Darwin Initiative: Final 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)*

Darwin Project Information

Project reference	23-002
Project title	Important Plant Areas of the Republic of Guinea
Host country(ies)	Republic of Guinea
Lead organisation	Royal Botanic Gardens, Kew
Partner institution(s)	Herbier National De Guinée (HNG), Université Gamal Abdel Nasser, Conakry (UGAN), Guinée; Plantlife International (Plantlife); Guinée-Ecologie (GE); Centre d'Observation de Surveillance et d'Informations Environnementales (COSIE), Ministère de l'Environnement des Eaux et Forêts (MEEF).
Darwin grant value	£291,413
Start/end dates of project	1 April 2016 - 31 March 2019
Project leader's name	Dr Martin Cheek
Project website/blog/Twitter	http://www.herbierguinee.org Twitter: @KewAfrica, @HerbierGuinee, #TIPAs_Guinea
Report author(s) and date	Charlotte Couch, Martin Cheek

1 Project Rationale

The Republic of Guinea is one of the most biodiverse countries in West Africa. This diversity is partly due to topography, Guinea has two highland areas: the central Fouta Djallon and, in the south east an extension of the Loma-Man mountains, these areas have been isolated for thousands of years and as a result have numerous endemic species. It also has the western extent of the Guinea-Congolian forest belt, mostly now only found in Guinée Forestière, but this project has found that surviving fragments of the once plentiful coastal forests are also rich in species including several new to science that are highly threatened.

Guinea depends for income on increasing open-cast mining by multinational companies, the largest being listed in London, with investments by British taxpayers through pension funds. These initiatives and new infrastructure projects will result in major losses of natural habitat. Yet, Guinea has numerous highly range-restricted plant species and rare vegetation types which are consequently at risk of unwitting extinction, posing reputational risks to companies which will affect their share prices and investor income. Additional problems for natural habitats and species are posed by habitat clearance for agriculture, tree felling for charcoal production, fires that sweep the country from end to end every year and hydro-electric projects.

The existing protected area network focusses on maintaining timber resources for exploitation (Forêt Classé) or protecting large animals (National Parks) or wetlands (Ramsar sites); most of the rarest plant species are therefore offered little or no protection, and some have become

extinct as a result. National awareness that Guinea was home to unique and globally threatened plant species was almost zero at the outset of the project.

An effective means of conservation prioritisation was required if Guinea's biodiversity is to be safeguarded, focussing efforts on the sites that require protection. Guinea's capacity to do this is severely hampered by a lack of scientific expertise and infrastructure. The 2014 fifth national progress report on Guinea's CBD commitments[1] emphasises the need for greater capacity in the identification of Guinea's biodiversity, and more accessible data on its threatened species and key sites for protection, as well as the need to disseminate these findings effectively to encourage community-level engagement in biodiversity protection. While considerable progress has been made with regard to Guinea's charismatic fauna, access to data and expertise on plants was limited.

The assessment of Important Plant Areas (IPAs) offered a practical but rigorous means of identifying site-based conservation priorities. IPAs are aligned to Target 5 of the CBD's Global Strategy Plant Conservation "At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity" and so offered an important step towards fulfilling national CBD targets. The project will also contribute significantly to GSPC targets 2, 4, 7, 8 and 9. In addition, Aichi targets 1, 11 and 12 are addressed as the project will improve the conservation status of our c.300 potentially threatened species (most to be assessed by the project) protected in the estimated 15-20 IPAs we expect to be selected from a candidate list of 32 sites.

Discussions between Kew and partners in Guinea indicated enthusiasm to adopt the IPA approach and threatened species data to inform decision making on prioritisation of areas for conservation efforts.

Throughout the project, the scientific partners liaised with COSIE-MEEF and other relevant stakeholders from the national to community level to promote the use of the Plantlife IPA protocol and threatened species data in conservation planning and sustainable development, to address the biodiversity challenges outlined above. Succinct booklet-form guides to Guinea's IPAs and threatened and valuable species, together with a series of province-specific species conservation posters were produced for secondary school teachers and for university students, in order to help educate the next generation of professionals and community leaders in the benefits of biodiversity conservation for Guinea's future prosperity.

By identifying, mapping, characterising and publicising Important Plant Areas, we have enabled the national authorities of Guinea-Conakry and multinational companies and contractors (the largest of which are listed in London and have substantial UK investment from British taxpayers) to avoid or minimise their reputational risk of adversely impacting threatened plant species and habitats, and to support their protection and sustainable management through offsetting (multinationals) and by improved focussing of scarce national conservation resources (Government of Guinea-Conakry, advised by MEEF). This will improve investor-confidence in Guinea, and increase investment further, since the reputational risks of unwittingly causing extinction of threatened plant species will be reduced. Well-paid jobs and poverty reduction will be lifted.

Publication of IPAs and a national Red List for plants enables Guinea to deliver on its CBD commitments under GSPC Targets 2 and 5.

The project built technical capacity in Guinea to apply biodiversity data to decision-making in natural resource management as new challenges and opportunities arise in the future, and promoted the possibility of developing a national monitoring programme.

Guineans depend on plant resources for survival, including traditional medicines from threatened species. By identifying and demarcating the most important areas for plant conservation, we supported the survival of this national resource for utilisation by future generations. Inclusion of plant species of socio-economic importance within IPAs established a direct link between the preservation and sustainable management of areas of high biodiversity value and human livelihoods, in line with Aichi Biodiversity Targets 1 and 2

[1] https://www.cbd.int/doc/world/gn/gn-nr-05-fr.pdf

Stakeholder engagement at national to community levels, through a combination of workshops, community-based field survey work and teaching materials for educational institutions emphasised this link and promoted both community-led and national protection of IPAs, so helping to preserve Guinea's unique and threatened plants and habitats.

2 Project Partnerships

The main partners in this project have been the National Herbarium of Guinea (HNG). UGAN botanists proposed a National Herbarium at the turn of the millennium, at which time Guinea did not have a single registered herbarium. In 2005, Kew, seeking to support a Herbarium in Conakry, facilitated the provision of specialist materials, equipment, training and specimens to this end. In 2008 a Memorandum of Collaboration was signed between Kew and HNG-UGAN, and in 2009 a Government decree officially created the National Herbarium as a legal entity with rights and responsibilities. In 2011, HNG was registered on Index Herbariorum. The staff at HNG-UGAN requested that Kew co-teach a new Master course in Biodiversity and Sustainable Development, to train the next generation of conservation biologists. This began in 2012.

HNG-UGAN leads botanical exploration and conservation in Guinea and identified a national Red List for plants and site-based conservation prioritisation as key areas for research collaboration with Kew. The staff and associates of HNG-UGAN, together with the MSc students have provided significant input into the data-gathering operation that has allowed 22 TIPAs to be identified, confirmed and characterised for official recognition. The HNG botanists have been at the forefront of on the ground data gathering on threatened species and habitats. Expeditions planned in collaboration with Kew and led by the HNG Project Technician, Denise Molmou and, Pépé Haba a previous Kew trainee and founder of NGO Guinée Biodiversité based in Guinée Forestière, they have carried out 20 field expeditions across Guinea.

This project was requested by the main partner (HNG), and developed by Kew (the lead institution) in consultation with HNG and Saïdou Doumbouya (MEEF).

However, there was a challenge: when a financial irregularity was reported to the lead institution in Nov. 2016 by a junior employee of the project, she was suspended by UGAN-HNG. Such has been the support of the host Govt. Minister of MESRS (Ministre de l'Enseignement Supérieur et de la Recherche Scientifique) of UGAN-HNG however, that when a review was requested by the lead organisation this was swiftly acted on, the junior employee reinstated and eventually a senior member of staff retired. This gave us confidence that our partnership and our Darwin project are respected, valued and supported at Government level. Since this issue, Dr Magassouba (previously assistant director) has been promoted to Director of HNG. With his leadership and the appointment of the Technical Advisor in July 2017 based predominantly in Guinea at HNG, the partnership between Kew and HNG has strengthened.

Plantlife is a UK-based plant conservation NGO that developed the concept of Important Plant Areas in the 1990s and ensured that it became a CBD target in the Global Strategy for Plant Conservation (GSPC). In 2014, Kew began engaging with Plantlife about Kew's developing plans to promote and apply the IPA system throughout the tropics as part of Kew's new Science Strategy (2015-2020) for which Tropical IPAs (TIPAs) is a key strategic output. A Plantlife representative sits on the Kew committee for delivering this output. Plantlife has unrivalled expertise in IPA methodology and IPA stakeholder engagement and experience of implementation in numerous countries over many years. For these reasons Plantlife assistance in running the consultative and capacity-building workshops at the start of the project was sought and agreed. Stakeholder engagement from the inception of an IPA project is seen as essential to its success, since without local buy-in and understanding from the outset, recognition and implementation of IPAs on the ground can be difficult. The Plantlife protocol has been instrumental in achieving the project. Plantlife's methodology for choosing a National Flower proved to be extremely successful engaging the public, local students and schools in biodiversity.

In 2011, Kew staff began a dialogue with the then Centre d'Observation de Surveillance et d'Informations Environnementales (COSIE) focal point Saïdou Doumbouya, MEEF, for Guinea, concerning joint botanical missions for the extractive sector, during which the need for enhanced conservation of Guinea's threatened plant species was first discussed. COSIE has responsibility for all of Guinea's National Biodiversity, including data and protected areas. Since 2011 this

collaboration has been jointly developed, at a series of Kew training workshops with the current project partners at HNG-UGAN. In October 2015 COSIE, with technical support from Kew, led an application for a GBIF Biodiversity Information for Development grant which includes all the current Darwin project partners, expressly to support the Darwin IPA project, by mobilising plant specimen data from Europe and Guinea to enable Red List assessment of species in Guinea and thus the identification of concentrations of threatened species which represent priorities for protection as IPAs. At the outset of the project we had the support of the CBD focal point staff, Col. Abouboucar Oulare, Col. Sidibé (then head of COSIE) and Saïdou Doumbouya GBIF focal point, representing key policymakers for the Ministry of Environment, Water and Forests (MEEF), who were interested in expanding the protected area network to meet CBD/GSPC targets. Throughout the project Saïdou Doumbouya has been a key member of the partnership and has subsequently been promoted to Head of COSIE. He has fostered the relationship between the partners (HNG and Kew) and stakeholders within MEEF including the Office of Guinean Parks and Reserves (OGuiPAR) and CBD focal point resulting in a strong working partnership. This partnership was critical in obtaining acceptance of TIPAs by the Government of Guinea which has been stated by MEEF to result in incorporation in national legislation.

