

COMMUNITY COLLABORATION IN THE CONSERVATION OF IMPORTANT PLANT AREAS (IPA) IN THE GUINÉE FORESTIÈRE REGION.

Annual Report 2024



Seed collecting training at Diécké, October 2024.

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Introduction

This project will achieve proof of concept for incentivizing 12 local communities in the buffer zones of three Guinean Important Plant Areas or IPAs (TIPAs) in the Forest Guinea region to improve protection of the natural habitat of conservation value in which they live through a range of local-based sustainable solutions. The model is partly adapted from our similar programme completed in Guinea Maritime recently and based on preliminary work we conducted with project partners in Forest Guinea in 2022/2023. The project timeline is from Jan 1, 2024, to Dec 31, 2026. This report sees completion of the first 12 months of the project.

We currently work with seven communities around the TIPAs of Mt Béro (Lamineta, Gounagalaye) and Diécké (Gbèlèye, Yonsono) and the southern Simandou mountains (inc. Pic de Fon) (Dandano 1, Siafarala, Nawainsou). The project activities are delivered through our collaborative partnerships with Herbar National de Guinée, Guinée Ecologie, Centre Forestier N'Zérékoré (CFZ) and Centre Regional de Recherche Agricole a Seredou (CRRAS). Community groups in each village carry out the activities of the project in collaboration with CFZ or CRRAS including managing the tree nurseries, market gardening activities, installation of improved cookstoves. The project aims to increase access to useful indigenous species, to build sufficient capacity with the community groups for them to earn a living from selling plants and through market gardening activities and thus reducing pressure on the surrounding forest. The project will build capacity through training courses with CFZ and other organisations to identify and protect threatened plants and raise awareness with local communities and schools about the benefits of protecting the environment. We are also conducting research into underutilised indigenous species and will do a preliminary analysis of the value chains for one of these, Tola, and potentially other species such as the indigenous pepper *Piper guineensis*.

Year 1 outputs delivered include an expansion in capacity for the current 7 community tree nurseries from 1500 to 3000 plants per year and laying the groundwork for an alley cropping trial as an alternative model agriculture system. The environmental education schools programme has been launched in ten schools and training courses in vegetation survey techniques and plant identification delivered, fieldwork for seed collection and identifying threatened species for the threatened plants of Guinea book has been completed.



Project progress

Output 1: village nurseries and production of threatened plants for sale.

All seven communities have been visited twice during the year by the project coordinator, once in May/June and a second visit in October. In May/June, revenue generating activities and the extension of the nurseries to 3000 plants were discussed with the communities. Organisation of training for installation and maintenance of improved cookstoves was implemented in June in Diécké and Mt Bero. A follow up visit was necessary for maintenance training and took place in November.

Plants from four nurseries were planted out in July-August, in addition to a trial with *Piper guineense* to grow this indigenous cash crop species in a more sustainable and accessible way. Monitoring of the plantings from the previous year was undertaken. The partners (CFZ, HNG and GE) carried out a survey of survival rates of the seedlings planted out in 2023. For the socioeconomic seedlings, a sample was taken of 3 per species/ per planting since the number of seedlings planted was over 7,000. All planted seedlings of threatened tree species were surveyed and mapped. An electronic questionnaire was set up so that this information could be recorded in a standardised way on a telephone. A total of 799 plants were censused, 95 plants (12%) were found to have died. The majority of deaths were thought to be due to their planting position being too exposed to the sun during the dry season (Fig 1).



Figure 1: Monitoring of plantations

Garcinia kola, *Piper guineense* and *Omphalocarpum ahia* suffered particularly from sun exposure, this will be taken into account when these species are planted next season.

