Applicant: **Hockings, Kimberley**
Organisation: **The University of Exeter**

DIR25S2\100003

Promoting public health in a biodiverse agroforest landscape in Guinea-Bissau

This project will minimise risks of leprosy in humans and threatened wildlife at Cantanhez NP, Guinea-Bissau, by developing an evidence-based public health campaign; a multi-stakeholder management plan for areas of high human-wildlife interaction and key habitat for protection; increased capacity for long-term biodiversity and health monitoring; an infectious disease outbreak and conflict mitigation response programme. By strengthening collaboration among local communities, Government, local NGOs, and scientists, we seek to achieve multi-stakeholder engagement in long-term public health and conservation strategy.

PRIMARY APPLICANT DETAILS

Title	Dr
Name	Kimberley
Surname	Hockings
Tel (Work)	
Email (Work)	
Address	

Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Title	Dr
Name	Kimberley
Surname	Hockings
Tel (Work)	
Email (Work)	
Address	

GMS ORGANISATION

Type	**Organisation**
Name	The University of Exeter
Phone (Work)	
Email (Work)	
Website (Work)	
Address	

Section 2 - Title, Dates & Budget Summary

Q3. Project title:

Promoting public health in a biodiverse agroforest landscape in Guinea-Bissau

What was your Stage 1 reference number? e.g. DIR25S1\100123

DIR25S1\100131

Q4. Country(ies)

Which eligible country(ies) will your project be working in? Where there are more than 4 countries that your project will be working in, please add more boxes using the selection option below.

Country 1	Guinea-bissau	**Country 2**	*No Response*
Country 3	*No Response*	**Country 4**	*No Response*

Do you require more fields?

⊙ No

Q5. Project dates

Start date:	**End date:**	**Duration (e.g. 2 years, 3 months):**
01 April 2019	31 March 2022	3 years

Q6. Budget summary

Year:	**2019/20**	**2020/21**	**2021/22**	**Total request**
Amount:	£122,223.00	£108,522.00	£94,298.00	**£** 325,043.00

Q6a. Do you have proposed matched funding arrangements?

⊙ Yes

What matched funding arrangements are proposed?

We have confirmed contributions from the Halpin Trust through an urgency grant to collect 6 months of preliminary data on the prevalence and distribution of leprosy in chimpanzees at Cantanhez NP (up to December 2018: £X including 30 camera traps and equipment to be used for Darwin project) and UoE (staff time and overheads). In addition, we have significant funds already secured from project partners in Guinea-Bissau (IBAP and NADEL- staff time, overheads, vehicles, accommodation, and Darwin Field Officer salaries), in Portugal (staff time, overheads, travel, equipment), in Germany (sample shipment from Bissau, sample analysis, laboratory technician salary).

Q6b. Proposed (confirmed and unconfirmed) co-financing as % of total project cost	64

Section 3 - Project Summary

Q7. Summary of project

Please provide a brief summary of your project, its aims, and the key activities you plan on

undertaking. Please note that if you are successful, this wording may be used by Defra in communications e.g. as a short description of the project on GOV.UK. Please write this summary for a non-technical audience.

This project will minimise risks of leprosy in humans and threatened wildlife at Cantanhez NP, Guinea-Bissau, by developing an evidence-based public health campaign; a multi-stakeholder management plan for areas of high human-wildlife interaction and key habitat for protection; increased capacity for long-term biodiversity and health monitoring; an infectious disease outbreak and conflict mitigation response programme. By strengthening collaboration among local communities, Government, local NGOs, and scientists, we seek to achieve multi-stakeholder engagement in long-term public health and conservation strategy.

Section 4 - Lead Organisation Summary

Q8. Lead organisation summary

Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count)?

⊙ Yes

If yes, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
25001	Frank Van Veen	Preventing Borneo's peatland fires to protect health, livelihoods and biodiversity
23011	Brendan Godley	Transforming marine resource management in the Republic of Congo
23012	Annette Broderick	Improving Marine Biodiversity and Livelihood of coastal communities in Principe
No Response	*No Response*	*No Response*
No Response	*No Response*	*No Response*
No Response	*No Response*	*No Response*
Have you provided the requested signed audited/independently examined accounts? If you select "yes" you will be able to upload these. Note that this is not required from Government Agencies.	⊙ Yes	

Section 5 - Project Partners

Q9. Project partners

Please list all the partners involved (including the Lead Organisation) and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development.

This section should illustrate the capacity of partners to be involved in the project. Please provide Letters of Support for each partner or explain why this has not been included.

N.B. There is a file upload button at the bottom of this page for the upload of a cover letter (if applicable) and all letters of support.

Lead Organisation name:	The University of Exeter (UoE)
Website address:	www.exeter.ac.uk
Details (including roles and responsibilities and capacity to engage with the project):	Hockings' research group is based at UoE's Centre for Ecology and Conservation, which hosts a dynamic faculty at the forefront of conservation science. As a research-intensive university, UoE has staff to oversee effective grant management. Project leader Dr Hockings, Lecturer at UoE, identified leprosy in chimpanzees and will be responsible for project management. She is an expert in human-primate interactions and has conducted fieldwork on apes for 15 years. She has worked in Cantanhez NP since 2008 and leads the country's only chimpanzee research group. Hockings has strong collaborative links to IBAP and is an active member of the Great Ape Section of the IUCN Primate Specialist Group. Professor Godley (Co-I) has managed biodiversity conservation projects in Guinea-Bissau since 2001. He has successfully completed 11 Darwin grants. He will work closely with the Project Leader to ensure the successful execution of the project. Dr Bonneaud (Co-I) works on emerging wildlife diseases. She will help analyse disease data and advise on healthcare campaign. Bersacola (named Darwin Fellow) conducted her PhD on human-primate coexistence at Cantanhez NP under the supervision of Hockings. She will be responsible for overseeing project activities, particularly monitoring and evaluation, including data analysis and leading on publications.

Have you included a Letter of Support from this organisation?	⊙ Yes

Have you provided a cover letter to address your Stage 1 feedback?	⊙ Yes

Do you have partners involved in the Project?

⊙ Yes

1. Partner Name:	Institute for Biodiversity and Protected Areas (IBAP), Guinea-Bissau
Website address:	http://ibapgbissau.org/
Details (including roles and responsibilities and capacity to engage with the project):	IBAP is a Governmental Institute mandated with managing Guinea Bissau's wildlife and Protected Areas, including human-wildlife conflict scenarios, through more effective targeting of intervention, and strengthening capacity at planning and policy levels. IBAP have been instrumental in developing project objectives, determining conservation priorities including capacity building, and planning data collection. IBAP will continue to employ Darwin Field Officers (forest guards) following the end of this project. We will work directly with Said (Coordinator Dep. Terrestrial Protected Areas) and Regalla (Coordinator Dep. Monitoring and Biodiversity Conservation) to develop a biodiversity monitoring programme to ensure IBAPs long-term goals are considered, and a conflict response protocol to stop retaliatory killings. They will be responsible for liaison with Ministries (e.g. Ministry of Health) and the National media. Quecuta, Director of Cantanhez NP, will work directly with the Darwin Project Officer and Research Fellow, to coordinate Darwin Field Officers and ensure efficient data collection throughout the monitoring programme. He will be a key member of the conflict response team. Barbosa will assist on technical matters related to the monitoring programme and Embalo will organise IBAP's project finances.
Have you included a Letter of Support from this organisation?	⊙ Yes