Guinée-Ecologie is Guinea's premier environmental NGO. It trains students in environmental studies and techniques, and works with a network of local communities, especially in the Fouta Djallon area, to improve conservation nationally. Kew has been in dialogue with GE to discuss national conservation approaches since 2005, and supported its plan to redevelop the Camayenne Garden with biodiversity conservation interpretation for the population of Conakry. GE is also vociferous about the need to protect additional areas in Guinea. GE's part in this Darwin project has been to work with local communities to promote awareness of conservation priority species in their area such as with the National Flower Campaign and has been actively involved in the ongoing promotion with the Scholls Ministry of our project booklet on threatened plant species and habitats for secondary school teachers.

All our local partners and stakeholders are members of the working group for Tropical Important Plant Areas (TIPAs) and Conservation Action Plans (CAPs). This CAP group was brought together by our project to review plant conservation in Guinea and validate the proposed IPAs. This is the first time that Guinean conservation stakeholders have met regularly to discuss plant conservation in Guinea. The working group have been instrumental in achieving the final outcome of the project and many are co-authors on the resulting publications. This group will continue to meet once the Darwin financed project has concluded. Funding has been received from a philanthropic donor (Ellis Goodman Family Foundation) that will enable the partners to continue meeting post Darwin project,

This report has been developed through discussion on the ground in Conakry with all our local partners in Guinea, although due to the language barrier they did not draft the text directly.

3 Project Achievements

3.1 Outputs

1. Priority species, habitats and sites for plant conservation in Guinea identified, documented and published.

1.1 At the Important Plant Areas of Guinea project inception workshop, we presented a draft list of 482 threatened species which was discussed and edited with the project partners. This list was then screened against specimens that were available at Kew and other online herbaria to see what data was available. This reduced the initial list to 253 species. However, with fieldwork over the course of the three years of this project, and previous fieldwork since 2005 as part of EIAs, the total is now 275 species. All existing records on the original conservation priority species were gathered from herbaria and literature by end Y2. Our database for Guinea plant records alone now amounts to over 19000 specimen records. This work was done mainly by volunteers at Kew, and staff at HNG funded by BID. Some species (c. 70) had already been assessed for the IUCN Red List. As part of this project, over 200 new assessments have been

prepared on the IUCN SIS database. About half are already published on iucn.redlist.org, and over 100 are stated by iucn to be published in the next release July 2019. This work was done in part by project staff and the Plant Assessment Unit at Kew using matched funding from the Ellis Goodman Family Foundation. The compiled information will appear as a Red Data Book for Guinea Plants later in 2019. In the interim a paper titled Threatened plants species of Guinea-Conakry: A preliminary checklist was published in PeerJ Preprints in 2017 and has been updated periodically as new assessments have been published https://doi.org/10.7287/peerj.preprints.3451v2. This article is open access and has been viewed over 1000 times and downloaded over 480 times, demonstrating the need and relevance of this information. However, additional research, including discoveries made on field surveys, continues to bring to light some additional priority species, previously unknown to us.

1.2 Guinea's priority threatened habitats were identified by the partners and discussed at the inception workshop in 2016. The preliminary list of nine was subsequently uploaded to the HNG website (www.herbierguinee.org). This list has been further refined over the course of the project. At the end of Year 2 maps detailing the extent of each of the 9 priority vegetation types/ habitats were delivered to MEEF. Habitats were mapped at a country level using ArcGIS and Landsat imagery. Google Earth was used where the habitats comprise smaller units e.g. inselbergs which could not be picked up by automated imagery process. Some areas have also been mapped in detail as a result of specific MSc. project studies e.g. submontane forest and bowal. The final maps along with habitat descriptions, geographical distribution, indicator species and degree of exploration has been published as part one of the book Threatened Habitats and Tropical Important Plant Areas of Guinea (Couch et al. 2019), the main output of the project. A report of the mapping process is included in Annex 7.

1.3 Initially, 4 field trips per year were scheduled. These field surveys proved so productive in terms of data gathered important for our project that we launched additional surveys for a total of 25 (Y1 9 + Y2 14 + Y3 2) reports available on the HNG website) drawing upon additional resources from e.g. the Garfield Weston Fund for Global Trees, but also by spreading use of funds by e.g. taking the opportunity of delivering workshops to attach a fieldwork dimension (see Annex 7 for reports). An unexpected number of new species to science have resulted from these surveys (c.20, over half of which are published/accepted/submitted), and so far, one new genus to science, all threatened, (see standard measures). The data from these surveys fed into IPA data sheets, and led to modification of the original list of IPAs. In total 22 IPAs were identified and documented in detail and published in hardcopy in the book "Threatened Habitats and Tropical Important Plant Areas of Guinea"reviewed in the end of project workshop Conakry March 2019. Guinea partners made evident at the inception workshop that, IPAs would be referred to as Tropical Important Plant Areas (TIPAs) since the French version of the IPA acronym (ZIP) is already used for something else; therefore, Zones Tropicales Importantes pour les Plantes (ZTIPs or TIPAs) was formally adopted for IPAs. The online database for TIPAs will have all Guinea data uploaded through a new portal by end 2019. The changes to the list of TIPAs and the data gathered was validated by the CAP working group set up in May 2018 which includes all of the project partners and stakeholders. As the TIPAs were approved, a report of each TIPA including the datasheet information, site maps and photographs was been published on the HNG website (http://www.herbierguinee.org/documents-du-projet-darwin.html). A hardcopy of the book has been sent to the Darwin Initiative office.

2. IPAs and National Red List of Plants incorporated into national action plans on conservation and sustainable development.

2.1 The inception workshop to highlight the benefits of the IPA approach to conservation, resource management and industry for key stakeholders was held in June 2016 at the University Gamal Abdel Nasser Conakry. This involved representatives from the key partners and stakeholders including the CBD Focal Point for Guinea, Ministry of Environment, Water and Forests (MEEF), Ministry of Higher Education and Research, conservation NGOs and representatives of key industries e.g. Rio Tinto. The workshop was opened by the director of the National Herbarium and was closed by the Guinean Minister of Environment and the UK Ambassador, both of whom drew attention to build capacity in women scientists and praised the Darwin IPA project for having this in their project brief. The launch was documented on the HNG website, a press release on the UK Embassy Facebook page and storify (this has been

saved and uploaded to the HNG website http://www.herbierguinee.org/documents-du-projet-darwin.html since the site is no longer operational).

2.2 Post-expedition summaries (a sample can be found in Annex 7) and the annual report on red listing threatened species of Guinea was produced for MEEF in Years 1 and 2. Copies of all the field reports have been submitted to MEEF, specifically to the National Direction of Water and Forests (DNEF) and the National Office for Protected Areas (OGuiPAR) who can directly implement any recommendations.

Regular meetings between the key partners and MEEF have taken place over the course of the project, with an increase in years 2 and 3 with the commencement of IPA designation. The working group for TIPAs (Tropical Important Plant Areas (TIPAs) and Conservation Action Plans (CAPs) has enabled close collaboration between MEEF stakeholders; CAPs are part of a GBIF BID funded project that has been feeding data into this project. TIPA evaluations have been made available to the wider public through the HNG website and publicised through social media accounts (Twitter: @HerbierGuinee and @KewAfrica).

2.3 22 Tropical Important Plant Areas have been identified, assessed and discussed with working group (mentioned above). The sites have been mapped detailing a core protected area and a buffer zone. Within the current 22 TIPAs 3.5% of the surface area of Guinea would be protected, more sites have been identified, but not yet assessed. This incorporates over 60% of Guinea's 275 globally threatened plant species. As a result of the close collaboration between the partners and stakeholders, the 22 TIPAs have been accepted by the national authorities and will be added to the statute books as new protected areas, making these the first in Tropical Africa. (See email from MEEF in Annex 7)

2.4 A stakeholder workshop was held on the 21-22 March 2019 at the Hotel de l'Université Gamal Abdel Nasser de Conakry. The workshop was attended by representatives from the Ministry of Environment Water and Forests (MEEF), Ministry of Higher Education and Scientific Research (MESRS), conservation NGOs including WCF, Guinée-Ecologie, Guinée Biodiversité, Sylvatrop and representatives of mining industries (Simfer and SMFG); and also representatives from the UK and Belgian Embassies. The workshop was opened by the Director of Scientific Research of UGAN. Day 1 focussed on the IPA criteria with a practical exercise for the attendees to better understand the degree of information required to do a full assessment. The second half of the day gave a round up of the progress made over the duration of the project and the roles of the partners within the project; plenty of time was given for discussions around the presentations. Day 2 focussed on the outputs of the Darwin IPA project: the secondary school teacher's guide, the National Flower Campaign, the book on the Threatened Habitats and Tropical Important Plant Areas of Guinea and future deliverables such as the Guinea Red Data Book and a checklist of Guinean vascular plants. The day finished up with a discussion on the use of data and what the next steps are in the process of plant conservation in Guinea. The workshop was followed by a reception hosted by the British Ambassador. A list of participants can be found in the Annexe 7 with the poster of threatened species given to all the participants. The presentations are available with the key results of the project on the HNG website (http://www.herbierguinee.org/les-reacutesultats-cleacute-de-ztips.html).

3. National capacity to assess plant conservation priorities built through training of scientists, post-graduate students, citizen scientists and school children, and through repatriation of plant datasets.

3.1 In Jan 2018, a joint Darwin-BID funded IUCN red listing Course was delivered in Conakry during which the 20 participants assessed several Podostemaceae species. IPA methodology and application were taught at the inception workshop and a second workshop was held in Oct 2018 for partners. We found that due to the poor-quality internet connection in Guinea the online IUCN red list assessment course was not a viable option for training. During the project we have had two research visits to Kew for HNG staff. Dr Sékou Magassouba with Saïdou Doumbouya (MEEF), who was funded by the GBIF BID project, came for 4 weeks in November

2016 and Tokpa Seny Doré and Nagnouma Condé for 3 weeks in February 2018; they were given 1:1 training in IUCN red listing and IPA assessments.

3.2 Lectures and reading materials for teaching species-based and site-based plant conservation strategies for the UGAN-HNG MSc. were developed in September 2016 (see Annex 4 for samples) and the first lectures were delivered in October year 1 to MSc students and invited participants from partner and stakeholder institutions; this was repeated again in year 3.

