Applicant: **Martins, Dino**
Organisation: **Mpala Research Centre**
Funding Sought: **£393,675.00**

DIR27S2\1040

African wild dogs and African people – Conservation through Coexistence

Hope for the coexistence of people and wildlife once came from Kenya's Ewaso ecosystem, where a globally important African wild dog population thrived alongside local communities. Then in 2017, an epidemic killed 98% of Ewaso's wild dogs. The rabies and human-predator conflict which block wild dog recovery also kill people, impact livelihoods, and threaten other large carnivores. This Kenyan-led project aims to locally eradicate rabies, and resolve human-predator conflicts, restoring African wild dogs, and hope, to Ewaso's rangelands and people.

Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Title	Dr
Name	Dino
Surname	Martins
Organisation	Mpala Research Centre
Website (Work)	www.mpala.org
Tel (Work)	[redacted]
Email (Work)	[redacted]
Address	[redacted]

GMS ORGANISATION

Type	**Organisation**
Name	Mpala Research Centre
Phone (Work)	+ [redacted]
Email (Work)	[redacted]
Website	[redacted]
Address	[redacted]

Section 2 - Title, Dates & Budget Summary

Q3. Project title:

African wild dogs and African people – Conservation through Coexistence

What was your Stage 1 reference number? e.g. DIR27S1\100123

DIR27S1\1110

Q4. Country(ies)

Which eligible host 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	Kenya	**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 July 2021	30 June 2024	3 years

Q6. Budget summary

Year:	2021/22	2022/23	2023/24	2024/25	Total request
Amount:	£76,306.00	£146,666.00	£133,989.00	£36,714.00	**£** 393,675.00

Q6a. Do you have matched funding arrangements?

⦿ Yes

What matched funding arrangements are proposed?

We have confirmed access to £[redacted] in matched funding, of which £[redacted] represents Mpala's in-kind contribution of the Project Leader's time. A further £[redacted] comes from a smaller-scale project supported by IUCN/SOS. Other contributions are a £[redacted] grant for domestic dog rabies vaccination (from Veterinarians International), and £[redacted] for wild dog monitoring (from a Natural Environment Research Council grant). We also have in-kind contributions of rabies vaccine (from government), and staff time (from technical advisors). The only unconfirmed matched support relates to rabies vaccine, which is confirmed for the first year and likely to be confirmed for future years.

Q6b. Proposed (confirmed and unconfirmed) matched funding as % of total project cost (total cost is the Darwin request plus other funding required to run the project). [redacted]

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.

Hope for the coexistence of people and wildlife once came from Kenya's Ewaso ecosystem, where a globally

important African wild dog population thrived alongside local communities. Then in 2017, an epidemic killed 98% of Ewaso's wild dogs. The rabies and human-predator conflict which block wild dog recovery also kill people, impact livelihoods, and threaten other large carnivores. This Kenyan-led project aims to locally eradicate rabies, and resolve human-predator conflicts, restoring African wild dogs, and hope, to Ewaso's rangelands and people.

Section 4 - Darwin Objectives and Conventions

Q8. Objectives for the Darwin Initiative

Please indicate which of the fund objectives (listed on p.8 of the guidance) you will be addressing.

- ☑ To understand and support action to address linkages between biodiversity and human health
- ☑ To understand and tackle impacts of agriculture practices on biodiversity, livelihoods and climate
- ☑ To promote the responsible stewardship of natural assets
- ☑ Contributing towards reversing the increase in threats of extinction to the world's flora and fauna

Q9. Biodiversity Conventions, Treaties and Agreements

Q9a. Your project must support the commitments 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.

- ☑ Convention on Biological Diversity (CBD)
- ☑ Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- ☑ United Nations Framework Convention on Climate Change (UNFCCC)
- ☑ Global Goals for Sustainable Development (SDGs)

Q9b. Biodiversity Conventions

Please detail how your project will contribute to the aims of the agreement(s) your project is targeting. You should refer to Articles or Programmes of Work here.

Our project addresses four of Kenya's commitments under the Convention on Biological Diversity, as outlined in its National Biodiversity Strategy and Action Plan (1). First, our project addresses Kenya's commitment to "restore threatened species" (Action 10) by recovering a globally important population of an endangered species. Second, the project addresses Kenya's commitment to "reduce the impacts of poverty on biodiversity" (Action 4), by empowering poor and marginalised people to coexist with wildlife. Third, our project addresses Kenya's commitment to "promote sustainable development activities in arid and semi-arid lands" (Action 8), by improving the health and wellbeing of people in the semi-arid project area, and also by recovering a species important to the local tourism industry, an important generator of income in such dry lands (2). Fourth, our project addresses Kenya's commitment to "strengthen the national capacity for research… and scientific cooperation" (Action 16) by building capacity among Kenyan conservationists and scientists.

Our project also addresses decision UNEP/CMS/COP12/CRP36 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) which requests that range states "develop and implement within communities evidence-based strategies that reduce disease transmission to… and… livestock depredation by… African wild dogs"(3). This project aims to develop and implement exactly such strategies. The African

Wild Dog has been designated for 'Concerted Action' by CMS (4).
Additionally, our project addresses the aims of a new joint programme between CMS and the Convention on International Trade in Endangered Species (CITES), the African Carnivores Initiative (5), which targets wild dogs, lions, leopard, and cheetahs, all of which are expected to benefit from our project. Our project addresses this initiative's aims to "promote the coexistence of local communities and the four carnivores", to "develop and implement… monitoring protocols for large carnivore populations to inform management decisions" to "develop the capacity of Range States to monitor populations of the four species" and to "improve education and awareness on the plight of African carnivores" (5).
The African Carnivores Initiative also encourages parties to implement existing IUCN/SSC strategies for wild dog and cheetah conservation (6). The IUCN/SSC strategy for eastern Africa (7), which provided a template for Kenya's national conservation strategy (8), recommends implementation of "holistic canid disease management strategies" (Target 1.5), dissemination of "sustainable tools to reduce… impacts on livestock" (Target 1.2), "awareness creation programmes relevant to wild dog and cheetah conservation" (Target 1.4) , employment of "cheetah and wild dog specialists… including… community liaison" (Target 3.2) and "awareness raising among… civil society… about wild dog and cheetah populations" (Target 5.3), all targets which are being addressed by our project.
Our project also addresses commitment 1e of the Convention on Climate Change (9) by supporting "adaptation to the impacts of climate change". While the link to climate change is not direct, previous research suggests multiple impacts of climate change on wild dog demography and behaviour (10-12), including synergistic effects of high temperatures and disease (13). Hence, our work to mitigate disease threats to wild dogs should also address an impact of climate change.

Q9c. Is any liaison proposed with the CBS / ABS / ITPGRFA / CITES / CMS / Ramsar / UNFCCC focal point in the host country?

⦿ Yes

If yes, please give details.

Our team has close links to Kenya's CITES and CMS focal point, Dr Patrick Omondi, who represents the Kenya Wildlife Service on Mpala's Board of Trustees. Likewise, CBD focal point Dr Beatrice Khayota is a member of Mpala's Science Advisory Board, representing the National Museums of Kenya. Another CBD focal point, Dr Samuel Kasiki, preceded Dr Omondi as KWS representative on Mpala's board and, in his current role as KWS Chief Scientist, collaborates closely with Mpala.

Q9d. Global Goals for Sustainable Development (SDGs)

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

Our project addresses four of the Global Goals for Sustainable Development (14).
Goal 3 aims to "ensure healthy lives". Our project contributes to this goal through its efforts to eradicate rabies locally. Rabies is estimated to kill approximately 25 people annually in the project area (15), but national rabies control efforts will not reach this area for many years (15). By establishing long-term vaccination, our three-year project will save the lives of approximately 75 people.
Goal 15 aims to "halt biodiversity loss". Our project contributes to this goal by recovering a globally-important population of (endangered) wild dogs and by reducing threats to other vulnerable carnivores (cheetahs, lions, leopards). Top predators, including wild dogs, have multiple impacts on savanna ecosystems (16,17), hence our conservation efforts will impact biodiversity beyond the focal species.
Goal 1 aims to "end poverty in all its forms everywhere". Our work to reduce the impacts of predators (including less threatened but more damaging species such as spotted hyaenas) on livestock will contribute to this goal. We have previously estimated that predation on livestock can cost households 11% of their annual income (18), a figure that our project aims to reduce. Moreover, contributing to the restoration of

wild dog tourism should help support the >1,300 local households reliant on income from tourism (2). Finally, Goal 13 aims to “combat climate change and its impacts”. Wild dogs are adversely affected by climate change (10-12), and our work to alleviate other threats should make their populations more climate-resilient.