2. Partner Name:	Associação Nacional para o Desenvolvimento Local e Urbano (NADEL), Guinea-Bissau
Website address:	http://ongnadel.blogspot.com/p/historial.html
Details (including roles and responsibilities and capacity to engage with the project):	NADEL is a Guinean health NGO funded in 2001 working with local communities, especially women's and youth groups, to improve their participation in community development. NADEL has collaborated with various International NGOs including Oxfam and UNICEF in disease outbreaks prevention and control programmes. Since 2008 NADEL has been working in Tombali (including Cantanhez NP) at the forefront of controlling two deadly cholera outbreaks (2008 and 2012-2013). In 2013-2016 NADEL ran awareness campaigns in Cantanhez NP and the wider Tombali region in an effort to prevent the spread of Ebola. NADEL continues to be present in Cantanhez NP running programmes to improve water sanitation. The project carefully integrates NADEL's experience and recommendations for developing effective healthcare campaigns for Guinean people. We will work directly with Gomes Lopes (NADEL National Coordinator) to develop a leprosy healthcare campaign and establish the collaborations required to develop a linked outbreak programme. He will be responsible for employing and supervising one Darwin Project Officer and seven local Darwin Field Officers to implement the healthcare campaign in Cantanhez NP.
Have you included a Letter of Support from this organisation?	⊙ Yes

3. Partner Name:	Robert Koch Institute (RKI), Germany
Website address:	https://www.leendertz-lab.org/

Details (including roles and responsibilities and capacity to engage with the project):	RKI is the central institution the German Ministry of Health responsible for public health and disease prevention. Leendertz is a veterinarian by training, specialised in zoonotic diseases affecting wild great apes and wildlife as sources of emerging diseases such as Ebola virus disease. He is head of the world-leading 'Epidemiology of Highly Pathogenic Microorganisms' unit at the RKI and collaborates with numerous conservation and veterinary NGOs across Africa. He will analyse all faecal samples collected as part of the monitoring programme for presence of leprosy, and will cover costs for sample shipment, import permits, and analysis, and for laboratory technician Mubemba. He will also advise on the healthcare campaign. Leendertz has successfully developed specialised methods to determine leprosy infection from analysis of faecal samples. He has been instrumental in the development of this project and has over 20 years of experience in great ape health and conservation. Mubemba, a Zambian National, is the named laboratory technician. He works on zoonotic skin infection in great apes, and successfully analysed leprosy samples collected for the Halpin Trust urgency grant.
Have you included a Letter of Support from this organisation?	⊙ Yes

4. Partner Name:	Centre for Research in Anthropology (CRIA), Portugal
Website address:	http://cria.org.pt/wp/apresentacao/

Details (including roles and responsibilities and capacity to engage with the project):	CRIA is the leading Institute in Portugal specialised in social anthropological research, especially across Lusophone countries. The Environment, Sustainability and Ethnography research group at CRIA focuses on understanding interconnections between nature and society, with topics including human-wildlife interactions and traditional ecological knowledge. Frazão-Moreira has conducted social anthropological research in Cantanhez NP for over 20 years and has in-depth knowledge of the local customs and sociocultural context, with expertise in ethnomedical research. Her advice is critical to ensure a culturally-sensitive and informed approach particularly regarding how to work with different people to effect behavioural change and in conflict scenarios. She also has experience with participatory approaches to ensure that women's opinions are included in the development of conservation strategy. Parathian has extensive cross-disciplinary experience that dissects both biological and social anthropological data collection. She has worked on chimpanzee and with people in Cantanhez NP since 2013 and will provide expertise in locally sensitive data collection techniques and methods.
Have you included a Letter of Support from this organisation?	⊙ Yes

5. Partner Name:	*No Response*
Website address:	*No Response*
Details (including roles and responsibilities and capacity to engage with the project):	*No Response*
Have you included a Letter of Support from this organisation?	○ Yes ○ No

6. Partner Name:	*No Response*
Website address:	*No Response*
Details (including roles and responsibilities and capacity to engage with the project):	*No Response*
Have you included a Letter of Support from this organisation?	○ Yes ○ No

If you require more space to enter details regarding Partners involved in the Project, please use the text field below.

No Response

Please provide a cover letter responding to feedback received at Stage 1 if applicable and a combined PDF of all letters of support.

LETTERS OF SUPPORT COMBINED
30/11/2018
21:17:40
pdf 4.43 MB

Darwin response letter
30/11/2018
21:17:14
pdf 182.32 KB

Section 6 - Project Staff

Q10. Key project personnel

Please identify the core staff on this project, their role and what % of their time they will be working on the project.

Please provide 1 page CVs for these staff, or a 1 page job description or Terms of Reference for roles yet to be filled. Please include more rows where necessary. These should match the names and roles in the budget spreadsheet.

Name (First name, Surname)	Role	% time on project	CV attached below?
Kimberley Hockings	**Project Leader**	10	Checked
Brendan Godley	Co-Investigator	5	Checked
Hellen Bersacola	Darwin Research Fellow	89	Checked
Aissa Regalla Barros	IBAP - Coordinator of the Department for Monitoring and Biodiversity Conservation	15	Checked

Do you require more fields?

Yes

Name (First name, Surname)	Role	% time on project	CV attached below?
Aristoteles Gomes-Lopes	NADEL - National Coordinator	15	Checked

Fabian Leendertz	RKI - Head of Unit Epidemiology of Highly Pathogenic Microorganisms	10	Checked
Amelia Frazão-Moreira	CRIA - Professor in Social Anthropology	10	Checked
Other personnel listed in attached table	UoE/IBAP/NADEL/RKI/CRIA	*No Response*	Checked

Please provide 1 page CVs (or job description if yet to be recruited) for the Project staff listed above. Ensure the file is named clearly, consistent with the named individual and role above.

Project Partner CVs
01/12/2018
21:20:21
pdf 2.9 MB

Have you attached all Project staff CVs?

Yes

Section 7 - Problem Statement & Conventions

Q11. Problem the project is trying to address

Please describe the problem your project is trying to address in terms of biodiversity and its relationship with poverty. For example, what are the drivers of loss of biodiversity that the project will attempt to address? Why are they relevant, for whom? How did you identify these problems?

The emergence of zoonotic diseases can represent serious threats to public health, and conservation problems when reservoirs are endangered. Zoonotic diseases are predicted to increase due to habitat destruction, road building and hunting, with high risks in less developed countries that often lack the systems to detect and respond to outbreaks. Guinea-Bissau, W.Africa, is among the poorest countries (67% population living below $1.90 USD/day; many without access to healthcare). Cantanhez National Park (NP),1067km2 inhabited by approximately 28,000 people, is the country's most biodiverse protected area, with numerous threatened species such as the chimpanzee and red colobus monkey.

In April 2018, we identified an outbreak of leprosy (Mycobacterium leprae) in Critically Endangered chimpanzees at Cantanhez NP; the first in wild great apes (Fig1a). Although leprosy is present in humans in Guinea-Bissau, no data exist for Cantanhez NP. Camera footage shows likely presence in other primates hunted for food and kept as pets (Fig1b). This puts poor people and wildlife at serious risk because of potential infection and retaliatory wildlife killings. This is compounded by a lack of knowledge about disease and behaviours that might influence the spread of disease.

This project is developed at the invitation of IBAP to respond to the imminent potential health crisis resultant from a leprosy outbreak and concern that might result in conflicts with local people.

The project's objectives are to: (1) evaluate risks of leprosy to humans and wildlife; (2) understand local perceptions of disease, including leprosy, and use of health services by locals; (3) work with NGOs, health practitioners and local communities to design an effective leprosy public health awareness campaign that will decrease risk of transmission to humans and mitigate health/conservation conflicts, as well as make

progress towards developing a national outbreak response programme; (4) improve longer-term conservation of key habitat and biodiversity.

