

## Darwin Initiative Capability & Capacity Annual Report

To be completed with reference to the “Project Reporting Information Note”:  
(<https://www.darwininitiative.org.uk/resources-for-projects/information-notes-learning-notes-briefing-papers-and-reviews/> ).

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes)

**Submission Deadline: 30<sup>th</sup> April 2023**

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### Darwin Initiative Project Information

Project reference	DARCC009
Project title	Strengthening conservation and management capacity in Tanzania through collaborative research
Country/ies	Tanzania
Lead Partner	Lion Landscapes
Project partner(s)	WildCRU (University of Oxford), Tanzania Wildlife Management Authority (TAWA), Frankfurt Zoological Society (FZS) Tanzania, Southern Tanzania Elephant Program (STEP)
Darwin Initiative grant value	£199,941 (Y1: £98,314; Y2: 101,627)
Start/end dates of project	April 2022 – March 2024
Reporting period and number	Annual report 1 (April 2022 – March 2023)
Project Leader name	Dr Charlotte Searle
Project website/blog/social media	<a href="https://www.lionlandscapes.org/">https://www.lionlandscapes.org/</a> <a href="https://twitter.com/lionlandscapes">https://twitter.com/lionlandscapes</a> <a href="https://www.instagram.com/lionlandscapes/">https://www.instagram.com/lionlandscapes/</a> <a href="https://www.facebook.com/lionlandscapes">https://www.facebook.com/lionlandscapes</a>
Report author(s) and date	Dr Charlotte Searle, 28 April 2023

### 1. Project summary

Since 2017, Lion Landscapes has been involved in carrying out large carnivore assessments in two of Tanzania’s most important wilderness areas, the Ruaha-Rungwa and Selous-Nyerere landscapes. Both are carnivore strongholds, with the latter believed to host Africa’s largest population of endangered wild dog (Woodroffe et al., 2020). During these efforts, we developed close collaborations with protected area management authorities (TAWA, TANAPA), the Tanzania Wildlife Research Institute (TAWIRI), and the University of Dar es Salaam (UDSM). Through these partnerships, we have noted that knowledge and capacity gaps are especially significant with regards to large carnivore population research, conservation, and management. There is little knowledge on methods that can be employed to assess large carnivore populations, and understand their threats and management needs. We have also noted a lack of collaboration between the country’s governmental research institutions and protected area management authorities, which further hinders effective conservation.

The identified capacity limitations are acknowledged by Tanzania’s research and management institutions: TAWIRI identified problems arising from inadequate management as one of the most

important factors affecting lion, leopard, wild dog, and cheetah conservation, and set strategic targets to establish capacity building programs for large carnivore conservation, where possible in tandem with research and monitoring (TAWIRI, 2009, 2016). The Government of Tanzania has therefore identified the need addressed by this project as a key national biodiversity conservation priority. If protected area management authorities are equipped with the requisite skills and resources, they will be able to assess and monitor species, implement actions to mitigate identified threats, and establish regular monitoring to evaluate interventions and identify emerging threats. Such evidence-based management is critical for efforts to halt population declines and range reductions (Sutherland et al. 2004).

If left unaddressed, these capacity gaps also pose a substantial threat to wider poverty reduction efforts. Large carnivores play a central role in regulating ecosystem structure and function (Atkins et al., 2019), and their loss can therefore have profound consequences for wider biodiversity and the provision of ecosystem services (Ripple et al., 2014). Furthermore, wildlife tourism is an important generator of income and livelihoods in Tanzania (Tanzaniainvest.com), and large carnivores are an important factor attracting international tourists to Africa (Okello, 2008; Macdonald et al. 2017). Population declines resulting from ineffective management of these species will therefore imperil an important source of income and livelihoods for the country.

This project aims to build conservation, research, and protected area management capacity in Tanzania, while improving the management of two globally-important large carnivore populations in the Ruaha-Rungwa and Selous-Nyerere landscapes (Fig. 1). Through this project, we are providing practical training in large carnivore monitoring and wildlife corridor assessments, coupled with academic mentoring, to Tanzanian nationals from protected area management authorities, governmental research institutions, and universities. The monitoring and conservation plans developed will contribute to long-term poverty reduction by helping promote tourism activities and preserving ecosystem function.

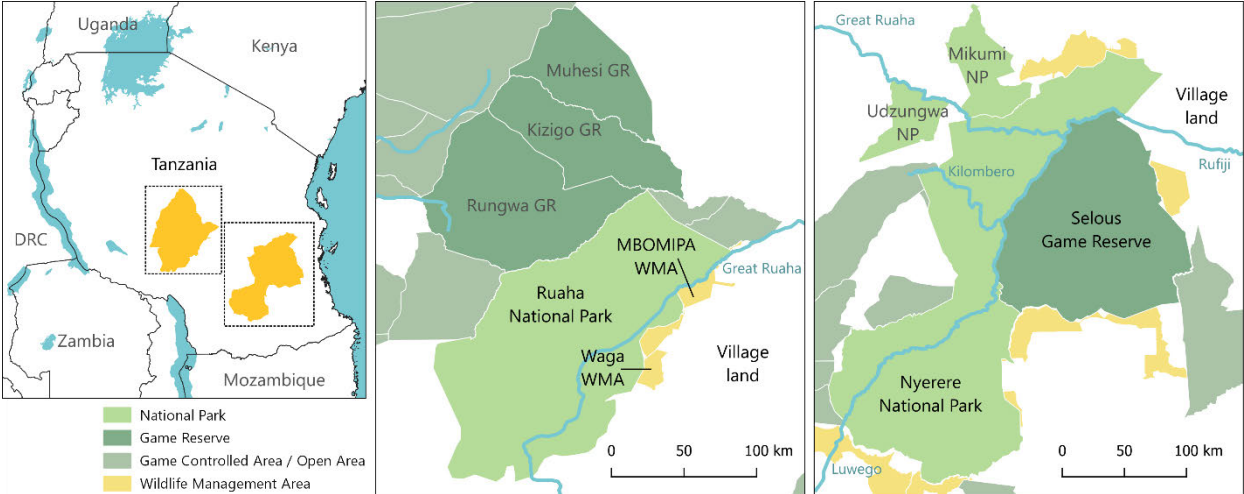


Fig. 1: The location of Ruaha-Rungwa landscape (middle) and Selous-Nyerere landscape (right) within Tanzania (left), where the project activities are taking place.

## 2. Project stakeholders/ partners

All activities under this project in Y1 have been led by lead partner **Lion Landscapes** and partner **WildCRU**. Project leader Dr Charlotte Searle is employed through a postdoctoral research fellowship at WildCRU, but is an affiliated researcher at Lion Landscapes. The two organisations are closely linked and have been carrying out large carnivore research and conservation activities in southern Tanzania for multiple years; as a result, they are well known within the country and have established relationships with a number of key stakeholders. Lion Landscapes has provided institutional and logistical support throughout Y1, including by employing the project assistant, providing existing assets for use by the project (vehicles and camera traps), managing project administration and finances, and offering ad hoc in-country support. WildCRU has provided the academic context for the work, which is critical for supervision of students and publication of

papers through Oxford's Open Access Scheme (Output 3) – this scheme is particularly valuable to ensure the outputs of this project are available to protected area management authorities beyond the study landscapes, who often lack the resources to access scientific subscriptions.

**Frankfurt Zoological Society (FZS) Tanzania** has provided logistical support for field training activities in Selous-Nyerere, contributed to participants' fieldwork allowances through the SECAD fund, hosted the analytical training workshop at their office in Dar es Salaam, assisted with the import of equipment, and facilitated meetings between the project leader and senior staff members within protected area management authorities. They have also provided matched funding to purchase a dedicated ecological monitoring vehicle for Selous Game Reserve, which will be used by the large carnivore monitoring team established through this project.

The **Tanzania Wildlife Management Authority (TAWA)** is a partner on this project so they can use the training opportunities to upskill their staff and employ the outputs of project research activities to improve their conservation management plans, including implementing sustainable hunting quotas. While their involvement has been relatively low in Y1 (as training was focused on TAWA in 2021, prior to the Darwin project, and on TANAPA in 2022), their role will expand in Y2 as we move towards the conservation strategy planning process (Output 3).

The **Southern Tanzania Elephant Program (STEP)** is a key project partner for the wildlife corridor connectivity assessments (Output 4), which will build upon a previous Darwin Initiative grant held by the organisation (Round 25, project 26-007). The organisation is experienced in corridor work – their CEO led the first national assessment of Tanzanian wildlife corridors in 2008 – and is directly involved in the gazettelement of the Selous-Nyerere – Udzungwa corridor. As a result, the corridor assessments have been planned in collaboration between project leader Charlotte Searle and STEP's associate researcher, Josephine Smit. Training in corridor assessment will be conducted as part of this work, and will be delivered by Charlotte and Josephine. STEP also play a critical role in supporting management and anti-poaching efforts in MBOMIPA WMA and have been supporting and training the WMA's village game scouts since 2018. They were instrumental in facilitating the camera trap survey and training in MBOMIPA in Y1, including by organising the meeting to present the proposed work to the board, coordinating village game scouts for training, and assisting with logistics [C03, C04]. They will play a similar facilitating role for the field skills training course in Y2, while their role in supporting management of the WMA will help us ensure the findings of the research are used to support conservation and promote tourism.