Section 5 - Lead Organisation Summary

Q10. Lead organisation summary

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

⦿ No

If no, please provide the below information on the lead organisation.

What year was your organisation established/ incorporated/ registered?	01 January 1994
What is the legal status of your organisation?	⦿ NGO
How is your organisation currently funded?	Mpala Research Centre’s funding comes primarily from donors and from researcher fees, grants, and projects. Mpala also has an endowment held at Princeton University, and the Mpala Wildlife Foundation is a registered as a 501(c)(3) nonprofit organisation in the USA.

Describe briefly the aims, activities and achievements of your organisation. Large organisations please note that this should describe your unit or department.

Aims	To generate knowledge that has implications for policy and environmental management, and to equip communities to become active participants in conservation while benefiting from local economic resources.
Activities	Mpala comprises an international field station and a working cattle ranch, in the rangelands of northern Kenya where wildlife and livestock coexist. The research and outreach conducted at Mpala concern conservation and Animal Behavior, Savannah and Rangeland Ecology, Ecosystem studies, Ecohydrology, Evolution, and One Health.

Achievements	For 26 years, scientists at Mpala have conducted world-class research relevant to species conservation, ecosystem function, and disease ecology. Mpala also works with partners to implement science-based conservation. We are currently expanding our training of African scientists, and recently established the first genomics and stable isotope lab in sub-Saharan Africa.

Provide details of 3 contracts/projects held by the lead organisation that demonstrate your credibility as an organisation and provide track record relevant to the project proposed.

These contracts/awards should have been held in the last 5 years and be of a similar size to the grant requested in your Darwin application.

Contract/Project 1 Title	MpalaLive!
Contract Value/Project budget (include currency)	USD [redacted]
Duration (e.g. 2 years 3 months)	2 years
Role of organisation in project	Mpala staff manage live webcams to allow internet users to observe Mpala's wildlife in real time. The Mpala team built and maintain the field guide, classroom, and "stories from the bush" sections of the MpalaLive! Website.
Brief summary of the aims, objectives and outcomes of the project	The MpalaLive! project is a web-based education and outreach project which teaches school children and the general public about African wildlife, using lesson plans (designed for the Kenyan and USA school curricula), videos, and live webcams. MpalaLive! has received 45 million views since it was established in 2014, and is visited approximately 700 times per day.
Client/independent reference contact details (Name, e-mail)	Blanch Vance Annenberg Foundation [redacted]

Contract/Project 2 Title	Forest Geo Project

Contract Value/Project budget (include currency)	[redacted] USD a year
Duration (e.g. 2 years, 3 months)	7 years
Role of organisation in project	1. Liaison with government agencies for licensing and permitting for research projects 2. Access to Mpala property for research 3. Fund management in accounting 4. Project staff recruitment and administration
Brief summary of the aims, objectives and outcomes of the project	The Forest Global Earth Observatory (ForestGEO) is a global network of scientists and forest research sites dedicated to advancing long-term study of the world's forests. The aim is to conduct long term research on forests to: • Increase scientific understanding of forest ecosystems • Guide sustainable forest management and natural-resource policies • Monitor the impacts of global climate change • Build capacity in forest science Mpala is one of 67 ForestGEO sites, and tree monitoring at Mpala has already revealed insights into patterns and drivers of tree diversity.
Client/independent reference contact details (Name, e-mail)	David Kenfack African Program Coordinator CTFS – ForestGEO Smithsonian Tropical Research Institute [redacted]

Contract/Project 3 Title	Buffel Grass Project
Contract Value/Project budget (include currency)	~[redacted] USD a year
Duration (e.g. 2 years, 3 months)	6 years
Role of organisation in project	1. Liaison with government agencies for licensing and permitting for research projects 2. Access to Mpala property for research 3. Fund management in accounting 4. Project staff recruitment and administration

Brief summary of the aims, objectives and outcomes of the project	1. To understand and quantify the ecological differences in buffel grass when growing in native and introduced ranges. This will provide insights for buffel grass management, and will contribute to invasive species science. 2. To understand whether the observed differences in buffel grass productivity are due to release from stressors such as competition, grazing, arthropod herbivory or fungal activity 3. To discover and evaluate arthropods as potential biological control agents by conducting surveys on buffel grass and its related species of grasses.
Client/independent reference contact details (Name, e-mail)	Dr. Rob Plowes Department of Integrative Biology The University of Texas at Austin [redacted]

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

Please attach the requested signed audited/independently examined accounts.

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Section 6 - Project Partners

Q11. 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 the Lead Organisation and 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:	Mpala

Website address:	https://mpala.org
Details (including roles and responsibilities and capacity to engage with the project):	Mpala will lead the project, coordinating all elements of the work and contributing technical expertise including scientific, veterinary, and community development capability. Mpala will also use its convening power to facilitate the engagement with communities, policymakers, health professionals, other NGOs, local, national and international expertise which are so essential to this multidisciplinary project. Mpala will host the workshops and training courses outlined in this proposal. Mpala will host the core project team on its site at the centre of the project area, providing office space, accommodation, meeting rooms, laboratory facilities, vehicle workshop services, accounting services, internet access, security, and other support. Mpala will employ the core project staff, and Mpala's Executive Director will lead the project with input from the technical advisors in Kenya and internationally. For several years, Mpala has led the predecessor to this project, the smaller-scale Laikipia Rabies Vaccination Campaign. It therefore has the knowhow to deliver domestic dog vaccination at scale. Moreover, most of the research on large carnivore (including wild dog) ecology and conservation underpinning the project was also conducted from Mpala. Hence Mpala, and the technical advisors it is able to convene, is well-equipped to lead this project.
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:	Kenya Wildlife Service
Website address:	http://www.kws.go.ke

Details (including roles and responsibilities and capacity to engage with the project):	Kenya Wildlife Service (KWS) will provide technical guidance to the project, including ensuring that all work contributes to Kenya's goals under national (e.g., national strategy for the conservation of cheetahs and African wild dogs) and international (e.g., CBD, CMS) agreements. KWS veterinarians and ecologists will participate in the workshops on disease management and human-carnivore conflict, and their involvement will be essential to the implementation of many decisions. For example, KWS authority would be needed for any decision to vaccinate wild dogs or other wildlife. KWS will also oversee any response to incidents of ill-health or mortality detected in wild dogs or other focal wildlife, for example through post mortem examination.
Have you included a Letter of Support from this organisation?	⦿ Yes

2. Partner Name:	County Governments of Laikipia, Samburu, and Isiolo
Website address:	https://www.laikipia.go.ke; https://www.samburu.go.ke; https://isiolo.go.ke
Details (including roles and responsibilities and capacity to engage with the project):	The County Governments of Laikipia, Samburu, and Isiolo will support the project in two ways. First, they will contribute their teams of county veterinary officers to work with the Mpala and partner teams to implement domestic dog vaccination within the project area, in liaison with the Zoonotic Disease Unit which is coordinating national rabies eradication efforts. Second, they will help to promote Mpala's outreach efforts among local communities, to encourage both coexistence with wildlife and participation in the rabies vaccination programme.
Have you included a Letter of Support from this organisation?	⦿ Yes

3. Partner Name:	Northern Rangelands Trust
Website address:	https://www.nrt-kenya.org
Details (including roles and responsibilities and capacity to engage with the project):	The Northern Rangelands Trust (NRT) is an umbrella organisations for community conservancies, There are 17 NRT conservancies within the project area, covering 481 sq km of community land and supporting over 100,000 people. Five of these NRT conservancies will host Community Officers supported by the project, and NRT will facilitate community outreach, rabies vaccination, and other activities throughout all 17 conservancies.