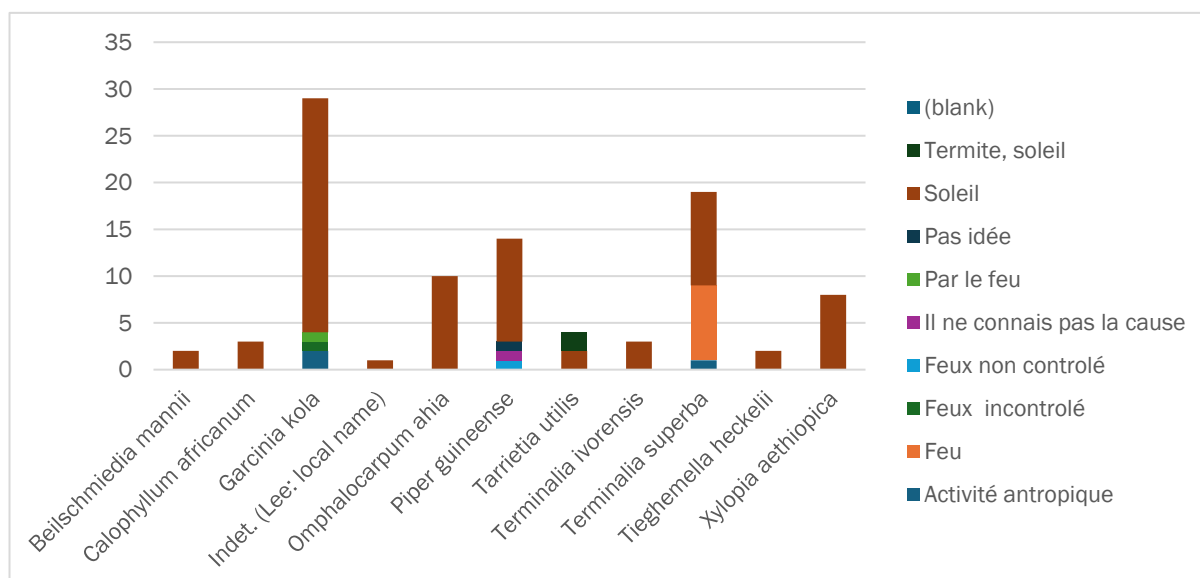


Figure 2: Graph showing mortality rates and causes for all species planted in 2022/23

1.1 Two new community groups were formed at the end of year 1 in preparation for the forthcoming seed collection season (when). It was felt that if this was delayed until the new year, the time taken to put the groups together and then install the nurseries could mean that they would not be prepared to receive seed (particularly important for non-orthodox plant species) and this could affect production of seedlings for 2025. New community groups at Ouléouon and Gueipa have been formed and validated. These villages both benefitted from material distributed from the CFZ nursery to be planted in their plantation and community areas.

1.2 During April and June expeditions, 295 seeds were collected of 3 threatened species and five socioeconomic species. These were shared between the village nurseries, CFZ and CRRAS (see table for detail). The main period for seed collection of many of the threatened species is November to January/February. However, we have noticed a delay in fruitification of some species in 2024 probably due to the disturbed wet season.

During May and June, the village nurseries were revamped and revitalized. Some nurseries have been relocated this year due to members of their community groups changing. Each nursery put in place 1250 planting sachets (plastic bag pots) and filled these with either seeds or wildlings collected from around Diécké or Mt Bero. The table in Figure 3 below shows the number of plants in the nurseries in June. These nurseries will be extended to 3000 sachets by the end of December 2024. CFZ will have a capacity of 5000 sachets. Some of these plants were planted out in the wet season in July if they were ready. Therefore, the nurseries are prepping to receive new seed and wildlings.

