

Darwin Initiative/Darwin Plus Projects Half Year Report (due 31st October 2020)

Project reference	26–018
Project title	Promoting public health in a biodiverse agroforest landscape in Guinea-Bissau
Country(ies)/territory(ies)	Guinea-Bissau
Lead organisation	University of Exeter (UoE)
Partner(s)	Institute for Biodiversity and Protected Areas (IBAP), National Association for Local and Urban Development (NADEL), Robert Koch Institute (RKI), Centre for Research in Anthropology (CRIA)
Project leader	Dr Kimberley Hockings
Report date and number (e.g. HYR3)	HYR2
Project website/blog/social media	

1. Outline progress over the last 6 months (April – Sept) against the agreed project implementation timetable (if your project has started less than 6 months ago, please report on the period since start up to end September).

Despite the restrictions placed on us and our partners due to Covid-19, progress over the last six months is steady and Covid-19 has provided us with the opportunity to broaden our perspective on disease resilience in Cantanhez National Park (CNP), Guinea-Bissau. Please find more specific information on the activities undertaken 1st April – 30th September 2020 related to specific Outputs:

Output 1. Reduced risks of leprosy transmission/outbreak in humans and disease-related conflicts (e.g. retaliatory killing of wildlife) through an evidence-based public health campaign across CNP.

In April 2020, interviews (**activity 1.2**) with household members and health workers informing the development of the public health campaign (**activity 1.6**) were planned to be completed by the end of September 2020 by DPO (NADEL: National Association for Local Development). However, due to the coronavirus pandemic and the Bissau-Guinean Government declaring the State of Emergency in March 2020, face-to-face interviews had to be halted. Progress has been made through an alternative data collection strategy considering the Covid-19 pandemic and in response to preventive measures. Data collection to establish the baseline is ongoing and we expect it to be completed by the end of Y2Q3. Please see Section 2b for further details.

Output 2. Improved wildlife management capacity through the establishment of the first health and abundance systematic monitoring programme for key terrestrial biodiversity in Guinea-Bissau.

As planned, from April to July 2020 the Darwin Bissau-Guinean team (UoE: University of Exeter; IBAP: Institute for Biodiversity and Protected Areas) continued with activities for the biodiversity monitoring programme across CNP. Data collection using transect surveys and camera traps (**activity 2.3**) was carried out by eight local Darwin Field Officers (DFOs) and co-ordinated by two Bissau Guinean Darwin Project Officers (DPOs) and the Darwin Research Fellow (DRF, remotely). The 64 transects that we established across the park were surveyed twice, once in May and once in July 2020 using Cybertracker/SMART and GPSs. All data have been entered and processed by the DPOs (**activity 2.4**). In total, from the transect surveys we obtained 1386 observations of primates and other wildlife (407 direct and 979 indirect observations), and 157 observations of human activities, which will be used to establish baseline of abundance (**activity 2.6**). Camera traps remained operational throughout the survey period, resulting in 78,069 images of primates and other wildlife, which will be used to model

species distribution across CNP (**activity 2.6**). All images were checked as part of the chimpanzee health monitoring programme (see below). Regular communication was maintained between the Project Leader (PL), DRF, DPOs, and IBAP via email and WhatsApp including video calling. All Cybertracker/SMART data from transect surveys were shared with the DRF via email. The first evaluation of the monitoring programme is in progress (**activity 2.6**). A written report by the DPOs has been shared with the PL and DRF. The report outlines activities undertaken; preliminary results including indices of abundance; challenges encountered; and logistical and strategic recommendations by DPOs and DFOs. This report will allow the PL, DRF and DPOs to make necessary adjustments to the data collection strategy before surveys resume in the dry season (starting mid-November 2020). Statistical analysis and modelling of survey data will commence in Year 2Q3. An updated version of the biodiversity monitoring protocol (**activity 2.7**) will be produced by the end of Year 2.