3.3 The MSc student research projects on socio-economic species have been initiated in Y2, and completed in Y3. One student worked on socio-economic plants in the Kindia area, having done some questionnaires in villages, she had a hiatus due to maternity leave. A second student worked on socio-economic plants used in the Nzérékoré region. Due to a delay in the intake of the student cohort for the MSc, only two projects were completed instead of the 4 envisaged. Kew is also supporting two other MSc students on projects relating to seed banking of threatened species and research on fungi, and working with HNG post-project to initiate three doctoral projects on socio economic species.

3.4 There is little to no awareness in-country of Guinea's interesting and threatened plant species and habitats. The national curriculum includes general environment and biodiversity teaching, but nothing specific about Guinea. The enthusiasm we saw from the teachers and educators during the Regional Flower Campaign workshops supported the need for more specific teaching.
A Training booklet for Secondary School Teachers on Guinea's plant diversity, plant conservation, threatened species, IPA approach, was written, designed, tested and printed by the end of Y2 (delayed from Y1). However, sufficient teaching materials have been produced to reach all c. 2000 secondary schools in Guinea, not just the c.550 originally envisaged. With the support of the UK Embassy in Guinea shipping of the booklets from the UK to Guinea was organised through the Diplomatic Bag service at no cost to the project. Unfortunately, due to a series of teachers' strikes, we have been unable to hold the workshops for the training of teachers and distribution of the booklets. However, the current strike came to an end in January 2019 and there seems to be an agreement now in place with the government and teacher's union. The Ministry of Higher Education and Scientific Research under which the National Herbarium is situated, has given its agreement to help with organising the workshops with their sister Ministry of Pre-university Teaching and Literacy. Guinee-Ecologie are now going ahead with the workshops.
The National Flower campaign culminated in May 2018 with submission of the winner to the government for approval. Initially, a regional flower campaign was run within the 4 natural regions of Guinea and workshops were held with teachers and education representatives for the prefectures. The teachers then went back to their respective schools and voted for their choice. A campaign was also run on social media (Facebook and Twitter) to reach a wider audience. Once the 4 regional flowers were chosen, these were then taken forward for the National Flower Campaign (http://www.herbierguinee.org/le-choix-dune-fleur-nationale.html). The condition attached to the National Flower choice was that it was an endemic species of Guinea, this resulted in one flower being dropped for the final vote. For the National Flower Campaign there was a discussion on the breakfast programme, Kolomatin, on the national television station as well as a social media campaign and the an in-situ vote at the National Student Forum. We also spoke about the national flower and plant conservation on the radio programme 'English is Fun' on Radio Nostalgie (see photos in Annex 7). The campaign was featured in a Daily Telegraph online article (https://www.telegraph.co.uk/news/2018/06/12/west-african-nation-guinea-selects-national-flower-first-time/) as well as a blog on the Kew website (https://www.kew.org/read-and-watch/guinea-the-campaign-national-flower).

3.5 The updated Guinea IPA and project specimen datasets have been repatriated to HNG (who hold the national plant records database) every 6 months from the start of the project. The dataset for Guinea plant records is now at 19010 specimen records. As part of the GBIF-BID project, many of these records are now available on the GBIF portal; the Guinee IPT is managed by MEEF. See Annex 7 for letter of receipt. There has been a delay in the launch of

the IPA database due now in 2019, however the data for the 22 TIPA assessments is published on the HNG website (http://www.herbierguinee.org/documents-du-projet-darwin.html)

3.2 Outcome

The project achieved its outcome of 'Effective conservation prioritisation in Guinea is enabled through the identification of Important Plant Areas, providing a critical contribution to Guinea's CBD commitments through the Global Strategy for Plant Conservation'. Guinea has embraced the IPAs of Guinea project and will become the first country in tropical Africa to adopt IPAs into legislation. It is very much in tune with their commitments to the CBD (GPSC) enabling them to increase their protected area network and document and conserve their threatened plant species.

0.1 Baseline data on Guinea's rarest, most threatened and most valuable plant species and habitats, and their distributions has been assembled and documented, and 22 key sites for their protection have been identified as IPAs; this exceeded the expected outcome for the number of IPAs by the end of the project. New Red List assessments were made for over 200 species, however, there has been a delay in their publication on the IUCN Red List due to a bottleneck in reviewing them on the IUCN SIS database. The final 100+ assessments will be published by IUCN in July 2019. To assist with future reviewing of assessments the project initiated in 2016 the creation of the West African Plants Red List Authority, accepted by IUCN in April 2019.

0.2 IPAs integrated into national policy and action plans on biodiversity conservation and sustainable development in Guinea, in line with GSPC and Aichi Biodiversity targets by end of project. Over the course of the project, Guinea has ratified Nagoya. This has aided the projects outcome as the government needs to meet its commitment to enlarge its protected area network. The Ministry of Environment, Water and Forests gave their go ahead for TIPAs to be incorporated into legislation in December 2018, this was reiterated at the dissemination workshop in March 2019. Subsequently, the National Parks and Reserves service has been working closely with the partners to get the documentation together to submit as part of a larger funding bid to the World Bank for protected areas in Guinea. The government has committed to putting TIPAs on the statute books and we will continue to work with the authorities to make this happen. The Kew and HNG have been asked to contribute and have supplied data, particularly threatened species data, to the update of the 'Monographie Nationale' (National biodiversity action plan) and also to the update of the national CITES listings. Sections on IPAs and Red List of Plants are to be included in the next CBD national report for Guinea (see letter from OGuiPAR in Annex 7).

0.3 The dissemination workshop invited representatives from the industrial sector, NGOs and environmental consultancies to take part with the view that the data on IPAs and threatened plant species in Guinea are incorporated into future Environmental & Social Impact Assessment (ESIA) studies (see list of participants in Annex 7). Access to information on threatened species (PeerJ Preprint, IUCN Red List) is widely available and the partners will continue to promote this and work to see if appropriate wording can be added to current ESIA legislation after the end of the project. The project is not privy to information on current ESIA's to be able to state verify they are being referred to at present. However, a liaison group for the industrial sector, COMBO, did request and were given mapping data for the 22 IPAs designated by the project, indicating that there is interest from that quarter in our outputs.

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

By identifying, mapping, characterising and publicising Important Plant Areas, we enabled the national authorities of Guinea-Conakry and multinational companies and contractors (the largest of which are listed in London and have substantial UK investment from British taxpayers) to avoid or minimise their reputational risk of adversely impacting threatened plant species and habitats, and to support their protection and sustainable management through offsetting (multinationals) and by improved focussing of scarce national conservation resources (Government of Guinea-Conakry, advised by MEEF). This will improve investor-confidence in Guinea, and increase investment further, since the reputational risks of unwittingly causing

extinction of threatened plant species will be reduced. Well-paid jobs and poverty reduction will be lifted.

Publication of IPAs and a national Red List for plants enables Guinea to deliver on its CBD commitments under GSPC Targets 2 and 5.

The project has built technical capacity in Guinea through creation of the CAPS working group, to apply biodiversity data to decision-making in natural resource management as new challenges and opportunities arise in the future, and promoted the possibility of developing a national monitoring programme.

Guineans depend on plant resources for survival, including traditional medicines from threatened species. By identifying and demarcating the most important areas for plant conservation, we are supporting the survival of this national resource for utilisation by future generations. Inclusion of plant species of socio-economic importance within IPAs establishes a direct link between the preservation and sustainable management of areas of high biodiversity value and human livelihoods, in line with Aichi Biodiversity Targets 1 and 2.

Stakeholder engagement at national to community levels, through a combination of workshops, community-based field survey work and teaching materials for education institutions, has emphasised this link and promotes both community-led and national protection of IPAs, so helping to preserve Guinea's unique and threatened plants and habitats.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

Our project primarily contributes to Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
Through the identification of important plant areas, we have identified Guinea's priority threatened habitats and threatened species. The IPA network will, with the support of the Government of Guinea, protect 3.5% of the surface area and >60% of the country's 275 threatened plant species.
The project will promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.
The project also contributes to Goal 5: Achieve gender equality and empower all women and girls by promoting women's full and effective participation and equal opportunities in project activities.

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

Our project concerns biodiversity conservation, it primarily supports target 5 of the Global Plant Strategy for Plant Conservation (GSPC) aspect of the CBD "At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity"., by working with our partners (through e.g. training events, workshops, and meetings to hand over data and reports), the National CBD focal point and Protected Areas Authority to determine where these areas are, and to designate, interpret, publicise and raise awareness of their existence and national and local importance.
The 22 TIPAs will, with the support of the Government of Guinea, protect 3.5% of the surface area and >60% of the country's threatened species. Guinea will be the first country in Tropical Africa to implement IPAs.
The project also contributes to Aichi Target 1: people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably (National and Regional Flower campaigns and schoolteacher's booklet),
Target 11: By 2020, at least 17 per cent of terrestrial and inland water, …especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of

protected areas and other effective area-based conservation measures (22 TIPAs identified, documented and agreed to be put into legislation),
Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained (through field expeditions, IUCN Red Listing and community outreach).

4.3 Project support to poverty alleviation

This is a DEFRA funded, not a DFID-funded project, so poverty alleviation is not the primary focus. Nevertheless:

The overarching rationale was to reduce the reputational risk to Guinea's main investors and export earner's: mining companies, by identifying and demarcating areas that should be protected for plant diversity as IPAs and not developed. By avoiding such IPAs and supporting their protection as offset areas potentially, such companies, many listed in London, will have more secure investments in Guinea, be more encouraged to invest in Guinea to the benefit of the national economy and the population as a whole.

In order to incentivise poor rural communities in the buffer zones of IPAs we have recognised, as part of the IPA protocol, we sought additional funding through the RCUK GCRF call in 2016 and 2018 which addressed SDGs (primarily 15, but also 1 & 2, relief of poverty and improved nutrition), to discover and develop indigenous underutilised species that would be harvested (or even planted) sustainably to develop new products for markets in Guinea and abroad. We formed a partnership with the University of Leeds (fibre engineers), Kings College London (new nutritional products) and the Natural Resources Institute from University of Greenwich (expertise in social science, building supplier and business chains, getting products to markets) together with scientists and agronomists in Government Institutes and Universities in Guinea to achieve this. Our EOI was accepted and we spent all of November 2016 developing a full application for £7.6 million through BBSRC, learning in Feb. 2017 that we were not successful. However, we have decided to push forward with elements of the project where possible, for example analysis of the nutritional value of a native "nut" species *Neocarya* is underway at RBG, Kew with a view to exploring its potential for sale as a premium product on the European market. We developed a partnership with the poverty alleviation through sustainable harvesting of natural resources NGO, United Purpose, to support work with local communities in the buffer zones of IPAs. We applied to a second UKRI GCRF call in Aug. 2017 submitted an outline in Nov. 2017, and were asked in Feb. 2018 for a full application. Responding to reviewers from the first round, we expanded the project from Guinea to include Cameroon, Ethiopia, Uganda and Mozambique, and expanded the research network both in the UK and in Africa (https://www.kew.org/science/our-science/projects/GCRF-underutilised-plants-tropical-africa-hub). Sadly, although the reviews were generally very positive about the proposal, we were not successful in securing funding. The partnership building and ongoing collaborations all came about as direct result of our Darwin Guinea IPA project.