No	Species	Family	CFZ	Yonsono	Gbèlèye	Laminata	Gounagalaye
Socio-economic species							
1	<i>Garcinia kola</i>	Clusiaceae	400	200	150	200	100
2	<i>Beilschmiedia mannii</i>	Lauraceae	100				
3	<i>Xylopia aethiopica</i>	Annonaceae	300			100	300
4	<i>Terminalia superba</i>	Combretaceae	300		330	100	20
5	<i>Terminalia ivorensis</i>	Combretaceae	400		700	200	300
6	<i>Tarrietia utilis</i>	Sterculiaceae	400		357	200	200
7	<i>Picralima nitita</i>	Apocynaceae	250	200	100	100	100
Threatened species							
1	<i>Omphalocarpum ahia</i>	Sapotaceae	217			30	30
2	<i>Tieghemella heckelii</i>	Sapotaceae	200				
3	<i>Allophylus samoritourei</i>	Sapindaceae	300				
4	<i>Vepris laurifolia</i>	Rutaceae	24				
5	<i>Entandrophragma cylindricum</i>	Meliaceae	29				
6	<i>Sterculia oblonga</i>	Sterculiaceae	11				

Figure 3: The number of plants in the nurseries in June 2024.

We have had some access issues during the wet season. The roads to Diécké have been blocked and the team had to abandon their vehicle in September to arrive at site by motorbike. An expedition to Diécké and Banan had been planned in October, but due to the state of the roads, this was changed to Ziama and Mt Bero. This expedition included Xander van der Burgt (Kew)

and was focussed on checking for seed producing trees and checking populations of threatened species at the two sites.

A second field mission is taking place in December for the monitoring and collection of seed in Diécké and Mt Bero. This mission will also be looking to collect seed for the alley cropping trial with species of indigenous species of *Millettia* and *Pentaclethra macrophylla*.

1.4 Alley cropping trial set up with minimum 2 communities by end Y2. Laminata and Yonsono communities have identified areas for the trial. A plan for preparing the trial areas for planting for and installation of a separate dedicated alley cropping nursery will be discussed before the end of the year.

1.5 The mechanism for selling excess saplings of both threatened and useful trees to local reforestation projects is not quite in place, though we have a commitment from Guinée Ecologie to purchase plants from our nurseries and we have had enquiries from Rio Tinto, which we are following up. We planned to meet with the Minister of Environment, facilitated by the UK Ambassador, to discuss the National Action Plan for Threatened Tree species of Guinea (NCAP) for threatened trees and the use of indigenous species in reforestation programmes, but she unfortunately cancelled at the last minute, and we were unable to arrange another meeting due to her need to prepare for, travel and attend the Colombia Convention Biodiversity (CBD) meeting in Colombia (Conference of the Parties or COP).

Output 2: Post project legacy

During July our colleagues at MAC Consulting undertook a baseline poverty study for us in the communities at the three project TIPAs. They have submitted a preliminary report which we have commented on and are awaiting a final version. This has given us some important insights into the demographics, revenues and perception of poverty within the communities. MAC also compared these results with those of the study they did for us in Guinée Maritime in 2023, which shows some differences particularly around perceptions of poverty and higher education. The final version accompanies this report.

Samples of several “useful” indigenous were delivered to Kew of several species for nutritional and chemical analysis in March 2025. There has been a delay in the analysis due to staff and lab availability. However, analysis of *Neocarya macrophylla* has yielded some interesting results:

Gas chromatography-mass spectrometry (GC-MS) analysis results summary: *Neocarya macrophylla*

The main fatty acids detected in the *Neocarya macrophylla* seeds (Kew reference BI 32967; n=5, collected in Guinea in 2023) were the unsaturated fatty acids oleic acid (59%) and linoleic acid (24%). Linoleic acid is an omega-6 fatty acid and oleic acid is an omega-9 fatty acid. Also detected were the saturated fatty acids stearic acid (7%) and palmitic acid (11%). The profile of fatty acids detected in the *N. macrophylla* seeds is similar to that reported for cashew seeds/nuts (*Anacardium occidentale*): 61% oleic acid, 18% linoleic acid, 10% palmitic acid and 9% stearic acid [1].