To reduce the time that DFOs were spending in the forest during the pandemic, and to minimise their contact with wildlife, we chose not to collect chimpanzee faecal samples in Year 2Q1-3 (**activity 2.5**). The collection of fresh faecal samples requires tracking chimpanzee movements which can occasionally result in opportunistic encounters. Through laboratory analysis by our partner Robert Koch Institute (RKI), we have confirmed *Mycobacterium leprae* as the aetiological agent causing physical manifestations of leprosy in two individuals from one of the chimpanzee community's at CNP (Hockings et al. in prep). However, due to the reasons outlined above, faecal sampling and analysis to identify *M. leprae* in the other communities will be postponed to Year 2Q4. We will instead use camera trap images to first detect clinical manifestations of leprosy enabling a more targeted future approach to faecal sampling and camera trap placement, with focus on areas frequented by infected individuals. In addition to the continued monitoring of leprosy progression in individuals from three chimpanzee communities, we identified chimpanzees showing advanced clinical manifestations of leprosy from two new communities across the northern part of CNP. This systematic and rigorous health survey approach has enabled us to confirm that five of an estimated 12 communities in CNP have individuals showing clinical manifestations of leprosy. Due to rigorous training in Year 1, we have a strong network of local DFOs and DPOs that are trained in camera trap use and logistics. Camera trap surveys have proved a reliable method of data collection despite the Covid-19 related travel and logistical challenges faced by International members of the project. We therefore plan to increase the number of targeted camera traps monitoring chimpanzee communities where leprosy has been identified. Thus, at least 60 additional camera traps will be deployed in Year 2Q4.

Output 3. *A human-wildlife interaction plan that extends protection of key wildlife habitat, and incorporates new regulations in areas of high human-wildlife interactions, including leprosy transmission risk, is developed for CNP.*

No specific activities were planned in Year 2Q1-2. However, in anticipation of the likely reforestation of key wildlife corridors identified through this plan, IBAP have started a sapling nursery at their headquarters in Cantanhez NP comprising tree species that are important to local wildlife, including chimpanzees. Darwin DFOs are fully engaged in this work and have been tasked with the collection of plant seeds and planting/maintenance activities.

Output 4. *Increased long-term readiness for potential public zoonotic threats and disease-related conflicts through the initiation of an outbreak preparedness and response strategy in CNP.*

No activities planned for Year 2Q1-2. In Year 1 we met with the Health Minister Dr. Magda Robalo (**activity 4.3**), who agreed to incorporate our project output within the national health strategy. The government has changed since June 2020. Once travel restrictions are lifted, with the support of IBAP, we will contact and develop relations with the new Health Ministry. As the World Health Organization's Director for Communicable Diseases Cluster (Regional Office for Africa), Dr. Robalo will remain a key contact for our response strategy in Cantanhez NP.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months (for Covid-19 specific delays/problems, please use 2b). Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

All delays have been Covid-19 specific, please see next section.

2b. Please outline any specific issues which your project has encountered as a result of Covid-19. Where you have adapted your project activities in response to the pandemic, please briefly outline how you have done so here. Explain what residual impact there

may be on your project and whether the changes will affect the budget and timetable of project activities.

Output 1: Interviews to obtain baseline data for the public health campaign (**activity 1.6**) were delayed by seven months as face-to-face interviews with local people in CNP were not deemed safe nor possible during the lockdown restrictions in Guinea-Bissau. The DRF was scheduled to conduct qualitative interviews with key informants in May-July 2020 and attend a workshop with NADEL in September 2020 to develop the health campaign (**activity 1.4**). However, the DRF was unable to travel due to the pandemic but remained in regular contact with the DPO and local informants remotely (via email, WhatsApp and phone calls). In May 2020, UoE, NADEL, and the Centre for Research in Anthropology (CRIA) **adapted activity 1.2 – Output 1 to incorporate the context of the current pandemic**. We developed two interview questionnaires for key informants and local people ("local activists") involved in the Covid-19 response activities at CNP. These were to be conducted over the phone during the Covid-19 restriction period. However, in June 2020 NADEL determined that phone interviews were not feasible due to very poor phone signal across the country, especially CNP, caused by an exceptionally intense rainy season. Due to ethical restrictions placed on face-to-face interviews, we postponed all questionnaire activity with local community members. Revised interviews with household members and health workers are now ongoing by the NADEL DPO Samba Camará as the number of new Covid-19 cases in Guinea-Bissau continue to decrease and in-country travel resumes.