Beyond the project partners, we have also engaged local community members in Ruaha-Rungwa through our work in MBOMIPA WMA. We held a meeting in Swahili with the board of the WMA, which is comprised of representatives from each member village, to explain the project activities and highlight the potential value of the research for conserving the WMA's carnivores and promoting tourism in the area [G06, G07].

Training participants were identified by inviting participating organisations (TAWIRI, TAWA, TANAPA) to nominate individuals they believed would benefit most from the training, based on their own individual selection processes and equal opportunities criteria. We encouraged these organisations to nominate early career researchers – as the project can help support participants to pursue higher education by providing relevant skills and knowledge, supporting scholarship applications, and offering access to data and supervision for research projects – and practitioners with a direct role in wildlife monitoring. One challenge in Y1 has been the lack of women nominated for the training; we will try to address this in Y2 by requesting that these institutions nominate any suitable female candidates, even if they are not based in our project area.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

##### **Activity 1.1 & 2.4: Training & establishment of large carnivore monitoring teams**



The activities in Selous-Nyerere are part of a 2020-2022 large carnivore assessment & training programme. From 30 July to 23 August 2022, in-depth training in sign-based (spoor) surveys was delivered by project member Dr Paolo Strampelli. From 24 August, data collection for these spoor surveys was handed over to a completely Tanzanian team comprised of training participants and led by TAWIRI researcher Leonard Haule, who went on to train a further three TANAPA rangers and one Lion Landscapes staff member (Fig. 2). Up to 23 August, the team completed 317 km of spoor survey transects, and up to the end of September the all-Tanzanian team completed a further 557 km.



Fig. 2: The TAWIRI-led spoor survey team during field preparation (left) and on a transect (right).

Also in Selous-Nyerere, Dr Charlotte Searle provided in-depth training in camera trap survey set-up and checks to three TANAPA ecologists and four TANAPA rangers through two grids in Nyerere National Park, together totalling 83 paired camera trap stations. An all-Tanzanian team comprised of training participants and led by TANAPA ecologist Germanus Hape independently checked and took down one of these two grids (Fig. 3) [A01, A02, C01].



Fig. 3: Members of the TANAPA camera trap team mounting a camera case on a tree (left) and reviewing test photos to check camera positioning during set-up (right).

In Ruaha-Rungwa, training was delivered through a grid of 40 camera trap stations in MBOMIPA Wildlife Management Area. Through this effort, training in camera trap set-up and checks was delivered to one Lion Landscapes staff member, three Lion Landscapes interns, two STEP staff members, one STEP intern, and ten MBOMIPA village game scouts (Fig. 4) [A02, G07]. An all-Tanzanian team led by Darwin project assistant Joseph Francis – hired in September 2022 – independently conducted the check and takedown of this grid. The guide sightings programme has also been continuing in Ruaha National Park, to help monitor large carnivores in the park’s core tourism area [C02].





Fig. 4: Team members receiving training on how to adjust camera settings (left) and mounting a camera case on a tree (right).

The above training activities have allowed us to establish carnivore monitoring teams in each landscape. We have supported training participants Leonard Haule [F03, F07] and Singira Parsais [F01, F05, F06] to secure funding for a PhD and MSc, respectively; they will jointly lead a large carnivore monitoring team in Selous-Nyerere alongside a Lion Landscapes staff member, with a particular focus on GPS collaring and focal monitoring of lion prides and wild dog packs. We have also supported Leonard Haule to form a collaboration with the African Carnivore Connectivity Project, which will see him visit the Swedish University of Agricultural Sciences to carry out genetic sequencing of wild dog and lion samples from Selous-Nyerere as part of his PhD research. In Ruaha-Rungwa, Darwin project assistant Joseph Francis has been leading the large carnivore monitoring team to carry out the camera trap survey in MBOMIPA WMA and manage the guide sightings programme, among other activities [A02, C02, C03]. The project leader has continued to provide training and mentorship in both practical techniques and theory, and in Y2 will support Joseph to pursue scholarship funding for his own MSc studies using data he has helped to collect through this project.

### **Activity 1.2: Analytical training workshops**

In April 2022, Lion Landscapes held an analytical training workshop in Dar es Salaam in partnership with FZS Tanzania (Fig. 5) [C01, C02, E01, E03]. Participants in the Selous-Nyerere carnivore assessment and training were invited to attend the workshop [B01, B07]; this included one TAWIRI researcher [B02], three TAWA ecologists [B03], and two TANAPA ecologists [B04]. During the workshop, project leader Charlotte Searle and former project member Paolo Strampelli delivered training on how systematic camera trapping and spoor data can be employed to estimate population density of large carnivores. After a presentation on the theoretical background for the analyses [B06], workshop participants learnt how to individually identify lions and leopards from camera trap images, and how to estimate population density from the individually identified camera trap data via spatially explicit capture-recapture (SECR) modelling in program *DENSITY*. Participants were also taught how to estimate density and abundance via spoor count analysis. Booklets with step-by-step instructions for completing these analyses were prepared and given to attendees, equipping them with the tools required to carry out these analyses independently in the future [B06]. In Y2 we will reconvene this group to interpret and discuss results, draft scientific publications, and identify conservation management recommendations arising from the work.

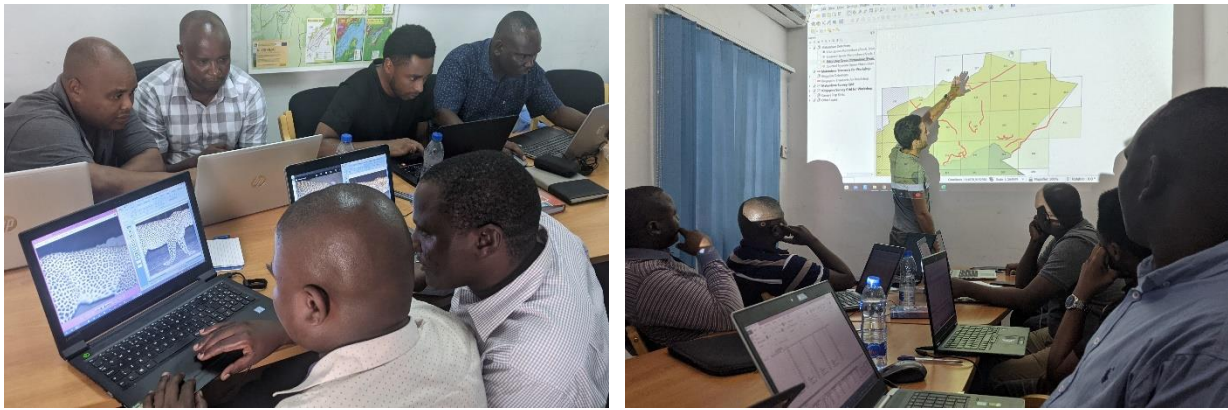


Fig. 5: Participants in the April 2022 analytical training workshop learning how to identify individual leopards from their spot patterns (left) and prepare spoor data for analysis (right).

### **Activity 1.5 & 3.1: Write-up of key findings in reports & scientific publications**

Since the start of the project, we have shared regular reports with the government wildlife authorities to provide them with updates on the project's activities and progress [C02]. We have also shared more detailed reports with the relevant management authorities in each study area, including TANAPA in Nyerere NP [C01] and the MBOMIPA board and District Game Officer, in English and Swahili [C03, C04].

Most scientific publications are expected to be prepared and submitted for publication in Y2 of the project, as additional time is required to process data and carry out analyses, and we plan to hold meetings with training participants to collaboratively interpret our findings and draft manuscripts. However, in Y1 we have already submitted one paper for publication in an open access journal [D02], documenting the disappearance of cheetah from the Selous-Nyerere landscape. This paper was written collaboratively by the project leader and participants in the capacity-building training, including three TAWIRI researchers, three TAWA ecologists, and three TANAPA ecologists [D01].

### **Activity 2.1: MSc and PhD students**

One female MSc student from University of Dar es Salaam (UDSM) is being supervised by the project leader as part of this project, using data from the Ruaha guide sightings programme [F04]. She is using lion sightings data to estimate population density (one of the first applications of SECR modelling to this data type), explore demography, and investigate the value of citizen science for carnivore monitoring [F01]. This research will be completed in Y2.

The project has also supported a second MSc student (male) – who participated in the 2020-2021 training this project builds upon – to secure scholarship funding for his Master's programme [F05, F06]. This student, who is Head Ecologist for TAWA in Selous Game Reserve, will be a leading member of the carnivore monitoring team in Selous-Nyerere, and will use the data collected to study wild dog ecology [F02]. The project leader has also supported another training participant from TAWIRI (male) to secure scholarship funding to embark on his PhD in 2023 [F07]. This student led the spoor team in Nyerere National Park, and will be a leading member of the Selous-Nyerere carnivore monitoring team; his research will focus on conservation genetics [F03], a field that is vastly underdeveloped in Tanzania.

**Other activities:** Activities 1.3/3.2 (collaborative development of carnivore monitoring strategies), 1.4/2.2 (field course), 2.3 (University course), 4.1 (Ruaha-Rungwa – Udzungwa corridor assessment), and 4.2 (Selous-Nyerere – Udzungwa corridor assessment) will all be carried out in Y2.