Through funding obtained from the Ellis Goodman Family Foundation by the Kew Foundation, we will be funding three doctoral student projects on socio-economic species, the *Neocarya*, yams and edible fungi (2 female and 1 male students). We also now have an agreement within our MoU with HNG to share specimens of potential use to third parties to investigate their economic potential. If there are any possibilities, equitable benefit sharing agreements will be drawn up. We intend to apply for a responsive mode BBSRC garnt to take this work forward for Guinea in late 2019/early 2020

4.4 Gender equality

Throughout the project we have given first preference to employment of females. The result is that the recruited staff at Kew (data gatherer: Saba Rokni), and in Guinea (technician/botanist: Denise Molmou and technical adviser: Charlotte Couch) are all female, as our both of our monitors/reviewers (see below). Both Guinean partner staff selected for training in the UK in Feb. 2018 were female (see blog: http://www.herbierguinee.org/des-chercheurs-de-hng/a-la-decouverte-du-royal-botanic-gardens-de-kew). The West African Plant Red List Authority WAPRLA initiated and brought into being to support the project aims has a female co-chair

nominated by the project. Preferential selection was given to females at all project events, such as requesting that females represent our partners at ourproject meetings if available. The newly recruited female members of staff are held in high regard within the National Herbarium and the Ministry of Higher Education.

4.5 Programme indicators: This was a DEFRA, not a DfiD funded project, therefore increase of household incomes and management plans and structures for biodiversity were not part of our project. this section does not directly apply. However, our project has been gathering data on underutilised indigenous species with the potential to alleviate poverty e.g. *Neocarya macrophylla* and *Piliostigma thonningii*. Throughout all field expeditions, the local communities concerned have been informed of the project and its intentions.

- **Did the project lead to greater representation of local poor people in management structures of biodiversity? n/a**
- **Were any management plans for biodiversity developed and were these formally accepted? n/a**
- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures? n/a**
- **How did the project positively influence household (HH) income and how many HHs saw an increase? n/a**
- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured? n/a**

4.6 Transfer of knowledge

The project has used social media channels e.g. Facebook, Twitter, and the National Herbarium website to publicise new species or exciting outputs for the project. We have presented at conferences both in Guinea and internationally to transfer knowledge to a wide audience of practitioners and policy makers. The creation of the TIPAs/ CAPs working group has facilitated transfer of knowledge between stakeholders and policy makers.
Teaching by Darwin project staff of courses on the Masters in Biodiversity and Sustainable Development at HNG-UGAN and supporting thesis projects has resulted in 16 students graduating from this course so far, 5 female and 11 male students.
2 Kew MSc Plant and Fungal Taxonomy students (1 F, 1 M) completed thesis projects on Guinean threatened habitats. Their work is incorporated into the publication of the main book for this project.

4.7 Capacity building

The assistant director of the national herbarium, Dr Sekou Magassouba (Male), was promoted to Director following the retirement of the previous director (Dr Basile Camara), this was as a direct result of working in partnership on the project. As a result of co-authorship of four number papers from the project (see standard measures), Dr Magassouba was promoted to 'Maître de Conference' and Denise Molmou (female) the project technician was upgraded to Assistant and submitted for inclusion in the civil service.
Several members of the National Herbarium, previously interns, who proved themselves working with the project have subsequently been promoted by appointment to the civil service: Nagnouma Conde (F), Tokpa Seny Dore (F), and Gbamon Pascal Konomou (M).
Dr Sekou Magassouba has been invited to join the National CITES committee to contribute to the Nationale Monographie and to represent Guinea on W African Plants Red List Authority (WAPRLA). WAPRLA, now recognised by IUCN, was created because of the project's need for an RLA to review assessments and realisation that a body to champion plant conservation regionally was lacking.
Nagnouma Conde has joined the national group for the protection of sea grasses.
Dr Magassouba and Denise Molmou have participated in national workshops on threatened species.

Falaye Kone (M) (MEEF), engaged to provide data to the project, subsequently graduated from the HNG Masters course and was promoted within the Forestry service.

5 Sustainability and Legacy

The project is well-known nationally in Guinea through social media and radio as a result of the regional/national flower selection campaign in Y2, which was so successful that we decided to extend it into Y3. *Vernonia djalonensis,* the selected National Flower is in the process of being ratified by government. We recently obtained funding from the Mohamed bin Zayed Species Conservation Foundation to protect the national flower including community participation.

Apart from the extensive national television coverage at the opening ceremony and events in Y1, the same was obtained in Y2 in Jan 2018 for the regional red listing workshop and for the closing workshop in March 2019. The key publications (see Annexe 2) in Y2 have been open access. Copies of the booklet for secondary school teachers will be distributed to 2600 schools. We are hopeful that this will be taken up into the National Curriculum.

Hard copy books on the 'Threatened Habitats and Tropical Important Plant Areas of Guinea' will be distributed to partners and stakeholders in May-June 2019. We are also hoping to create an online open access version of the book giving greater access to conservation practitioners. IUCN Red List assessments will be available online and publication of a Red Data Book and a Checklist of Vascular Plant species for Guinea are envisaged in 2019.

We have a high profile in the Ministry of the Environment, Water and Forests and the Ministry of Higher Education and Scientific Research, and have met regularly throughout the 3 years with the Ministers, and their senior staff to discuss our Darwin IPA project. The continued presence of the Technical advisor in Guinea has cemented the collaboration between partners and stakeholders. The creation of the working group on TIPAs and CAPs has been instrumental in delivering the 22 TIPAs; it ultimately led to the government giving their go ahead to incorporating TIPAs into national legislation. We are confident the group will continue to meet beyond the life of the project.

The project has an open access plan: all project documents are available on the HNG website, in French or with translations, including publications.

Our exit strategy has been improved by the advent of the Ellis Goodman Family Foundation funding recently obtained through Kew Foundation, allowing continued support 2 years beyond that of the Darwin funding which will enable us to maximise uptake into national policy of the results of the Darwin Project and to enhance capacity-building and socio-economic aspects of the Guinea IPA project.

6 Lessons learned

In year 1 when asked "What would we do differently? We responded that we would increase funding so as to 1. hire a designated manager for the life of the project to spend at least several days per week co-ordinating, accounting, administrating, and keeping up momentum- and not be distracted by other projects; 2. have more staff." This project had many elements that would have been much easier if it was better staffed, especially with the Red List assessments which are time consuming, but essential. By good fortune we obtained funds from the Ellis Goodman Family Foundation to do both 1 and 2. The extra funding paid for staff from the Plant Assessment (Red List Unit) at Kew to finish the final 100 assessments and enabled the Technical Advisor to remain in her role and support the project forward to completion.

Having a dedicated Technical Advisor based in Guinea for extended periods was invaluable to the project. There are no full-time project staff at the National Herbarium and therefore the project would have struggled to meet its targets without this post. The technical advisor provided valuable support and facilitated effective communication between partners and on social media channels, as well as managing the accessibility of documentation through the website.

Involving all the partners and stakeholders from the very beginning and involving them in the IPA process as recommended by Plantlife (project partner) worked very well and allowed people to buy in to the process. We would recommend this for other similar projects going

forward. If you are able to get the right people in the room at the beginning, it can make a big difference to the final outcomes.

Reorganising the fieldwork in order to make more trips with Guinean partners leading and being supported by Kew staff made a big change to the amount of data collected during the project. It was also provided hugely valuable capacity building experience for the Guinean team leaders who were required to manage trip planning, budgets and write field reports. The initial 4 trips identified in the logframe were increased to 20 trips over the course of the project with 6 extra trips funded by other projects which have contributed to identifying TIPAs.

This project worked especially well because of the long-existing good relationships between the UK and Guinean partners, and because early in the project positive relations between the Guinean partners was built and maintained through the CAPS working group. However, one thing which might have helped at the beginning would have been to be more explicit with the need for strict financial management and reporting with the lead partner. This might have avoided the unpleasant incident where a junior member of staff was temporarily suspended in Y1 for pointing out a financial irregularity. Thankfully this matter was dealt with swiftly by the Government of Guinea and building trust further and the project did not suffer as a result in the longterm.

6.1 Monitoring and evaluation

Changes were made to staffing during the project after authorisation was obtained. A trained, productive data gatherer was appointed earlier than originally planned in the project to benefit from employing the person who had already started this work as a volunteer and excelled. It also meant that our new volunteer data gathers were supported by her.

The log frame was a valuable tool for monitoring and evaluation in conjunction with the 6-monthly progress reports it was a useful way of identifying potential issues ahead of time so that they could be discussed with the partners and adapted where necessary. The delay in production of the secondary school teacher's booklet to Q4 of year 1 is a good example of this. The delay meant that the workshops for dissemination of the booklets and training the teachers was delayed until year 2. Unfortunately for the project, the education system experienced substantial disruption from teacher's strikes (both authorised and unauthorised) during Years 2 and 3. The partners, with advice from the Ministry of Higher Education, made the decision that these workshops should not happen until Stability returned

Weekly teleconferences between the Technical advisor, Project leader at Kew and main project partner (the National Herbarium of Guinea) allowed decision-making to be more reactive than the originally outlined monthly teleconferences.

Annual monitoring and evaluation (see attachments) was carried out by the British Ambassador to Guinea, Catherine Inglehearn, and by Prof. Isabel Larridon (Ghent University, Belgium) and was positive..

6.2 Actions taken in response to annual report reviews

We, and our partners, were very happy with the positive review and score (the highest possible) awarded to our project by the Reviewers for Y1 and Y2. The reviewers pointed out that the Darwin logo had been omitted from our posters and booklets (we then addressed that) and requested clarification on and to see the M&E reports which we sent with the Y2 report as requested.