In addition to what we proposed in the original Outputs, and to provide additional context to the development of the public health campaign, NADEL DPO spent the last six months in Bissau monitoring the pandemic situation across Guinea-Bissau via desk-based research, plus two visits to CNP in July and August 2020 to gather qualitative information on the situation and response of NGOs in CNP. The DPO travelled with other members of NADEL whilst they were engaged in Covid-19 transmission prevention education activities at CNP and used participatory methods to observe activities of key personnel involved in the Covid-19 response in CNP. The newly adapted social sciences surveys aimed at understanding local people's perception of disease transmission (including Covid-19 and leprosy), as well as interviews with health workers in CNP to assess their knowledge of zoonotic diseases, diagnosis and treatment of leprosy, will be conducted in November and December 2020 by the NADEL DPO using PPE and social distancing measures. Data will be analysed in January 2021 and presented at our Annual M&E meeting (**activity 4.2**) in February 2021. The M&E meeting is scheduled to take place in Lisbon with project partners. We will also use the M&E meeting to develop the public health campaign (**activity 1.4**), followed by the training of health activists (**activity 1.5**) and campaign (**activity 1.6**) to start by the end of Year 2 (in February/March 2021 as opposed to November 2020, i.e. with c. 3-4 months delay). The clinical training for local health workers (**activity 1.7**) which was scheduled for Y2Q3 will be postponed to the end of Year 2. We do not anticipate that these delays will interfere with the related Project Outcomes.

Output 2: Transects surveys (part of **activity 2.3**) were temporarily paused in March 2020 when all work in NPs was officially halted by IBAP. Prior to the restart of the transects in May 2020, UoE and IBAP developed a health & safety protocol for DFOs and provided PPE to ensure that surveys could be safely conducted for wildlife and for local human populations. In May 2020, all transects were successfully surveyed by DFOs. Due to Covid-19 delays, we achieved 3 survey repetitions/transect (totalling 192 km of survey effort) instead of the four repetitions (256 km) originally planned. The decreased survey effort will have minimal impact on obtaining indices of abundance, considering the large number of survey observations made (>1500).

The IBAP DPOs have processed all the camera trap data and have sent the PL and DRF a final spreadsheet containing information on the content of each image. Camera trap images are stored on three external hard drives that are currently located in Bissau (replicates of the data are stored in 2 locations as a precaution). We are waiting for a hard drive to be sent to the PL and DRF as there are restrictions for shipping electronic material from Guinea-Bissau to Europe, and inadequate internet connection for sending large amount of data (approximately 700 gigabytes). We expect to retrieve a hard drive in the upcoming months (before the end of Year 2Q3), either with the help of an IBAP member of staff who is planning to travel to Europe or by the DRF when travel to Bissau is once again permitted.

Travel and subsistence costs planned to be spent by the DRF for two fieldwork periods will be re-distributed across categories to purchase essential monitoring equipment costs associated with Output 2, including purchase and shipment of camera trap equipment to Bissau (change between categories). Other international travel and subsistence costs of travel by European partners to Guinea-Bissau in Year 2 will be used to cover additional travel and subsistence costs of IBAP and local collaborators within Guinea-Bissau, to allow for increased local participation and monitoring efforts for Output 2 (**activity 2.3**).

2c. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS: No

Formal change request submitted: No

Received confirmation of change acceptance No

3a. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £0

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary. Please DO NOT send these in the same email as your report.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

N/A

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with LTS International through a Change Request. **Please DO NOT send these in the same email.****

Please send your **completed report by email** to Darwin-Projects@ltsi.co.uk. The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 25-001 Darwin Half Year Report**