If necessary, please provide supporting documentation e.g. maps, diagrams etc., using the File Upload below:

Fig 1a and 1b
01/12/2018
21:22:46
jpg 2.75 MB

Q12. Biodiversity Conventions, Treaties and Agreements

Q12a. Your project must support the objectives of one or more of the agreements listed below. Please indicate which agreement(s) will be supported and describe which objectives your project will address and how. Note: projects supporting more than one will not achieve a higher score.

☑ Convention on Biological Diversity (CBD)

Q12b. Biodiversity Conventions

Please detail how your project will contribute to the objectives of the agreement(s) your project is targeting. You should refer to Articles or Programmes of work here. Note: No additional significance will be ascribed for projects that report contributions to more than one agreement.

Despite sustained efforts to eliminate infectious diseases (such as leprosy) worldwide, transmission is ongoing, in part because of disease persistence in animal reservoirs. Despite this, almost nothing is known about leprosy in wildlife. The close relationship between human and nonhuman primates and high spatial overlap in shared and often degraded landscapes, such as in Cantanhez NP, increases risk of disease transmission. Such constraints to coexistence are highlighted by IUCN as a key challenge facing conservation in the 21st Century.

The CBD was ratified in Guinea-Bissau in 1995 and our project aligns with CBD's core principles for the programme of Work on Forest Biodiversity and in particular CBD Aichi Biodiversity Targets 2,5,11,12,14,17,18,19.

Our project will contribute through:

1. Increasing local biodiversity and wildlife health monitoring capacity in the most biodiverse terrestrial NP in Guinea-Bissau and increasing knowledge of leprosy in wildlife (Targets 2,19). Our approach will be used as a model for Guinea-Bissau's four other terrestrial NPs.

2. Conducting long-term monitoring of biodiversity health and abundance (Target 12) to identify and improve protection of remaining forests, including mangroves, and wildlife hotspots to promote biodiversity and protection of ecosystems that provide essential services (Targets 5,11,14).

3. Monitoring disease prevalence and distribution in primates and reducing human-wildlife overlap and opportunities for disease transmission through research-led mapping (Targets 2,12).

4. Respecting traditional knowledge and management systems (Target 18). Since Cantanhez NP was formed

in 2008 it has been legally recognized as Nalu homeland, and the Nalu continue to play a role in land use management. Nalu people (represented by chieftains, Women's Associations, Land Management Committee, Youth Associations and elders) will play a crucial role in developing a plan to improve biodiversity conservation and reduce disease transmission risks in Cantanhez NP (Target 18).

5. Understanding local knowledge and perceptions of disease transmission and local healthcare services (traditional and public) to inform public health strategy (Targets 18,19).

6. Ensuring participatory community involvement in public health issues to reduce gender inequality, and strengthen synergy between local communities, NGOs, and Government in decision-making (Target 18). Guinea-Bissau is one of the world's poorest countries and is positioned at 177 out of 189 countries on the Human Development Index (UN 2018). Leprosy more commonly affects people living in poverty, possibly because of malnutrition and lowered immunity, limited disease awareness, and access to healthcare.

7. Strengthening capacity and knowledge to respond quickly and effectively to a leprosy outbreak (Target 19).

8. Developing an infectious disease and conflict response programme that includes mitigation of conservation conflicts and disease risk. Nalu authorities and leaders will act as key mediators for the conflict mitigation strategy, with the response team comprising Nalu chieftains, health workers, Women Associations presidents and IBAP. The programme identifies potential long-term sources of financial aid to cover human medical treatment in the event of a leprosy outbreak (e.g. Ministry of Health in Guinea-Bissau, WHO) (Target 17).

9. Making datasets on leprosy in available to interested parties e.g. for the WHO Global Leprosy Strategy 2016–2020 (Target 19).

Q12c. Is any liaison proposed with the CBS/ABS/ITPGRFA/CITES/CMS/Ramsar focal point in the host country?

⦿ Yes

Please give details:

Dr. Abilio Rachid Said, Head of the Department Terrestrial Protected Areas at IBAP, is one of the CBD focal points in Guinea-Bissau and is a named collaborator. We also work closely with Dr. Justino Biai, Director IBAP, who is also one of the CBD focal points in Guinea-Bissau.

https://www.cbd.int/countries/nfp/?country=gw

Q12d. Global Goals for Sustainable Development (SDGs)

Please detail how your project will contribute to the Global Goals for Sustainable Development (SDGs)

1. Building local people's awareness/resilience to infectious disease outbreaks, including leprosy, through improved access to effective healthcare and strengthening the capacity for a leprosy early warning system (Goals 1,3).

2. Working with healthcare practitioners to increase the number of skilled leprosy staff and reduce potential stigmatization associated with leprosy which prevents self-reporting/early diagnosis. Understanding local knowledge/perceptions of disease transmission and healthcare services to inform public health strategy (Goals 1,3,5,6).

3. Improved access to hygiene for all, paying close attention to the needs of women and girls, and strengthen the participation of local communities in improving sanitation management (Goal 6).

4. Ensuring participatory community involvement in public health issues to reduce gender inequality, and strengthen synergy in stakeholder (local communities, Government, NGO) decision-making (Goals 5,10,17).

5. Including women at all stages of the decision-making process, working directly with the Women's Associations in Cantanhez NP, and encouraging women to apply for employment (Goals 5,10).

6. Directly integrating ecosystem and biodiversity values into National and local healthcare planning and implementing targeted capacity building of stakeholders (IBAP, NADEL, local communities) in health and conservation (Goal 17).

7. Ensuring the conservation of forests and reducing the loss of threatened biodiversity (Goal 15), including the western chimpanzee.

8. Helping to develop a National disease-response framework to support long-term investment in leprosy eradication actions (Goal 1), in particular WHO's Global Leprosy Strategy 2016–2020, and contributing critical data on leprosy in wildlife reservoirs to work towards SDG's Goal 3 to end epidemics of neglected tropical diseases including leprosy.

Section 8 - Method, Change Expected, Gender & Exit Strategy

Q13. Methodology

Describe the methods and approach you will use to achieve your intended Outcome and Impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc.).

This may be a repeat from Stage 1, but you should update or refine as necessary.

Social Research: Darwin Research Fellow will use semi-structured interviews and participatory methods with women and men to understand: (1) human behaviour that might increase disease spread, including of leprosy (e.g. hunting/bushmeat processing/consumption, keeping primate pets, poor hygiene, delayed medical consultation); (2) local perceptions of infectious diseases/transmission, including zoonoses; (3) perceptions of health services (hospitals/traditional healers); (4) identify gaps in the health chain. These data will inform our public awareness campaign.

Wildlife Abundance and Health Monitoring: Eight Darwin Field Officers will be trained to undertake ecological fieldwork (set up camera traps and walk transects twice/year). Collection of primate faeces will be undertaken under strict hygiene standards (stored in RNAlater). Using cameras, we will estimate leprosy incidence and virulence (by scoring severity), as well as correlates of infection (i.e. age, sex). This contributes long-term data to test how this debilitating disease spreads through wildlife populations. Primate abundance, occupancy and GIS analysis including disease distribution will be carried out by Guinean Darwin Officer2 (employed through IBAP, women encouraged to apply), supervised by Darwin Research Fellow at UoE. Molecular analysis will be conducted at the RKI.

