples plots conducted to date.*

We are not yet at the stage of being able to roll out restoration in any bas-fonds, but our initial assumption remains unchanged.

**Assumption 18:** *Seedlings and seeds, if needed, are readily available at the right times.*

There have been no issues with the procurement of seeds and seedlings, including those that require importation from Cote d'Ivoire. We don't anticipate procurement issues in the final 2 years of the project.

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

The increased presence of anti-poaching and monitoring patrols in the reserve has acted as a deterrent to elephant poaching, and has played a part in the improved prosecution rates for illegal hunting in and around Zياما MAB Reserve over the past two years; in Darwin Y2, 22

arrests were made related to suspected poaching activities in Ziama MAB Reserve. Additionally, the eventual effect of having fewer farmers active in the bas-fonds, including a reduction in the use of herbicides in the MAB Reserve, will reduce threats to fauna and flora biodiversity.

When working with smallholder farmers from an agricultural perspective, the goal is always poverty alleviation. Within the scope of this project we are working on yield intensification, reducing post-harvest loss, and the development of agriculture-related income-generating activities; each of these on its own can make a significant impact in poverty alleviation for smallholders.

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

The project supports Guinea's contribution to several SDGs, notably SDGs 2 and 15.

SDG 2 is addressed via the promotion of sustainable agricultural practices, and SDG 15 is addressed through work to protect and promote the sustainable use of Ziama MAB Reserve, to reduce degradation of the forest and to restore degraded areas, and to help in the implementation of sustainable community stewardship of the MAB Reserve.

Also addressed within the scope of the project are SDG 5, in the provision of an equitable programme with equal opportunity for men and women, and SDG 1, with efforts to increase income opportunities for farmers to incentivize their leaving the bas-fonds.

#### **5. Project support to the Conventions, Treaties or Agreements**

This project contributes towards CBD Strategic Goals B and D by reducing direct pressure on biodiversity caused by forest clearing and use of the bas-fonds for agriculture in Ziama MAB Reserve.

The project works to allow restoration of degraded areas in the Ziama forest landscape (Aichi Target 5). It promotes sustainable use of land resources through improved agricultural practices (Aichi Target 7), taking into account the needs of women and vulnerable and marginalised groups at all times, to ensure all can benefit from learning opportunities. Via conservation and protection efforts, this project addresses the fragmentation of a vital forest ecosystem that provides essential services to vulnerable wildlife and humans (Aichi Target 14).

FFI is in regular contact with the CITES focal point. Guinea has been suspended from CITES, but hopefully this will be reversed due to the country's renewed commitment to addressing wildlife crime. FFI recently facilitated the signing of the Elephant Protection Initiative by the Guinean government and is supporting the proposed setting up of a national ivory stock management system.

#### **6. Project support to poverty alleviation**

The implicit goal of the project is poverty alleviation; farmers will not be incentivised to leave the bas-fonds when their poverty levels are such that they and their families suffer. The only sustainable way to convince farmers to leave the bas-fonds is via poverty alleviation; that is, their incomes farming outside of the bas-fonds are equal to or better than their incomes farming in the bas-fonds (a.k.a. Output 2).

To this end, the project is providing significant technical support in the regeneration of depleted soils in the villages, as well as technical support in yield maximization of staple crops via improved planting practice, use of compost, irrigation and improved seed stock. In addition, the project is providing support in the development of agriculture-related income-generating activities, including the option to receive support on work with cash crops such as cocoa and coffee.

## 7. Project support to gender equality issues

At project outset, 47% of participants in the agricultural extension trainings were women; by the end of Y2, 56.5% of our participants are women (**Annex 15**). This includes 28 women who have signed up for agroforestry training and support; traditionally, agroforestry is a 'man's crop', so the fact that 21% of our agroforestry participants in Y2 are female is significant. In Y3 we have registered 412 farmers as participants in our agricultural trainings, 225 of whom are female (54.6%).

In Y2 we rolled out a gender equity training to our office-based and field-based staff in Guinea; this was delivered in November 2018 (**Annex 18**).

As the Gender Specialist written into the project does not speak French, there is extra coordination required in getting her out to Guinea to work with the team on planning the role-mapping and other aspects that will support the project's goals. An in-country planning session involving the Gender Specialist is programmed for Q3 of Y3, where she will be able to have translation support working with the Project Lead, Project Manager and Operations Lead to plan out socioeconomic activities for Y4, including gender role mapping and a Participatory Impact Assessment that directly surveys women regarding issues such as inclusivity.

## 8. Monitoring and evaluation

**Project M&E:** We fully take on board the feedback from Y1 Annual Report Review, which states that "[t]he project needs to establish a routine for monitoring against the logframe..." As such, in Y2 a template for monitoring as suggested was created and used, and for Y3 we are using a similar, slightly adapted based on Y2 learnings (**Annex 13**).

**Agricultural/Socioeconomic M&E:** In Q3 Y2 we decided to invest in strengthening the capacity of the in-country team to collect data using smartphones, with surveys built and uploaded/downloaded from the server using Open Data Kit tools. Formalizing and improving electronic data collection within the scope of the project not only allows for more frequent data collection, as the process of surveying is faster and less obtrusive with a smartphone than with paper, but it also allows for the immediate collation and transmission of all survey data for quick analysis by the relevant teams, whether Seredou or Cambridge-based. See **Annex 6** for our first data set collected electronically.

**Patrol M&E:** Patrol-based activities have retained a paper-based M&E system, as the systems is already adequate for collecting the required data from a large set of field-based staff. Data recorded on paper is then data inputted into an Excel spreadsheet. Please see **Annex 20** for patrol data from Y2.

## 9. Lessons learnt

Given the perfect storm of events this year (IRAG fraud, change in project partner, change in Project Lead, Project Manager on maternity leave), it goes without saying that there were many lessons learned in Y2.

Notable lessons learned are:

- The fraudulent activity by IRAG was facilitated by the fact that we allowed them to manage their sub-granted funds internally (beginning in July/August 2018). This decision was made based on the high quality of the financial reports they were providing in the beginning. However, what was not accounted for was the possibility that the IRAG accountant would be told he no longer needed to countersign and that IRAG's invoices would be submitted to FFI directly, which was not the case. The decision to allow IRAG to handle their funds internally was a mistake that will not be repeated. See **Annex 4** for more information.