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

4. Partner Name:	Smithsonian Global Health Programme
Website address:	https://nationalzoo.si.edu/smithsonian-global-health-program/about-smithsonian-global-health
Details (including roles and responsibilities and capacity to engage with the project):	The Smithsonian Institution has been represented on Mpala's Board since the Board was established in 1994, and continues to collaborate with Mpala on long-term research and monitoring within the Ewaso ecosystem. At Mpala, the Smithsonian's Global Health Program is supporting training and capacity building for Kenyan veterinarians, and the development of systems for wildlife health surveillance for integration into SMART monitoring which is already widely used on ranches and community conservancies. As in-kind support for the project, Smithsonian veterinarian Dr Anna Haw will train and mentor the project's Veterinary Officer, while Smithsonian Research Fellow Dr Katherine Worsley-Tonks will help to design the surveillance system and also mentor the Monitoring and Surveillance Officer.
Have you included a Letter of Support from this organisation?	⦿ Yes

5. Partner Name:	Community Outreach Arts
Website address:	https://www.facebook.com/Community-outreach-arts-1077064309105964/
Details (including roles and responsibilities and capacity to engage with the project):	Community Outreach Arts will work with the Mpala team to develop two local-language plays (one about rabies control and another about coexisting with large carnivores), each incorporating the key project messages in a format which encourages audience members to participate and discuss the topic, creating a forum of change. The Community Outreach Arts team (comprising one actor/director and five actors, with an equal sex ratio) will then perform the plays in locations throughout the project area, targeting markets, football matches, women's group meetings, and other gatherings. The director also works in television, and can help to produce short videos suitable for sharing on local WhatsApp groups. The Community Outreach Arts team can also contribute to Monitoring and Evaluation by helping to administer brief audience questionnaires before and after selected performances.
Have you included a Letter of Support from this organisation?	⦿ Yes

6. Partner Name:	Zoological Society of London
Website address:	https://www.zsl.org/science/research/kenya-rangelands-wild-dog-and-cheetah-project
Details (including roles and responsibilities and capacity to engage with the project):	The Zoological Society of London will contribute in-kind support for the project through technical advisor Prof Rosie Woodroffe, who is an authority on the ecology and conservation of African Wild Dogs. Prof Woodroffe established the Samburu-Laikipia Wild Dog project at Mpala in 2001 and has built a comprehensive body of evidence on sustainable ways for people and wild dogs to coexist. Prof Woodroffe's role in this project will be to provide technical guidance relating to wild dog ecology, epidemiology, and coexistence with people. In partnership with her Mpala-based PhD student Dedan Ngatia, she will oversee the wild dog monitoring which will provide several of the project's indicators of success, and which, for the first year of the project, will be supported through a research grant to Prof Woodroffe. She will also lead the proposed workshops on disease management and human-carnivore conflict (in partnership with the IUCN/SSC Canid Specialist Group, of which she is a core member).
Have you included a Letter of Support from this organisation?	⦿ Yes

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

Support letters are also included from
(i) The five community conservancies that will host the Community Officers (Naibunga Upper and Lower, Lekurruki, Kirimon and Narupa Community Conservancies);
(ii) Rabies-Free Kenya, which provides liaison with national eradication efforts (via the government's Zoonotic Disease Unit) and technical advice on rabies control;
(iii) The International Livestock Research Institute, which will provide technical advice (from Dr Dishon Muloi, co-founder of the Laikipia Rabies Vaccination Campaign) and diagnostic support for samples from sick or dead carnivores;
(iv) Mpala-based PhD student Dedan Ngatia, co-founder of the Laikipia Rabies Vaccination Campaign, who will provide technical advice on rabies vaccination and wild dog monitoring;
(v) Dr Adam Ferguson of The Field Museum, co-founder of the Laikipia Rabies Vaccination Campaign, who will provide technical advice on rabies vaccination;
(vi) Partner projects aiming to reduce human-carnivore conflict (Ewaso Lions, Lion Landscapes, The Peregrine Fund (in relation to vulture poisoning), Action for Cheetahs Kenya, Uhifadhi wa Chui, and Mpala Hyaena Project), who will share their technical expertise regarding the most effective ways for people to coexist with their respective focal species, and will contribute their outreach staff to broader rabies control, coexistence, and surveillance efforts.

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

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Section 7 - Project Staff

Q12. Project staff

Please identify the core staff on this project, their role and what % of their time they will be working on the project. Further information on who should be classified as core staff can be found in the guidance.

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

If your team is larger than 12 people please review if they are core staff, or whether you can merge roles (e.g. 'admin and finance support') below, but provide a full table based on this template in the pdf of CVs you provide.

Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Dino Martins	**Project Leader**	10	Checked
Joseph Putunoi	Project Coordinator	100	Checked
Nashipai Karinten	Veterinary Officer	100	Checked
TBA	Outreach Officer	100	Checked

Do you require more fields?

◉ Yes

Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
TBA	Community Officers (x5)	100	Checked
TBA	Monitoring and Surveillance Officer	100	Checked
Dedan Ngatia	Technical Advisor	40	Checked

Rosie Woodroffe (ZSL)	Technical Advisor	10	Checked
Dishon Muloi (ILRI)	Technical Advisor	5	Checked
Adam Ferguson (Field Museum)	Technical Advisor	10	Checked
Anna Haw (Smithsonian)	Technical Advisor	10	Checked
Katherine Worsley-Tonks (Smithsonian)	Technical Advisor	20	Checked

Please provide 1 page CVs (or job description if yet to be recruited) for the project staff listed above as a combined PDF.

Ensure the file is named clearly, consistent with the named individual and role above.

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pdf 809.79 KB

Have you attached all project staff CVs?

Yes

Section 8 - Problem statement

Q13. 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?

Please cite the evidence you are using to support your assessment of the problem (references can be listed in your additional attached PDF document which can be uploaded at the bottom of the next page).

Kenya's Ewaso ecosystem is a flagship for the coexistence of people and wildlife, sustaining 80% of the world's Grevy's zebra, half of Kenya's black rhinos, and globally important populations of lions, cheetahs, and other large carnivores in a landscape which also supports 300,000 people (2).
This coexistence is uneasy, however. Remote from urban centres, Ewaso's pastoralist communities have limited access to health and veterinary care. The livestock on which they depend are targets for thieves and wild carnivores, so constant vigilance is needed (19). The environment is harsh, and drought can worsen both livestock disease (20) and depredation (21). Ecotourism, which until recently supported at least 1,300 local households (2), has been devastated by the COVID-19 pandemic (22).
Close links between the health and security of Ewaso's people and wildlife were highlighted in 2017, when political upheaval and prolonged drought prompted land invasions. The invading herders grabbed headlines by murdering local people (23), and they inadvertently caused another disaster when their herd dogs brought Canine Distemper Virus (CDV) to the area (24). The ensuing epidemic devastated Ewaso's population of endangered African wild dogs, at the time one of the largest in the world (25): in our project area, two solitary animals were left where 200 had lived just months earlier.

Still, there is hope. The political upheaval subsided, the invaders left, and the epidemic faded. The surviving wild dogs formed tiny packs, and raised small litters. Their population is fragile, but its habitat and prey remain, and it can recover if carefully conserved (26).
Our project aims to foster rapid recovery of this wild dog population, and to secure all the area's large carnivore populations for future years, while protecting human lives and livelihoods, and building capacity for animal health and conservation.
The best way to re-grow the wild dog population is to reduce mortality caused directly and indirectly by people. Before the 2017 CDV epidemic, rabies, endemic in local domestic dogs (27), killed more wild dogs than any other cause (28). Rabies also kills approximately 25 people a year (15), mostly following domestic dog bites, although wild carnivores can also be involved (29,30). Mass domestic dog vaccination can locally eradicate rabies (31), protecting people, wildlife, and dogs themselves, without increasing domestic dog numbers (32). Establishing rabies surveillance and building veterinary capacity should ensure sustained impacts.
Additionally, human-carnivore conflict (which caused 21% of wild dog deaths pre-epidemic, compared with 32% for disease (33)) can cost local households 11% of their annual income (18) as well as impacting people's wellbeing less directly (19). Wild dogs cause a small fraction of overall losses (34), but their impacts can be locally severe (35), perhaps explaining the disproportionately negative attitudes of local communities (34). Mitigating such conflict should improve the livelihoods and wellbeing of local people, while also protecting wild carnivores (36). However, existing efforts (by project partners) are small-scale and lack wild dog-specific expertise. Linking wild dog recovery to ecotourism recovery and rabies control should also improve local attitudes to wild dog conservation.