Public Health Engagement: Through outreach meetings, Darwin Officer1 (through NADEL, women encouraged to apply) and seven Darwin Field Officers (including at least 3/4 women) will engage communities and hospitals to strengthen communication, raise infectious disease awareness (including about leprosy in chimpanzees), improve hygiene practices (e.g. reducing infection from food including

bushmeat/crops), and address possible stigma and fear regarding disease. We will provide technical and clinical expertise to health workers for rapid disease identification and control. Leprosy is the main disease under investigation in this project; however, health workers will also receive training to rapidly identify other zoonotic diseases (e.g., scabies, Ebola).

Human-wildlife Interaction Mapping/Management: Using data from social anthropology and wildlife monitoring, we will conduct spatial modelling to identify hotspots of biodiversity and human-wildlife interactions including disease transmission risk. Resultant maps will be discussed with stakeholders (including the local Land Management Committee, Women's Associations, Nalu chieftains) to finalise a targeted plan for habitat conservation and management of areas of high human-primate interaction.

Disease Outbreak Preparedness and Response Programme: To increase capacity to respond in the event of zoonotic disease outbreaks in the local human population, we will work with IBAP, NADEL, local health workers, researchers, and other identified user groups (potentially WHO, Ministry of Health). The response programme developed will rely on clear and systematic communication and data sharing. We will also develop a protocol to be executed by a trained response team to manage potential conservation conflicts over disease, including retaliatory killings of animals.

Project Monitoring/Evaluation: Data will be shared with stakeholders quarterly via reports in email, and during workshops. All activities will be monitored, and their impact evaluated using a range of SMART indicators.

Project Management/Responsibility: The project will be managed by a core group of representatives from each partner, co-ordinated by UoE with an interdisciplinary, Creole-speaking, Darwin post-doctoral Research Fellow (Hellen Bersacola). Logistics within Guinea-Bissau will be supported by IBAP, NADEL, and local communities.

Q14. Change expected

Detail the expected changes this work will deliver. You should identify what will change and who will benefit a) in the short-term (i.e. during the life of the project) and b) in the long-term (after the project has ended).

Please describe the changes for biodiversity and for people in developing countries, and how they are linked. When talking about people, please remember to give details of who will benefit and the number of beneficiaries expected. The number of communities is insufficient detail – number of households should be the largest unit used. If possible, indicate the number of women who will be impacted.

This project aims to strengthen the human health system and promote biodiversity conservation (Theory of Change Fig 2).

The exact mechanism of transmission of leprosy is not known. Until recently, it was thought that the disease was transmitted by close contact with infected individuals. More recent evidence suggests the possibility of infection via the respiratory route, increasing the risks of transmission. In the short term, we expect improvements in clinical expertise and capacity to rapidly diagnose leprosy and other infectious zoonotic diseases among 28,000 people that have access to targeted healthcare centres across Cantanhez NP. We expect an increase in public awareness of leprosy resulting in longer-term changes in behaviours identified as potentially contributing to the spread of leprosy (e.g. primates as pets, hunting), with positive knock-on effects that might reduce the spread of other infectious diseases. We expect strengthened collaboration and reduced likelihood of conservation conflicts or those between local communities and health workers. Effective and long-term health and conservation conflict management requires parties to recognise problems as shared ones, and engage with clear goals, and a transparent evidence base, with

better integration of the underpinning social context. Lack of trust can stifle coordination efforts to stop retaliatory killings of wildlife and, in the early stages of disease outbreaks, make containment difficult.

A long-term infectious disease response protocol will be developed and incorporate suggested sources of financial aid to cover human medical treatment in the event of an outbreak. Once critical project data have been collected and analysed, the Ministry of Health in Guinea-Bissau and WHO will be contacted. We expect to identify factors in the current health systems and socio-cultural factors that contribute to whether or not the public seek medical treatment. These data will inform the public health campaign and will be used to further strengthen institutional capacity within the timeframe of our project, improving human health in the long-term. Our approach to understand local perceptions of disease takes into account the diversity between human groups and between genders allowing for targeted and more effective public health messages, thus maximising the potential for long-term behavioural change.

Growing human population and shifts towards permanent cashew orchards are causing deforestation and increasing spatial overlap/human-wildlife interactions (i.e. possible high disease transmission areas). In the short term, we expect a substantial increase in biodiversity monitoring capacity, providing multi-year data on the abundance of primates including threatened species, across Cantanhez NP. The monitoring programme will also allow us to determine the scale/distribution of leprosy affecting chimpanzees, baboons, Campbell's monkeys, and other species identified. From this we can model the spread of leprosy in chimpanzees and determine the long-term impact of the outbreak on wildlife population dynamics and persistence. The interaction map will identify and prioritise key habitat for conservation action and allow targeted public health awareness in 'high-risk' areas, thus mitigating risks of zoonotic disease outbreak in humans and wildlife in the longer-term. Improved management of wildlife refuges and corridors ('low risk' areas) will allow more effective long-term management of human-wildlife interactions.

Q15. Gender

All applicants must consider whether and how their project will contribute to reducing inequality between persons of different gender. Explain how your project will collect gender disaggregated data and what impact your project will have in promoting gender equality.

We are working directly with the Women's Associations in Cantanhez NP to ensure the opinions and needs of women and girls are fully represented throughout the project, from initial consultation and final evaluation (see Letter of Support). Using qualitative data collection, we will work with women to identify perceptions of disease and health services, as well as women-specific healthcare needs. We will ensure that all meetings and workshops are held at times when female representatives are able to participate.

For social reasons, local women are sometimes reluctant to share their opinions during large meetings and workshops. To avoid this, we will hold additional focus group meetings with women to ensure their opinions are incorporated into our conservation and health strategies.

This project will support and work closely with Aissa Regalla at IBAP, who is a strong female advocate for the inclusion of local women in biodiversity conservation and she will encourage women to apply for the Darwin Project Officer position at IBAP. The importance of women in disseminating and campaigning for health-related improvements is well known to all project partners including NADEL.

Within local realities it may not be possible to provide equal opportunities to women because of existing local structures. However, we will encourage women to apply for the Darwin Project Officer position at NADEL and will discuss employment directly with the Women's Associations to ensure at least three/four of the seven NADEL Darwin field officers are women.

Q16. Exit Strategy

State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave?

The project lead has spent 10 years establishing work at Cantanhez NP. Although this project tackles the newly emerging threat of leprosy, it is part of a longer-term project examining human-wildlife coexistence and great ape conservation. Following this project, Hockings and partners will continue ongoing collaborations to ensure the successful monitoring of biodiversity abundance/health in Cantanhez NP, and work with IBAP to extend our approach to other terrestrial NP's (this has been discussed by IBAP as a long-term goal). During the project, advanced training in survey establishment, and data entry, analysis and storage will be given to IBAP Darwin Project Officer and other IBAP team members, and a detailed protocol will be written up to facilitate training to future new employees.

Although setting up a widescale treatment programme is beyond the scope of this 3-yr project, leprosy is treatable through multi-drug therapy which is supplied free of charge by WHO. A communication chain protocol will be developed as part of the proposed response programme to ensure evidence-based and careful intervention by healthcare institutions. Relevant social anthropological data generated during this project will be made available to WHO and relevant organisations (following ethical guidelines) to ensure culturally sensitive healthcare intervention.

Please provide supporting documentation e.g. maps, diagrams etc., using the File Upload below:

Participant Information & Consent Form
01/12/2018
16:22:02
pdf 140 KB

Fig 2 Theory of Change
29/11/2018
13:20:28
pdf 69.39 KB

Section 9 - Existing works, Ethics & Safeguarding

Q17a. Harmonisation

Is this a new initiative or a development of existing work (funded through any source)?