7 Darwin identity

- The Darwin Initiative is acknowledged in all project publications. The logo was used on banners for the five project workshops in Guinea, and DI of DEFRA, UK Govt was referred to in project workshops, e.g. by the British Ambassador and in press releases (see Annexe 7). The UK Ambassador in Guinea has been a great supporter of our project and has hosted receptions after the inception and dissemination workshops,

presented certificates, opened/ closed workshops and greatly increased attention to our project at the Guinea Government Ministerial level.

- The logo is used on the HNG website pages for the project and links through to the Darwin Initiative web page (www.herbierguinee.org).
- The project is referred to in Guinea as the Darwin Project since this is the biggest single source of funds and this support is central to the Guinea IPA project.
- Biodiversity conservation NGOs both national and international, EIA consultancies and Govt in Guinea are familiar with the Darwin Initiative now, in the context of the Guinea IPA project.
- Our @KewAfrica and @HerbierGuinee twitter (#TIPAs_Guinea) and Facebook accounts link back to the Darwin Initiative on TIPAs Guinea and is acknowledged in the storify stories on the project.

8 Finance and administration

8.1 Project expenditure

Staff employed (Provide name and position)	Date work commenced and finished in 2018/19	Proportion of this time spent on this work	Cost to LWT/Darwin (£)
Dr. Martin Cheek – Project Leader	1/4/18 – 31/3/19	10%	
Dr. Iain Darbyshire – Botanist IPA Advisor	1/4/18 – 31/3/19	5%	
Jenny Williams – Spatial analysis specialist	1/4/18 – 31/3/19	20%	
Xander Van der Burgt	1/7/18 – 31/3/19	10%	
Ben McCarthy	1/4/19 – 31/3/19	10%	
Dr Sekou Magassouba	1/4/19 – 31/3/19	40%	
Denise Molmou (Herbarium Technician)	1/4/19 – 31/3/19	30%	
Yaya Diallo	1/4/19 – 31/3/19	20%	
Saidou Doumbouya	1/4/19 – 31/3/19	10%	
Aboubacar Oulare	1/4/19 – 31/3/19	10%	
TOTAL (must match Staff Costs total in Section 6)			

Current Year's Costs	2018/19 Grant (£)	2018/19 Total actual Darwin Costs (£)	Variance %	Comments (please explain any variance)
Staff costs (from Section 5)			4	Higher payrises during the year than anticipated.
Consultancy Costs			-100	Plantlife (partner) didn't incur these costs. To be done by Kew in 2019.
Overhead Costs			9	Increase reflects increase in salary costs. No overhead costs from partners.
Travel and subsistence			54	Includes international travel not budgeted for

Operating Costs			-49	Costs less than expected. £1,193 variance.
Capital items (from Section 7)			0	NONE
Others (from Section 8)			-0.3	Negligible
Audit costs			-100	Audit costs not yet incurred.

			Claimed So Far	Claim for this period	Surrender Amount
TOTAL					

Capital Items: None

6. Others

Please provide a description of the 'other' items funded under this year's grant (including costs)

Other items – description	Other items – cost (£)
Books	
Illustration & Design	
Photo/printing	
Publication Production Costs	
Stationery	
Miscellaneous	
TOTAL (Must match Others total in Section 6)	

8.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Rio Tinto Foundation (equipment including field vehicle)	
Kew (Staff costs and indirect costs)	
Plantlife (in-kind costs)	
BID-GBIF	
Elliss Goodman Family Foundation	
TOTAL	

Source of funding for additional work after project lifetime	Total (£)
Mohammed bin Zayed Species Conservation Fund	
Elliss Goodman Family Foundation	
Wild Chimpanzee Foundation for surveys	
Simfer surveys and training	
TOTAL	

8.3 Value for Money

The costs for all in-country activities were based upon 10 years' experience of conducting collaborative research, fieldwork and data dissemination in Guinea by the project partners. Initial field costs were for two 3-week field expeditions in both years 1 & 2, as well as fieldwork towards two UGAN MSc. projects in years 1 & 2. Ultimately, we made over 20 field expeditions of between 1 and 3 weeks after stretching funds and obtaining funding from other sources. All international travel from the UK was be covered by alternative secured funding sources (£10,000), which provided a significant relief for the Stage 1 budget. HNG contributed use of a dedicated vehicle to the project; vehicle maintenance and taxation charges of £2000 p.a. were included under fieldwork operating costs.

Staff costs were based on the salaries for the named individuals on the project, with a projected 3% annual inflation rate. Half of the Principal Investigator's 20% time on the project was covered in-kind by Kew. The one-year in-country IPA coordinator originally proposed for year two was extended to Y3 and post-project ensuring legacy, through Kew securing alternative funding sources. Overheads for Kew and Plantlife staff are calculated at 40% of the staff costs but both institutions contributed the additional overhead costs associated with the project as in-kind institutional contributions.

Hardcopy publication and dissemination costs are based upon the experience of project work by the UK partners, including a DI funded project on a Red Data Book of the Plants of Cameroon, led by Kew. External quotes were obtained for development of the IPA database; £10,000 of funding towards this is requested from DI (as a consultancy cost), with Plantlife supplying secured matched funding of £10,000. This was eventually developed by Kew's Bioinformatics department as there are more specific requirements for the Tropical Important Plant Areas database than Plantlife were able to incorporate into their existing database. Post-project, this database will be maintained and regularly updated by Kew.

Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: IPA methodology is widely adopted in Africa as a means of identifying conservation priorities, promoting the protection and sustainable management of key sites for biodiversity and important plants for livelihoods.			
Outcome: Effective conservation prioritisation in Guinea is enabled through the identification of Important Plant Areas, providing a critical contribution to Guinea's CBD commitments through the Global Strategy for Plant Conservation.	**0.1** Baseline data on Guinea's rarest, most threatened and most valuable plant species and habitats, and their distributions, assembled and documented, and key sites for their protection identified as IPAs by end of project.15-20 IPAs are expected to be selected. **0.2** IPAs integrated into national policy and action plans on biodiversity conservation and sustainable development in Guinea, in line with GSPC and Aichi Biodiversity targets by end of project. **0.3** IPAs and Red List of Threatened Plants recommended as a tool in best-practice Environmental & Social Impact Assessment (ESIA) studies for industrial development projects in Guinea by end of project.	**0.1** The expected 15-20 IPAs of Guinea published both in hard copy and through the IPA database; Red List assessments of threatened species published on IUCN Red List website. **0.2** MEEF adopt IPAs and threatened species within national strategy for conservation and sustainable development; 6th CBD national report for Guinea includes sections on IPA designation and Red List of Plants. **0.3** New ESIA reports in Guinea include reference to IPA and Red List data and recommendations.	National government in Guinea will continue to commit to the incorporation of IPAs within their conservation / resource management strategies as an integral element of their obligations under the CBD. Other tropical African countries will adopt the IPA approach as a means of effective conservation prioritisation, as a result of publicity of the successful outcomes of the Guinea project.
Outputs: **1**. Priority species, habitats and sites for plant conservation in Guinea identified, documented and published.	**1.1** Guinea's globally threatened and national priority (socio-economic, range-restricted and endemic) plant species identified and mapped by end of year 2, from a candidate list of c. 330 species. **1.2** Guinea's estimated 9 national and global priority (threatened and/or range restricted) habitats identified and mapped by end of year 2. **1.3** The estimated 15-20 Important Plant Areas of Guinea identified, documented and mapped by end of project.	**1.1** Priority species for Guinea published in peer-reviewed journal; threat assessments formally submitted to the IUCN Red List. **1.2** Priority habitat list published together with 1.1; priority habitat maps submitted to MEEF. **1.3** "Important Plant Areas of Guinea" report published in hard copy; IPA sites searchable on the IPA database,	Current (6-year) strong collaborative partnership between UK-based and in-country scientific partners continues. Political and health and safety conditions remain favourable to work in Guinea, with no further outbreaks of ebola or equivalent (conditions are currently stable and safe).

Project summary	Measurable Indicators	Means of verification	Important Assumptions
		available via Kew and Plantlife websites.	
2. IPAs and National Red List of Plants incorporated into national action plans on conservation and sustainable development.	**2.1** Key stakeholders including MEEF, Ministry of Education, conservation NGOs and representatives of key industries engaged from the outset through involvement in inception workshop in year 1 Q1. **2.2** Results of site and species surveys relayed rapidly to MEEF; progress on IPA designation and its contribution to national CBD targets highlighted to MEEF and to wider public, in years 2 and 3. **2.3** Management recommendations provided to national and local government for all IPA sites by end of project; c. 80% identified IPA sites and c. 75% of Guinea's globally threatened species identified for formal protection within the national protected area network and/or community management by end of project. **2.4** Results disseminated via stakeholder workshop in year 3, with attendees including MEEF, Ministry of Education, conservation NGOs and representatives of key industries.	**2.1** Workshop report; stakeholder feedback sought and documented. **2.2** Reports to MEEF; national and international press coverage on Guinean IPAs; Guinea CBD national reports incorporate IPA data. **2.3** MEEF integrate reported recommendations within national biodiversity action plan, the "Monographie Nationale". **2.4** Workshop report; stakeholder feedback sought and documented.	National and local government in Guinea remain committed to incorporating IPAs within their conservation / resource management strategies as an integral element of their obligations under the CBD. Key industries in Guinea remain engaged with environmental impact assessment procedures and the environmental mitigation hierarchy.
3. National capacity to assess plant conservation priorities built through training of scientists, post-graduate students, citizen scientists and school children, and through repatriation of plant datasets	**3.1** Seven staff at HNG, GE and COSIE-MEEF successfully complete training in IUCN species conservation assessments and IPA methodology and application by mid year-2. **3.2** 15-20 students per year on UGAN MSc. in Biodiversity and Sustainable Development successfully complete	**3.2** Examination results of MSc. students.	Ministry of Education welcome our proposal for materials for teaching plant conservation in schools and incorporate into science curriculum. Sufficient MSc. students select projects on IPA identification and are able to

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	training in species- and site-based conservation prioritisation methodologies and their application. **3.3** IPA identification methodology focussing on socio-economically important species applied in MSc. student research projects at UGAN (2 in year 2, 2 in year 3). **3.4** Community outreach on the importance of Guinea's unique plant species and habitats through a simple schools campaign developed in years 1 & 2, and through engaging with administrative hierarchy during field missions. **3.5** All resulting scientific datasets, including national IPA database and priority species specimen database, available to all partners, updated each year of project, in line with Nagoya protocol.	**3.3** Results of MSc. projects published in peer-reviewed journal; students co-author relevant IPA database entries. **3.4** Annual report on schools programme; teaching materials incorporated into national science curriculum. **3.5** Complete datasets held in databases at HNG, GE and MEEF. IPA database accessible online.	conduct quality field research following training. HNG and GE staff are able to obtain visas for research visit to Kew.