- During the period of September-November 2018, FFI lost some goodwill within our target villages due to the fact that our in-country representative, IRAG, failed to provide the farmer field school curriculum as promised. The fact that this was not caught immediately, and that farmers suffered from a lack of support as a result, understandably caused some tension and led to the farmers questioning FFIs commitment to them. This is by far FFIs greatest regret arising from the fraud situation, that our farmers were left disappointed and unsupported for a period.
- However, as soon as the fraud was uncovered, our Guinea-based team immediately identified the need to speak frankly with the farmers to explain the situation to them, and to promise them that this was an exception and not the status quo. They worked extremely hard throughout November and December 2018 in their efforts to support farmers, make up missed activities and to reassure them moving forward, such that when surveyed in January 2019, 96% of Y1 farmers and 94% of overall farmers said that they would like to continue being part of the Darwin project (**Annex 6**).
- An IRAG agent working as an extension officer for the Darwin project’s agricultural activities, Jonas Dopavogui, was suspended from the Darwin project by the IRAG focal point in July 2018, reportedly for repeated absences and for not adhering to a basic code of conduct (**Annex 4**). At the time, we considered this to be an internal matter at IRAG and accepted the judgement, but in retrospect, we understand that Jonas was fired for refusing to engage in the planning of fraudulent activity with the focal point. Jonas was asked back to the project in November 2018 (upon discovery of the fraud), and without hesitation agreed to work with FFI in leading the community re-engagement activities described above. He has since competed against four other candidates to win the position of staff agronomist at the Guinea FFI office, and has consistently been a high-performing employee. We regret not investigating the reason Jonas was fired by the (former) IRAG focal point, and the lesson learned here is to dig deeper with the partner organization in this type of situation.
- As mentioned in the review of the Y1 Annual Report for this project, “the project is quite ambitious.” In addition to the fact that the project is relatively ambitious, all work in Guinea must be conducted in French, as very few people in Guinea speak English. At the same time, however, few people in the FFI Cambridge office speak French, including several people written into the project as Key Personnel. This has caused some delays and difficulties, as all communications between Guinea and Cambridge must pass through a Cambridge-based French speaker, of which there are currently two on this project (Project Lead and Regional Oversight). This creates an untenable workload for the French-speakers. The lesson learned here is to consider language capacity when allocating Key Personnel in the proposal stage.

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

Two major issues were flagged for action in the Y1 AR Review: clarity with regards to the frequency of partner meetings, and the establishment of a routine for monitoring against the log frame.

### **1. How often partner meetings will take place:**

Referring to meetings between the project partners: FFI, CFZ and IRAG/ADCAP. Throughout Y2 monthly meetings occurred between FFI, CFZ and IRAG at the FFI Seredou office (**Annex 08**); these meetings occurred regularly throughout Y2 without significant deviation from schedule.

Moving forward with new project partner ADCAP, the Acting Programme Manager has decided to increase the frequency to two partner meetings per month, between FFI, CFZ and ADCAP. The meetings will continue to take place at the FFI Seredou office, will last a maximum of one hour, and will alternate between work planning and the presentation and review of monthly reports. Attendance sheets and photo evidence of meetings will be kept.

## 2. Routine for monitoring against logframe

An Excel spreadsheet for monitoring against logframe was created after received the Y1 AR feedback, and this tool has been adapted for use in Y3. Please see **Annex 13** for Y2 and Y3 progress monitoring sheets.

### 11. Other comments on progress not covered elsewhere

- Nov 2-15 2018 was an extremely tumultuous period for this project. Within this two week period, the fraud perpetrated by IRAG was uncovered and the Project Manager left for maternity leave. In addition to this, the current Project Lead (Michelle Villeneuve) began work at FFI only a week prior (Oct 23<sup>rd</sup>), and an already-planned handover trip between Project Leads (Laura Fox to Michelle Villeneuve) took place November 11-24 2018. Even one of these events (fraud, loss of staff to maternity leave, Project Lead handover) would be a disruption, but all three at the same time was a lot for the project to handle. We hope that progress in Y2 can be viewed through this lens. Despite any shortcomings in Y2 activities, the fact that we remain on-track to reach our EoP objectives is something we're all proud of.
- We are happy that the Project Manager gave birth to a healthy baby early in 2019, and that she has had the opportunity to take maternity leave. However it must be taken into consideration that without the means to hire a replacement Project Manager for 9 months (the length of this maternity leave), the work of the Project Manager was split amongst remaining staff, all of whom already had full workloads; this applies especially to the Operations Lead/Acting Project Manager. This is mentioned as a consideration only for evaluating progress in Q3/4 of Y2; this period suffered from staff bandwidth issues. We believe that in bringing on the new partner (ADCAP) and hiring 4 full-time FFI staff members at the FFI Guinea office (start dates beginning October 2019), we have addressed the bandwidth issue until the return of the Project Manager in September 2019.
- A change request for the log frame was submitted on April 4<sup>th</sup>. This change request came after significant consultation between the Cambridge and Guinea-based teams, spurred by the difficulties brought on by many sudden changes (IRAG fraud, new Project Lead, Project Manager on maternity leave). The change request takes into account progress to date and field conditions; some indicators were removed because they are not feasible, and some means of verification were altered to provide better data. We wish that we could be reporting against the changed log frame, as it is the one that everyone currently working on the project agrees is the most efficient and inclusive means to meet project goals. But we understand that it can take time to review. (**Annex 5**).

### 12. Sustainability and legacy

Having recently dealt with the spillover effects of civil wars in two neighbouring countries, as well as being the near the epicentre of the 2014 Ebola epidemic, farmers in the Ziama area are realistic and resilient. They have been engaged and involved in Darwin activities from the beginning, and have remained engaged even throughout the discovery of the IRAG fraud issue and the implementation of a new project partner. It's not empirical evidence, but this is a strong indicator that farmers in the region are motivated to learn about, implement and improve their agricultural systems, and farmer buy-in is the key to sustainability for any agricultural intervention.

It would be reasonable for Darwin representatives to have significant concerns regarding legacy in the light of the IRAG fraud issue, and frankly it was one of FFIs major concerns upon discovery of the issue; we wondered how we could confidently move on and get farmer buy-in after having, in the eyes of the farmers, essentially abandoned activities for several months (this refers to the fact that IRAG submitted false reports of work done in the field). Fortunately, our amazing team of (at the time) 3 FFI staff in Guinea, in conjunction with the two IRAG agents not implicated in the fraud, visited each community to sit down with farming group



representatives (and any other interested parties) to explain the situation; this was later followed by the formal introduction of our new project partner (ADCAP) in each target village (**Annex 7**). Based upon farmer feedback, we believe that this was an effective strategy for regaining farmer trust and by proxy, buy-in.

The project’s exit strategy is to give farmers the agricultural and post-harvest training support necessary to equal or exceed income gained by the current practice of farming in the bas-fonds, and most importantly, to support CFZ in the creation, management and enforcement of a bas-fonds management plan. This exit strategy is still valid.

### 13. Darwin identity

The Darwin Initiative name and logo have been clearly displayed during all activities to date, including on reports, equipment, mentioned in the performances by Club d’Ecoute, on the pesticide posters and at the entrance to each farmer field school demonstration plot and/or nursery.

The Darwin Initiative is widely known by the communities and authorities in the region, who commonly refer to the work being done to protect the Ziama MAB as “*le Darwin*”. The Darwin Initiative is recognised locally as a distinct funding stream of the UK government, put into place to support biodiversity conservation efforts for the long-term benefit of local populations.

Please see **Annex 17** for photographic evidence of the Darwin logo used in the field.