Furthermore, the percentage yield of total fats in the *N. macrophylla* seeds (63%) from this research, was higher than that reported for cashew seeds (48%) [1], thus indicating that *N. macrophylla* seeds could provide higher oil yields than cashew seeds. Therefore, the similar fatty acid profiles of *N. macrophylla* seeds and cashew seeds, and the potential for *N. macrophylla* seeds to provide greater oil yields compared to cashew seeds, may help incentivise the conservation of *N. macrophylla* trees and habitats to reduce clearing in favour of non-native cashew plantations. Reference [1] <https://doi.org/10.1002/fsn3.294>



Awareness training

Two sessions were held with CFZ ecoguards (23 and 25 May 2024) on how to communicate conservation and protection of nature with communities. These were interactive sessions with 30 participants in total. It gave us an opportunity to discover the level of understanding of the CFZ ecoguards about certain topics e.g. climate change, extinction, ecosystem services, threatened species and threats to the environment, and to teach them how to communicate these ideas to others including community members. We also had discussions around the importance of raising awareness and repeating the messages and why it is important to provide explanations to people when asking them not to do something.



Figure 3 : Discussions on threats at Ecoguard training workshop

This was the first time many of them had been given this type of training and they all found it interesting and valuable. It would be good to roll this out to more people including the prefectural forestry services in the future.

Environmental Education managed by Guinée Ecologie

The education officer for Guinée Forestière (EO-GF) was appointed in April by Guinée Ecologie- Mr Nasser Lamassick is now based in Nzérékoré.

In May 2024, Mrs Kadiatou Barry Diallo, who is the lead Guinée Ecologie Environmental Education Officer (EO) and set up the environmental education programme in Guinée Maritime, came to Guinée Forestière to train Nasser and visit the local schools that will be invited to participate in the programme. An initial 10 schools have been selected in preparation for rolling out in the new school year: 4 schools each (3 primary and 1 college) at Mt Bero and Diécké, and 2 primary schools at Pic de Fon. The team visited and discussed with most schools ahead of the new school year.

- Mt Bero: Lamineta, Ouléouon, Gounangalaye, Kabièta (college)
- Diécké : Gbèlèye, Saouro, Gueipa, Diécké centre (college)
- Pic de Fon: Dandano 1, Nawoinssou.

In October, the environmental education programme was launched in schools in the Macenta and Nzérékoré administrative areas. Unfortunately, due to poor road access, the schools in Diécké were not visited at the time. The EO-GF will visit these schools once the road opens.

The schools in the administrative regions of Nzérékoré and Macenta were grouped together at Kabieta and Dandano respectively. There was an initial launch day with speeches and participation from the local education authorities. The first day concentrated on an introduction to environmental education and the themes contained in the teaching booklet, designed by our project team. The second day dealt with details around Climate Change, Extinction, Ecosystem services and threats. Threatened tree species in the area and seed collecting were presented. The concept of school nurseries and gardens was introduced and how to go about installing a nursery.

The programme has been very well received by the local authorities and schools we are confident that the programme will advance well given regular supervision from the Education officer. The full report will be submitted with the annual report.

In October, funding of phase 2 of our Franklinia project in Guinée Maritime was approved for a further three years. This links with the Guinée Forestière project through the environmental education programme. The plan is to twin ten schools in Guinée Maritime with schools in Guinée Forestière. We will have some inter-school competitions and activities.



Figure 5: Explaining the concept of environmental education at school to teachers at Kabieta

Output 3: Capacity building of partners for increased biodiversity conservation

3.1 A vegetation survey course was held from 27 May to 1 June. A total of 18 participants including 12 Ecoguards, 1 from CRRAS, 5 from Guinée Ecologie. The ecoguards had all undertaken the course once before.

It was decided that it would be more worthwhile to repeat the course with them as it is quite intense and not always possible to grasp all the concepts initially. The course was very

productive and those that had done the course before were able to guide the newcomers in the field practical. A suggestion of setting a project for the Ecoguards was made, for example inventorying the 1er Mai forest, though we are unsure how this would work in practice as the jurisdiction lies with the local forestry office, not CFZ.