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

1.1 Priority species list, including candidate threatened species (estimated at 330 species), priority habitat list (estimated 9 key habitats) and candidate IPA sites (estimated 32 candidates) identified and agreed through literature and data review and inception workshop by end of year 1 Q1.

1.2 All existing data on priority species gathered from herbaria and literature (estimated 3000 records) by end of year 2 Q2.

1.3 Four targeted field surveys conducted in years 1 & 2 to gather contemporary data on at least 30 priority species in Guinea, focusing on threatened species and indicator species of threatened habitats, and to provide contemporary data on candidate IPA sites including habitat intactness and threats; these surveys will inform species conservation assessments, IPA assessments and future monitoring of sites.

1.4 Maps produced detailing the distribution and aerial extent of each of the 9 priority habitats, compiled through GIS analysis and field ground-truthing, by end of year 2.

1.5 Full IUCN Red List assessments compiled for c. 150 priority plant species selected from the candidate list following 1.1 and 1.2, by end of year 2.

1.6 IPA criteria formally applied to candidate IPA sites in Guinea, using the data compiled in 1.2-1.5, and qualifying IPA sites identified by end of year 3 and published, summary results published in peer reviewed journals Q3.

2.1 Key stakeholder engagement event at inception workshop to highlight benefits of the IPA approach to conservation, resource management and industry, year 1 Q1.

2.2 Post-expedition summaries and annual report on IPAs and threatened species of Guinea produced for MEEF, in Q4 of each year.

2.3 Management recommendations, including mapped core zone and buffering "zone of opportunities", documented for all formally evaluated IPAs, in years 2 & 3.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
2.4 National and international press releases on the identification of IPA identification in Guinea and its impact upon conservation and resource management produced in year 2, Q3-4.			
2.5 Results dissemination workshop, attended by key stakeholders, held in year 3 Q4.			
3.1 Training booklet on Guinea's plant diversity, the IPA approach and species Red Listing produced in French, by year 1 Q3.			
3.2 IPA site data recording and assessments sheet developed for field surveys, by year 1 Q1.			
3.3 Lectures and reading materials species-based and site-based plant conservation strategies for UGAN MSc. developed in year 1 and modified as required in years 2 and 3; lectures delivered.			
3,4 Two HNG staff apply training received in Red List and IPA assessments during 5-week research visit to Kew in years 1 & 2.			
3.5 Four MSc. student research projects at UGAN completed on IPA identification (2 in year 2, 2 in year 3), focusing on socio-economically important species.			
3.6 Locally-focused posters for schools and communities on Guinea's rare and threatened species and habitats produced in years 1 & 2, disseminated to c. 550 schools to educate children on Guinea's unique biodiversity; a "national flower" campaign run through the school network to raise awareness of the diversity of Guinea's floral patrimony.			
3.7 GE to run teachers' training workshop for teaching on Guinea's plant diversity including developing a simple booklet based on 3.1, in year 1 Q3.			
3.8 IPA Guinea dataset and project specimen data repatriated to Guinean partners, every 6 months.			

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

Project summary	Measurable Indicators	Progress and Achievements
Impact: IPA methodology is widely adopted in Africa as a means of identifying conservation priorities, promoting the protection and sustainable management of key sites for biodiversity and important plants for livelihoods.		The PI gave a plenary presentation on IPAs/TIPAs in Africa at the triennial African botanical congress (AETFAT) in Nairobi, April 2017, giving the Guinea IPA as a prime example. Following this representatives of several countries made enquiries about conducting IPA projects in their countries, e.g. Ethiopia, the Government of which subsequently formally requested help from RBG to advise on an Ethiopian IPA programme (now in progress). IPA programmes are also underway in Cameroon, Uganda and Mozambique with support from Kew as part of its strategy 2015-2020. In March 2020 at Livingstone, Zambia an update on the progress of IPAs in Africa will be delivered by the PI and further take-up is expected. Staff at Kew are lobbying to include that their strategy for 2020-2025 continue with IPAs in additional African countries. The Darwin Guinea IPA project is the most model in Africa, being first completed. The project has built technical capacity in Guinea to apply biodiversity data to decision-making in natural resource management as new challenges and opportunities arise in the future. The IPAs identified have been accepted by the government to be put into legislation. Publication of IPAs and a national Red List for plants has/will by end 2019 enabled Guinea to deliver on its CBD commitments under GSPC Targets 2 and 5.
Outcome: Effective conservation prioritisation in Guinea is enabled through the identification of Important Plant Areas, providing a critical contribution to Guinea's CBD commitments through the Global Strategy for Plant Conservation.	**0.1** Baseline data on Guinea's rarest, most threatened and most valuable plant species and habitats, and their distributions, assembled and documented, and key sites for their protection identified as IPAs by end of project.15-20 IPAs are expected to be selected. **0.2** IPAs integrated into national policy and action plans on biodiversity conservation and sustainable development in Guinea, in line with GSPC and Aichi Biodiversity targets by end of project.	The project has achieved its outcome and the Govt of Guinea has embraced the IPAs of Guinea project and will become the first country in tropical Africa to adopt IPAs into legislation. It is very much in tune with thei Guinea commitments to the CBD (GPSC) enabling Guinea to increase their protected area network and document and conserve their threatened plant species. Baseline data on Guinea's rarest, most threatened and most valuable plant species and habitats, and their distributions has been assembled and documented, and 22 IPAs have been identified ; New Red List assessments have been done for over 200 species, however there has been a delay in the publication on the IUCN Red List. The final 100+ assessments loaded into the IUCN SIS database IUCN stated will published on redlist.org in July 2019. Over the course of the project, Guinea ratified Nagoya. This has aided the projects outcome as the government seeks to increase its protected area network to match those of Nagoya. The Ministry of Environment, Water and Forests gave their go ahead for IPAs to be incorporated into legislation in December 2018, this was

Project summary	Measurable Indicators	Progress and Achievements
	0.3 IPAs and Red List of Threatened Plants recommended as a tool in best-practice Environmental & Social Impact Assessment (ESIA) studies for industrial development projects in Guinea by end of project.	reiterated at the dissemination workshop in March 2019. Subsequently, the National Parks and Reserves service has been working closely with the partners to get the documentation together to submit as part of a larger funding bid to the World Bank for protected areas in Guinea. The government has committed to putting IPAs on the statute books and we will continue to work with the authorities to make this happen. See evidence in 3.2 and Annex. The dissemination workshop invited representatives from the industrial sector NGOs and environmental consultancies to take part so that the data on IPAs and threatened species in Guinea is incorporated into future Environmental & Social Impact Assessment (ESIA) studies, the partners through CAP working group will continue to promote this and work to see if appropriate wording can be added to current ESIA legislation after the end of the project.
Output 1. Priority species, habitats and sites for plant conservation in Guinea identified, documented and published.	**1.1** Guinea's globally threatened and national priority (socio-economic, range-restricted and endemic) plant species identified and mapped by end of year 2, from a candidate list of c. 330 species. **1.2** Guinea's estimated 9 national and global priority (threatened and/or range restricted) habitats identified and mapped by end of year 2. **1.3** The estimated 15-20 Important Plant Areas of Guinea identified, documented and mapped by end of project.	At the Important Plant Areas of Guinea project inception workshop we presented a draft list of 482 threatened species which was discussed and edited with the project partners. This has been updated throughout the project and final list is 275 threatened species. C.200 assessments have been prepared and species mapped, and are on the IUCN SIS database. Due to the bottle neck of getting UICN assessments published we published 'Threatened plants species of Guinea-Conakry: A preliminary checklist' in PeerJ Preprints in 2017 and update it periodically as new assessments were made https://doi.org/10.7287/peerj.preprints.3451v2. This allowed for a more dynamic list and public access to the data (viewed >1000 times, downloaded >450 times). Guinea's priority threatened habitats were identified by the partners and discussed at the inception workshop in 2016. The preliminary list of nine was subsequently uploaded to the HNG website (www.herbierguinee.org). This list has been further refined over the course of the project. At the end of Year 2 maps detailing the extent of each of the 9 priority vegetation types/ habitats were delivered to MEEF. The final maps along with habitat descriptions, geographical distribution, indicator species and degree of exploration has been published as part one of the book Threatened Habitats and Tropical Important Plant Areas of Guinea (TIPAs), the main output of the project. Part 2 of the book details the 22 TIPA areas identified. Copies have been delivered in Conakry to authors and partners and will also be distributed to libraries and relevant stakeholders and made available online. This is the first such book produced for a TropicalAfrican country and is much needed by conservation practitioners working in this area. A hardcopy has been sent to the Darwin Initiative office. A pdf version will available by end 2019. Setbacks with the online database for TIPAs are being resolved with the data uploaded to the new portal in second half 2019.