### 14. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2018 – 31 March 2019)**

<b>Project spend (indicative) since last annual report</b>	<b>2018/19 Grant (£)</b>	<b>2018/19 Total Darwin Costs (£)</b>	<b>Variance %</b>	<b>Comments (please explain significant variances)</b>
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
<b>TOTAL</b>				

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2018-2019

Project summary	Measurable Indicators	Progress and Achievements April 2018 - March 2019	Actions required/planned for next period
<p><b>Impact</b></p> <p>Ziama is an intact and effective Man and Biosphere reserve that supports optimal populations of key species, co-managed and equitably benefitting local men and women</p>		<p>In an area that has experienced a significant decline in forest elephant populations over the last 10 years, the population appears to have remained stable since project inception.</p> <p>Farmer participant numbers are growing each year, and farmers remain engaged in working towards an alternative solution to bas-fonds farming.</p>	
<p><b>Outcome</b> The relocation and improvement of agricultural practices reduces encroachment and degradation of forest habitats and ecosystems, benefiting elephants, forest resources and biodiversity, while improving the wellbeing of targeted farmers.</p>	<p>0.1 Stable or increasing indices of elephant and other key species (compared to baselines collected before start of project and through Y1 for full year)</p> <p>0.2 50% of target bas-fonds in Ziama (250 hectares) show improvements in line with expected patterns of restoration in years 3 and 4 against project baseline (gathered at when farmers leaves bas-fond).</p> <p>0.3 60% reduction (228 individuals) in number of men and number of women (minimum 50% women) using bas-fonds in target villages by project end with a 20% reduction by end of year 2. We anticipate the final 40% to leave within 3 years of project end.</p>	<p>0.1 No elephant poaching has occurred within the patrolled zone since project inception; our known elephant count for the area remains 15.</p> <p>0.2 Not yet applicable, expected after Y3</p> <p>0.3 We were not able to gather data on the departure of farmers from the bas-fonds in Y2. See <b>Annex 5</b> for suggested logframe update to make up for this missed activity.</p> <p>0.4 Not yet applicable; we will survey in Y4</p>	<p>Due to the killing of an elephant in a community adjacent to our target villages in 2016 (N'Zebela) and many subsequent incidences of HWC recorded in the area by CFZ patrols, it was decided to implement our agricultural buffer zone work in N'Zebela in the hopes of preventing further HWC-based elephant deaths.</p> <p>CFZ patrols will continue as scheduled</p> <p>Cambridge-based project staff currently training in the coding and analysis of satellite imagery in order to be able to identify restoration against baseline.</p>

	<p>0.4 70% (266 individuals) of both male and female farmers targeted (of which at least 50% are women) report an improved sense of wellbeing (material, physical and subjective) by the end of the project</p>		
<p><b>Output 1.</b> Bas-fond farmers and current transition zone farmers in 4 villages are trained in improved agricultural practices and apply them to farmland in transition zones</p>	<p>1.1 100% (380 individuals, gender disaggregated) of targeted bas-fond farmers from 4 villages received direct training and on-going support on a range of improved agricultural, irrigation and tree crop techniques in each year of the project.</p> <p>1.2 From Year 2, 100 direct beneficiary farmers (at least 50% women) are applying at least 1 new intervention on their farmland in transition zones with a minimum of 300 farmers (78%) reporting application of at least 1 new intervention by project end</p> <p>1.3 50% male and 50% female transition zone farmers surveyed from 4 targeted villages (20% population estimated at 337 households) who are not direct beneficiaries of the project report having access to information on improved agricultural techniques by year 4. with 60% of participants reporting access to information in focus group feedback sessions on communications programme in year 2 and 3.</p>	<p>1.1 A total of 368 farmers (160 men and 208 women) are currently receiving regular farmer field school training in our four target villages (<b>Annex 15</b>); 412 farmers (225 women) are registered to receive FFS support in Y3. A target of reaching 100% of bas-finds farmers in the area each year may be unrealistic; see <b>Annex 5</b> for proposed change in wording to this indicator.</p> <p>1.2 Due to the disruption in Y2 activities, we have not yet formally surveyed farmers regarding adoption of interventions. Adoption will be monitored via survey, beginning at harvest time in Y3 (Q2/3), and repeated one year later, at harvest in Y4.</p> <p>1.3 We did not run focus group feedback sessions on this indicator in Y2, though we will in Y3. Please see <b>Annex 5</b> for the proposed change in wording to this indicator.</p>	

<p>Activity 1.1- Inception workshops and participatory design of agricultural extension package with beneficiary farmers including soil and weed mapping to match annual and perennial crops to best locations according to available lands.</p>		<p>FFS inception activities in four target villages were completed in Y1.</p> <p>New partner ADCAP formally introduced to target communities, including mid-term discussion of project progress to date, and goals moving forward (<b>Annex 7</b>, March 2019 introduction report)</p> <p>Survey conducted with target villages in January 2019 to capture any changes in agricultural priorities in the four target villages (<b>Annex 6</b>).</p> <p>Agricultural buffer zone inception workshop took place in N'Zebela in March 2019.</p>	<p>FFS activities were adjusted according to participant and survey feedback.</p> <p>Y3 FFS participants have been registered, and number a total of 412 (225 female).</p> <p>The agricultural buffer zone in N'Zebela will be a priority focus area in Y3.</p>
<p>Activity 1.2- Coordinate and implement joint training for efficiency and synergies with Sainte Isaure de Guinee Order and Plan International including composting training</p>		<p>This activity (composting training) will be delivered by ADCAP, as the sisters named in activity 1.2 no longer available to work with us. Please see <b>Annex 5</b> for proposed change to activity.</p> <p>Equipment purchased, curriculum created and training in all four villages underway as of Y2 Q4 (March 2019)</p>	<p>Composting training will continue throughout the Y3 agricultural season.</p>
<p>Activity 1.3- Update IRAG assessment of local farmer savings groups with a view to supporting and establishing new savings groups as needed particularly for women and to ensure farmers are able to purchase seeds of improved varieties when seeds need replacing</p>		<p>The Project Lead has submitted a change request to remove this activity (<b>Annex 5</b>), as we do not have the personnel or expertise available to establish and support savings groups within the scope of this project.</p>	<p>n/a</p>
<p>Activity 1.4- Targeted training sessions and ongoing mentoring for agricultural extension package on topics such as soil management, planting techniques, seed management, green manure, integrated pest management, tree crop improvement, conservation agriculture, weed management, herbicide and</p>		<p>This activity went as scheduled in Q1/2 of Y2; in Q3 of Y2 only the agroforestry component was delivered. The delivery</p>	<p>This activity will continue as scheduled in Y3, with conservation agriculture trainings delivered weekly to the four</p>

<p>pesticide management, alley cropping, agroforestry and improved irrigation techniques for direct beneficiary farmers. Sessions offered as both single and mixed-sex groups to encourage participation by all.</p>	<p>of the full curriculum began again in Q4.</p> <p>In Y2, modules were delivered on the intensification of market vegetable production, rice and niebe production and seed selection, variety selection for cassava and intensification of ginger.</p>	<p>target villages by ADCAP, supervised by our staff agronomist in Guinea.</p> <p>Additional trainings planned for Y3 include training on the safe use of pesticides, herbicides and fungicides, and the use of PICS hermetic bags for post-harvest storage.</p>
<p>Activity 1.5- Update agriculture extension and training methods and topics according to regular participant feedback, with a focus on ensuring sessions are run in a format, time and place to enable women to participate, learn and support each other, without isolating male participants</p>	<p>All four villages were surveyed in January 2019 as to their agricultural priorities, and the Y3 curriculum was slightly modified based upon farmer feedback.</p> <p>Farmer field schools continue to be mixed-sex; in Y2 160 men and 208 women participated.</p>	<p>We will collect farmer feedback in the post-harvest period (Q2/Q3 Y3), and adjustments to the curriculum will be made based upon feedback.</p> <p>In Y3, 54.6% of farmers registered for FFS activities are female.</p>
<p>Activity 1.6- Develop and deliver communication plan including training materials and radio programmes using appropriate media to ensure outreach of training and information to village residents and wider area (indirect beneficiaries)</p>	<p>In Y1 Club d'Ecoute, a local youth group, wrote a play about biodiversity and conservation in general, and specifically the advantages of conserving Ziama forest, and the disadvantages of poaching and illegal logging. This play was performed in 2 villages in Y1.</p> <p>In Y2 the play was performed by Club d'Ecoute in the two remaining target villages, Boo and Avilissou, in their respective local languages (Toma and Mandinka).</p> <p>A radio rurale farm management discussion show had been planned for Y2, but was not achieved during this period; this activity has been moved to Y3.</p>	<p>Continued dissemination of the recorded performances of Club d'Ecoute and the commencement of farmer radio informational spots are planned for Y3; <b>Annex 19</b></p>
<p>Activity 1.7- Conduct Participatory Impact Assessment in 4 target villages to ascertain effectiveness of training sessions, to monitor and update communications plan and to assess impact on wellbeing</p>	<p>It was decided not to conduct the PIA in Y2 due to the disruption in farmer field school activities.</p>	<p>PIA will be planned in Q3 Y3, and the actual assessment in Y4.</p>