Additionally, a meeting was also held at Nzerekore on 24th May with actors in the region who are doing reforestation/restoration in Guinée Forestière. This meeting was jointly organised with FFI after a discussion with Angelique Todd of FFI following the RT Biodiversity meeting in Feb. 2024.



Figure 6: Vegetation survey techniques course- practical

The idea was to find out where people are active, what methodology and species they are using, what issues there are and what advice might we be able to provide. The meeting hosted c.25 people from NGOs, Research institutions and government technical services. It was useful to exchange information and ideas, including the issues surrounding reforestation by the government as executed through NGOs. We also took the opportunity to introduce the new Conservation Action Plan for threatened trees of Guinea (NCAP) to the participants and show how their activities will feed into the objectives of the plan.

In October 2024, two major training events took place, co-financed by the Darwin C&C project but integral to Our RT funded project. Firstly, we delivered two Tropical Plant Family Identification courses, one in Conakry and one in Sérédou. This course is in collaboration with Missouri Botanical Gardens. The lead trainers and organisers were Charlotte Couch (Kew) and Ehoarn Bidault (MBG), with assistance from Ana Rita Simoes (Kew, taught in Conakry), Xander van der Burgt (Kew, taught in Sérédou), Moussa Diabate (SERG, taught in Sérédou). A total of 41 people were trained from various backgrounds, but all had to be either currently working in the field of botany or recently graduated, and they first had to demonstrate how they would use this training in order to be accepted onto the course. We had 140 applicants, so reducing to a shortlist of only 40 was challenging, though clearly demonstrates a demand for this training course.

A total of 33 tropical plant families were taught and studied over the 6-day course and an exam on the final day showed us how much the students had learnt. Feedback forms were also filled in. This RT-funded project added additional funding for the trainer's accommodation and travel between sites. A full report on the course will be available shortly.



Figure 7: Studying family characters, Tropical ID course Conakry.

The second training delivered was on seed collection and on the installation of a new seed collection and monitoring network with the communities, CFZ and CRRAS. Two theory courses were held, one at Dandano with members of the groups from Dandano, Siafarala and Nawainsou; and one at Nzérékoré with members of the groups from Diécké and Mt Bero. The course was led by Xander van der Burgt and Faya Julien Simbiano with Charlotte Couch. Five members of the groups who could understand French, were invited to take part and then feedback to the rest of their group. There was a half day of theory about the different seed types, how to test if a seed is good or not and when to collect. Each group has been given a refurbished smartphone with a decent camera. We set up a WhatsApp group to which all the members of the group could be added and showed them how to use it and add pictures etc. The next day they would then have a field practical. All the groups are members of the same WhatsApp group and can post activities as well as pictures of plants for identification.



Figure 8: Training on how to take pictures and post on the new seed monitoring network

We found it very beneficial for the groups to come together for training, it was a chance to meet and discuss activities, moreover they could see that we are not doing anything different between communities, so it was good for building trust.

The groups at Dandano unfortunately have not had their field day yet as we encountered a delay in getting to Sereidou and there wasn't enough time before the Tropical ID course. Those at Diécké and Mt Bero participated in a field day during which we showed them threatened plants and the differences between species of the same genus and they learnt how to take photos with their smartphones and upload them to the WhatsApp group. We have received images from most of the groups, though some are more active than others. In a few months' time we will ask all users to complete a simple evaluation of the WhatsApp group.

3.2. Research into threatened species in Guinea continued in October/November with an expedition to Ziama and Mt Bero. A new species record for Guinea was discovered at Mt Bero, *Pseudovigna sulaensis*, previously only known from Sierra Leone. This is the first population found in Guinea, and it is being severely impacted by the cattle grazing in the area. The team made some recommendations about managing this population such as fencing off these areas from the cattle or removal of the cattle entirely, the preferred option as it would protect other species as well, though likely not possible at the moment.