Project summary	Measurable Indicators	Progress and Achievements
Activity 1.1 Priority species list, including candidate threatened species (estimated at 330 species), priority habitat list (estimated 9 key habitats) and candidate IPA sites (estimated 32 candidates) identified and agreed through literature and data review and inception workshop by end of year 1 Q1.		In Yr 1 we completed the Priority species list, including candidate threatened species (initially 482 species), and priority habitat list (estimated 9 key habitats, after workshop discussion) through the inception workshop in June 2016 and prior and subsequent literature and data review and analysis. 'Threatened plants species of Guinea-Conakry: A preliminary checklist' was published in PeerJ Preprints in 2017 and updated periodically as new assessments are published https://doi.org/10.7287/peerj.preprints.3451v2. This allowed for a more dynamic list and public access to the data (viewed >1000 times, downloaded >450 times).
Activity 1.2. All existing data on priority species gathered from herbaria and literature (estimated 3000 records) by end of year 2 Q2.		All existing records on the original conservation priority species were gathered from herbaria and literature by end Y2. Our database for Guinea plant records alone now amounts to over 19000 specimen records. This work was done mainly by volunteers at Kew, and staff at HNG funded by BID. Repatriation of data certificate in Annex 7.
Activity 1.3 Four targeted field surveys conducted in years 1 & 2 to gather contemporary data on at least 30 priority species in Guinea, focusing on threatened species and indicator species of threatened habitats, and to provide contemporary data on candidate IPA sites including habitat intactness and threats; these surveys will inform species conservation assessments, IPA assessments and future monitoring of sites		Initially 4 field trips per year were scheduled,. These field surveys proved so productive in terms of data important for our project that rather than 4, we have had a total of 25 surveys (Y1 9 + Y2 14 + 2 Y3), reports available on the HNG website) drawing upon additional resources from e.g. the Garfield Weston Fund for Global Trees, but also by spreading use of funds by taking the opportunity of delivering workshops to attach a fieldwork dimension.
Activity 1.4 Maps produced detailing the distribution and aerial extent of each of the 9 priority habitats, compiled through GIS analysis and field ground-truthing, by end of year 2.		At the end of Year 2 maps detailing the extent of each of the 9 priority vegetation types/ habitats were delivered to MEEF. Habitats were mapped at a country level using ArcGIS and Landsat imagery. Google Earth was used where the habitats comprise smaller units e.g. inselbergs which could not be picked up by automated imagery process. Some areas have also been mapped in detail as a result of specific Kew MSc. project studies e.g. submontane forest and bowal. See mapping protocol Annex 7.
Activity 1.5 Full IUCN Red List assessments compiled for c. 150 priority plant species selected from the candidate list following 1.1 and 1.2, by end of year 2.		As part of this project, c.200 assessments have been prepared and mapped and are on the IUCN SIS database and published/due to be published by IUCN July 2019. This was completed in Y3. Due to the long reviewing process with IUCN there was a delay in publication on www.iucnredlist.org
Activity 1.6 IPA criteria formally applied to candidate IPA sites in Guinea, using the data compiled in 1.2-1.5, and qualifying IPA sites identified by end of year 3 and published, summary results published in peer reviewed journals Q3.		In total 22 IPAs were identified in Guinea and documented by the end of Y3. An initial list was drawn up and discussed at the inception workshop, a working group was established to review the assessments. They have been published in hard copy as a book (Couch et al. 2019).

Project summary	Measurable Indicators	Progress and Achievements
Output 2. IPAs and National Red List of Plants incorporated into national action plans on conservation and sustainable development.	**2.1** Key stakeholders including MEEF, Ministry of Education, conservation NGOs and representatives of key industries engaged from the outset through involvement in inception workshop in year 1 Q1. **2.2** Results of site and species surveys relayed rapidly to MEEF; progress on IPA designation and its contribution to national CBD targets highlighted to MEEF and to wider public, in years 2 and 3. **2.3** Management recommendations provided to national and local government for all IPA sites by end of project; c. 80% identified IPA sites and c. 75% of Guinea's globally threatened species identified for formal protection within the national protected area network and/or community management by end of project. **2.4** Results disseminated via stakeholder workshop in year 3, with attendees including MEEF, Ministry of Education, conservation NGOs and representatives of key industries.	The inception workshop to highlight benefits of the IPA approach to conservation, resource management and industry for key stakeholders was completed in Y1 (see project website http://www.herbierguinee.org/ztips-darwin.html) Reports of all species-site surveys were delivered to MEEF over the course of Y1 and 2. These were used to apply IPA criteria to the 22 TIPA sites. The publication of these assessments has been publicised on social media and are available on the HNG website and twitter posts from @HerbierGuinee and @KewAfrica. 22 Tropical Important Plant Areas have been identified, assessed and discussed with the CAP working group (see details in section 3.1),. The sites have been mapped detailing a core protected area and a buffer zone. Within the current 22 TIPAs 3.5% of the surface area of Guinea would be protected, more sites have been identified, but not yet assessed. These incorporate over 60% of Guinea's globally threatened plant species. As a result of the close collaboration between the partners and stakeholders of CAP , the 22 TIPAs have been accepted by the national authorities and will be added to the statute books as new protected areas, making these the first in Tropical Africa. A stakeholder workshop was held on the 21-22 March 2019 at the Hotel de l'Université Gamal Abdel Nasser de Conakry. The workshop was attended by representatives from the Ministry of Environment Water and Forests (MEEF), Ministry of Higher Education and Scientific Research (MESRS), conservation NGOs and representatives of mining industries; also representatives from the UK and Belgian Embassies; the workshop was opened by the Director of Scientific Research. See details in section 3.1 and list of participants in Annex 7.
Activity 2.1. Key stakeholder engagement event at inception workshop to highlight benefits of the IPA approach to conservation, resource management and industry, year 1 Q1.		The inception workshop to highlight the benefits of the IPA approach to conservation, resource management and industry for key stakeholders was held in June 2016 at the University Gamal Abdel Nasser Conakry. This involved representatives from key partners and stakeholders including the CBD Focal Point for Guinea, Ministry of Environment, Water and Forests (MEEF), Ministry of Higher Education and Research, conservation NGOs and representatives of key industries e.g. Rio Tinto. The workshop was opened by the director of the National Herbarium and was closed by the Minister of Environment and the UK Ambassador http://www.herbierguinee.org/ztips-darwin.html)
Activity 2.2. Post-expedition summaries and annual report on IPAs and threatened species of Guinea produced for MEEF, in Q4 of each year.		Post-expedition summaries (sample in Annex 7) and the annual report on red listing threatened species of Guinea was produced for MEEF in Years 1 and 2. Copies of all the field reports have been submitted to MEEF, specifically to the National

Project summary	Measurable Indicators	Progress and Achievements
		Direction of Water and Forests (DNEF) and the National Office for Protected Areas (OGuiPAR) who can directly implement any recommendations.
Activity 2.3. Management recommendations, including mapped core zone and buffering "zone of opportunities", documented for all formally evaluated IPAs, in years 2 & 3.		All 22 IPAs have been mapped to show a core area and a buffer zone. Full management recommendations for these areas will be discussed with OGuiPAR over the coming months as they are accepted into legislation.
Activity 2.4. National and international press releases on the identification of IPA identification in Guinea and its impact upon conservation and resource management produced in year 2, Q3-4.		National and International press releases were produced end Y2 on progress made formally evaluating 3 IPAs (Ziama, Kounounkan, Bowal Tankon). A press release about the 22 TIPAs and threatened habitats of Guinea was produced in March 2019 to coincide with the final workshop. There was national television coverage of both the inception and final workshops.
Activity 2.5. Results dissemination workshop, attended by key stakeholders, held in year 3 Q4.		A stakeholder workshop was held on the 21-22 March 2019 at the Hotel de l'Université Gamal Abdel Nasser de Conakry. The workshop was attended by representatives from the Ministry of Environment Water and Forests (MEEF), Ministry of Higher Education and Scientific Research (MESRS), conservation NGOs including WCF, Guinee Ecologie, Guinee Biodiversité, Sylvatrop and representatives of mining industries (Simfer and SMFG); also representatives from the UK and Belgian Embassies; the workshop was opened by the Director of Scientific Research. See details in section 3.1 and list of participants in Annex 7.
Output 3. National capacity to assess plant conservation priorities built through training of scientists, post-graduate students, citizen scientists and school children, and through repatriation of plant datasets.	**3.1** Seven staff at HNG, GE and COSIE-MEEF successfully complete training in IUCN species conservation assessments and IPA methodology and application by mid year-2. **3.2** 15-20 students per year on UGAN MSc. in Biodiversity and Sustainable Development successfully complete training in species- and site-based conservation prioritisation methodologies and their application. **3.3** IPA identification methodology focussing on socio-economically important species applied in MSc. student research projects at UGAN (2 in year 2, 2 in year 3). **3.4** Community outreach on the importance of Guinea's unique plant	In Jan 2018 a joint Darwin-BID funded IUCN red listing Course was delivered in Conakry during which the 20 participants assessed several Podostemaceae species. IPA methodology and application was taught at the inception workshop and a second workshop was held in Oct 2018 for partners. During the project there were also two research visits to Kew for HNG staff to train in red listing and IPA methodology. A half day workshop on the IPA methodology was also held in Oct 2018. Lectures and reading materials for teaching species-based and site-based plant conservation strategies for the UGAN-HNG MSc. were developed in September 2016 (see Annex 7 for samples). MSc student research projects on socio-economic species have been initiated in Y2, but will be completed after the end of the project due to a delay in intake of the student cohort. Only 2 project will be completed (see Section 3.1 for details). Regional Flower Campaign successfully delivered in Y2 and developed into a National Flower campaign in Y3 Q1. Workshops were delivered in all 4 regions and voting via website, twitter, in person at schools and annual student forum. Teaching pack including a booklet on IPAs, threatened species and habitats and posters of threatened species produced end of Y2 for 1600+ schools. A prolonged teacher's

Project summary	Measurable Indicators	Progress and Achievements
	species and habitats through a simple schools campaign developed in years 1 & 2, and through engaging with administrative hierarchy during field missions. **3.5** All resulting scientific datasets, including national IPA database and priority species specimen database, available to all partners, updated each year of project, in line with Nagoya protocol.	strike has prevented distribution of the booklet. See section 3.1 and website for details (http://www.herbierguinee.org/le-choix-dune-fleur-nationale.html). The updated Guinea IPA and project specimen datasets have been repatriated to HNG (who hold the national plant records database) every 6 months from the start of the project. The dataset for Guinea plant records is now at 19010 specimen records. As part of the GBIF-BID project, many of these records are now available on the GBIF portal; the Guinee IPT is managed by MEEF. See Annex 7 letter for receipt.
Activity 3.1. 3.1 Training booklet on Guinea's plant diversity, the IPA approach and species Red Listing produced in French, by year 1 Q3.		Training booklet produced end of Y2, this forms part of teaching pack with 16 posters of threatened species from all regions. 2500 booklets have been printed, but distribution has not yet been completed due to a prolonged teachers strike.
3.2 IPA site data recording and assessments sheet developed for field surveys, by year 1 Q1.		The IPA site data recording and assessments sheet was developed for field surveys in Q1. A sample can be found on the HNG website. (http://www.herbierguinee.org/documents-du-projet-darwin.html)
Activity 3.3 Lectures and reading materials species-based and site-based plant conservation strategies for UGAN MSc. developed in year 1 and modified as required in years 2 and 3; lectures delivered.		Materials produced Y1. Second set of lectures postponed in Y2 due to small number of students. The lectures were delivered in March 2019 to the combined 3rd and 4th cohorts.
Activity 3,4 Two HNG staff apply training received in Red List and IPA assessments during 5-week research visit to Kew in years 1 & 2.		1 member of HNG staff received training in Red List and IPA assessments during a 4-week research visit to Kew in Nov. 2016 (see project website).Two HNG staff, Tokpa Dore and Nagnouma Conde spent 3 weeks training in redlisting and IPA assessments at Kew in February 2018.
Activity 3.5 Four MSc. student research projects at UGAN completed on IPA identification (2 in year 2, 2 in year 3), focusing on socio-economically important species.		MSc student research projects on socio-economic species have been initiated in Y2, but will be completed after the end of the project due to a delay in intake of the student cohort. Only 2 projects will be completed (see Section 3.1 for details).
Activity 3.6 Locally-focused posters for schools and communities on Guinea's rare and threatened species and habitats produced in years 1 & 2, disseminated to c. 550 schools to educate children on Guinea's unique biodiversity; a "national flower" campaign run through the school network to raise awareness of the diversity of Guinea's floral patrimony.		A Training booklet on Guinea's plant diversity, plant conservation, threatened species, IPA approach, was written, designed, tested and printed by the end of Y2 (delayed from Y1). However, sufficient teaching materials have been produced to reach all c. 2000 secondary schools in Guinea, not just the c.550 originally envisaged. A regional flower campaign was run within the 4 natural regions of