<p>Activity 1.8- Arrange and facilitate learning exchange visits with other Ziama communities, to demonstrate agricultural practices and crop choices</p>	<p>The implementation of an agricultural buffer zone to repel elephants in a highly-affected village began Q4 of Y2; see Activity 2.12.</p> <p>In Y4, when the (mostly perennial) buffer zone crops are established, farmers from our four villages will visit to learn about the buffer zone technique.</p>	<p>Learning exchange related to human-wildlife conflict planned for Y4.</p>
<p><b>Output 2.</b> The incentives and wellbeing (food security, physical security, time, income, yield) from farming in the transition zone are equal to or greater than farming in the illegal bas-fonds in the core and buffer zones</p>	<p>2.1 300 (78%) of direct beneficiary male and female farmers (of which at least 50% are women) have established or improved existing annual or perennial plots in transition zones by project end, with 25% beginning the process by end Y2 and 50% by end Y3</p> <p>2.2 By Year 4 60% of direct beneficiary farmers (228 individuals, of which at least 50% are women), report that the benefits of farming in transition zone equals or exceeds those from bas-fonds crops and remaining 40% of beneficiary farmers are projecting this within 3 years project end.</p> <p>2.3 100% (380 individuals) of targeted farmers have access to improved seed varieties and 25% of both male and female farmers are actively trialling them in the transition zone by year 2, 50% by year 3 and 100% by year 4.</p> <p>2.4 Farmer seed exchanges and seed farmers make new varieties available to wider farming communities (additional</p>	<p>2.1 In Y2 there were 368 farmers enrolled in our FFS trainings, all of whom received support in the establishment of farm plots in the transition zone. We expect to reach the goal of 150 farmers farming on previously marginal land by the end of Y3. We did not collect data on the number of farmers who established plots in transition zones in Y2, but will do so in Y3.</p> <p>2.2 Not yet applicable</p> <p>2.3 Access to improved seed varieties through FFI and IRAG was established in Y2; notably, the distribution of 1460 kg of 4 varieties of improved rice seed to farmers in our four target villages.</p> <p>2.4 Seed selection training was provided in Y2; we will follow up at harvest time in Y3 to determine farmer sentiment regarding this training and the practice of quality seed selection. Please note that a change request has been submitted to remove the establishment and monitoring of seed exchanges as an indicator of success (<b>Annex 5</b>), as access to improved seed varieties exists already in the Ziama region, via IRAG and local multipliers.</p> <p>2.5 A mother elephant who was still nursing two young calves was killed in the village of N'Zebeba in August 2016 as a result of HWC. The two young calves have, ever since, been a source of continued HWC in N'Zebela. At the end of Y2 the project began the establishment of a deterrent buffer zone to try to keep these calves away from the village (Activity 2.12, <b>Annex 9</b>). The establishment of this buffer zone and related community work will continue in Y3, in the hopes of</p>

	<p>to target villages) with 15% year on year increase to farmers in villages and beyond purchasing improved seed year on year</p> <p>2.5 Reduction in human-elephant conflict (compared to baseline collected 2016)</p>	<p>reducing HWC in this area, as well as providing an exemplar for other villages who may wish to implement similar measures.</p>	
<p>Activity 2.1- Identify with village councils and CFZ land in the transition zone for those direct beneficiary farmers that need it, ensure harmonisation of the process within community and establish culturally appropriate agreements for long term use of the land (Y1)</p>		<p>CFZ has advised FFI that the issue of land tenure is too socially and politically volatile, and so FFI has submitted a logframe change request to delete this activity (<b>Annex 5</b>)</p>	<p>n/a</p>
<p>Activity 2.2- Review condition of land provided, identify appropriate annual and perennial crops, select appropriate farming methods with beneficiary farmers and prepare the land including managing weeds and increasing fertility through planting of 'mucuna'</p>		<p>The identification of appropriate annual and perennial crops occurred at project inception, and was confirmed via survey of 88 farmers in the four target villages in January 2019.</p> <p>Training on the theory and science of soil replenishment with nitrogen-fixing mucuna beans occurred in the four target villages throughout Y2.</p>	<p>Work on the reconditioning of land with mucuna beans will continue in Y3, and training on the use of edible leguminous crops (such as cowpea and moringa) in soil improvement is part of the Y3 FFS curriculum.</p>
<p>Activity 2.3- Establish project baselines, gender disaggregated from bas-fonds crops and monitor annually for direct beneficiary farmers</p>		<p>CFZ guards continue to submit bas-fonds monitoring reports after each 5-day patrol</p>	<p>The submission of reports from CFZ after each patrol will continue, and FFI will continue to lead on analysis.</p>
<p>Activity 2.4- Ground truth, update design and implement agricultural transition plan, incorporating agricultural extension plan, in participation with direct beneficiary target farmers including mapping shifting labour roles and responsibilities for women and men, support to enhance and shift to self-selected annual and tree crops etc. to ensure feasibility and ownership of the plan</p>		<p>Beneficiary farmers participated in a mid-term survey to verify the intervention choices from project inception (<b>Annex 6</b>).</p> <p>The mapping of shifting labour roles will be conducted by the gender specialist named in the project proposal. This is planned for Q3 Y3 and Y4.</p>	<p>Feedback from the mid-term survey was incorporated into the Y3 farmer field school curriculum.</p> <p>A plan has been put into place for the Project Lead and Project Manager (once back from maternity leave) to translate for the Gender Specialist while she works with the in-country socioeconomic specialist on the</p>