## 3.2 Progress towards project Outputs

### **Output 1: Improved skills and knowledge among Tanzanian PA management authorities, research institutions, and NGOs to assess and monitor large carnivore populations, including through the ability to carry out wildlife corridor assessments**

This project builds upon capacity-building training that was initiated in 2020 through the 2020-2022 Selous-Nyerere large carnivore assessment. This assessment was developed as a collaboration between Lion Landscapes, WildCRU, and FZS Tanzania, and partnered with TAWIRI, TAWA, and TANAPA to deliver training in large carnivore research methods. As such, although ecologists from management authorities in the study area lacked the skills and knowledge to effectively monitor large carnivores using the most up to date techniques prior to 2020, we had begun to make inroads in improving this situation by the start of the Darwin project, having delivered field methods training to 23 people. During Y1 we expanded this impact by delivering in-depth training in spoor and camera trap surveys to a total of 43 researchers and conservationists, including 1 TAWIRI researcher, 3 TANAPA ecologists, 19 TANAPA rangers, 10 MBOMIPA Wildlife Management Area village game scouts, 7 Lion Landscapes staff members and interns, and 3 STEP staff members and interns (see 3.1) [A01, A02, C01, C03].

We also hosted a week-long analytical training workshop to teach ecologists from protected area management authorities how to carry out spatially explicit capture-recapture analysis from camera trap data to estimate population density, a key metric for monitoring large carnivores and setting sustainable hunting quotas (see 3.1) [B06, C01]. This workshop was attended by 1 TAWIRI researcher, 3 TAWA ecologists (who participated in field training prior to the start of the Darwin grant) and 2 TANAPA ecologists [B07]. In a self-evaluation questionnaire completed before and after this training, all respondents reported having increased confidence in the skills on which they received training after the workshop, with improvements reported for an average of 98% of the trained skills. All respondents also rated the workshop highly, giving it an average score of 4.5 out of 5 [B14-19, B20]. We will use the feedback provided by the workshop participants to inform our workshop in Y2 – in particular, multiple respondents requested training in QGIS, which we are now planning incorporate into the training.

Training participants have shown significant improvements in their confidence with large carnivore monitoring techniques during Y1: one participant from TAWIRI (Leonard Haule) used his new skills to independently lead a team to complete spoor surveys in Nyerere National Park, while two participants from TANAPA (Germanus Hape) and Lion Landscapes (Joseph Francis) used their training to independently lead teams to check and take down camera trap surveys in Nyerere National Park and MBOMIPA Wildlife Management Area, respectively (see 3.1) [C01, C02, C03]. Two training participants were able to secure funding for further study thanks to their new knowledge, which they used to develop project proposals with mentorship from the project leader [F02, F03, F06, F07]. Nine training participants have also contributed to a short communication (in review) on the status of cheetah in Selous-Nyerere [D01, D02]; this will be the first scientific publication for five of these participants.

We are confident that we will achieve this output by the end of the project – we have made good progress in Y1, and hope to continue to improve carnivore research capacity in Y2 by providing training to a larger number of people (prioritising women wherever possible) and delivering more advanced training in analysis and scientific interpretation & writing to existing training participants. To meet our SMART indicators in Y2, we will provide in-depth field training to at least one TAWIRI researcher, and analytical training to at least one TAWIRI researcher, six TAWA/TANAPA ecologists, and five Lion Landscapes/STEP research assistants. In Y2 we will also carry out meetings with TAWA and TANAPA protected area managers to make them aware of how the project findings can be used to inform management, and host a training course for students and staff at UDSM. We will also provide training in how to carry out wildlife corridor assessments.

## **Output 2: Improved skills and knowledge among young Tanzanian academic researchers on how to study, monitor, and secure large carnivore populations in Tanzania**

In Y1 we have supported two Master's students to begin research projects on large carnivores (see 3.1) [F04, F05]. One of these students was already enrolled at UDSM at the start of the Darwin project, and is now nearing completion of her research project under the supervision of the project leader. During this process, the student has learnt how to carry out a literature review, assess the demographic structure of a carnivore population, and estimate population density via spatially explicit-capture recapture [F01].

The second Master's student was not enrolled on his MSc programme at the start of the Darwin project. However, as a result of his extensive training and mentorship provided by the project leader through the proposal writing and scholarship application process, he was able to secure a highly-competitive WCN Scholarship to fund his studies [F06]; his access to this opportunity can therefore be attributed to the Darwin Initiative's support. In Y2, Darwin funding will support fieldwork for this student's research project [F02], and will allow him to develop additional skills in GPS collaring and focal monitoring of wild dog.

This project has also enabled one PhD student to secure funding from the Lion Recovery Fund to enrol on a PhD programme in Tanzania in July 2023 [F07]. This student has been a participant in the training since 2021, and put his new knowledge to practice by developing his own research proposal on the ecology and conservation genetics of lion and wild dog [F03]. As this student's background is not in carnivore research, this is a strong illustration of how this project has embedded a deeper understanding of large carnivores among training participants, and inspired participants to continue doing research on these species.

We will achieve this output in Y2 by continuing to provide mentorship and supervision to the two enrolled MSc students and the soon to enrol PhD student, and supporting at least two additional students to carry out research projects on carnivores. To meet our goal of at least 50% female students, we will work to identify female candidates for this opportunity. One of these students will be Lion Landscapes Research Assistant Nyasatu Mkaka, who is undertaking a Diploma at WildCRU; for the second candidate, we will share a list of prospective projects with UDSM to share with their Master's cohort.

## **Output 3: Improved knowledge on the status of, and threats to, large carnivore populations in two globally-important conservation areas is available to the scientific/conservation community and is employed to improve their management**

Throughout the research and training activities, we have shared regular reports to update project partners and key stakeholders, including government entities, on our activities and progress. These include reports on the Selous-Nyerere large carnivore assessment and training (FZS Tanzania, TAWIRI, TANAPA, TAWA) [C01], a report on the camera trap training in MBOMIPA WMA (Iringa (Rural) District Game Officer, board of MBOMIPA WMA, STEP) [C03, C04], and overall progress reports shared with Tanzanian government research authorities (TAWIRI, COSTECH) [C02]. The project leader and project assistant also delivered a presentation to the MBOMIPA WMA board in advance of starting fieldwork and training activities in the WMA, to ensure they understood the purpose of the research – this presentation and report for this work were translated and delivered in Swahili to ensure the information would be understood by the audience, as the majority of board members speak little to no English [C03, C04, G06, G07].

While processing and analysis of most of the data collected in Y1 is ongoing, we recently worked with training participants to collaboratively write a paper on the status of cheetah in Selous-Nyerere (see 3.1 and 3.2) [D01, D02]. We have submitted this paper for publication in *Oryx*, a fully open access journal, which will help ensure this project output is accessible to as wide an audience as possible.

We have also shared the outputs of our research with key audiences specifically focused on improving the conservation outlook of lion, leopard, cheetah, and African wild dog. The project



leader was invited to participate in a Workshop to Revise the Eastern Africa Regional Conservation Strategy for Cheetah and African Wild Dogs in Laikipia, Kenya in September 2022, where she delivered a presentation on *updates on cheetah and African wild dog from southern Tanzania* [G03]. This workshop was attended by carnivore researchers from across East Africa and the Horn of Africa, as well as representatives from the Range-Wide Cheetah & Wild Dog Conservation Initiative.



Fig. 6: Project leader Charlotte Searle participating in a breakout group (left) and all attendees (right) at the 2022 Workshop to Revise the Eastern Africa Regional Conservation Strategy for Cheetah and African Wild Dogs.

In November 2022, the project leader also participated in the Tanzania Ministry of Natural Resources & Tourism (MNRT) Meeting to Review the National Action Plan for Lion and Leopard in Tanzania in Dar es Salaam, which was attended by carnivore experts, management authorities, and government stakeholders. Here, she delivered two presentations on the *abundance and distribution of lion and leopard in Ruaha-Rungwa* [G01] and the *abundance and distribution of lion and leopard in Selous-Nyerere* [G02]. At both workshops, the project leader made a significant contribution to the development of updated regional and national action plans, and ensured that data collected through this Darwin project were incorporated into these plans and disseminated to key stakeholders. The project leader has also disseminated the results of this project to the international research and conservation community through presentations at the Global Leopard Conference [G04, G05].



Fig. 7: Lion Landscapes country director BenJee Cascio presenting on human-wildlife conflict (left) and project leader Charlotte Searle participating in a discussion (right) at the 2022 Meeting to Review the National Action Plan for Lion and Leopard in Tanzania.

In Y2, we will achieve this output by continuing to provide regular reports to partners and stakeholders, collaboratively writing and submitting at least four more scientific papers for publication, and presenting the outputs of the project on an ad hoc basis at meetings and workshops. Once the data collected have been analysed, we will prepare reports summarising our findings for the relevant protected area management authorities. These reports will be produced collaboratively with training participants from the respective management authorities;

this will allow us to build capacity in interpreting scientific research to produce management recommendations while also ensuring the recommendations delivered are realistic and appropriate. We will then organise meetings where we will work with training participants to present the recommendations to senior officials at each authority and draft large carnivore conservation strategies.