Project summary	Measurable Indicators	Progress and Achievements
		Guinea and workshops were held with teachers and education representatives for the prefectures. The teachers then went back to their respective schools and voted for their choice. A campaign was also run on social media (Facebook and Twitter) to reach a wider audience. Once the 4 regional flowers were chosen, these were then taken forward for the National Flower Campaign (http://www.herbierguinee.org/le-choix-dune-fleur-nationale.html). See section 3.1 for more details.
Activity 3.7 GE to run teachers' training workshop for teaching on Guinea's plant diversity including developing a simple booklet based on 3.1, in year 1 Q3.		Due to the delay in publication of the booklet o Y2 and also a prolonged teachers strike, the training workshop has not yet been held. The Ministry of Higher Education and Scientific Research under which the National Herbarium is situated, has given its agreement to help with organising the workshops with their sister Ministry of Pre-university Teaching and Literacy.
Activity 3.8 IPA Guinea dataset and project specimen data repatriated to Guinean partners, every 6 months.		The updated Guinea IPA and project specimen datasets have been repatriated to HNG (who hold the national plant records database) every 6 months from the start of the project. The dataset for Guinea plant records is now at 19010 specimen records.

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis	0					
1b	Number of PhD qualifications obtained	0					
2	Number of Masters qualifications obtained	0					
3	Number of other qualifications obtained	0					
4a	Number of undergraduate students receiving training	0					
4b	Number of training weeks provided to undergraduate students	0					
4c	Number of postgraduate students receiving training (not 1-3 above)	7	Guinean	5M&2F	Vegetation survey course	French	Part of MSc course in Biodiversity and Sustainable Dev.
4d	Number of training weeks for postgraduate students	5					
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)	0					
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	60	Guinean, Ivorian, Senegalese, French	45M&15F	Plant identification; Conservation assessment methods	French	
6b	Number of training weeks not leading to formal qualification	10					

7	Number of types of training materials produced for use by host country(s) (describe training materials)	4			Plant Conservation Handbooks, Strategies, Teacher's booklets	French	

Research Measures		**Total**	**Nationality**	**Gender**	**Title**	**Language**	**Comments/ Weblink if available**
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	20			Species Action Plans	French	Participatory process
10	Number of formal documents produced to assist work related to species identification, classification and recording.	0					
11a	Number of papers published or accepted for publication in peer reviewed journals	14					
11b	Number of papers published or accepted for publication elsewhere	1					
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	0					
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	1					
13a	Number of species reference collections established and handed over to host country(s)	0					
13b	Number of species reference collections enhanced and handed over to host country(s)	1					c.2550 specimens added to

							National Herbarium of Guinea

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	10			Regional Flower campaign, Final TIPAs workshop	French	
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	6				English	

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)	c. £35,000	Books, field equipment and curatorial supplies
21	Number of permanent educational, training, research facilities or organisation established	0	
22	Number of permanent field plots established	0	Please describe

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work	£348,178					

Annex 4 Aichi Targets

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

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

Annex 5 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)
Journal	Cheek, M. & Haba, P. M. (2016). Inversodicraea Engl. resurrected and I. pepehabai sp. nov. (Podostemaceae), a submontane forest species from the Republic of Guinea	British	UK	M	RBG, Kew, London.	Kew Bulletin 71: 55. DOI 10.1007/S12225-016-9673-2.
Journal	Cheek, M. & Haba, P. M. (2016b). Spiny African Allophylus (Sapindaceae): a synopsis.	British	UK	M	RBG, Kew, London.	Kew Bulletin 71: 55. DOI 10.1007/S12225-016-9672-3.
Journal	Cheek, M. & Williams, T. (2016). Psychotria samoritourei (Rubiaceae), a new liana species from Loma-Man in Upper Guinea, West Africa.	British	UK	M	RBG, Kew, London.	Kew Bulletin, 71(2), 1-6. http://link.springer.com/article/10.1007/s12225-016-9638-5
Journal	Cheek, M. Williams, T., Couch, C. & Molmou D.	British	UK	M	RBG, Kew, London.	Planta Carnivora 38(1): 6-22.

	(2016). Sandstone Bowal habitat at Mambiya, Republic of Guinea.					
Journal	Darbyshire, I., Anderson, S., Asatryan, A. et al. (2017) Important Plant Areas: revised selection criteria for a global approach to plant conservation.	British	UK	M	Springer Netherlands	Biodiversity Conservation. doi:10.1007/s10531-017-1336-6
Journal	Charlotte Couch, Sékou Magassouba, Saba Rokni, Martin Cheek (2017) Threatened plants species of Guinea-Conakry: A preliminary checklist.	British	UK	F	PeerJ, London	https://peerj.com/preprints/3451.pdf
Journal	Martin Cheek, Sékou Magassouba, Melanie-Jayne R. Howes, Tokpa Doré, Saïdou Doumbouya, Denise Molmou, Aurélie Grall, Charlotte Couch, Isabel Larridon (2018) Kindia (Pavetteae, Rubiaceae), a new cliff-dwelling genus with chemically profiled colleter exudate from	British	UK	M	PeerJ, London	https://peerj.com/articles/4666/

	Mt Gangan, Republic of Guinea.					
	van der Burgt, X.M., Molmou, D., Diallo, A. et al. (2018) *Talbotiella cheekii* (Leguminosae: Detarioideae), a new tree species from Guinea Kew Bull 73: 26.	**DUTCH**	**UK**	**M**	**RBG, Kew, London**	https://doi.org/10.1007/s12225-018-9755-4
Journal	Cheek M., Magassouba, S., Molmou D. Doré, TS, Couch, C., Yasuda, S., Gore, C., Guest, A., Grall, A., Larridon, I., Bousquet, IH, Ganatra, B, Gosline, G. (2018c). A key to the species of *Keetia* (Rubiaceae - Vanguerieae) in West Africa, with three new, threatened species from Guinea and Ivory Coast. Kew Bull (2018) 73: 56.	**UK**	**UK**	**M**	**RBG, Kew, London**	https://doi.org/10.1007/s12225-018-9783-0
Booklet	**Cheek & Magassouba (2018) L'Importance de la Conservation de la Plantes en Guinée. Guide a L'Intention des**	**British**	**UK**	**M**	**RBG, Kew & UGAN-C HNG Conakry.**	**www.herbierguinee.org/ Available in French and English**

	Enseignants du Secondaire				**Solopress, UK.**	
Book	**Couch, C., Cheek, M., Haba, P., Molmou, D., Williams, J., Magassouba, S., Diallo, M.Y. (2019) habitats menaces et Zones Tropicales Importantes pour les Plantes de Guinee, Afrique de l'Ouest.**	**British**	**UK**	**F**	**Solopress, UK**	**Available in French and English** **Book was posted to LTS/Darwin Initiative in May 2019. A pdf will be made available on the internet free of charge after formal launch of the book in June/July 2019**
Journal	**Cheek, M., Molmou, D., Jennings, L., Magassouba, S., van der Burgt, X.M. (2019) Inversodicraea koukoutamba and I. tassing (Podostemaceae), new waterfall species from Guinea, West Africa.**	**British**	**UK**	**M**	**Netherlands**	**Accepted for publication in Blumea** **http://www.herbierguinee.org/inversodicraea-kkt-and-tassing.html**
Journal	Phillipson, P., Hooper, O., Haba, P. et al. Kew Bull (2019) Three species of *Coleus* (Lamiaceae) from the Guinean Highlands: a new species, a new combination and clarification of *Coleus splendidus* 74: 24.	**British**	**USA**	**M**	**RBG, Kew, London.**	https://doi.org/10.1007/s12225-019-9812-7

Journal	Burgt X. M. van der, Konomou G., Haba P. M. & Magassouba S. 2019: *Gladiolus mariae* (*Iridaceae*), a new species from fire-free shrubland in the Kounounkan Massif, Guinea. – Willdenowia 49: 117–126.	**Dutch**	**UK**	**M**	**Germany**	https://doi.org/10.3372/wi.49.49112
Journal	Cheek, M., Onana, J-M., Yasuda, S., Lawrence, P., Ameka, G., Buinovskaja, G.. 2019. Addressing the *Vepris verdoorniana* complex (Rutaceae) in West Africa, with two new species. *Kew Bull.* Subm. 12 Sept. 2018.	**British**	**UK**	**M**	**RBG, Kew, London.**	**ACCEPTED FOR PUBLICATION, NOT YET PUBLICALLY AVAILABLE**
Journal	Cheek M., Haba PM., Konomou G., van der Burgt, XM. 2019: *Ternstroemia guineensis* (Ternstroemiaceae), a new endangered, submontane shrub with neotropical affinities, from Kounounkan, Guinea, W. Africa. Willdenowia	**British**	**UK**	**M**	**RBG, Kew, London.**	**SUBMITTED FOR PUBLICATION, NOT YET PUBLICALLY AVAILABLE**
Journal	Xanthos, M. & Burgt, X.M. van der (2019) *Trichanthecium tenerium*	**British**	**UK**	**M**	**RBG,Kew, London**	**ACCEPTED FOR PUBLICATION, NOT YET PUBLICALLY AVAILABLE**

	(Poaceae: Panicoideae), a new species from Guinea-Conakry. *Kew Bull.*					

Annex 6 Darwin Contacts

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