Section 9 - Method, Change Expected, Gender & Exit Strategy

Q14. Methodology

Describe the methods and approach you will use to achieve your intended Outcome and Impact. Provide information on:

- **How you have analysed historical and existing initiatives and are building on or taking work already done into account in project design. Please cite evidence where appropriate.**
- **The rationale for carrying out this work and a justification of your proposed methodology.**
- **How you will undertake the work (materials and methods).**
- **How you will manage the work (roles and responsibilities, project management tools, etc.).**

Our work builds on evidence from the Samburu-Laikipia Wild Dog Project (2001-present) which, through long-term study, has identified disease and conflict as the primary threats to wild dogs locally, and has researched ways to mitigate these threats (35,37-42). Project partners are conducting similar research on the coexistence of people with lions (Lion Landscapes, Ewaso Lions), leopards (Uhifadhi wa Chui), cheetahs (Action for Cheetahs) and spotted hyaenas (Mpala Hyaena Project) (43,44,34).
We also draw on experience from the Laikipia Rabies Vaccination Campaign (2015-present) which has vaccinated domestic dogs across 1,500km2, reaching 24% of the targeted dog population (45) using a mainly volunteer workforce. However, scaling up to the 10,000km2 and 70% vaccination coverage needed to eliminate rabies locally (46) will require door-to-door visits in pastoralist areas (47), demanding more time than volunteers can commit. We are therefore developing professionally-staffed vehicle- and camel-based mobile vaccination units, modelled on the Community Health Africa Trust, which provides health care to remote communities in our project area (48).
The project will be managed from Mpala, where a Coordinator, Outreach Officer, Veterinary Officer, and Monitoring Officer will be based. Additionally, five Community Officers will be hosted at the offices of community conservancies throughout the area (see map). Partnerships with Kenya Wildlife Service (KWS), local government, carnivore conservation projects, Rabies-Free Kenya, the International Livestock Research

Institute, and others, provide a wealth of technical and practical support.
Disease control efforts will be guided by a disease management plan, developed through a workshop at the project start. Workshop participants (including government and NGO partners) will use existing data (e.g., 49,38,27,50,51,45) and models (52) to decide whether domestic dog vaccination should target distemper as well as rabies, whether to vaccinate wild dogs, and optimal surveillance methods, prioritising "future-proof" approaches likely to remain effective despite disruptions such as drought and political instability.
Domestic dog vaccination will be delivered using vaccination points and door-to-door visits. Mpala teams will vaccinate most community lands and ranches (see map), supplemented by partners' efforts in the north and east. Through partnerships with local government, county veterinarians will contribute to the vaccination effort, with Mpala providing mentorship, transport, assistance, and equipment. To estimate coverage, vaccinated domestic dogs will be temporarily marked, with marked and unmarked dogs subsequently counted using transects and household surveys (53,54). Outreach to encourage participation will include a participatory play about rabies prevention, developed and performed by partner Community Outreach Arts, with guidance from the project team. This local-language play will be performed at venues such as markets and women's group meetings, in a style encouraging audience interaction and discussion. Similar approaches have prompted behaviour change in other health fields (55). The play will be adapted to produce short videos for sharing on local WhatsApp groups, and supplemented by posters, meetings, and branded masks. All vaccination and outreach will follow COVID-19 guidance.
Surveillance will help us to target disease management. We will monitor human rabies cases and dog bites through agreements with hospitals and clinics. Partner Smithsonian is developing a surveillance system for wildlife health (including poisoning; 56,51), for integration into ranger-based monitoring system SMART. Partner Lion Landscapes will train scouts from across the project area (including ranches and community conservancies) to use this system, with KWS and Mpala veterinarians equipped to respond to reported cases (e.g., with necropsy or clinical investigation).
Wild dog vaccination will be conducted only if recommended by workshop participants, including KWS. A protocol for rabies-vaccinating wild dogs is available (41), with a distemper protocol being field-tested (57). All wild dog handling, including collaring for monitoring, will be conducted with KWS veterinarians.
Our work to resolve human-carnivore conflict draws upon extensive research by our team (36,35,37) and others (e.g., 58-60). A workshop early in the project will identify cost-effective and locally-appropriate approaches to reducing depredation by all predator species. These approaches will be enshrined in another participatory play (and associated videos), targeting locations experiencing depredation problems. The same messages will be integrated into outreach materials (e.g., Action for Cheetahs' Mitigation Toolbox), and used to train outreach officers (including Mpala's Community Officers, Northern Rangelands Trust's conservancy rangers, Lion Landscapes' Lion Rangers, and Ewaso Lions' Mama Simba (mother of lions) women's group). These teams will then draw on this knowledge to train local communities, and in rapid responses to depredation problems. Outreach will target both men (responsible for most herding) and women (well-placed to maintain bomas [night-time livestock stockades]). Our team will continue to refine knowledge by gathering data on depredation within a case-control framework (37), integrating new findings into outreach materials.

Q15. 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?

Our communication approach has five elements, all coordinated by our Outreach Officer.
First, local Community Officers, stationed throughout the project area, will maintain continuous two-way

communication with communities. The Community Officers will aim to maximise participation in our vaccination campaign, and to share knowledge about ways to coexist with large carnivores. Community officers will use formal and informal meetings, leaflets, posters, etc to engage with communities.
Second, we shall work with project partners to maximise the reach of our messages. The Northern Rangelands Trust, Lion Landscapes, The Peregrine Fund, Ewaso Lions, Action for Cheetahs, Uhifadhi wa Chui and Mpala Hyaena Project all have outreach staff. We will provide training and materials to support these officers to help deliver our rabies and coexistence messages.
Third, we shall use participatory theatre (with partner Community Outreach Arts) to share both rabies and coexistence messages. This approach has effected behaviour change in public health (55) and human-elephant conflict (61), and a pilot play increased audience members' positive perceptions of wild dogs by 36% (33). Participation and careful preparation will ensure that each performance addresses local issues. Our theatre director also works for television, and can oversee preparation of videos for sharing on local WhatsApp groups.
Fourth, we shall encourage local tour operators to use wild dogs in their advertising materials. Wild dogs are an especially draw for within-Africa tourists (62), and promoting their presence may help to rebuild the ecotourism business devastated by COVID-19.
Finally, we shall use print, broadcast, and social media to communicate our project activities and outcomes to national and international audiences. We plan to build our media presence through engagement with Kenyan (63,64) and international (65,66) journalists, as well as our own (e.g. https://www.mpalalive.org, 60 million views, https://www.facebook.com/MpalaResearchCentre/ ~8,600 followers) and our partners' (e.g. https://twitter.com/kwskenya, ~460,000 followers) digital platforms.

Q16. 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.

While protecting threatened wildlife and improving human health and wellbeing, our project will also build capacity for conservation and development in Kenya. Because the core project team is made up of Kenyans local to the project area, we are confident that our work will build truly local capacity for long-term conservation and development.
Our team includes Kenyan and international technical advisors who will train and mentor the Coordinator, Veterinary Officer, Outreach Officer, Monitoring Officer, and Community Officers. In particular, Mpala-based Smithsonian veterinarian Anna Haw will train and mentor Veterinary Officer Nashipai Karinten. Guidance in coexistence, epidemiology, surveillance and monitoring will be provided by Mpala-based Dedan Ngatia (University of Wyoming) and Katherine Worsley-Tonks (Smithsonian), and by Rosie Woodroffe (Zoological Society of London), Adam Ferguson (Field Museum), and Dishon Muloi (International Livestock Research Institute). A training workshop at the project start, plus regular training sessions throughout the project, will provide opportunities for formal and informal learning. Such opportunities for peer-to-peer learning and knowledge exchange will build the capacity of all team members in conservation, public health, research, and monitoring.
We will also support capacity building throughout the project area by training outreach officers, scouts, and rangers from partner projects in rabies management, disease surveillance, and mitigating human-carnivore conflict. By providing mentoring, transport, and vaccination equipment to county veterinarians, we shall also increase local capacity to manage animal health. Partnerships between Mpala and KWS veterinarians will improve capacity to manage wildlife health.
At a national level, our workshops will build capacity among Kenyan conservationists to use epidemiological models and other participatory tools in decision-making. Moreover, our project will build capacity among policymakers by bringing together those addressing human and wildlife health at both the national (Rabies-Free Kenya, Kenya Wildlife Service) and county (county executive) levels, improving science, development, and conservation literacy among policymakers.