		mapping of labour roles and the assessment of equity within the project to date. This work will begin in Q3 Y3.
Activity 2.5- Adaptively manage the process of change through on-going monitoring of farmers' perceptions of how incentives and activities are progressing, and provide continuous support, follow up and respond to any issues as they arise	While changing project partners mid-project is not ideal, it did give us an opportunity for mid-term review of project support and incentives. Feedback from the communities was solicited during the introduction of ADCAP to the communities ( <b>Annex 7</b> , January report), and during the farmer needs survey ( <b>Annex 6</b> ).	Feedback from the communities received in Q4 Y2 was integrated into the FFS curriculum for Y3 ( <b>Annex 21</b> ).
2.6 Based on hydrology mapping, develop locally appropriate trials for irrigation systems, including construction of 'improved wells' (puits améliorés) and community agreements for location, use, management and maintenance of the selected systems and wells and ensured access for direct beneficiary farmers	This activity was reformulated in a change request ( <b>Annex 5</b> ) to remove activities related to 'improved wells' and associated management of community agreements.  Irrigation will be an integral part of the Y3 FFS curriculum, and equipment for the demonstration plots was purchased Q4 Y2.	Irrigation training is currently being delivered to all four target villages, and will continue throughout the growing season of Y3.
2.7 Provide training on niebe post-harvest storage loss, distribute storage bags at reduced cost and develop independent local supplier of storage bags	8000 PICS bags arrived in Guinea from Ghana in March 2019 (Q4/Y2).	Distribution and a training on the use of these bags for the post-harvest period in Y3 (Q2/Q3).  ADCAP will create and deliver a training on the use of hermetic storage bags in the prevention of post-harvest loss. This training will be created in Q2 Y3 and delivered in Q3 Y3.
2.8 Identify cost effective storage improvements to address post-harvest loss for other crops beyond niebe as identified as significantly problematic by farmers and implement cost effective solutions in Y3 and Y4	Post-harvest storage efforts for Y2 were largely centred on the import of PICS bags, which had been identified at project outside as the most ideal post-harvest storage intervention for farmers around Ziama. These 8000 bags finally arrived in Ziama in the last days of Y2, and a large-scale training	We will promote the use of hermetic storage bags (PICS bags) as a cost-effective storage solution for our farmers in Y3. Based upon the feedback received after these trainings, we will identify any additional storage solutions requested by farmers for consideration in Y4. If farmers are



	and distribution campaign is being planned for Y3.	happy with hermetic storage bags, we will focus on improving the procurement of these bags in order to establish some local availability by end of project.
Activity 2.9- Review potential processing opportunities for existing crops grown outside the bas-fonds in order to identify opportunities to increase income from simple feasible processing	In Y1 IRAG and the Sisters of Ste Ursule de Sérédou identified Cassava and Ginger as the crops with the best value-added processing opportunities; work with these crops launched in Y2 and included the participatory varietal selection of a cassava cultivar and intensification of ginger in Avilissou.	Value-added processing of ginger has been incorporated into the Y3 farmer field school curriculum, and now that a variety for propagation has been selected, work on cassava transformation will begin in Y3.  Additionally, value-added work on coffee and oil palm will be incorporated into the Y4 curriculum.
2.10 Based on successful seed develop programmes from IRAG, update mapping of existing seed exchange groups within and between villages, and support them to design and implement their own scaling up of seed exchange of new varieties to ensure availability to wider farmer groups in 4 villages and beyond	This activity was not completed in Y2, and has been flagged by the new project lead for removal due to logistical challenges and not being necessary to the theory of change. IRAG does maintain a regular supply of improved seed varieties, available locally and to the public with a reasonable pricing structure; access to improved seed stock is not an issue in the area.	n/a
Activity 2.11- Distribute improved rice and other annual crop seed varieties at a reduced cost to direct beneficiary farmers, providing training of planting techniques for seed and ensure collection of seed at harvest for following year use.	1460 kg of improved rice seed distributed to 67 beneficiary farmers (F = 59, M = 8), and 47 farmers (F = 35, M = 12) were trained on planting, maintenance and seed selection ( <b>Annex 10, Annex 21</b> ).	Measurement of rice yield was missed in Y2 due to not having a project partner in place at harvest time; this activity will be done in Y3 and Y4.
Activity 2.12 Establish and train seed farmers to maintain access to improved varieties year on year with support from IRAG	Seed selection training took place with farmers in July 2019; this training focused primarily on rice seed selection, with some secondary focus on on niebe seed selection ( <b>Annex 21</b> )	Seed selection techniques will be reviewed at harvest in Y3 (Q2/Q3); seed conservation training will take place during the same period.

<p>Activity 2.13- Annually monitor yields for rice varieties being achieved by beneficiary farms in transition zone and incomes of any surplus sold and adapt activities and support accordingly</p>	<p>1460 kg of improved rice seed were distributed in July 2019 (<b>Annex 10</b>), but unfortunately this was an activity that IRAG reported monitoring but didn't. Rice harvest occurred when there was no agricultural partner in place (IRAG removed, ADCAP not yet approved), and so was not measured. This activity has been moved to Y3.</p>	<p>In Y3 the project will repeat the rice distribution of Y2, and will follow up with farmers by providing extension during planting and growing, and by measuring yields as compared to baseline to determine efficacy of the intervention.</p>
<p>Activity 2.14- Establish trials for protecting crops and repelling elephants with direct beneficiary farmer groups in transition zone based on lessons learnt in FFI Elephant Survey report and use these as demonstration plots for wider community training on the topic according to demand for this village by village</p>	<p>An agricultural buffer zone trial was designed for the community of N'Zebela, which has faced severe human-wildlife conflict over the past year (project Y2). The inauguration of this project was held in Q4 Y2, and the buffer zone is being established throughout Y3 (<b>Annex 9</b>).</p>	<p>Work on the establishment and maintenance of the buffer zone will continue throughout Y3.  Four target villages will visit the buffer zone and participate in human-wildlife conflict management trainings in Y4.</p>
<p>Activity 2.15- Monitor crop loss and human wildlife conflict in transition zone during monthly community meetings</p>	<p>Crop loss and HWC is monitored by the CFZ rangers.  Meetings were held as needed throughout Y2, for a total of 5 meetings between CFZ, FFI and the communities on the topic of HWC.  Moving forward, these meetings will be quarterly, at the request of the community (N'Zebela) and partner organization (CFZ), in addition to as-needed.</p>	<p>Quarterly meetings regarding human-wildlife conflict and the agricultural buffer zone will take place in N'Zebela during Y3.</p>
<p><b>Output 3.</b> Illegal activity within Ziama is reduced through a shift from bas-fonds to farming in transition zones</p>	<p>3.1 No new clearing of forest in bas-fonds areas against current figures from July 2016 survey</p> <p>3.2 Law enforcement patrols report decline in illegal activity in core and buffer zones of Ziama MAB (compared to baseline from 2016 patrol data)</p>	<p>3.1 Not yet applicable; clearance will be measured against 2016 baseline at EoP, using comparative satellite imagery.</p> <p>3.2 Illegal activity in the Ziama MAB Reserve is stable (<b>Annex 20</b>)</p>