**Output 4:** All activities under this output will take place in Y2.

### 3.3 Progress towards the project Outcome

This project has made good progress towards the project outcome in Y1: training has been provided to participants from Tanzanian research institutions (TAWIRI), management authorities (TAWA, TANAPA), and conservation organisations (Lion Landscapes, STEP). All participants in the analytical training reported improved capacity in large carnivore monitoring techniques, and expressed an interest in furthering this knowledge (see 3.2) [B14-19, B20]. Although most analyses will be completed in Y2, we have also started to produce scientific publications that can be used to inform management of Ruaha-Rungwa and Selous-Nyerere's large carnivore populations (see 3.1, 3.2) [D01-02]. In Y2 we will build upon this progress by developing large carnivore management strategies in collaboration with management authorities, in addition to expanding our training to a cohort of staff and students at a Tanzanian university, thus building wildlife research capacity among Tanzania's next generation of conservationists.

The research and training carried out under this project has also unlocked additional funding from the Lion Recovery Fund to establish long-term monitoring of large carnivore populations in Selous-Nyerere. As many of the training participants on this project are directly responsible for monitoring in this landscape, they will be involved in developing and implementing this programme. The partnerships created through this project will also enable monitoring to inform protection and vice versa, as project partner FZS Tanzania supports protection activities in Selous-Nyerere. Overall, this should result in an improved conservation outlook for the landscape's large carnivores by supporting evidence-based management.

### 3.4 Monitoring of assumptions

Assumptions 1-3 below were identified in our initial application; assumptions 4-5 were added in July 2022 as part of a change request (DARCC009\_CR2207):

1. **(Whole project) Funding will be secured to cover salaries of the project leaders:** This assumption was met – although we initially sought funding from the Darwin Initiative for these salaries, we were able to secure them through a Dennis Curry Postdoctoral Research Fellowship (WildCRU) and support from WWF Germany. As such, we submitted a change request in March 2022 (DARCC009\_CR2203) to revise the budget allocations for the project.
2. **(Whole project) Necessary research clearance will be granted for the project activities:** This assumption was met for Y1, and we are currently in the process of applying for research clearance for Y2. We have no reason to believe that this will not be granted.
3. **(Whole project) None of the participating organisations withdraw their support:** At the time of reporting, all participating organisations are still in support of the project.
4. **(Output 4) Selous-Udzungwa corridor will be gazetted in time for the assessment to be carried out in Year 2. The activities will be designed and planned anyway so cameras can be deployed as soon as possible once the corridor is established:** The Selous-Udzungwa corridor is in the process of being gazetted; most landowners have been compensated, and a few remaining landowners will be compensated this year. The legal gazette process will take a bit longer but the committee, district commissioner, and Udzungwa Mountains National Park authority are keen to start monitoring, so it seems as though there will be good support for this work. A boundary fence will be constructed along the corridor by October 2023; we will deploy cameras once this is in place.

- (Output 4) Partner organisations will have sufficient staff to carry out Ruaha-Udzungwa corridor assessment:** We are exploring whether it will be possible to partner with a Tanzanian research team to lead the Ruaha-Udzungwa corridor assessment. If an appropriate team is found, survey design will be carried out collaboratively among project partners and the selected research team, and training will be delivered in the planned methods. The findings of the assessment will be collaboratively interpreted, reported, and published through meetings and workshops.

### **3.5 Achievement of positive impact on biodiversity and poverty reduction**

In terms of its higher-level impact on biodiversity conservation, this project has collected vital baseline information on threatened large carnivore species in southern Tanzania, and ensured this information is incorporated into conservation plans for the target species through presentations with key stakeholders (see 3.2, output 3). In Y2, this information will be used to help management authorities collaboratively develop evidence-based conservation plans. This process will equip participating institutions with a roadmap for how to apply their new skills and knowledge to achieve biodiversity conservation goals in the study area, and the lessons learned can be used to inform conservation elsewhere in the country.

This process will also support human development in the longer term: with the tourist industry accounting for over 10% of Tanzania's GDP, delayed or misinformed wildlife management interventions have the potential to significantly impact the country's poverty reduction goals. Outputs from our activities in MBOMIPA WMA also have the potential to help attract investors, which should help contribute to long-term poverty reduction for participating communities. There are also short-term human wellbeing benefits from this project, as training participants have been equipped with improved skills and knowledge that will help them succeed in their careers, pursue further education opportunities, and publish research.

## **4. Project support to the Conventions, Treaties or Agreements**

By contributing to evidence-based large carnivore management and embedding monitoring capacity in protected area management authorities, this work is helping to achieve the **NDC** (2021) of promoting sustainable tourism – including by providing robust data on population densities required to inform sustainable trophy hunting quotas. The project has also contributed significantly to the Strategic Goals outlined in Tanzania's **NBSAP** (2015), which are drawn directly from the **CBD's Aichi Biodiversity Targets** (2010). We have empowered management authorities to manage species requiring special attention for long-term sustainability (Target 12) – which will help improve the status of biodiversity (SG-C) – by delivering in-depth training in field and analytical methods to monitor and conserve large carnivores to the two main protected area management authorities and the government wildlife research institute (see 3.1, 3.2) [A01, A02, C01, C03]. We also held a meeting to explain the value of monitoring large carnivores for the board of MBOMIPA WMA and delivered training in monitoring to ten village game scouts (see 3.1, 3.2) [G06, C03]. We have enhanced the implementation of scientific knowledge (SG-E) by working closely with training recipients to discuss and interpret the findings of our research using the data collected as part of the project. We will build upon this in Y2 by holding workshops to collaboratively write scientific papers and produce actionable management recommendations based on our research findings. As MBOMIPA is a community-managed area, our research and training in the WMA should help its management better conserve their wildlife populations, which will improve tourism prospects for local communities. In doing so, this work should help to enhance the benefits to all from biodiversity and ecosystem services (SG-D).

The project has also helped to support the delivery of multiple adaptation activities identified in the country's **National Adaptation Plan** (NAP; 2007) by providing valuable information to inform wildlife management policy to ensure conservation of wildlife resources; enhancing capacity building on wildlife management for sustainable development by delivering training to management authorities; and supporting the implementation of Community Based Management programmes of wildlife management areas through activities in MBOMIPA WMA. In Y2 we will



build upon this by contributing to the development of migratory corridors and buffer zones for wildlife species, and supporting training recipients to develop and implement management plans for protected areas.

The project has contributed much-needed information for **TAWIRI's Priority Areas for Research** (2012) and **COSTECH's Research Priorities** (2016). It has also directly addressed research and capacity gaps identified in TAWIRI's Lion & Leopard (2006) and Cheetah & African Wild Dog (2006) **Conservation Action Plans** – in doing so, the project has contributed to the joint **CITES-CMS African Carnivores Initiative** and the **CITES, CMS & IUCN CSG's African lion programme**. The project leader participated in the *Workshop to Revise the Eastern Africa Regional Conservation Strategy for Cheetah and African Wild Dogs* in September 2022 [G03] and the *Tanzania Ministry of Natural Resources & Tourism (MNRT) Meeting to Review the National Action Plan for Lion and Leopard in Tanzania* in November 2022 [G01, G02] (see 3.2). At both workshops, the project leader made a significant contribution to the development of updated regional and national action plans, and ensured that data collected through this Darwin project were incorporated into these plans and disseminated to key stakeholders.

While we have not yet had any direct contact with the Tanzanian convention focal point – the Vice President's Office Division of Environment – we have had direct contact with MNRT, TAWIRI, and the Commission for Science and Technology (COSTECH), which all feed information into the focal point, by presenting our findings at meetings and providing regular reports.

## 5. Gender equality and social inclusion

<p>Please quantify the proportion of women on the Project Board<sup>1</sup>.</p>	<p>Women make up 83% (5 out of 6 members) of the project board:</p> <ul style="list-style-type: none"> <li>✓ Dr Charlotte Searle (project leader; F) – WildCRU &amp; Lion Landscapes</li> <li>✓ Prof Amy Dickman (F) – WildCRU &amp; Lion Landscapes</li> <li>✓ Dr Alayne Oriol-Cotterill (F) – Lion Landscapes</li> <li>✓ Ms Kathryn Doody (F) – FZS Tanzania</li> <li>✓ Ms Josephine Smit (F) – STEP</li> <li>✗ Mr Singira Ngoishiya Parsais (M) – TAWA</li> </ul>
<p>Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women<sup>2</sup>.</p>	<p>60% (3 out of 5) of project partners are led by women or have a senior leadership team consisting of at least 50% women:</p> <ul style="list-style-type: none"> <li>✓ Lion Landscapes is led by women; 4 out of 6 (67%) of the board of trustees and 80% (4 out of 5) of senior management positions are held by women.</li> <li>✓ WildCRU is led by a woman; 40% (4 out of 10) of senior management positions are held by women.</li> <li>✓ STEP is led by a man, but the organisation's research activities are led by a woman; 50% (2 out of 4) of the senior leadership team are women.</li> <li>✗ TAWA is led by a man; 1 out of 9 (11%) senior management positions is held by a woman (<a href="https://www.tawa.go.tz/management">https://www.tawa.go.tz/management</a>)</li> <li>✗ FZS Tanzania is led by a man, but the Selous-Nyerere programme director is a woman; 2 out of 8 (25%) of the senior leadership team are women.</li> </ul>

<sup>1</sup> A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

<sup>2</sup> Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

The existing gender inequality within the academic and conservation communities in Tanzania is well documented. Since Lion Landscapes' inception, we have pushed to provide exceptional female candidates with the opportunities and training required to ensure a more gender-equal conservation landscape in Tanzania's future, and half of the research assistants employed in our Tanzania programme are women. Throughout this project, we have carried this ethos forward and sought to support female candidates whenever possible. Unfortunately, the representation of women among our training participants has been limited (4 out of 43, 9%), as TAWIRI, TAWA, and TANAPA were responsible for identifying candidates from among their staff – all women trained were from Lion Landscapes and STEP. However, this is a relatively good level of representation given the low representation of women working in conservation in the country. One particular success was the camera trap survey and training in MBOMIPA WMA: during this effort, we provided training in camera trapping to monitor carnivore populations to two female interns from Lion Landscapes, one female intern from STEP (Fig. 8), and one female village game scout.