Q17. Gender equality

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 sex disaggregated data and what impact your project will have in promoting gender equality.

Our project will work towards gender equality both among the community beneficiaries and within the project team.

Within communities, our project should benefit women at least as much as men, because women and children can be disproportionately impacted by both rabies (67) and human-wildlife conflict (68,19). Targeting women is essential for the success of our project because pastoralist women, who tend to spend less time herding livestock, may be more able to bring domestic dogs for vaccination, and to contribute to boma maintenance (reducing livestock predation). We shall gather sex-specific data on the numbers of people (i) bitten by dogs; (ii) bringing dogs for vaccination; (iii) engaging with outreach efforts; and (iv) reporting livestock depredation. We shall encourage women to engage with our project by featuring female characters in our outreach materials (including participatory theatre), and by targeting women's groups. We shall also showcase women in leading roles within our team. All of the named veterinarians involved in our project are women, and Veterinary Officer Dr Nashipai Karinten is the first Samburu woman to qualify as a veterinarian, representing a historically under-represented tribe as well as gender. Half of our Technical Advisors are women, and we plan to prioritise women in recruiting core team members (including Community Officers), providing equal pay regardless of gender. We shall also train women (e.g., Ewaso Lions' "Mama Simba" group, and Uhifadhi wa Chui's "Chui Mamas" group) as well as men to participate in project activities.

More broadly, Mpala is fully committed to gender equality, and works to achieve this in multiple ways. For example, Mpala recently hosted a National Geographic Society conference on women in science and conservation. The chair of Mpala's board is a woman, and it has previously employed a female director and a female chief finance officer.

Q18. 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.

We expect six types of change from this project.

First, we expect health benefits for local people through rabies control. An estimated 25 people die each year from rabies in the project area (15) and, by implementing mass domestic dog vaccination and raising awareness about rabies management (69), we expect to save the lives of approximately 75 people. These benefits should persist beyond the lifetime of the project, as our work contributes to Kenya's goal of eradicating dog-mediated rabies nationally by 2030 (15). As women can face slightly higher dog bite risks than men (67), women may benefit disproportionately from our vaccination efforts. Additionally, by protecting domestic dogs, we shall secure an important element of household security (37) for the 300,000 people inhabiting the project area.

Second, we expect economic benefits for local people. Livestock depredation can cost pastoralist households 11% of their annual income (18), which we aim to reduce by a third in the lifetime of the project

by encouraging well-evidenced husbandry methods which are locally appropriate. Additionally, the COVID-19 pandemic has had major economic impacts for the >1,300 local households dependent directly on wildlife tourism for their income, as well as on broader infrastructure, health and education initiatives financed by tourism (2,22). Within-Africa tourism is less restricted than inter-continental tourism and, with wild dogs known to be a major draw for within-Africa tourists (62), wild dog recovery may help encourage tourism recovery.

Third, we expect both rapid and sustained impacts on the recovery of a wild dog population which was, until recently, among the largest in the world. Firmly tackling the two most important causes of wild dog death should help the existing small packs to grow, raise larger litters, and generate more new packs (39). If the project can reduce adult mortality as planned, we can realistically expect a 50-200% increase in population size within the lifetime of the project (26). In the longer term, eliminating rabies, and equipping local people to minimise conflict, should secure sustained population growth at ≥20% p.a., as observed in the past (26). Rapid population growth should also reduce the genetic consequences of the population crash (70).

Fourth, we expect benefits for populations of other large carnivores, as our work should reduce livestock predation by all large carnivores and, hence, the numbers of these animals killed by local people (36). Human-wildlife conflict is the major threat locally to cheetahs, lions, leopards, and spotted hyaenas (18), and tackling this threat should benefit these species, during the lifetime of the project and beyond.

Fifth, we expect our project to improve perceptions of wildlife, both locally and nationally, as the protection of public health is in this case directly linked to wildlife conservation. We hope that this change will have benefits for all Kenyan wildlife.

Finally, we expect our project to benefit long term conservation in Kenya by fostering the development of a diverse and highly-skilled team of Kenyans who will be well-equipped to tackle other future challenges in conservation and development.

Q19. Pathway to change

Please outline your project's expected pathway to change. This should be an overview of the overall project logic and outline how you expect your Outputs to contribute towards your overall Outcome and, longer term, your expected Impact.

Our project addresses three related problems.
A Our project area sustains endemic rabies, estimated to kill approximately 25 people per year.
B People in our project area experience livelihood losses from wild carnivores killing livestock.
C Rabies and human-wildlife conflict threaten large carnivores in the project area, including endangered African wild dogs, which were nearly eradicated locally by an epidemic in 2017.

We reasoned that two interventions could address these interlinked problems
a Locally eradicating rabies would remove the mortality risk for people and wild dogs
b Minimising livestock predation would reduce the livelihood impact on people and also reduce mortality risks for wild carnivores.

Securing the long-term impact of these interventions requires
i Ensuring that our local rabies control efforts link to national eradication efforts
ii True engagement with communities to ensure our efforts meet locally-perceived needs
iii Continuous evaluation of our impact to adapt standard practices to suit local conditions
iv Building knowledge within local communities about sustainable ways to prevent livestock depredation
v Building local professional capacity in wildlife and human health, conservation, and development.
Our project is therefore designed to resolve problems A-C by delivering interventions a and b, and securing them by interventions i-v.

Q20. Exit Strategy

State how the project will reach a stable and sustainable end point, and explain how the outcomes will be sustained, either through a continuation of activities, funding and support from other sources or because the activities will be mainstreamed in to "business as usual".

Where individuals receive advanced training, for example, what will happen should that individual leave?

We shall finalise our exit strategy at a close-out meeting before the project ends.
Our domestic dog vaccination, conducted in partnership with Rabies-Free Kenya, contributes to Kenya's aim of eradicating rabies nationally by 2030 (15). Evidence suggests that we can reduce human rabies deaths to zero within our three-year project (31), but rabies will gradually return unless vaccination is maintained until eradication. We therefore expect to raise further funds to maintain vaccination until rabies is eradicated nationally. Local rabies eradication would make any wild dog rabies vaccination redundant (52). In contrast, CDV vaccination is unlikely to eradicate CDV from either domestic dogs or wild dogs (50), and workshop participants will need to consider exit strategies in deciding whether to recommend it. The low wild dog vaccination coverage needed to prevent extinction (71) could potentially be maintained as a component of long-term population monitoring.
Reductions in human-carnivore conflict should be sustained as the most cost-effective tools are implemented, refined, and shared widely across local communities. Nevertheless, as livestock depredation is exacerbated by scarcity of wild prey (35), broader efforts to secure habitat and prey populations (beyond the scope of this project) will be important to achieving sustained reductions.

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

Mpala_Wild_Dogs_Supporting_Documentation
09/02/2021
21:52:31
pdf 401.39 KB

Section 10 - Budget and Funding

Q21. Budget

Please complete the appropriate Excel spreadsheet, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. Note that there are different templates for projects requesting over and under £100,000 from the Darwin budget.

- Budget form for projects under £100,000
- Budget form for projects over £100,000

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

N.B.: 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.

Mpala_wild_dogs_budget_09Feb21
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xlsx 70.1 KB

Q22. Funding

Q22a. Is this a new initiative or a development of existing work (funded through any source)?