	<p>3.3 60% reduction (228 individuals) in number of men and number of women (minimum 50% women) using bas-fonds in target villages by project end with a 20% reduction by end of year 2. We anticipate the final 40% to leave within 3 years of project end.</p> <p>3.4 Reduction in herbicide use in the bas-fonds beginning in Y2.</p>	<p>3.3 Delayed, as we have not yet collected data on the number of farmers who have left the bas-fonds. We will begin collecting this data in Y3.</p> <p>3.4 Anti-herbicide communications strategy was deployed in Q3 Y2, and farmer-reported reduction in herbicide use will be surveyed Q2 Y3, and repeated in Q2 Y4.</p>	
<p>Activity 3.1- Bas-fond user groups and CFZ develop and implement bas fond management plan including monitoring existing use and halting further clearance in bas-fonds</p>		<p>CFZ rangers continued monitoring the use of bas-fonds throughout Y2. Management plan is in development; see <b>Annex 11</b> for current status and next steps.</p>	<p>A methodology for monitoring the cessation of rice cultivation in the bas-fonds will be requested of CFZ (with support from FFI), and monitoring departure will begin by end of Y3, and continue throughout Y4.</p>
<p>Activity 3.2- CFZ ranger staff conduct regular patrols of bas-fonds and attend bas-fond users association meetings on a regular basis to update users and ensure a strong and harmonious dialogue with communities</p>		<p>12 CFZ rangers logged a combined 624 days of patrol in Y2; 378 days of biomonitoring work and 246 days of poaching patrols. There was an additional 42 days spent on the installation and data collection from 10 new camera traps, and 152 days in the field logging evidence of HWC. (<b>Annex 10</b>)</p> <p>Bas-fonds user association meetings do not happen regularly and so CFZ have not been involved in the activity as stated in Activity 3.2, but in Y2 they conducted 157 days of community engagement related to HWC, in the assessment of wildlife-related destruction (152 days) and in attending</p>	<p>Patrols will continue as scheduled in Y3; the data related to total patrol hours for Y3 is anticipated to look similar to the Y2 data.</p> <p>Community engagement with bas-fonds users is expected to go up in Y3 due to the commencement of the agricultural buffer zone work in N'Zebela; quarterly meetings that include the CFZ rangers are scheduled, in addition to any as-needed meetings and missions to record evidence of animal destruction in the villages.</p>

		community meetings related to HWC (5 days).	
Activity 3.3- Provide training on environmental impacts of herbicide and pesticide use in water systems and safe application to bas fond associations in 4 villages and beyond		<p>In Y2 anti-herbicide posters were printed and affixed in the Ziama MAB (<b>Annex 19</b>).</p> <p>Club d'Ecoute wrote and presented a play touching on on the topics of biodiversity, poaching and illegal logging in two target villages in Y2. These plays were presented in the local languages of Toma and Mandinka.</p>	<p>Training on the safe use of herbicides and to be delivered by ADCAP as part of the farmer field school curriculum in Y3.</p> <p>Communications on the cessation of use of herbicides in the Ziama MAB will continue throughout Y3; a new poster campaign will be launched more widely, and work with Club d'Ecoute on the dissemination of the herbicide awareness play will continue in Y3.</p> <p>Farmer field radio / radio rurale shos in Y3 to incorporate messaging related to the cessation of the use of herbicides in the bas-fonds of Ziama MAB Reserve.</p>
Activity 3.4- Conduct baseline survey for water quality in targeted bas fonds and repeat survey in year four		This data was not collected in Y1. The project tried to establish a methodology for water quality surveys in Y2, but was unable to find a Guinean laboratory that could test glyphosate (herbicide) levels in water. A change request has been submitted to have this activity removed ( <b>Annex 5</b> ).	n/a
<b>Output 4.</b> Targeted bas-fonds in Ziama MAB are showing signs of forest recovery	<p>4.1 Management plan developed in year 1 and implemented across 50% of all targeted bas-fonds by year 4 (250 hectares)</p> <p>4.2 Targeted bas fonds show annual improvements in ground cover / density of woody vegetation/ species richness in line with expected patterns of restoration by 25% year on year in</p>	<p>4.1 Not yet applicable as the management plan is incomplete; <b>Annex 11</b>.</p> <p>4.2 FFI staff will be learning how to code and compare satellite imagery in Y3, and will be able to compare Ziama MAB Reserve imagery from baseline to Y2, 3 and 4. This training will be in-house at FFI with the Analytics team, and will be undertaken by the Project Lead (at minimum).</p>	

	years 2, 3, and 4 against project baseline		
Activity 4.1- Develop restoration plan incorporating identification of suitable cost effective methods for enhancing the restoration of bas-fonds based on successful work by CFZ to date including assisted and natural restoration and identification of suitable species to be planted as feasible, based on various suitability criteria including potential to increase forest cover and attract wildlife species to the sites		On track but incomplete; CFZ provided a restoration plan in Y2, but it requires some modification and expansion before it can be considered a final version ( <b>Annex 22</b> ).	FFI will work with CFZ throughout Y3 to expand upon the current version of the restoration plan.
Activity 4.2- Develop baselines for a selection of indicators including ground cover / density of woody vegetation/ species richness depending on conditions found in bas-fonds areas to be restored		<p>The former IRAG focal point provided FFI with documents related to baseline indicators for restoration, however they are not useable as a baseline.</p> <p>As such, we will instead code baselines from satellite imagery, and compare visual baselines for ground cover and vegetation density from Y1 to EoP.</p>	<p>In Y3 the Project Lead will work with the Analytics department at FFI to code baseline indicators from publically-available satellite imagery (Landsat and Sentinel).</p> <p>The coding methodology will be used to compare baseline satellite imagery to Y2, Y3 and EoP images, to determine changes to ground cover and density of woody vegetation, which in turn will indicate level of use of the bas-fonds by farmers.</p> <p>Species richness may not be kept as an indicator; it is vague and difficult to follow up on, as a baseline for 'species richness' was not determined in Y1 or Y2, and would require advanced skills to code with satellite imagery.</p>
Activity 4.3- Implement and update restoration plan in years 2, 3 and 4 and scale up appropriate techniques at CFZ identified sites and sites volunteered by bas fond associations		<p>Throughout Y2, restoration activities using mucuna bean to recondition the land took place on sites identified by users.</p> <p>The restoration plan is in progress; see activity 4.1.</p>	<p>Land restoration activities using mucuna bean will continue throughout Y3, and cowpea and moringa will be integrated into discussions of soil improvement as well.</p> <p>FFI will work with CFZ throughout Y3 to expand upon the current version of the restoration plan.</p>

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

### PROJECT MONITORING AND EVALUATION

#### MEASURING IMPACT

#### 24. LOGICAL FRAMEWORK

Darwin projects will be required to report against their progress towards their expected outputs and outcomes if funded. This section sets out the expected outputs and outcomes of your project, how you expect to measure progress against these and how we can verify this.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Impact:</b> (Max 30 words) Ziama is an intact and effective Man and Biosphere reserve that supports optimal populations of key species, co-managed and equitably benefitting local men and women			
<b>Outcome:</b> (Max 30 words) The relocation and improvement of agricultural practices reduces encroachment and degradation of forest habitats and ecosystems, benefiting elephants, forest resources and biodiversity, while improving the wellbeing of targeted farmers.	0.1 Stable or increasing indices of elephant and other key species (compared to baselines collected before start of project and through Y1 for full year)  0.2 50% of target bas-fonds in Ziama (250 hectares) show annual improvements in line with expected patterns of restoration in years 3, and 4 against project baseline (gathered at when farmer leaves bas-fond)	0.1 Species indices data collected through monthly biomonitoring patrols. Data collected includes tracks and signs from a range of species found in Ziama. Data will be collected throughout Ziama during different seasons. Elephants will be surveyed in Y4 Oct – Dec, repeating the 2016 census.  0.2 Vegetation and forest regrowth (ground cover, density of woody vegetation, species richness) increases shown year on year against baseline from when farmer leaves bas-fond. Verified through biomonitoring analysis, vegetation	That incentives offered in the agricultural transition plan do reflect ‘meeting their needs’ as reported, and that new law enforcement and education activities are sufficient to dissuade those wanting to continue bas-fond farming, or new farmers moving in.  That there is no significant increase in population beyond natural growth, e.g. due to in-migration from conflict, mining opportunities in the region, etc.  Assume that the bas fond farmers were honest during project scoping