◉ New Initiative

Q17b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work?

◉ No

Q18. Ethics

Outline your approach to meeting the Darwin Initiative's key principles for research ethics as outlined in the Guidance.

All work involving human participants will be carried out following the Association of Social Anthropologists "Ethics Guidelines for Good Research Practice" and all procedures will comply with National and UK legislation. Participants will be selected from different user groups. Only adults that can give informed consent will be selected. We will provide the participant with a 'Participant Information and Consent Form'

(see attachment), which will be translated into a Portuguese Creole and/or explained if the participant is illiterate. Whilst in the field and post-fieldwork, all data on human participants will be treated as highly confidential and participants will remain anonymous, including strict anonymity for people found to be suffering from leprosy. Details of people accidentally captured by camera traps will remain confidential, and no records kept of the individual/activity. Data collected in paper format will be kept locked securely in a metal box at the field site and at UoE, along with external hard drives that store data collected during this project.

All proposed research involving wild chimpanzees is non-invasive and strictly adheres to ethics guidelines detailed by the Association for the Study of Animal Behaviour (UK) and UoE. All regulations at the chimpanzee research station in Guinea-Bissau will be strictly followed. When in the apes' habitat strict hygiene will be observed, and a mask will always be worn to limit the spread of any infectious diseases from researchers. No person will enter the forest if unwell. The research will adhere to the legal requirements of Guinea-Bissau in which the research is carried out and research permissions will be obtained from IBAP. We received ethical approval from the Ethical Review Committee at the UoE for preliminary data collection on leprosy in chimpanzees and we anticipate no problems with obtaining permission for human and chimpanzee data collection for this project.

Q19. Safeguarding

(see Guidance Note 3.8)

Projects funded through the Darwin Initiative must fully protect vulnerable people all of the time, wherever they work. In order to provide assurance of this, we would like projects to ensure they have the appropriate safeguarding policies in place. Please tick the box to confirm you have relevant policies in place and that these can be available on request.

Checked

Section 10 - Biodiversity & Project Information

Q20. Raising awareness of the potential worth of biodiversity

If your project contains an element of communications, knowledge sharing and/or dissemination please provide a description of your intended audience, how you intend to engage them, what the expected products/materials will be and what you expect to achieve as a result. For example, are you expecting to directly influence policy in your host country or is your project a community advocacy project to support better management of biodiversity?

This project has urgent implications for managing chimpanzee-human contact. Delays in an evidence-based leprosy awareness campaign are likely to put humans and chimpanzees/other primates at serious risk, both within and outside Cantanhez (increased risks of infection and retaliatory culling). We are extremely concerned that if this delicate situation is not handled with care (e.g. the media or uninformed tourists spread sensationalised news including photos of chimpanzees with leprosy), local communities may fear direct transmission creating widespread panic with the likelihood of retaliatory killings. Indeed, this is made all the more pressing given the rapid and increasing encroachment of humans into chimpanzee habitat.

We will carefully share knowledge of leprosy with local people directly through the Darwin Research Fellow and NADEL Darwin Officers, workshops and meetings. Data generated throughout this project will inform a targeted leprosy awareness campaign to reduce the likelihood of retaliatory killings of wildlife, as well as potentially high-risk human behaviours including keeping primates as pets, primate hunting, and poor hygiene.

The biodiversity monitoring programme will provide IBAP with the first comprehensive dataset on biodiversity and wildlife health in Cantanhez NP allowing knowledge to be shared with various stakeholders (Governmental and Non-Governmental Organisations, local communities) during meetings and workshops. There is a paucity of published work that effectively evaluate the integration of human development with primate conservation. We will make publication of our approach a priority. This project will result in a substantial increase in our understanding of a leprosy outbreak in wildlife, and as such, we will communicate all findings (including datasets, and a frequent reports) to interested conservation and health stakeholders, including IUCN Primate Specialist Group and WHO.

Q21. Capacity building

If your project will support capacity building at institutional or individual levels, please provide details of what form this will take and how this capacity will be secured for the future.

At the institutional level, we will: (1) provide IBAP with better capacity to establish and run long-term biodiversity monitoring; (2) strengthen the human health system capacity to rapidly diagnose/manage leprosy and other infectious disease outbreaks; (3) enhance multi-stakeholder capacity to conserve key ecosystems and manage human-wildlife interactions; (4) build multi-sectoral, multi-stakeholder capacity to alleviate conservation conflicts and mitigate retaliatory killings arising from disease-related issues.

Through working directly with the Darwin Research Fellow and Project Leader, the IBAP Project Officer will gain expertise in managing and analysing large biological datasets. Darwin Field Officers will be trained to monitor wildlife using systematic surveys and collect faecal samples safely following strict protocols. Benjamin Mubemba, Zambian National, will work with Leendertz, RKI, to build expertise in molecular analyses for leprosy detection.

We will assess the capacity of local health workers to diagnose leprosy and other infectious diseases and provide additional clinical training by UoE/RKI. NADEL Project Officer and Field Officers will undergo extensive training in health communication by expert NADEL staff, CRIA, Darwin Research Fellow. We will work with IBAP, NADEL, local health workers, RKI, and other user groups that we will identify throughout the course of this project (potentially WHO, Ministry of Health) to develop a disease outbreak response programme that includes a clear and systematic communication/data sharing chain. Our strategy will allow rapid, coordinated, and efficient interventions by health institutions.

We will increase local participation (particularly women) and involve health workers in strategy planning (meetings, workshops, multi-stakeholder conservation plan) and implementation (awareness campaign, outbreak response/conflict mitigation programme). Data generated from this project and user groups knowledge/expertise will be shared during meetings/workshops and distributed via reports. This will increase knowledge, professional competence and participatory decision-making capacity at the individual level. Our approach will enable a long-term and sustainable multi-sectoral, multi-stakeholder collaboration and coordination

Q22. Access to project information

Please describe the project's open access plan and detail any specific funds you are seeking from the Darwin to fund this.

This project engages with numerous stakeholders and access to project information is a priority. All data will be made immediately available to all project partners. This project will generate numerous outputs including peer-reviewed scientific articles; leprosy response strategy; wildlife monitoring protocol;

conservation strategy with risk maps; regular reports to Darwin Initiative; training and outreach materials.

We will publish our data in peer-reviewed journal articles. In accordance with UoE's open access policy, publications in scientific journals will be archived as Green Standard (i.e. pre-submission format) on the UoE's online repository. This complies with RCUK's open access policy and forgoes the need for open access publication costs.

Reports and protocols will be written in English, Portuguese and/or Creole and will be made freely available (at times when the team consider it safe to publicise project results) to maximise the conservation/health implications of the research in Guinea-Bissau and Internationally.

All findings of conservation relevance will be relayed to the Great Ape section of the IUCN Primate Specialist Group. Data on chimpanzee distribution/abundance will be uploaded to the APES database: http://apesportal.eva.mpg.de/database/archiveTable.

The data collected will be widely advertised using National/International seminars. Data of relevance to those outside the UoE will be made available on request, following UoE's commitment to promote open access to data.

To ensure that local people receive updated project information we will integrate new developments into outreach programmes/workshops/meetings and provide summary information sheets in Creole. We will carefully share findings through social media (Facebook, Twitter) and local media outlets (radio stations).

Section 11 - Logical Framework

Q23. Logical Framework

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

Impact:

Improved public health through increased resilience to infectious disease outbreaks in local communities, with improved capacity to manage threatened biodiversity and human-wildlife interactions, at Cantanhez National Park, Guinea-Bissau.