Fig. 8: Female interns learning about camera traps; MBOMIPA board members with the project team.

Moving forward into Y2, we would like to improve female representation among the recipients of our training. While the first analytical training workshop was targeted at ecologists and researchers who had been assigned to participate in the training in Selous-Nyerere, and were therefore all men, in Y2 we will ask the assigning institutions to identify any female candidates for the training irrespective of the protected area in which they work, as the topics covered are relevant for ecologists in any area with carnivores. The project leader will also support one female research assistant from Lion Landscapes – who received training as part of the Selous-Nyerere programme on which this project builds in 2021 – to carry out her research project for the 2023 Postgraduate Diploma in International Wildlife Conservation Practice at WildCRU.

This project is also committed to social inclusion. In order to ensure accessibility of our work, we translated the presentation and report relating to our research and training in MBOMIPA WMA into Swahili, as the WMA board members (Fig. 8) speak very little English (all stakeholders and training recipients for our other activities speak English). All project partners employ staff from a range of backgrounds, and are committed to supporting people from disadvantaged backgrounds to thrive and seek further opportunities. One of the biggest successes in Y1 of this project is that we have been able to support two participants in our training to secure opportunities and funding for further study – one of these participants is from a Maasai pastoralist background and grew up in Ngorongoro Conservation Area, and the other was raised by a single mother. The Darwin grant enabled both these conservationists to develop their skills and knowledge, expand their horizons, and access opportunities that they otherwise would not have been able to access, and the grant will continue to support them by funding fieldwork for their research projects.

## 6. Monitoring and evaluation

M&E on this project is carried out by the project leader, with input from representatives from other partners. On a monthly basis, the project leader reviews the activities carried out as part of the project, using the project logframe as a guide. This process provides an opportunity to track the

project's performance against its intended Outcome, Outputs and Activities, and collate all financial and technical evidence in support of this. More detailed monitoring is carried out on a quarterly and annual basis – the Darwin reporting cycle is a good milestone for this planning – to review how well we are monitoring our impact.

The indicators of success include the number of papers published, number of people trained, number of students supported, training participants' responses to self-assessment questionnaires before and after training, meetings with management authorities to share the project findings, the incorporation of project findings into management plans, and collaborative corridor assessments; further detail on all indicators can be found in Annexes 1 and 2. We updated some of our indicators in the July 2022 change request (DARCC009\_CR2207) to make them more SMART.

## **7. Lessons learnt**

Overall, we feel that the project has worked well over its first year: our capacity-building training has reached a large number of researchers and conservation practitioners, and we have seen the rewards from this training in the form of two training participants securing opportunities for further study. This is a tangible benefit to the career prospects of two highly deserving people which should also bring long-term benefits for biodiversity conservation, as they can take the skills and knowledge they build through their studies back to their institutions after completing their degrees. Another aspect which has worked well has been empowering training participants to lead their own teams to collect data. We originally planned to take this step in Y2, but it was clear during the field training in Y1 that some participants were ready to take on this responsibility. Their success in these roles demonstrated how effective the training has been, and allowed them to consolidate their new skills in a way which should help ensure longevity of the training.

If we were to start the project again, one thing we would do differently would be to frame the project more specifically as a training opportunity than as an assessment that also includes training when speaking with senior members of protected area management authorities. This would ensure the main goal of the project – to develop large carnivore conservation capacity in Tanzania – would be clearly understood. It could also help increase the likelihood of women being assigned to the training, an area in which we have struggled in Y1: although women are underrepresented in relevant positions within Tanzanian management authorities, they do exist, and need to be actively sought out.

From an M&E perspective, there are some aspects of the logframe which remain complicated – for example, we have repeated indicators across different outputs, which can make reporting challenging. The project has also had some positive impacts that have not been captured in our current logframe, such as feeding into national and regional species action plans. As such, we will review the logframe in early Y2.

The Y2 analytical workshop will be a good opportunity to build this learning into future plans by shifting how we engage with senior management authority staff. In Y1 we could only train men as we had to train ecologists from the two main protected areas in which the project is taking place – TAWA ecologists from Selous and TANAPA ecologists from Nyerere. In Y2, we will have more freedom to invite these authorities to send ecologists from other protected areas in Tanzania, and – while we do not have ultimate decision-making power – we will request that they prioritise women as much as possible.

We would recommend to other projects that they embrace the Darwin identity: there is a lot of power to having a distinct identity for a Darwin-supported project, for engaging both the general public and government stakeholders. We also recommend listening to what training participants want to learn. By maintaining open communication between our project leader and training participants, we have been able to home in on the topics that really excite them, which is how we were able to identify areas they wanted to focus on for further study. This motivation will not only improve the quality of their research, but will also increase their commitment to applying their findings for conservation action.



## **8. Actions taken in response to previous reviews (if applicable)**

Not applicable

## **9. Risk Management**

A new risk for the project that has emerged in the last 12 months is the fluctuating value of the pound. At the time of application (07/12/21), 1 GBP was worth 1.32 USD/3047 TZS. The pound's value had fallen substantially by the time of our half year report (18/10/22), when 1 GBP was worth 1.13 USD/2641 TZS, but has rebounded somewhat at the time of writing this annual report (18/04/23), with 1 GBP worth 1.24 USD/2915 TZS. As this grant is in GBP but many of our project expenses are in USD (GPS collars, camera traps) or TZS (all in-country expenses), fluctuations in the pound's value could impact our ability to fulfil the project objectives by making the grant worth less than it was at the time it was awarded. We have added this risk to the updated risk register, attached alongside this report. We were able to mitigate the impact of the pound's falling value in 2022 by submitting a change request to reallocate funding previously allocated to the salary of one project member who left the project across other budget lines (CR2207). We will continue to monitor exchange rates in Y2, and will use other funds to buffer fluctuations if necessary.

## **10. Other comments on progress not covered elsewhere**

The project has faced two major challenges during Y1. One project member (Dr Paolo Strampelli), who was previously planned to dedicate 50% of his time to the project for its whole duration, left his position with Lion Landscapes at the end of August 2022 (Y1Q2). His responsibilities for the project were taken over by Ana Grau, who has worked for Lion Landscapes in Tanzania since 2017. In July 2022, we submitted a change request (DARCC009\_CR2207) to reflect this staff change, which was approved.

Another challenge has been delays with collaring permits. One of the planned activities under this project is to deploy GPS collars on lions and wild dogs as part of the research and training activities. In order to deploy wildlife collars in Tanzania, specific collaring permits must be secured in addition to the overarching research permits. While we were granted our overarching research permits in July 2022 (valid until July 2023), there were unexpected delays to the collaring permit process. We followed up with the relevant authorities (TAWIRI & COSTECH) on a regular basis, but were not granted the necessary permissions in time to carry out the planned collaring in Y1. We submitted a change request in February 2023 (DARCC009\_CR2302) to reallocate funding in such a way that would accommodate the delayed collaring without a change to the annual budget, by putting all funds allocated for collar deployment in Y1 towards ordering more GPS collars for Selous-Nyerere in Y1, and reallocating the funding freed up from the GPS collar budget line in Y2 to cover collar deployment costs in Y2. This change request was approved.

The project has been enhanced over the past year through lessons learned during Y1. Specifically, while we originally planned to give training participants the opportunity to lead their own teams in Y2, our decision to take this step in Y1 (see 7) demonstrated that this is an effective way to consolidate training and give a sense of real accomplishment and pride to trainees. We will take this lesson forward into Y2, and empower training participants to independently utilise their training as much as possible.

## **11. Sustainability and legacy**

The responses of training participants to the self-evaluation questionnaire completed before and after the training workshop provide clear evidence of increased capacity resulting from this project (see 3.2). Another illustration of increased capacity is the fact that two training participants have secured funding to pursue further study (see 3.1, 3.2); both took the initiative to develop their own research proposals and seek out scholarship opportunities after participating in the training.

The enrolment of these two participants on their MSc and PhD will also help maintain the built capability and capacity in-country: both are employed by Tanzanian government entities, and will be expected to return to these positions after their studies. Completing advanced degrees will enable them to progress within their organisations, meaning they will be likely to have more decision-making power and be able to mentor the next generation of conservation practitioners. As both have already proven their ability lead teams, we are confident they will be able to pass on their skills and knowledge to others in their organisations. We hope to identify similarly promising individuals we can support to secure opportunities for further study in Y2. The research and training carried out under this project has also unlocked additional funding to establish long-term monitoring of large carnivore populations in Selous-Nyerere, which should result in an improved conservation outlook for the landscape’s carnivores by supporting evidence-based management (see 3.3).