	<p>0.3 60% reduction (228 individuals) in number of men and number of women (minimum 50% women) using bas-fonds in target villages by project end with a 20% reduction by end of year 2. We anticipate the final 40% to leave within 3 years of project end.</p> <p>0.4 70% (266 individuals) of both male and female farmers targeted (of which at least 50% are women) report an improved sense of wellbeing (material, physical and subjective) by the end of the project</p>	<p>mapping reports and photos in years 2 (if possible), 3 and 4</p> <p>0.3 Law enforcement patrols conducted on a monthly basis, targeting bas-fonds. Y1 &amp; Y2 to reinforce project messaging and ensure no expansion / new users. Y3 &amp; Y4 to enforce agreements. Reports compiled and analysed on a monthly basis with 6 monthly and annual status reports</p> <p>0.4 Participatory Impact Assessment (PIA) in Y2 and Y4 to assess wellbeing of beneficiaries (including human-wildlife conflict). Repeat 2016 socio-economic survey in Y4.</p>	<p>of their desire to leave the bas-fonds.</p> <p>That elephant poaching for ivory remains opportunistic and that increasing demand does not lead to professional ivory poaching.</p> <p>There is no extreme weather event (ie drought) during the lifetime of the project</p>
<p><b>Outputs:</b></p> <p>1. Bas-fond farmers and current transition zone farmers in 4 villages are trained in improved agricultural practices and apply them to farmland in transition zones</p>	<p>1.1 100% (380 individuals, gender disaggregated) of targeted bas-fond farmers from 4 villages have received direct training and on-going support on a range of improved agricultural, irrigation and tree crop techniques in each year of the project</p> <p>1.2 From Year 2, 100 direct beneficiary farmers (at least 50% women) are applying at least 1 new intervention on their farmland in</p>	<p>1.1 Training reports, attendance certificates, photos in each year, minutes from monthly informal farmer feedback session with extension workers.</p> <p>1.2 Recorded farmer feedback (videos, quotes, minutes from extension feedback sessions),</p>	<p>Bas-fond farmers remain committed and open to learning new techniques and have confidence in results demonstrated to fully adopt practices</p> <p>Multiple benefits of niebe bean convince farmers to increase production and consumption, as practiced in other West African countries</p>

	<p>transition zones with a minimum of 300 farmers (78%) reporting application of at least 1 new intervention by project end</p> <p>1.3 50% male and 50% female transition zone farmers surveyed from 4 targeted villages (20% population estimated at 337 households) who are not direct beneficiaries of the project report having access to information on improved agricultural techniques by year 4. with 60% of participants reporting access to information in focus group feedback sessions on communications programme in year 2 and 3.</p>	<p>lessons learnt paper produced each year.</p> <p>1.3 Locally appropriate media communications including radio programmes produced and confirmed through household survey of 20% of population of each town conducted in year 4 and designed to target both male and female audiences. Quotes and minutes from 4 focus groups feedback sessions in each village in years 2 and 3.</p>	<p>Rainfall remains adequate to feed community irrigation systems for target villages</p>
<p><b>2.</b> The incentives and wellbeing (food security, physical security, time, income, yield) from farming in the transition zone are equal or greater than farming in the illegal bas-fonds in the core and buffer zones</p>	<p>2.1 300 (78%) of direct beneficiary male and female farmers (of which at least 50% are women) have established or improved existing annual or perennial plots in transition zones by project end with 25% beginning the process by end Y2 and 50% by end Y3</p>	<p>2.1 Agricultural transition plan developed and validated with beneficiaries and key stakeholders by end Y1. Ongoing monthly meetings with extension staff – minutes. Plan reviewed and assessed in Y2 – Y4 by Project Manager. Appropriate management actions to address any issues</p>	<p>Re-introduction of improved seed varieties conducted by IRAG for upland rice and niebe are replicated by direct beneficiary farmers as anticipated.</p> <p>Initial community discussions on availability and access to land hold true and sufficient land can be</p>



	<p>2.2 By Year 4 60% of direct beneficiary farmers (228 individuals, of which at least 50% are women), report that the benefits of farming in transition zone equals or exceeds those from bas-fonds crops and remaining 40% of beneficiary farmers are projecting this within 3 years project end.</p> <p>2.3 100% (380 individuals) of targeted farmers have access to improved seed varieties and 25% of both male and female farmers are actively trialling them in the transition zone by year 2, 50% by year 3 and 100% by year 4.</p> <p>2.4 Farmer seed exchanges and seed farmers make new varieties available to wider farming communities (additional to target villages) with 15% year on year increase to farmers in villages and beyond purchasing improved seed year on year</p> <p>2.5 Reduction in human-elephant conflict (compared to baseline collected 2016)</p>	<p>documented in 6 monthly and annual reports.</p> <p>2.2. Participatory Impact Assessment (PIA) in Y2 and Y4 to assess wellbeing of beneficiaries (including human-wildlife conflict). Annual yield and price surveys each year for transition plots, bas fond plots vs 2016 baseline. Six monthly extension staff reviews of farmer uptake and beneficiary farmer feedback focus groups.</p> <p>2.3 Annual extension staff reports on up take and use of varieties</p> <p>2.4 Annual farm seed exchange representative verbal feedback, annual seed farmer sales records. Socio-economic survey Y4.</p> <p>2.5 Monthly community meetings with farmers to ascertain incidents of wildlife conflict and impact (i.e. crop damage, projected income loss etc.) Reports collated monthly and annually. Information analysed by Project Manager to inform ongoing</p>	<p>harmoniously secured inside and outside Transition Zone.</p> <p>The use of ‘mucuna’ and other soil improvement and weed management techniques to restore degraded land can be scaled up based on previous successful soil restoration work done by IRAG</p> <p>Tree crops seedlings have high survival rates and farmer shows excellent knowledge in crop management.</p> <p>Rainfall remains adequate to feed community irrigation systems for target villages</p> <p>Existing good access to local and regional markets remains stable for project duration</p>
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		activities. Recorded in annual reports	
<p><b>3. Illegal activity within Ziama is reduced through a shift from bas-fonds to farming in transition zones</b></p>	<p>3.1 No new clearing of forest in bas-fonds areas against current figures from July 2016 survey</p> <p>3.2 Law enforcement patrols report decline in illegal activity in core and buffer zones of Ziama MAB (compared to baseline from 2016 patrol data)</p> <p>3.3 60% reduction (228 individuals) in number of men and number of women (minimum 50% women) using bas-fonds in target villages by project end with a 20% reduction by end of year 2. We anticipate the final 40% to leave within 3 years of project end.</p> <p>3.4 Water testing in bas-fonds shows reduction in herbicide (compared to baseline to be collected at start of project) by end of year 4</p>	<p>3.1 Vegetation mapping, photos, bas-fonds control and exit plan</p> <p>3.2 Monthly law enforcement patrol data and reports</p> <p>3.3 Law enforcement and targeted bas-fond patrol data and reports, management plan for Ziama MAB including bas fond control plan by CFZ.</p> <p>Law enforcement patrols conducted on a monthly basis, targeting bas-fonds. Y1 &amp; Y2 to reinforce project messaging and ensure no expansion / new users. Y3 &amp; Y4 to enforce agreements. Reports compiled and analysed on a monthly basis with 6 monthly and annual status reports</p> <p>3.4 Water quality report</p>	<p>Participatory demarcation of MAB zones is completed successfully, with communities agreeing access and management.</p> <p>Reducing dependence on bas-fonds will decrease time spent in forest by farmers for poaching/illegal activity</p> <p>Training on safe use of agrichemicals including application of herbicides is effective.</p>