Project summary	Measurable Indicators	Means of verification	Important Assumptions

Outcome: Reduced risk of transmission of leprosy benefitting 28,000 people and threatened wildlife through behavioural change in public health, mitigated conflicts over conservation and disease, and improved protection of key habitat	0.1 By the end of Y3, capacity of the local healthforce to rapidly identify and manage cases of zoonotic infections including leprosy is increased by 80%, and at least 50% of households surveyed demonstrate improvement in health-related behaviours compared to baseline established in Y1 0.2 By the end of Y2, multi-stakeholder preparedness for leprosy outbreak and related conflicts is increased by 75% compared to baseline zero. 0.3 By the end of Y3, wildlife associated with >60% of villages and all main forest areas (c. 11,000ha across CNP) are surveyed for abundance and leprosy (primates). No decrease in primate abundance compared to baseline established in Y1. 0.4 By the end of Y3, there has been no loss of key habitat (main forest blocks).	0.1 Pre- and post-clinical training questionnaires to health professionals Y1 and Y3, and visits to hospitals by Darwin Project Officer 1. Social data from Darwin Research Fellow 0.2 Response strategy to mitigate and control leprosy outbreaks and conflicts developed. Number of workshops/meetings and attendees, number of group/organisation representatives. 0.3 Data collection (transects, faecal sampling and camera trap surveys) and analysis (RKI, DPO, IBAP, UoE). 0.4 Land classification analysis of satellite imagery from Y1 and Y3.	Anonymous data shared for all patients and records kept appropriately by health workers (health data was previously shared during cholera outbreak with NADEL). Training of health workers in file management and confidentiality. Stakeholders, including partners and key local collaborators such as the Womens Association, remain engaged and committed to improve health throughout the project Local community leaders and IBAP remain committed to developing an evidence-based conservation strategy to reduce the risk of potential leprosy transmission, including protection of key wildlife habitat and monitoring of high-risk areas Country remains politically stable (since its inception IBAP has remained unaffected by political instability and our research team has experienced no problems working in Cantanhez NP).

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 Cantanhez NP.	1.1 By the end of Y2, awareness campaign based on sociocultural data developed and implemented. By the end of Y3, at least 50% of the population (men and women) have participated in campaign. 1.2 By end of Y1 high-risk behaviours that encourage disease transmission identified, and by the end of Y3 high-risk behaviours reduced by at least 50% from baseline established in Y1. 1.3 By end of Y2, 100% health professionals at the 8 centres in Cantanhez have improved capacity to rapidly identify zoonotic disease, including leprosy. 1.4 By the end of Y3, public knowledge of leprosy and transmission risks is improved in 90% of respondents, compared to Y1 baseline with less than 5% of respondents indicating negative perceptions of/attitudes towards wildlife concerning disease.	1.1 Data collection by Darwin Reseach Fellow, workshop to develop campaign completed, training attendance certificates and campaign activities of Health DFO's. Records of people involved in group discussions and other campaign activities by DFO's. 1.2 Pre- and post-campaign data collection. 1.3 Training attendance certificates. Pre- and post- clinical training data collection. 1.4 Pre- and post-campaign data collection.	Health DFO's remain active and engaging throughout the campaign, and the local communities are willing to dedicate time and engage in activities throughout the duration of this project. Risks of leprosy-related retaliatory behaviour towards wildlife are reduced by increasing the public's knowledge about zoonotic disease (including information about transmission risks, mitigation strategies associated with human behaviour, leprosy disease life cycle, health care provision by the local and regional health institutions). The presence of leprosy in chimpanzees at Cantanhez is not discussed with and sensationalised by the media (to avoid this, we have a signed confidentiality agreement between IBAP, NADEL and researchers).

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	2.1. By the end of Y1, the wildlife monitoring capacity in Cantahez NP is increased by 100% compared to baseline zero. Eight DFOs and one DPO collect, enter and analyse data. 2.2 By Y3, regular monitoring has improved knowledge of biodiversity and disease presence across Cantanhez NP (including pilot data collected in 2018 - Halpin Urgency Grant). 2.3 By Y3, monitoring programme evaluated and incorporated into IBAP's long-term management of Cantanhez NP.	2.1 Training course certificates of attendance. Data entry and analysis. 2.2 Data collection, analysis and report written up. Samples analysed for presence/absence of leprosy and results written up. 2.3 Conservation management programme published on IBAP's website. Results submitted for publication in a peer-reviewd journal.	Partner organisation staff (IBAP) continue to be employed during and beyond the completion of this project (and find substitutes if necessary). Please note: In this project we do not cover wildlife treatment costs. Chimpanzees and other primates have intentionally not been habituated to researcher presence, making the darting and treatment of infected individuals extremely complicated, costly and ethically questionable. Please note: the monitoring programme focuses on all wildlife (including six primate species, ungulates, rodents, small carnivores). This is important because the wildlife reservoirs for leprosy are currently unknown.

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 Cantanhez NP	3.1 By beginning of Y2, key wildlife habitat including corridors, and areas of high risk of leprosy transmission are identified using Y1 monitoring data and faecal analysis. 3.2. By the beginning of Y3, the plan is developed by stakeholders (IBAP, Management Committee and other group representatives including from the Cantanhez Women's Associations) comprising at least 50% women. 3.3 By the end of Y3, the plan is written by IBAP and formally agreed by IBAP and local communities.	3.1 Production of human-wildlife interaction hotspot maps and report. 3.2 Pre-plan meetings and 2-day workshop delivered (N of attendees and group representatives). Consensus achieved. 3.3 Plan formally signed by IBAP and local community representatives at Cantanhez NP.	Partners and local stakeholders remain committed to engage in project meetings and workshop. Consensus is achieved for the plan. No unresolvable conflict occurs between local communities and partners during the course of this project.

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 Cantanhez NP.	4.1 By end of Y3, improved coordination, communication and collaboration amongst health and conservation stakeholders compared to baseline (zero) 4.2 By end of Y2, infectious zoonotic disease response strategy drafted and sources of financial aid to cover human medical treatment identified (e.g. Ministry of Health Guinea-Bissau, WHO) 4.3 By end of Y2, a response strategy in the event of retaliatory killings of proteced wildlife developed and agreed by IBAP and community representatives	4.1 N of representatives for each group/institution attending regular meetings. N of reports shared amongst partner organisations. 4.2 Strategy written up and distributed to stakeholders. 4.3 Pre- and post-strategy meetings and 2-day workshop delivered (N of attendees and group representatives). Strategy written up in report.	Stakeholders recognise the long-term importance of the strategy and remain committed throughout and beyond the completion of this project. Roles and responsibilities in mitigation strategies and response to emergencies are fully accepted and recognised by partners and stakeholders. Response team and stakeholders take responsibility to find substitutes if necessary. Please note: In this project we do not cover human medical treatment costs. When developing the long-term response strategy we will identify funding for treatment costs, as was done previously (in collaboration with NADEL) during a recent cholera outbreak. WHO offer free leprosy treatment.
Output 5: *No Response*	*No Response*	*No Response*	*No Response*

Do you require more Output fields?

It is advised to have less than 6 Outputs since this level of detail can be provided at the Activity level.

⦿ No

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)

The word count for each individual activity should be no more than 25 words.

Activity details

Activity Number

1.1

Activity Details

NADEL and DRF to train NADEL DPO in pre-campaign data collection, entry and analysis.