⦿ Development of existing work

Please provide details:

This project expands and combines the work of two previous projects.
The Samburu-Laikipia Wild Dog Project was established at Mpala in 2001, to identify sustainable ways for people and wild dogs to coexist. Working closely with the Kenya Wildlife Service and local communities, it revealed how traditional land management and livestock husbandry can help wild dogs and people to live alongside one another (35,37,72,26,73,49,74). This prior work provides abundant technical knowledge about the ecology and conservation of African wild dogs in the area, including field-tested vaccination protocols, and tried-and-tested methods to reduce livestock depredation.
The Laikipia Rabies Vaccination Campaign was initiated in 2015 by Mpala Research Centre, drawing on a largely volunteer workforce to vaccinate 13,000 domestic dogs against rabies on community and private lands close to Mpala. This project provides vital insights into the most (and least) effective ways to deliver domestic dog vaccination in rural Kenya. Nevertheless, the project's reliance on volunteers and borrowed vehicles has constrained the scale and intensity of vaccine coverage that it can attain, informing the development of our current proposal.
Bringing these two Mpala-based projects together, alongside multiple partners, should generate greater benefits for both wildlife and people in the project area.

Q22b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work?

⦿ No

Q23. Co-financing

Are you proposing co-financing?

⦿ Yes

Q23a. 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

IUCN/SOS African Wildlife	[redacted]	GBP	A similar project with smaller scope, which can cover some project costs in the first 12 months
Veterinarians International	[redacted]	GBP	Funding secured for domestic dog vaccination
Mpala Research Centre	[redacted]	GBP	In-kind contribution of [redacted] of the project leader's time
County governments	[redacted]	GBP	In-kind donation of rabies vaccine made available from government rabies eradication programme.

Q23b. 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. This should also include any additional funds required where a donor has not yet been identified.

Date applied for	Donor Organisation	Amount	Currency Code	Comments
No Response	County governments	[redacted]	GBP	Request for ongoing donation of rabies vaccine, likely to be confirmed on an annual basis.
No Response	*No Response*	0	*No Response*	*No Response*
No Response	*No Response*	0	*No Response*	*No Response*
No Response	*No Response*	0	*No Response*	*No Response*

Do you require more fields?

⦿ No

Section 11 - Open Access and Financial Risk Management

Q24. Outputs of the project and Open Access

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

As an institution accredited by Kenya's National Commission for Science, Technology and Innovation (NACOSTI), Mpala is fully committed to open access publication, allowing its outputs to be accessible to the widest possible audience.

We have budgeted for a single open-access publication in the final year of the project. We anticipate multiple publications, but we have budgeted for just one, for three reasons. First, as a Kenyan organisation, Mpala is eligible for free open-access publishing through some relevant journals including PLoS Neglected Tropical Diseases (which publishes many rabies articles) and Oryx (which publishes many practical conservation articles). Other relevant journals (e.g., all the British Ecological Society journals) are freely available within Africa, and therefore locally accessible to all. Second, all project publications can be made freely available through digital repositories for accepted manuscripts (e.g., https://discovery.ucl.ac.uk). Finally, some publications may appear after expiry of the three-year grant period, and so could not be funded in any case.

We are committed to making wild dog monitoring data freely available. Data collected using NERC matched funding will be made available through the Environmental Information Data Centre (https://eidc.ac.uk). Other data (aggregated where necessary to maintain anonymity) will be made available at the time of publication through repositories such as Dryad (https://datadryad.org).

Operational data will be shared freely with the Rabies-Free Kenya programme (subject to any confidentiality agreements if necessary) to support national eradication efforts. All materials (leaflets, posters etc) will be shared freely with other projects to support conservation and development more widely.

Q25. Financial Risk Management

This question considers the financial risks to the project. Explain how you have considered the risks and threats that may be relevant to the successful financial delivery of this project. This includes risks such as fraud or bribery, but may also include the risk of fluctuating foreign exchange and internal financial processes such as storage of financial data.

Kenya is a country with a high potential for corruption, and Mpala therefore has stringent protocols in place to detect evidence of financial impropriety.

Mpala has its own detailed finance manual which has been devised to avoid misappropriation of funds, either deliberately (e.g., inappropriate or unsupported claims for travel expenses), or accidentally (e.g., arithmetical errors, billing expenditure to the wrong grant). Timesheets are used to ensure that staff work their allocated hours. Vehicle use and mileage are carefully logged and checked to ensure vehicles are taken only to agreed destinations, and protocols are in place to ensure that only approved passengers are carried.

Several key staff are already in-post. If the grant is approved, additional staff will be recruited immediately to avoid mismatches between employment contracts and budget timetables.

All new staff will be recruited through a transparent hiring process, involving a panel of at least three people, including both genders.

Exchange rate fluctuation is a risk which cannot be avoided entirely. We have budgeted using current exchange rates, recognising the need to retain the project's buying power (in case the Kenya Shilling strengthens against the pound) while avoiding over-budgeting (if the Shilling weakens).

Q26. 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. If you are requesting more than 10% capital costs, please provide your justification here.

The only capital items requested are two 4WD vehicles. These are needed to conduct our work over the very large project area, much of which is roadless or has very poor roads (e.g., fording rivers is often necessary). On completion of the project, these vehicles will be retained by Mpala for continued use on the same (or similar) programmes. It is likely that one or more of these vehicles may be needed to support continuation of the vaccination work, as we continue to contribute to Kenya's strategy to eradicate rabies nationally by 2030 (15), or to maintain the Kenya Wildlife Service's veterinary programme. In these eventualities, a vehicle might potentially be donated to a partner organisation. In all of these scenarios, purchase of these vehicles will contribute to the long-term capacity of Mpala, and its partners, to promote wildlife conservation and human wellbeing.

Q27. Value for Money

Please describe why you consider your application to be good value for money including justification of why the measures you will adopt will secure value for money.

We have optimised the project's value for money in multiple ways.
Running the project with all-Kenyan staff allows us to keep salary costs relatively low, and minimises expenditure on international travel (also reducing our carbon footprint and facilitating capacity-building). In Kenya, only veterinarians can vaccinate dogs. Rather than employing multiple veterinarians full-time, we have budgeted to mobilise county veterinarians, who can assist on "vaccination days" for the cost of their per diem and travel.
Core staff will be based at Mpala Research Centre, within the project area, reducing travel costs, with community officers residing in their home communities.
Our greatest single-item cost is the purchase of two 4WD vehicles. These vehicles are required so that multiple activities can occur simultaneously (e.g., the outreach officer can transport the theatre troupe while the veterinary officer is vaccinating elsewhere). The existing wild dog project vehicle is approaching the end of its life, while the LRVC has never had a dedicated vehicle. Four-wheel drive is essential as much of the project area is accessible only by driving off-road, including fording rivers. Community officers will be provided with motorbikes rather than vehicles to reduce costs.
We have budgeted for the cost of developing two participatory plays, with 20 performances each.
Vaccination costs are reduced by in-kind donations of vaccine from the Kenya government, while the cost of monitoring wild dogs is funded, for the first year, by a NERC research grant.
Overheads are calculated as [redacted] of Darwin costs, and inflation at [redacted]

Section 12 - Ethics and Safeguarding

Q28. Ethics

Outline your approach to meeting Darwin's key principles for ethics as outlined in the guidance note. Additionally, are there any human rights and/or international humanitarian law risks in relation to your project? If there are, have you carried out an assessment of the impact of those risks, and of measures that may be taken in order to mitigate them?

Our project complies with all elements of the Darwin Initiative's key principles for ethics. All research is

permitted by Kenya's National Commission for Science, Technology and Innovation (NACOSTI; indeed, Mpala is a NACOSTI-accredited institution). Wild dogs are collared in collaboration with Kenya Wildlife Service, following ethical approval by the Zoological Society of London.
Our project does not involve any use of genetic resources.
Our project is developed and led by Kenyan nationals, and works very closely with a large number of community organisations to ensure that the people directly affected by our work are fully engaged with it.
Our approach to addressing livestock depredation and resulting human-wildlife conflict draws heavily upon traditional knowledge, albeit using advanced statistics to collate communities' own experience and then share the findings with them (37). As such, traditional knowledge is explicitly included and acknowledged. At the same time, researchers operate in an objective manner, with all data collection and analysis being conducted to the highest international standard.
All work is conducted with Prior Informed Consent from local communities. Domestic dogs are vaccinated only with the owners' permission, and participation in all other aspects of the project is likewise voluntary.
Data collected on human dog bite injuries will be anonymised. Where personal data are collected (e.g., in recording owner names on dog vaccination certificates to facilitate longitudinal monitoring of vaccination coverage) these will be held in a secure database on encrypted computers. Any publications will present aggregated data to avoid any risk of compromising confidentiality.