**12. Darwin Initiative identity**

The Darwin Initiative logo is captured on [our website](#) – we have requested the UK Aid Logo but have not yet received it, so we will follow up on this. We have credited the Darwin Initiative Capability & Capacity fund and included the Darwin Initiative logo in all reports from work supported by this grant since the start of the project in April 2022 [C01, C02, C03, C04]. Lion Landscapes has also mentioned the Darwin Initiative in multiple online communications, including two email newsletters to the organisation’s supporters [E01, E02] and four posts on our social media channels (Facebook, Twitter, LinkedIn, and Instagram), including on the analytical workshop (Y1Q1), Selous-Nyerere camera trap surveys (Y1Q2), all-Tanzanian spoor survey team (Y1Q3), and African wild dog research in Selous-Nyerere (Y1Q4) [E04]. We also reported the grant to one of our other funders, the Lion Recovery Fund, who published [a blog on the grant and training](#) on their website [E03].

This Darwin grant forms part of a wider programme of ecological research, monitoring, and capacity-building training led by Lion Landscapes in Tanzania. However, the Darwin Initiative is one of only three core funders for this work (alongside the Lion Recovery Fund and WWF Germany), and as such is a core part of the programme’s identity.

There is some understanding of the Darwin Initiative within the host country, as there have been 41 projects supported by the Darwin Initiative in Tanzania, including two Capability & Capacity projects (including this project). However, there is still scope to expand this recognition. By mentioning the Darwin Initiative by name and including the logo on our reports to in-country partners and government stakeholders – including the Tanzania Commission for Science and Technology (COSTECH), Tanzania Wildlife Research Institute (TAWIRI), Tanzania Wildlife Management Authority (TAWA) and Tanzania National Parks (TANAPA) – we hope to help promote the initiative as a meaningful supporter of capacity-building, biodiversity conservation, and poverty reduction in the country.

**13. Safeguarding**

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes Name: BenJee Cascio Email: [REDACTED]
Has the focal point attended any formal training in the last 12 months?	No
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 80% [12] Planned: 100% [15]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	No
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify..	No

#### 14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2022 – 31 March 2023)

Project spend (indicative) since last Annual Report	2022/23 Grant (£)	2022/23 Total Darwin Initiative Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Monitoring & Evaluation (M&E)				
Others				
<b>TOTAL</b>	<b>98,314</b>	<b>98,314</b>		

We submitted three change requests in Y1 to update our project budget in light of unforeseen changes in March 2022 (DARCC009\_CR2203), July 2022 (DARCC009\_CR2207), and February 2023 (DARCC009\_CR2302). All three change requests were discussed with and approved by the Darwin Initiative.

At the end of Y1, our spending is broadly in line with the budget agreed in our latest change request (DARCC009\_CR2302). The only difference is that we have reallocated the remaining budget in three categories – Travel and subsistence, Operating costs, and Capital items – to the Other costs category. This has resulted in an underspend of 9-10% in these three categories,



and an overspend of 6% in Other costs – changes which we understand are within the Darwin Initiative’s allowance of 10% variance between categories. This was necessary to cover the increased cost of wildlife collars compared to our original budget as a result of increasing global prices for collar components. We were able to underspend on Capital items as a result of additional funding from WWF Germany mobilised as a result of this project (see Table 2 below).

**Table 2: Project mobilising of matched funding during the reporting period (1 April 2022 – 31 March 2023)**

	Matched funding secured to date	Total matched funding expected by end of project
Matched funding leveraged by the partners to deliver the project.		
Total additional finance mobilised by new activities building on evidence, best practices and project (£)		

**15. Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes**

I agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section.

One achievement we are particularly proud of is the fact that training activities in Y1 of the project have been used as a springboard for two participants to secure opportunities for further study. Leonard Haule, a TAWIRI researcher, has received funding from the Lion Recovery Fund to enrol for his PhD, and will carry out research on the ecology and genetics of lion and wild dog in southern Tanzania. Singira Parsais, the head ecologist of Selous Game Reserve working for TAWA, was awarded a competitive Wildlife Conservation Network scholarship to undertake his Master’s at Tanzania’s Nelson Mandela Institution of Science and Technology (NM-AIST); Singira’s research will focus on improving our understanding of Selous-Nyerere’s wild dog population, which is one of the largest remaining populations of the species in Africa. Both Leonard and Singira developed the proposed research projects for their studies based on the work they have participated in through this Darwin Initiative Capability & Capacity project, and their fieldwork will be made possible by project funding. This achievement goes beyond our initial goals for this work, and demonstrates just how impactful capacity-building training can be to provide new opportunities for those who receive it.

File Type	File Name	Caption, country and credit	Online accounts to be tagged	Consent of subjects received
Image	1_African wild dog in Selous_Charlotte Searle	African wild dog in Selous Game Reserve, Tanzania – taken by Charlotte Searle	Lion Landscapes, TAWA, TANAPA, TAWIRI	N/A

Image	2_African wild dog pups in Selous_Charlotte Searle	African wild dog in Selous Game Reserve, Tanzania – taken by Charlotte Searle	Lion Landscapes, TAWA, TANAPA, TAWIRI	N/A
Image	3_Lion in Nyerere_Charlotte Searle	Lion in Nyerere National Park, Tanzania – taken by Charlotte Searle	Lion Landscapes, TAWA, TANAPA, TAWIRI	N/A
Image	4_Leonard Haule_Charlotte Searle	Tanzanian PhD student Leonard Haule – taken by Charlotte Searle	Lion Landscapes, TAWIRI, Lion Recovery Fund	Yes
Image	5_Singira Parsais_Charlotte Searle	Tanzanian MSc student Singira Parsais – taken by Charlotte Searle	Lion Landscapes, TAWA, Wildlife Conservation Network	Yes

## Annex 1: Report of progress and achievements against Indicators of Success for Financial Year 2022-2023

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p><b>Outcome</b></p> <p>Strengthened capacity amongst Tanzanian research institutions and PA management to conserve and manage large carnivore populations in southern Tanzania, alongside improved conservation outlook for two of Africa's most important large carnivore populations through evidence-based management</p>	<p>0.1 Five scientific papers on large carnivore assessment and monitoring with Tanzanian authors submitted for publication through this project by the end of Year 2</p> <p>0.2 Training participants (two TAWIRI researchers, ten TAWA/TANAPA Ecologists &amp; Game Scouts/Rangers, and five LL/STEP research assistants) show increased confidence on average within each skills category in which they have received training (survey design, field skills, analytical skills, IT software &amp; tools), compared to their confidence before the training</p> <p>0.3 All UDSM Zoology students (BSc and MSc) and staff attending the UDSM training course show increased confidence on average within each skills category compared to their confidence before the course</p> <p>0.4 Research findings incorporated into PA management strategies by TAWA and TANAPA in relevant PAs in Selous-Nyerere and Ruaha-Rungwa by the end of Year 2</p>	<p>0.1 1 paper submitted [D01, D02]</p> <p>0.2 100% of participants rated the workshop highly (mean = 4.5 out of 5), and 100% reported increased confidence in the skills covered by the training.</p> <p>0.3 To be delivered Y2</p> <p>0.4 To be delivered Y2</p>	<p>0.1 Collaboratively write at least 4 papers with training participants and submit to open access journals</p> <p>0.2 Roll out self-assessment questionnaire to more training participants; deliver further training in field skills and analysis and provide extended training on scientific writing and interpretation of results.</p> <p>0.3 Deliver university training course</p> <p>0.4 Hold meetings with management authorities to incorporate research findings into carnivore management strategies</p>
<p><b>Output 1</b></p> <p>Improved skills and knowledge among Tanzanian PA management authorities, research institutions, and NGOs to assess and monitor large carnivore populations, including through the ability to carry out wildlife corridor assessments</p>	<p>1.1 Two TAWIRI researchers, ten TAWA/TANAPA Ecologists &amp; Game Scouts/Rangers, and five LL/STEP research assistants (at least 30% women, or all women eligible for training if they make up less than 30% of the cohort) receive in-depth training in field methods for large carnivore population assessment &amp; monitoring and wildlife corridor assessments, across Years 1 and 2</p> <p>1.2 Two TAWIRI researchers, ten TAWA/TANAPA Ecologists, and five LL/STEP research assistants (at least 30% women, or all women eligible for training if they make up less than 30% of the cohort) attend a week-long training workshop on how to analyse the data collected and use findings to</p>	<p>1.1 In-depth field training provided to 1 TAWIRI researcher, 22 TANAPA ecologists &amp; rangers, 4 Lion Landscapes research &amp; field assistants, 3 Lion Landscapes student interns, 2 STEP research &amp; field assistants, and 1 STEP student intern. 4 out of 43 these training participants were women (9%); however, as training participants were selected by the parent organisations, the number of women was not something we had control over (and women represent a small number of TANAPA field staff). Where we did have the ability to select participants (Lion Landscapes and STEP staff and interns), we put forward all women eligible and available at the time of the training [A01, A02, C01, C03].</p> <p>1.2 Week-long analytical workshop provided to 1 TAWIRI researcher, 3 TAWA ecologists, and 2 TANAPA ecologists. All participants were men, but this is because participants</p>	