Activity details

Activity Number

1.2

Activity Details

DRF conduct interviews to understand disease perceptions/health services. DPO collect questionnaire data to establish baselines health risk behaviours (<100 households), capacity at eight health centres.

Activity details

Activity Number

1.3

Activity Details

DRF and DPO to analyse data, write report and disseminate to project partners.

Activity details

Activity Number

1.4

Activity Details

NADEL, CRIA, DRF to develop workshop health campaign strategy (using data collected in 1.2). DPO and DRF to write up and finalise health campaign strategy.

Activity details

Activity Number

1.5

Activity Details

NADEL and UoE to select and train seven Health campaign DFO's.

Activity details

Activity Number

1.6

Activity Details

NADEL DPO, DFOs, DRF to run health campaign. DPO coordinate DFOs to conduct outreach activities (meetings >70 of 110 villages, >14,000 people) across Cantanhez NP.

Activity details

Activity Number

1.7

Activity Details

NADEL, UoE and RKI to carry out clinical training to health workers at eight health centers.

Activity details

Activity Number

1.8

Activity Details

NADEL DPO & DRF to evaluate impact of campaign, collect data to compare to baseline. Reports shared with partners every 3 months.

Activity details

Activity Number

2.1

Activity Details

IBAP, UoE train IBAP DPO and eight DFOs in data collection (DFOs: wildlife survey, primate faecal sampling; DPO: data management and analysis, report writing).

Activity details

Activity Number

2.2

Activity Details

UoE and IBAP DPO to establish survey areas (transects and camera trap sites).

Activity details

Activity Number

2.3

Activity Details

IBAP, UoE to coordinate monitoring programme. DFOs walk transects to collect primate survey data, set up/maintain camera traps, collect faecal samples.

Activity details

Activity Number

2.4

Activity Details

IBAP DPO to monitor progress of wildlife monitoring programme via data entry/meetings with DFOs, UoE. Data/report shared with project partners every 3 months.

Activity details

Activity Number

2.5

Activity Details

Sample handling/analysis: IBAP DPO transport faecal samples to Bissau every 2 months. RKI organise shipping/import permits, IBAP ship faecal samples to RKI every 6 months.

Activity details

Activity Number

2.6

Activity Details

IBAP DPO, DRF evaluate programme (abundance indices/primate distribution/leprosy occurrence). Report writeup/share with project partners every 6 months. UoE conduct land classification analysis Y1/Y3 satellite imagery.

Activity details

Activity Number

2.7

Activity Details

UoE, IBAP finalise wildlife monitoring protocol (procedures for data collection/entry/management/analysis) for incorporation into IBAP's long-term management plan for Cantanhez NP.

Activity details

Activity Number

3.1

Activity Details

UoE analyse spatial data to create human-wildlife interaction hotspot maps, based on Y1/Y2 wildlife survey/faecal data, human social data (risk behaviour).

Activity details

Activity Number

3.2

Activity Details

UoE and RKI write up results and disseminate to project partners.

Activity details

Activity Number

3.3

Activity Details

UoE and IBAP to meet with local communities to present and discuss human-wildlife interaction maps.

Activity details

Activity Number

3.4

Activity Details

Local community representatives and project partners participate in workshop to develop a human-wildlife interaction plan for management of high risk areas.

Activity details

Activity Number

3.5

Activity Details

UoE to draft human-wildlife interaction plan including maps and workshop proceedings and share with local communities and project partners.

Activity details

Activity Number

3.6

Activity Details

UoE and IBAP to finalise multi-stakeholder human-wildlife interaction plan and share with local communities and project partners.

Activity details

Activity Number

4.1

Activity Details

Opening meeting with project partners and stakeholders. Present project objectives and timeline, establish roles and responsibilities. Meeting proceedings written up and distributed to project partners.

Activity details

Activity Number

4.2

Activity Details

Project partners to meet for annual M&E.

Activity details

Activity Number

4.3

Activity Details

All project partners to identify and engage with relevant organisation focal points (incl. Ministry of Health, Bissau hospitals, WHO) for inclusion in the response strategy.

Activity details

Activity Number

4.4

Activity Details

Project partners to hold workshop to develop long-term disease readiness/conflict mitigation strategy (in collaboration with local stakeholders and focal points of relevant organisations).

Activity details

Activity Number

4.5

Activity Details

Project partners to write response strategy to be approved by key organisations and local stakeholders (UoE/IBAP:conflict mitigation strategy; NADEL/health organisations: disease outbreak response strategy).

Activity details

Activity Number

4.6

Activity Details

NADEL DPO and IBAP DPO to monitor and evaluate the conservation/disease related strategies via meetings and reports every 3 months.

Section 12 - Implementation Timetable

Q24. Provide a project implementation timetable that shows the key milestones in project activities

Please complete the Excel spreadsheet linked below to describe the intended workplan for your project.

Implementation Timetable Template

Please add columns to reflect the length of your project.

For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out. The workplan can span multiple pages if necessary.

Darwin_R25_Stage_2_Implementation_Timetable_Hockings
01/12/2018
12:14:34
xlsx 17.73 KB

Section 13 - Monitoring and Evaluation

Q25. Monitoring and evaluation (M&E) plan

Describe, referring to the Indicators above, how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.

Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact. Additionally, please indicate an approximate budget and level of effort (person days) to be spent on M&E (see "Finance for Darwin and IWT Guidance").

M&E will allow us to flexibly manage the project including the revision of targets and activities where necessary to maximise project success. In addition to formal M&E meetings, M&E is also incorporated into project activities, such as to assess baselines and change. UoE has a strong reputation for managing conservation projects worldwide based on sound science and have successfully delivered 11 Darwin projects.

To ensure targets are met on-time and on-budget, in-country partners will produce an annual workplan with agreed activities to support objectives and the approved budget. In-country partners will hold quarterly meetings, from which a progress report that follows a standardised format will be submitted to the project leader Hockings and distributed to all partners. Members of the UoE project team will meet face to face with all project partners during an opening meeting at the beginning of Year1 as well as during M&E meetings in Q3 of Years1,2,3 to conduct project planning, monitoring and evaluation, and generate an annual review (comprises full M&E budget). Progress in project activities and completion of key milestones

will be monitored through the abovementioned quarterly reports. This process ensures timely completion of activities, and quickly flags up any issues for attention. These reports provide the basis for writing an annual progress report that is submitted to all project partners.

Outside these formalised management and evaluation procedures and meetings, there will be regular communication between project partners in-country and the UK via email, WhatsApp and Skype. The Darwin Fellow will spend most of her time between Cantanhez NP and Bissau, Guinea-Bissau, and regularly meet with Guinean project partners, staff and local communities to share new developments and to ensure any problems are resolved quickly. The Project Leader will work closely with the Darwin Fellow and arrange additional meetings with partners when in Guinea-Bissau. In addition, M&E is undertaken by both Darwin Project Officers during the health campaign and wildlife monitoring programme and conservation conflict mitigation and disease response strategy.

The project has clear biodiversity and health targets which will be monitored to measure impact using a Before-After-Control-Impact design, these include:

Health Awareness Campaign (activities 1.6 & 1.8) – NADEL DPO to monitor (via meetings, campaign data analysis, reports shared with project partners) and evaluate success (pre & post-campaign survey questionnaires to health workers/communities) of campaign.

Wildlife Monitoring Programme (activities 2.4 & 2.6) – IBAP DPO to monitor progress of wildlife monitoring (via data entry/meetings with DFOs) and evaluate programme (via analysis of wildlife abundance, leprosy distribution).