Q29. Corruption

This question specifically considers corruption. Explain how you have considered any risk of corruption that may affect the success of this project, and how you plan to manage this. This may include financial corruption, but may also deal with gifts or inducements, or other types of dishonesty or deceit.

Mpala has multiple systems in place to avoid corruption. On a day-to-day basis, funds are managed according to a detailed finance manual. Mpala provides financial reports to all four of the partners on its Board of Trustees (Kenya Widlife Service, the National Museums of Kenya, Princeton University, and the Smithsonian Institute). Mpala's finance board meets quarterly, and is independently chaired by Mr Kithili Mbathi, former chair of Stanbic Bank and former Investment Secretary at Kenya's Ministry of Finance and Planning. Annual accounts are audited by world-class auditors.
Other forms of corruption are carefully managed by ensuring that all staff are aware of the professional standard laid out in Mpala's staff manual. Responsibilities for funds, equipment, etc are carefully evaluated for each staff member, and all vehicle useage is carefully logged and checked. Mpala's whistleblowing policy encourages staff and others to report any incidents of corruption, and protects whistleblowers in these circumstances.

Q30. Safeguarding

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, projects are required to have appropriate safeguarding policies in place. Please confirm the lead organisation has the following policies in place and that these can be available on request:

We have a safeguarding policy, which includes a statement of our commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse	Checked

We have attached a copy of our safeguarding policy to this application (file upload below)	Checked
We keep a detailed register of safeguarding issues raised and how they were dealt with	Checked
We have clear investigation and disciplinary procedures to use when allegations and complaints are made, and have clear processes in place for when a disclosure is made	Checked
We share our safeguarding policy with downstream partners	Checked
We have a whistle-blowing policy which protects whistle blowers from reprisals and includes clear processes for dealing with concerns raised	Checked
We have a Code of Conduct for staff and volunteers that sets out clear expectations of behaviours - inside and outside the work place - and make clear what will happen in the event of non-compliance or breach of these standards	Checked

Please outline how you will implement your policies in practice and ensure that downstream partners apply the same standards as the lead organisation.

Mpala's safeguarding policy is implemented as part of its broader code of conduct for staff. This code of conduct includes responsibility for equipment, financial management (where appropriate), anti-corruption practices, respect for colleagues, etc, as well as safeguarding. Staff are made aware of this code of conduct in an induction session when they are first appointed, and disciplinary procedures are in place to address breaches of the code of conduct. For this project, monthly project meetings offer an opportunity for regular reminders concerning the code of conduct and its implementation.
Mpala's safeguarding policy applies to all who interact with Mpala (including guests, contractors, etc), as well as Mpala staff, including downstream partners. Mpala's safeguarding policy will be shared with project partners, and written partnership agreements will include a commitment to adhere to this policy.
In addition to these broader issues, this project raises specific safeguarding issues in relation to personal safety during activities such as animal handling, vehicle use, and gatherings (e.g. for outreach or vaccination) during a pandemic, all of which could potentially increase risks to participants in project activities. These risks are carefully managed and minimised through activity-specific risk assessments.

Please upload the lead organisation's Safeguarding Policy as a PDF

Mpala Safeguarding Policy
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pdf 489.05 KB

Section 13 - Logical Framework

Q31. Logical Framework

Darwin Initiative projects will be required to monitor (and report against) their progress towards their expected Outputs and Outcome. 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.

- Stage 2 Logframe Template

Please complete your full logframe in the separate Word template and upload as a PDF using the file upload below. Copy your Impact, Outcome and Output statements and your activities below - these should be the same as in your uploaded logframe.

Please upload your logframe as a PDF document.

Mpala Wild Dogs Logical Framework 09Feb21
09/02/2021
16:10:17
pdf 108.83 KB

Impact:

Sustainable long-term coexistence of an intact and ecologically functioning large carnivore guild with healthy and prosperous local people in Kenya's Ewaso ecosystem

Outcome:

An ecosystem free of rabies where people coexist sustainably with wild carnivores, including a recovering African wild dog population

Project Outputs
Output 1: Zero human deaths from rabies in the project area by 2024
Output 2: Two-thirds reduction in wild dog deaths caused directly or indirectly by people
Output 3: Declining incidence of livestock predation by all large carnivores, despite rising population of wild dogs
Output 4: Improved public attitudes to coexisting with African wild dogs
Output 5: Improved national capacity for protecting wildlife populations and human health

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, 1.3 are contributing to Output 1.

1.1 Vaccinate domestic dogs annually across 10,000 sq km project area, achieving 70% vaccine coverage, including travelling with camels in areas not accessible by vehicle.

1.2 Collect data on rabies vaccination effort and coverage using the Mission Rabies smartphone app (http://www.missionrabies.com/app).
1.3 Conduct mark-resight monitoring of domestic dogs conducted after a sample of vaccination days to estimate vaccine coverage.
1.4 Develop a participatory play about rabies, dog vaccination, how correct dog bite management can save lives, and the parallels between human and wildlife health.
1.5 Perform the rabies play on ≥20 occasions in advance of rabies vaccination days, targeting locations likely to attract women as well as men.
1.6 Monitor effectiveness of participatory play by interviewing audience members before-and-after performances.
1.7 Develop short video clips, based on the rabies play, optimised for sharing over WhatsApp, and encourage sharing over local networks.
1.8 Develop and distribute posters and leaflets about rabies prevention, as part of community sensitisation ahead of rabies vaccination days.
1.9 Train outreach officers and scouts from partner projects in rabies prevention messages, so that they can help with community sensitisation.
1.10 Monthly project meetings to evaluate progress, continue staff training, and consider ways to improve effectiveness.
1.11 Adapt outreach efforts to specific local issues if monitoring indicates vaccination coverage is insufficient.
1.12 Establish systems for collecting age- and sex-specific data on dog bites and rabies deaths at 4 hospitals and 20 dispensaries.
1.13 Liaise regular with national “Rabies-Free Kenya” campaign to ensure efforts are complementary and share experience of best practice.
1.14 Close-out meeting early in Year 3 to assess progress relative to national rabies eradication efforts, and to decide next steps.

2.1 Convene workshop on managing disease risks to wild dogs, involving local and international experts and drawing on existing data and epidemiological modelling.
2.2 Based on disease workshop outcomes, develop and publish a local disease management plan for wild dogs and other large carnivores.
2.3 If recommended by disease workshop participants, including Kenya Wildlife Service, initiate vaccination (rabies and/or CDV) within each collared wild dog pack.
2.4 With workshop participants, develop a SMART-integrated surveillance system for reporting sickness in wild and domestic carnivores, including response plans.
2.5 Train project Community Officers, and project partners’ scouts, outreach officers, and other SMART users to use the surveillance system.
2.6 Train and equip veterinarians from KWS, Mpala, and partners to implement the response plan.
2.7 Convene workshop on mitigating livestock depredation in the project area, involving local and international experts.
2.8 Based on depredation workshop outcomes, develop and publish a local plan to mitigate livestock depredation by wild dogs and other large carnivores.
2.9 Monitor wild dog health, survival, and reproduction by deploying tracking collars on all known wild dog packs in the project area, with frequent visual checks.
2.10 Retrieve and (with KWS) necropsy and wild dogs which die, collating data on mortality rates and causes.
2.11 Collate data annually from KWS and partner projects on conflict-related mortality of other large carnivore species.