	<p>identify threats and inform population management (one workshop each year, in both Year 1 and 2)</p> <p>1.3 Senior TAWA &amp; TANAPA PA Managers in Ruaha-Rungwa and Selous-Nyerere are made aware of how findings can be used to inform PA management strategies, by attending a day-long meeting at TAWA &amp; TANAPA HQs in Year 2</p> <p>1.4 Two additional TAWA ecologists (50% women) receive training in large carnivore monitoring field skills by attending a week-long field skills training course in MBOMIPA WMA in Year 2</p>	<p>were ecologists working in Selous Game Reserve and Nyerere National Park, and all individuals in these positions are men [A01, B06, C01].</p> <p>1.3 To be delivered Y2</p> <p>1.4 To be delivered Y2</p>	
<p><b>Activity 1.1:</b> Establishment of one large carnivore research &amp; monitoring team in MBOMIPA WMA and Ruaha NP in Ruaha-Rungwa, and one in Selous GR and Nyerere NP in Selous-Nyerere, to carry out large carnivore research and monitoring for the duration of the project. Tanzanian TAWIRI, TAWA, TANAPA, and LL staff will lead the data collection for both, under the supervision of the Project Leader. Data will be collected, and training will be provided, in survey &amp; monitoring programme design, camera trapping, sign-based surveys, demographic surveys, threats identification, and prey population assessments</p>		<p>Completed Y1 (see above) – training participants selected to lead monitoring teams; funding secured for two participants to carry out MSc/PhD research as part of team.</p>	<p>We will provide training in additional methods (GPS collaring, focal monitoring, genetic sampling) and set up long-term monitoring programmes.</p>
<p><b>Activity 1.2:</b> Analytical training workshops held to train participants in 1.1 on how to employ the data collected to monitor populations, identify threats, and strengthen management</p>		<p>Completed Y1 workshop [A01, B06, C01].</p>	<p>Workshop to be held in Y2 (likely Q4) for at least 1 TAWIRI, 6 TAWA/TANAPA, 5 Lion Landscapes/STEP, including as many eligible women as possible.</p>
<p><b>Activity 1.3:</b> A series of meetings are held by the Project Leader, TAWIRI researchers, TAWA &amp; TANAPA Ecologists with TAWA/TANAPA PA Managers at each PA in the study sites, and large carnivore monitoring strategies for each are collaboratively developed</p>		<p>Activity to be completed in Y2</p>	<p>Activity to be completed in Y2</p>
<p><b>Activity 1.4:</b> Week-long intensive training course in field skills is held in MBOMIPA WMA by the Project Leader for additional TAWA ecologists and UDSM students &amp; staff</p>		<p>Activity to be completed in Y2</p>	<p>Activity to be completed in Y2</p>
<p><b>Activity 1.5:</b> Write-up of key findings in the form of findings reports &amp; up to five scientific publications, to be collaboratively led by the Project Leader and TAWIRI, TANAPA, and TAWA staff</p>		<p>Progress reports shared with partners and stakeholders throughout Y1 [C01, C02, C03, C04]; one collaborative paper submitted for publication [D01, D02].</p>	<p>At least four more papers to be collaboratively written and submitted for publication; key findings reports to be shared and discussed with stakeholders</p>
<p><b>Output 2</b></p> <p>Improved skills and knowledge among young Tanzanian academic researchers on how to study, monitor,</p>	<p>2.1 Four Tanzanian Master's students and one PhD student (at least 50% women) begin research projects with a focus on large carnivore research, monitoring, and conservation (two Master's</p>	<p>2.4 Research projects started by 2 MSc students (1 female). 1 training recipient supported to secure funding to enrol on PhD in Y2 [F01, F02, F03, F04, F05, F06, F07].</p>	



<p>and secure large carnivore populations in Tanzania</p>	<p>students register in Year 1; two Master's students and one PhD student register in Year 2)</p> <p>2.2 Ten additional UDSM students (at least 50% women) and two staff (at least 50% women) receive training in large carnivore monitoring field techniques by attending a week-long field skills training course in MBOMIPA WMA in Year 2</p> <p>2.3 50+ BSc and Masters students (at least 50% women), and 5+ faculty staff (at least 50% women) receive training in wildlife monitoring techniques by attending a week-long training course at UDSM in Year 2</p>	<p>2.5 To be delivered Y2</p> <p>2.6 To be delivered Y2</p>	
<p><b>Activity 2.1:</b> Data collected by the field teams is made available to four Master students and one PhD student from the UDSM over the course of the project's lifetime, under the co-supervision of the Project Leader. Students will also be invited to join the field research &amp; monitoring teams to collect their own supplemental data</p>		<p>Data shared with 2 MSc students (one female) and one soon to enrol PhD student being supervised by the project leader [F01, F02, F03, F04, F05, F06, F07].</p>	<p>Data will be shared with at least two more students; one Diploma student at WildCRU (female) and at least one other student. Project leader will continue to provide support and mentorship to students.</p>
<p><b>Activity 2.2:</b> same as 1.4</p>		<p>See 1.4</p>	<p>See 1.4</p>
<p><b>Activity 2.3:</b> same as 1.1</p>		<p>See 1.1</p>	<p>See 1.1</p>
<p><b>Output 3</b></p> <p>Improved knowledge on the status of, and threats to, large carnivore populations in two globally-important conservation areas is available to the scientific/conservation community and is employed to improve their management</p>	<p>3.1 Summary report on findings of field project in Ruaha-Rungwa and Selous-Nyerere drafted and shared with relevant PA management authorities at the end of Year 2</p> <p>3.2 Meetings held with senior management of Nyerere NP, Selous GR, Ruaha NP, and MBOMIPA WMA to collaboratively draft large carnivore conservation strategies based on the above findings by the end of Year 2</p> <p>3.3 Findings shared with the wider public through the submission of at least five scientific papers, to be led or co-led by Tanzanian training participants from TAWIRI, TANAPA, TAWA, Universities, LL and STEP, in open access journals by the end of Year 2</p>	<p>3.4 To be delivered Y2. We have shared regular progress reports with relevant PA management authorities throughout Y1 [C01, C02, C03, C04].</p> <p>3.5 To be delivered Y2</p> <p>3.6 1 paper submitted to an open access journal in Y1. At least 4 more to be submitted in Y2. [D01, D02].</p>	
<p><b>Activity 3.1:</b> same as 1.5</p>		<p>See 1.5</p>	<p>See 1.5</p>
<p><b>Activity 3.2:</b> same as 1.3</p>		<p>See 1.3</p>	<p>See 1.3</p>

<b>Output 4</b> Improved knowledge by all relevant stakeholders of the status, threats to, and functional connectivity of corridors linking these landscapes (Ruaha-Rungwa – Udzungwa & Nyerere-Selous – Udzungwa)	4.1 Collaborative corridor assessments and preliminary data analyses are carried out in both corridors of interest in Year 2  4.2 Findings are shared with relevant stakeholders by the end of the project, through the production of a final report by the end of Year 2	To be completed in Y2.	
<b>Activity 4.1:</b> Collaborative functional connectivity assessment survey and training in the Ruaha-Rungwa – Udzungwa wildlife corridor, to be carried out by LL, STEP, TANAPA, and TAWIRI, using a combination of sign-based and questionnaire methods, followed by analysis of data and collaborative write-up of preliminary & final findings report	Activity to be completed in Y2	Activity to be completed in Y2	
<b>Activity 4.2:</b> Collaborative functional connectivity assessment survey and training in the Selous-Nyerere – Udzungwa wildlife corridor, to be carried out by LL, STEP, TANAPA, and TAWIRI, using camera trapping methods, followed by analysis of data and collaborative write-up of preliminary & final findings report	Activity to be completed in Y2	Activity to be completed in Y2	

## Annex 2: Project’s full current Indicators of Success as presented in the application form (unless changes have been agreed)

Project Summary	SMART Indicators	Means of Verification		
<b>Outcome</b> Strengthened capacity amongst Tanzanian research institutions and PA management to conserve and manage large carnivore populations in southern Tanzania, alongside improved conservation outlook for two of Africa’s most important large carnivore populations through evidence-based management	0.1 Five scientific papers on large carnivore assessment and monitoring with Tanzanian authors submitted for publication through this project by the end of Year 2	0.1	Journal confirmation emails	
	0.2 Training participants (two TAWIRI researchers, ten TAWA/TANAPA Ecologists & Game Scouts/Rangers, and five LL/STEP research assistants) show increased confidence on average within each skills category in which they have received training (survey design, field skills, analytical skills, IT software & tools), compared to their confidence before the training	0.2	Self-evaluation surveys completed by participants before and after training activities	
	0.3 All UDSM Zoology students (BSc and MSc) and staff attending the UDSM training course show increased confidence on average within each skills category compared to their confidence before the course	0.3	Self-evaluation surveys completed by UDSM students and staff before and after week-long training course	