Conservation and Disease Strategy (activities 4.2 & 4.6) – NADEL DPO and IBAP DPO to monitor and evaluate strategy (via meetings/reports every 3 months).

Important Assumptions will be regularly evaluated/updated to enable ongoing assessment of project success and to identify the reasons for any failings. See ethics section for information on data storage.

Total project budget for M&E (this may include Staff and Travel and Subsistence Costs)	
Number of days planned for M&E	144
Percentage of total project budget set aside for M&E	2

Section 14 - Funding and Budget

Q26. Budget

Please complete the Excel spreadsheet linked below, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet.

Darwin and IWT Budget Template

Please refer to the Finance for Darwin/IWT Guidance for more information.

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. The Darwin Initiative cannot agree any increase in grants once awarded.

Please upload your completed Darwin Budget Form Excel spreadsheet using the field below.

Hockings budget_St2_-_Darwin_R25
01/12/2018
21:28:28
xls 126.5 KB

Q27. Value for Money

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

How our budget was calculated

Our project team has calculated an up-to-date and accurate budget based on our extensive knowledge of working and living in Cantanhez NP and Bissau, and experience with large budgets. Workshops and fieldwork costs are based on our team members experience of organising similar events and activities.

How we provide value for money

We have prioritised cost effectiveness and efficiency when calculating this budget, including sourcing materials and services locally wherever possible. This project has secured 64% matched funds and we have made value for money a priority. Project partners have made significant commitments in staff time, overheads, consumables, laboratory analyses, international and national travel, and subsistence. This project can make use of consumables, including camera traps, bikes and photographic equipment etc, from project partners and previously funded projects (e.g. Halpin Trust). Where possible, the project will use freely available data including Global Forest Watch imagery and sentinel imagery. Activities are cost effective because we employ Guinean staff as Darwin Officers and Field Officers following locally appropriate pay scales with capacity building benefits. Time from all other project partners is included as matched funding. This project will also build on existing infrastructure in Guinea-Bissau, resulting in cost-effectiveness. This has extensively reduced funds sought from Darwin.

Q28. Capital items

If you plan to purchase capital items with Darwin funding, please indicate what you anticipate will happen to the items following project end.

No Capital Items will be purchased. All equipment (GPSs, cameratraps etc) are small and considered consumables.

Q29. Match funding (co-financing)

Are you proposing co-financing?

◉ Yes

Secured

Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity, as well as any your own organisation(s) will be committing.

Donor Organisation	Amount	Currency code	Comments
UoE		UK pounds	Halpin Trust urgency pilot data (£X); UoE Central Institutional Funds including staff time and overheads (£X)
RKI		UK pounds	Laboratory molecular analyses for leprosy presence in chimpanzee faecal samples, including staff time and research assistant
CRIA		UK pounds	Consumables, travel and staff time
IBAP		UK pounds	Staff time and logistical support

Unsecured

Provide details of any co-financing where an application has been submitted, or that you intend applying for during the course of the project. This could include co-financing from the private sector, charitable organisations or other public sector schemes.

Date applied for	Donor Organisation	Amount	Currency code	Comments
03 December 2018	NADEL		UK pounds	STAFF TIME IS CONFIRMED (but no space to enter 5th confirmed funding source). Staff time
No Response	*No Response*	*No Response*	*No Response*	*No Response*
No Response	*No Response*	*No Response*	*No Response*	*No Response*
No Response	*No Response*	*No Response*	*No Response*	*No Response*

Do you require more fields?

⊙ No

Q30. Financial Risk Management

Explain how you have considered the risks and threats that may be relevant to the success of this project, including the risks of fraud or bribery.

• The UoE has an Anti-Fraud and Bribery policy
• UoE financial policies and procedures are subject to regular review and updating, ensuring they remain appropriate for the projects we implement, as well as internal and external compliance requirements.
• UoE Health and Safety procedures require risk assessments and Emergency Procedures to be completed prior to initiating any activities delivered by UoE staff (see staff codes of conduct: http://www.exeter.ac.uk /staff/employment/codesofconduct/staff/)
• In country, our 10-year experience and presence means we understand the geographic and political landscape and we continue to strengthen ties with national and local government, and local communities.
• We have worked extensively with IBAP who issue our research permits to work in Cantanhez NP and they are fully integrated into this project.
• IBAP and NADEL fully understand that the funds sought to employ two Darwin Project Officers and Darwin Field Officers for NADEL are to be used solely for that purpose with full accountability.
• The effects of Brexit on the Pound is of concern, however, we have been monitoring exchange rates and are confident that our budgeted exchange rate are realistic.

Section 15 - FCO Notifications

Q31. FCO Notifications

Please put an X in the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country.

Checked

Please indicate whether you have contacted your Foreign Ministry or the local embassy or High Commission (or equivalent) directly to discuss security issues (see Guidance Notes) and attach details of any advice you have received from them.

⊙ Yes, written advice

Letter of Support - Honorary Consulate Guinea-Bissau
29/11/2018
17:10:09
pdf 37.82 KB

FCO Guinea-Bissau travel advice 29 November 2018
29/11/2018
17:08:59
pdf 885.25 KB

FCO update
29/11/2018
17:08:59
pdf 285.91 KB

Section 16 - Certification

Q32. Certification

On behalf of the

Company

of

University of Exeter

I apply for a grant of

£325,043.00

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- **I have uploaded CVs for project principals and letters of support.**
- **I have uploaded our most recent signed audited/independently verified accounts and annual report.**

Checked

Name	Kimberley Hockings
Position in the organisation	Lecturer in Biosciences
Signature (please upload e-signature)	**KH signature JPEG** 30/11/2018 21:28:48 jpg 7.19 KB
Date	30 November 2018

Section 17 - Submission Checklist

Stage 2 Application - Checklist for submission

	Check

Have you read the Guidance (including Guidance for Applicants and Finance for Darwin and IWT Guidance)	Checked
Have you read, and can you meet, the current Terms and Conditions for this fund?	Checked
Have you provided actual start and end dates for your project?	Checked
Have you provided your budget based on UK government financial years i.e. 1 April – 31 March and in GBP?	Checked
Have you checked that your budget is complete and correctly adds up?	Checked
Has your application been signed by a suitably authorised individual?	Checked
Have you uploaded a 1 page CV for all the Project Staff on this project, including the Project Leader?	Checked
Have you uploaded a letter of support from the main partner(s) organisations?	Checked
Have you included a cover letter from the lead organisation, outlining how any feedback received at Stage 1 has been addressed?	Checked
Have you been in contact with the FCO in the project country/ies and have you included any evidence of this?	Checked
Have you uploaded a signed copy of the last 2 years annual report and accounts for the lead organisation?	Checked
Have you checked the Darwin website to ensure there are no late updates?	Checked
Have you read and understood the Privacy Notice on GOV.UK?	Checked

We would like to keep in touch! Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.

Unchecked

Data protection and use of personal data

Information supplied in this application form, including personal data, will be used by Defra as set out in the latest copy of the Privacy Notice for Darwin, Darwin Plus and the Illegal Wildlife Trade Challenge Fund available **here**. This Privacy Notice must be provided to all individuals whose personal data is supplied in the application form. Some information, but not personal data, may be used when publicising the Darwin Initiative including project details (usually title, lead organization, location, and total grant value) on the GOV.UK and other websites.

Information relating to the project or its results may also be released on request, including under the 2004 Environmental Information Regulations and the Freedom of Information Act 2000. However, Defra will not permit any unwarranted breach of confidentiality nor will we act in contravention of our obligations under the General Data Protection Regulation (Regulation (EU) 2016/679).