3.1 With participants in the depredation workshop, agree appropriate methods to mitigate livestock predation by wild dogs and other large carnivores.
3.2 Integrate chosen methods into new and existing training materials for Mpala and partner projects, and

train key staff to use and share them.
3.3 Solicit and follow up reports of large carnivore attacks on livestock, collecting case-control data on husbandry methods and offering advice on mitigation methods.
3.4 Develop a participatory play about coexisting with large carnivores, especially wild dogs, sharing evidence on sustainable ways to prevent livestock attacks.
3.5 Perform the coexistence play on ≥20 occasions, targeting locations experiencing livestock depredation problems, especially wild dog depredation.
3.6 Monitor the impact of the coexistence play by counting audiences, and by interviewing a sample of audience members before-and-after performances.
3.7 Develop short video clips, based on the coexistence play, optimised for sharing over WhatsApp, and encourage sharing over local networks.
3.8 Develop and distribute posters and leaflets about coexistence with wild dogs and other large carnivores, targeting places women are likely to visit, as well as men.
3.9 Share knowledge about approaches to coexistence through regular formal and informal meetings with community members and groups.
3.10 Monitor key livestock husbandry measures (e.g., number/age/sex of herders) in a sample of herds at the start of the project and annually thereafter.
3.11 Identify a sample of focal households for each community officer, to facilitate a standardised measure of predator impact with constant observer effort
3.12 Collect data on livestock depredation and economic losses per focal household; estimate trends in losses over time.

4.1 Encourage discussion about the benefits of coexisting with wildlife, as well as the costs, during play performances and formal and informal community meetings.
4.2 Actively encourage journalists and film-makers to visit the project, promoting positive media stories linking human health to wildlife conservation.
4.3 Promote positive stories about wild dog conservation and human health through our own, and partners', social media accounts and other digital platforms.
4.4 Use a simplified version of the questionnaire developed for ref (87) to measure local attitudes to wild dogs at the start and end of the project.
4.5 Monitor and record numbers of reports about the project in print, broadcast, and social media.
4.6 Promote the use of wild dogs in marketing tourism to the project area through informal meetings with individual lodges and camps.

5.1 Conduct initial training workshops for project team at the start of the project
5.2 Include training session in every monthly project meeting
5.3 Ensure that specific training provided to project staff is also offered to relevant staff from partner projects
5.4 Schedule vaccination days to involve County Veterinary Officers, providing transport to facilitate their involvement
5.5 Train dispensary nurses and hospital staff to collect and report age- and sex-specific data on rabies deaths and dog bites.
5.6 Engage Kenyan veterinarians and other conservationists with epidemiological modelling in the course of the disease management workshop.

Section 14 - Implementation Timetable

Q32. Provide a project implementation timetable that shows the key milestones in project activities

Provide a project implementation timetable that shows the key milestones in project activities. Complete the Excel spreadsheet template as appropriate to describe the intended workplan for your project.

Implementation Timetable Template

Please add/remove 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.

Mpala Wild Dogs Implementation Timetable 09 Feb21
09/02/2021
16:11:37
xlsx 19 KB

Section 15 - Monitoring and Evaluation

Q33. Monitoring and evaluation (M&E)

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 Guidance for Darwin/IWT**).**

We plan to use monitoring to direct our project activities, as well as to evaluate our overall impact. For example, if our mark-resight monitoring showed evidence of low domestic dog vaccine coverage in a particular area, we would increase our outreach and vaccination efforts in that area. Likewise, if surveillance returned reports of dead hyaenas at a carcass, veterinary teams would respond by investigating poison and disease as potential causes of death and, if poisoning was confirmed or suspected, community teams (from either Mpala or partners) would intervene with advice on addressing conflict between people and hyaenas.

Monitoring and Evaluation will be managed by a dedicated Monitoring and Surveillance Officer. Technical Advisors and project partners will support the Monitoring and Surveillance Officer with topic-specific guidance on sampling design, data analysis and interpretation. The list below indicates who will be responsible for collecting specific datasets, including the Monitoring and Surveillance Officer (MSO), Community Officers (COs), Veterinary Officer (VO), Outreach Officer (OO), and partners.

The specific monitoring elements of our work are:

Continuous monitoring
Human rabies deaths and dog bite injuries (anonymised but separated by sex), monitored by nurses at 4

hospitals and 20 dispensaries (MSO).
Area covered by domestic dog vaccination (VO, COs, partners).
Proportion of domestic dogs vaccinated per area, estimated using mark-resight on the day after vaccination days (MSO, COs).
Wild dog and other large carnivore population trends and mortality causes, monitored using GPS-collars, mortality-sensing VHF-collars, visual observations, and necropsies (TAs, partners).
Incidents of cause-specific ill-health and mortality among wild carnivores, reported through SMART surveillance (MSO, VO, partners).
Livestock predation incidents and costs per household, measured systematically across a predetermined sample of households to avoid observation bias (COs, partners).
Husbandry details from “case” herds attacked by wild dogs and other large carnivores, and “control” non-attacked herds in the same area (following ref (37)), to refine evidence on the risk factors for livestock predation and inform outreach efforts (COs).
Numbers of people (separated by sex) engaged with outreach efforts, estimated by counting audiences, meeting participants, etc (OO, COs).
Effects of the participatory plays on attitudes and knowledge, by administering a brief multiple-choice questionnaire to audience members before and after selected performances (OO, partners).
Numbers of staff from Mpala and partners trained in health surveillance and outreach (VO, MSO).

Sporadic surveys
Livestock husbandry practised in focal areas, measured on annual surveys of a predetermined number of herds (MSO, COs).
Community attitudes to wild dogs (based on a simplified version of the questionnaire used in ref (87) for consistency) assessed on a stratified sample of respondents, in surveys conducted at the beginning and end of the project (MSO, COs).
Data on numbers of news articles, TV reports, and social media reach collated at the end of each year (OO).

These data will be collated and analysed to evaluate changes and trends in key indicators in the course of the project. The data will be discussed within the project team at monthly meetings, and presented in project reports and open-access academic papers.

Total project budget for M&E in GBP (this may include Staff, Travel and Subsistence costs)	£[redacted]
Number of days planned for M&E	934
Percentage of total project budget set aside for M&E (%)	[redacted]

Section 16 - FCDO Notifications

Q34. FCDO Notifications

Please state whether there are sensitivities that the Foreign Commonwealth and Development Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country.

No

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.

⦿ No

If no, why not?

Mpala has close links to the British High Commission in Nairobi, not least because British Army troops train on our land. Nevertheless, as a Kenyan-run project we use Kenyan sources (rather than the British High Commission) to evaluate local security issues.

Please attach details of any advice you have received.

No Response

Section 17 - Certification

Q35. Certification

On behalf of the

Trustees

of

Mpala

I apply for a grant of

£393,675.00

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 enclosed CVs for key project personnel, letters of support, budget and project implementation timetable (uploaded at appropriate points in application).**
- **Our last two sets of signed audited/independently verified accounts and annual report are also enclosed.**

Checked

Name	Dino Martins
Position in the organisation	Executive Director

Signature (please upload e-signature)	Dino signature 09/02/2021 21:54:46 jpg 16.56 KB
Date	09 February 2021

Section 18 - Submission Checklist

Checklist for submission

	Check
I have read the Guidance, including "Guidance Notes for Applicants**" and "**Finance Guidance**".**	Checked
I have read, and can meet, the current Terms and Conditions **for this fund.**	Checked
I have provided actual start and end dates for the project.	Checked
I have provided my budget based on UK government financial years i.e. 1 April – 31 March and in GBP.	Checked
I have checked that our budget is complete, correctly adds up and I have included the correct final total at the start of the application.	Checked
The application been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked
I have included a 1 page CV or job description for all the key project personnel identified at Question 12, including the Project Leader, or provided an explanation of why not.	Checked
I have included a letter of support from the the Lead Organisation and main partner organisation(s) identified at Question 11, or an explanation of why not.	Checked
I have included a cover letter from the Lead Organisation, outling how any feedback received at Stage 1 has been addressed where relevant.	Checked
I have included a copy of the lead organisation's safeguarding policy, which covers the criteria listed in Question 30.	Checked
I have been in contact with the FCDO in the project country/ies and have included any evidence of this. If not, I have provided an explanation of why not.	Checked
I have included a signed copy of the last 2 annual report and accounts for the Lead Organisation, or provided an explanation if not.	Checked
I have checked the Darwin website **immediately prior to submission to ensure there are no late updates.**	Checked

I have 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.

Checked

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 organisation, 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).