Progress against the log frame

Project Summary	SMART Indicators	Progress
<p>Outcome: Proof of concept is achieved for motivating 12 local communities in the buffer zones of three IPAs in Forest Guinea to protect the natural habitat of conservation value in which they live.</p>	<p>0.1 Income of target communities from sustainable exploitation of IPA species/habitat increases from base case within life of project, motivating protection of same.</p> <p>0.2 Priority plant biodiversity in IPAs is protected by local communities: numbers of individuals of 12 Vulnerable, Endangered and Critically Endangered plant species (as proxy for all threatened plant species) first stabilises and then increases over the life of the project and beyond.</p>	<p>Baseline poverty survey completed Year 1 of project.</p> <p>Monitoring of plantings done in 2023.</p>
<p>Outputs:</p> <p>1. Incomes of target communities are increased through payments received for harvesting seed and raising seedlings, and production of 12 threatened tree species for sale to other tree planting schemes in Guinee Forestière.</p>	<p>1.1 Tree nurseries established in additional 4 villages by end Y2.</p> <p>1.2 1800 seeds of 12 threatened species collected and sown by Q2 Y1, end Q3 Y2, Q3 Y3. Plus 5000 seeds of socioeconomic species by end of Y3.</p> <p>1.3 Seed samples backed-up, 8 threatened tree species banked in Guinea and UK (MSB).</p> <p>1.4 Alley cropping trial set up with minimum 2 communities by end Y2.</p> <p>1.5 Mechanism for selling excess saplings of both threatened and useful trees to local reforestation projects in place by end Y1.</p>	<p>2 new groups established and nursery installation underway.</p> <p>1.2 275 seeds of threatened species collected, plus 370 wildlings. 837 seeds collected plus 530 wildlings collected by the field team, additional seed and wildlings collected by the communities.</p> <p>Training, in seed collection and networks carried out in October.</p> <p>1.4 Communities canvassed about alley cropping trial, 2 communities have land available. Next steps to clear, put in nurseries and collect specific species is underway.</p>

		1.5 Behind on this. Guinee Ecologie has committed to buy plants for Mt Bero reforestation. RT expressed interest, needs following up.
2. Post-project legacy for local community livelihood improvement built by chemical and nutritional analysis and pilot-production of additional, identified, under-utilised species with potential for development of additional high value products initially for the Guinean market (foods, cosmetics, natural pesticides). Communities and local schools engaged in environmental awareness programmes to influence the next generation to protect the environment.	<p>2.1 Samples of total 5 additional species supplied to Kew, KCL & UGAN for nutritional and chemical analysis to inform on economic value by end Y1, total 10 species by end Y2;</p> <p>2.2 Community awareness programmes rolled out to additional communities around the 3 TIPAs.</p> <p>2.3 Ten local schools engaged in environmental education activities and tree planting</p>	<p>2.1 Samples are at Kew. Availability of staff to do the testing has delayed this slightly, but still on track to analyse all samples by end of Y2.</p> <p>2.2 Community awareness programmes and activities have been started. Improved cookstoves installed, new panels have been constructed and will be installed by the end of the year.</p> <p>2.3 Schools have been identified and programme will be rolled out in Dec. 2024.</p>
3. Capacity of local partners enhanced to continue the project outputs for plant biodiversity conservation.	<p>3.1 20 local partners trained in plant identification and vegetation survey techniques.</p> <p>3.2 Red Data book of plants of Guinea published.</p>	<p>3.1 Veg survey course taught with 18 participants Y1.</p> <p>Plant Id course taught in October in Sereidou and Conakry, 41 people trained.</p> <p>3.2 Data on threatened species is being collected. New species record for Guinea discovered at Mt Bero.</p>