<p>4. Targeted bas-fonds in Ziama MAB are showing signs of forest recovery</p>	<p>4.1 Restoration plan developed in year 1 and implemented across 50% of all targeted bas-fonds by year 4 (250 hectares)</p> <p>4.2 Targeted bas fonds show annual improvements in ground cover / density of woody vegetation/ species richness in line with expected patterns of restoration by 25% year on year in years 2, 3, and 4 against project baseline</p>	<p>4.1 Restoration plan produced by end year 1</p> <p>4.2 Vegetation mapping, biomass analysis in year 4, photos in year 2, 3 and year 4</p>	<p>Restoration sites respond in line with samples plots conducted to date.</p> <p>Seedlings and seeds, if needed, are readily available at the right times.</p>
<p><b>Activities</b> (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.1. Inception workshops and participatory design of agricultural extension package with beneficiary farmers including soil and weed mapping to match annual and perennial crops to best locations according to available lands</p> <p>1.2 Coordinate and implement joint training for efficiency and synergies with Sainte Isaure de Guinee Order and Plan International including composting training</p> <p>1.3 Update IRAG assessment of local farmer savings groups with a view to supporting and establishing new savings groups as needed particularly for women and to ensure farmers are able to purchase seeds of improved varieties when seeds need replacing</p> <p>1.4 Targeted training sessions and ongoing mentoring for agricultural extension package on topics such as soil management, planting techniques, seed management, green manure, integrated pest management, tree crop improvement, conservation agriculture, weed management, herbicide and pesticide management, alley cropping, agroforestry and improved irrigation techniques for direct beneficiary farmers. Sessions offered as both single and mixed-sex groups to encourage participation by all.</p> <p>1.5 Update agriculture extension and training methods and topics according to regular participant feedback, with a focus on ensuring sessions are run in a format, time and place to enable women to participate, learn and support each other, without isolating male participants</p> <p>1.6 Develop and deliver communication plan including training materials and radio programmes using appropriate media to ensure outreach of training and information to village residents and wider area (indirect beneficiaries)</p>			

- 1.7 Conduct Participatory Impact Assessment in 4 target villages to ascertain effectiveness of training sessions, to monitor and update communications plan and to assess impact on wellbeing
- 1.8 Arrange and facilitate learning exchange visits with other Ziama communities, to demonstrate agricultural practices and crop choices
- 2.1 Identify with village councils and CFZ land in the transition zone for those direct beneficiary farmers that need it, ensure harmonisation of the process within community and establish culturally appropriate agreements for long term use of the land (Y1)
- 2.2 Review condition of land provided, identify appropriate annual and perennial crops, select appropriate farming methods with beneficiary farmers and prepare the land including managing weeds and increasing fertility through planting of 'mucuna'
- 2.3 Establish project baselines, gender disaggregated from bas-fonds crops and monitor annually for direct beneficiary farmers
- 2.4 Ground truth, update design and implement agricultural transition plan, incorporating agricultural extension plan, in participation with direct beneficiary target farmers including mapping shifting labour roles and responsibilities for women and men, support to enhance and shift to self-selected annual and tree crops etc. to ensure feasibility and ownership of the plan
- 2.5 Adaptively manage the process of change through on-going monitoring of farmers' perceptions of how incentives and activities are progressing, and provide continuous support, follow up and respond to any issues as they arise
- 2.6 Based on hydrology mapping, develop locally appropriate trials for irrigation systems, including construction of 'improved wells' (puits améliorés) and community agreements for location, use, management and maintenance of the selected systems and wells and ensured access for direct beneficiary farmers
- 2.7 Provide training on niebe post-harvest storage loss, distribute storage bags at reduced cost and develop independent local supplier of storage bags
- 2.8 Identify cost effective storage improvements to address post-harvest loss for other crops beyond niebe as identified as significantly problematic by farmers and implement cost effective solutions in Y3 and Y4
- 2.9 Review potential processing opportunities for existing crops grown outside the bas-fonds in order to identify opportunities to increase income from simple feasible processing
- 2.10 Based on successful seed develop programmes from IRAG, update mapping of existing seed exchange groups within and between villages, and support them to design and implement their own scaling up of seed exchange of new varieties to ensure availability to wider farmer groups in 4 villages and beyond
- 2.11 Distribute improved rice and other annual crop seed varieties at a reduced cost to direct beneficiary farmers, providing training of planting techniques for seed and ensure collection of seed at harvest for following year use,
- 2.12 Establish and train seed farmers to maintain access to improved varieties year on year with support from IRAG

- 2.13 Annually monitor yields for rice varieties being achieved by beneficiary farms in transition zone and incomes of any surplus sold and adapt activities and support accordingly
- 2.14 Establish trials for protecting crops and repelling elephants with direct beneficiary farmer groups in transition zone based on lessons learnt in FFI Elephant Survey report and use these as demonstration plots for wider community training on the topic according to demand for this village by village
- 2.15 Monitor crop loss and human wildlife conflict in transition zone during monthly community meetings
- 3.1 Bas-fond user groups and CFZ develop and implement bas fond control and exit plan including monitoring existing use and halting further clearance in bas-fonds
- 3.2 CFZ ranger staff conduct regular patrols of bas-fonds and attend bas-fond users association meetings on a regular basis to update users and ensure a strong and harmonious dialogue with communities
- 3.3 Provide training on environmental impacts of herbicide and pesticide use in water systems and safe application to bas fond associations in 4 villages and beyond
- 3.4 Conduct baseline survey for water quality in targeted bas fonds and repeat survey in year four
- 4.1 Develop restoration plan incorporating identification of suitable cost effective methods for enhancing the restoration of bas-fonds based on successful work by CFZ to date including assisted and natural restoration and identification of suitable species to be planted as feasible, based on various suitability criteria including potential to increase forest cover and attract wildlife species to the sites
- 4.2 Develop baselines for a selection of indicators including ground cover / density of woody vegetation/ species richness depending on conditions found in bas-fonds areas to be restored
- 4.3 Implement and update restoration plan in years 2, 3 and 4 and scale up appropriate techniques at CFZ identified sites and sites volunteered by bas fond associations

## Annex 3: Standard Measures

**Table 1 Project Standard Output Measures**

Code No.	Description	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Total to date	Total planned during the project
5	Agroforestry training	Guinean	F = 32 M = 87 T = 119	F = 28 M = 108 T = 136	255	380
6A	Farmer field school training provided on a range of topics.	Guinean	F = 149 M = 22 T = 171	F = 208 M = 160 T = 368	539	380
6B	Training on bas fond monitoring pro rata to a 46% week	Guinean	M = 8	0	1	1
6B	1 week training to CFZ rangers on HWC mitigation measures	Guinean	0	M = 8	1	1
6A	No. of trainings on quality seed selection	Guinean	0	1	1	2
9	1 bas fond restoration and monitoring plan	Guinean	0	1	1	1
20						
23						

## Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	Yes
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
<b>Do you have hard copies of material you want to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	