	0.4	Research findings incorporated into PA management strategies by TAWA and TANAPA in relevant PAs in Selous-Nyerere and Ruaha-Rungwa by the end of Year 2	0.4	Large carnivore population management strategies to be shared
<b>Output 1</b> Improved skills and knowledge among Tanzanian PA management authorities, research institutions, and NGOs to assess and monitor large carnivore populations, including through the ability to carry out wildlife corridor assessments	1.1	Two TAWIRI researchers, ten TAWA/TANAPA Ecologists & Game Scouts/Rangers, and five LL/STEP research assistants (at least 30% women, or all women eligible for training if they make up less than 30% of the cohort) receive in-depth training in field methods for large carnivore population assessment & monitoring and wildlife corridor assessments, across Years 1 and 2	1.1	Fieldwork activity logs; co-authorship of field team participants on subsequent reports and scientific publications
	1.2	Two TAWIRI researchers, ten TAWA/TANAPA Ecologists, and five LL/STEP research assistants (at least 30% women, or all women eligible for training if they make up less than 30% of the cohort) attend a week-long training workshop on how to analyse the data collected and use findings to identify threats and inform population management (one workshop each year, in both Year 1 and 2)	1.2	Training course attendance certificates
	1.3	Senior TAWA & TANAPA PA Managers in Ruaha-Rungwa and Selous-Nyerere are made aware of how findings can be used to inform PA management strategies, by attending a day-long meeting at TAWA & TANAPA HQs in Year 2	1.3	Meeting minutes, signed by all participants
	1.4	Two additional TAWA ecologists (50% women) receive training in large carnivore monitoring field skills by attending a week-long field skills training course in MBOMIPA WMA in Year 2	1.4	Training course attendance certificate
<b>Output 2</b> Improved skills and knowledge among young Tanzanian academic researchers on how to study, monitor, and secure large carnivore populations in Tanzania	2.1	Four Tanzanian Master's students and one PhD student (at least 50% women) begin research projects with a focus on large carnivore research, monitoring, and conservation (two Master's students register in Year 1; two Master's students and one PhD student register in Year 2)	2.1	University registration certificate & research project plan co-signed by student, Project Leader, and University supervisor
	2.2	Ten additional UDSM students (at least 50% women) and two staff (at least 50% women) receive training in large carnivore monitoring field techniques by attending a week-long field skills training course in MBOMIPA WMA in Year 2	2.2	Signed list of attendees
	2.3	50+ BSc and Masters students (at least 50% women), and 5+ faculty staff (at least 50% women) receive training in wildlife monitoring techniques by attending a week-long training course at UDSM in Year 2	2.3	Signed list of attendees

<b>Output 3</b> Improved knowledge on the status of, and threats to, large carnivore populations in two globally-important conservation areas is available to the scientific/conservation community and is employed to improve their management	3.1	Summary report on findings of field project in Ruaha-Rungwa and Selous-Nyerere drafted and shared with relevant PA management authorities at the end of Year 2	3.1	Findings report
	3.2	Meetings held with senior management of Nyerere NP, Selous GR, Ruaha NP, and MBOMIPA WMA to collaboratively draft large carnivore conservation strategies based on the above findings by the end of Year 2	3.2	Meeting minutes, signed by all participants
	3.3	Findings shared with the wider public through the submission of at least five scientific papers, to be led or co-led by Tanzanian training participants from TAWIRI, TANAPA, TAWA, Universities, LL and STEP, in open access journals by the end of Year 2	3.3	Journal confirmation emails
<b>Output 4</b> Improved knowledge by all relevant stakeholders of the status, threats to, and functional connectivity of corridors linking these landscapes (Ruaha-Rungwa – Udzungwa & Nyerere-Selous – Udzungwa)	4.1	Collaborative corridor assessments and preliminary data analyses are carried out in both corridors of interest in Year 2	4.1	Preliminary field report, signed by all participants, for both corridor surveys
	4.2	Findings are shared with relevant stakeholders by the end of the project, through the production of a final report by the end of Year 2	4.2	Final report

Activities	
1.1	Establishment of one large carnivore research & monitoring team in MBOMIPA WMA and Ruaha NP in Ruaha-Rungwa, and one in Selous GR and Nyerere NP in Selous-Nyerere, to carry out large carnivore research and monitoring for the duration of the project. Tanzanian TAWIRI, TAWA, TANAPA, and LL staff will lead the data collection for both, under the supervision of the Project Leader. Data will be collected, and training will be provided, in survey & monitoring programme design, camera trapping, sign-based surveys, demographic surveys, threats identification, and prey population assessments
1.2	Analytical training workshops held to train participants in 1.1 on how to employ the data collected to monitor populations, identify threats, and strengthen management
1.3	A series of meetings are held by the Project Leader, TAWIRI researchers, TAWA & TANAPA Ecologists with TAWA/TANAPA PA Managers at each PA in the study sites, and large carnivore monitoring strategies for each are collaboratively developed
1.4	Week-long intensive training course in field skills is held in MBOMIPA WMA by the Project Leader for additional TAWA ecologists and UDSM students & staff
1.5	Write-up of key findings in the form of findings reports & up to five scientific publications, to be collaboratively led by the Project Leader and TAWIRI, TANAPA, and TAWA staff



2.1	Data collected by the field teams is made available to four Master students and one PhD student from the UDSM over the course of the project's lifetime, under the co-supervision of the Project Leader. Students will also be invited to join the field research & monitoring teams to collect their own supplemental data
2.2	Week-long intensive training session in field methods is held in MBOMIPA WMA by the Project Leader for additional TAWA ecologists and UDSM students & staff (same as 1.4)
2.3	Week-long course on the fundamentals of wildlife monitoring is held by the Project Leader at the UDSM for BSc and MSc Masters and faculty staff
2.4	Establishment of one full-time large carnivore research & monitoring team in MBOMIPA WMA and Ruaha NP in Ruaha-Rungwa, and one in Selous GR and Nyerere NP in Selous-Nyerere, to carry out large carnivore research and monitoring for the duration of the project. Tanzanian TAWIRI, TAWA, TANAPA, and LL staff will lead the data collection for both, under the supervision of the Project Leader. Data will be collected, and training will be provided, in survey & monitoring programme design, camera trapping, sign-based surveys, demographic surveys, threats identification, and prey population assessments (same as 1.1)
3.1	Write-up of key findings in the form of findings reports & up to five scientific publications, to be collaboratively led by the Project Leader and TAWIRI, TANAPA, and TAWA staff (same as 1.5)
3.2	A series of meetings are held by the Project Leader, TAWIRI researchers, TAWA & TANAPA Ecologists with TAWA/TANAPA PA Managers at each PA in the study sites, and large carnivore monitoring strategies for each are collaboratively developed (same as 1.3)
4.1	Collaborative functional connectivity assessment survey and training in the Ruaha-Rungwa – Udzungwa wildlife corridor, to be carried out by LL, STEP, TANAPA, and TAWIRI, using a combination of sign-based, questionnaire, and camera trapping methods, followed by analysis of data and collaborative write-up of preliminary & final findings report
4.2	Collaborative functional connectivity assessment survey and training in the Selous-Nyerere – Udzungwa wildlife corridor, to be carried out by LL, STEP, TANAPA, and TAWIRI, using a combination of sign-based, questionnaire, and camera trapping methods, followed by analysis of data and collaborative write-up of preliminary & final findings report

**Important Assumptions:** Up to 6 key assumptions that, if held true, will enable you to deliver your Outputs and Outcome

- **Whole project:** Necessary research clearance will be granted for the project activities
- **Whole project:** None of the participating organisations withdraw their support
- **Output 4:** Selous-Udzungwa corridor will be gazetted in time for the assessment to be carried out in Year 2. The activities will be designed and planned anyway so cameras can be deployed as soon as possible once the corridor is established.
- **Output 4:** Partner organisations will have sufficient staff available to carry out Ruaha-Udzungwa corridor assessment. If this is not possible, we will design the assessment and seek Tanzanian partners to lead the data collection after receiving training.

## Annex 3: Standard Indicators

Table 1 Project Standard Indicators

DI Indicator number (*core)	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Total planned during the project
DI-C17 DI-C18	[0.1] Five scientific papers on large carnivore assessment and monitoring with Tanzanian authors submitted for publication through this project by the end of Year 2	Number of papers with Tanzanian authors submitted	Number	-	1	At least 5
DI-A01* DI-A03*	[0.2] Training participants (two TAWIRI researchers, ten TAWA/TANAPA Ecologists & Game Scouts/Rangers, and five LL/STEP research assistants) show increased confidence on average within each skills category in which they have received training (survey design, field skills, analytical skills, IT software & tools), compared to their confidence before the training	Proportion of training participants reporting improved capacity after training	People Proportion	Gender Stakeholder group	6 100% (all M)	17 100% At least 50% F
DI-A01*	[0.3] All UDSM Zoology students (BSc and MSc) and staff attending the UDSM training course show increased confidence on average within each skills category compared to their confidence before the course	Proportion of course attendees reporting improved capacity after course	People Proportion	Gender	NA	Full Zoology undergrad cohort & staff
DI-B01* DI-B02* DI-D01*	[0.4] Research findings incorporated into PA management strategies by TAWA and TANAPA in relevant PAs in Selous-Nyerere and Ruaha-Rungwa by the end of Year 2	Number of carnivore monitoring & management plans developed with PA management	Number	-	NA	At least 2
DI-A01* DI-A02* DI-A03*	[1.1] Two TAWIRI researchers, ten TAWA/TANAPA Ecologists & Game Scouts/Rangers, and five LL/STEP research assistants (at least 30% women, or all women eligible for training if they make up less than 30% of the cohort) receive in-depth training in field methods for large carnivore population assessment & monitoring and wildlife corridor assessments, across Years 1 and 2	Number of people from stakeholder organisations receiving field skills training	People	Gender Stakeholder group	1 TAWIRI 22 TANAPA 10 LL/STEP 10 WMA (4 F)	2 TAWIRI 10 TAWA /TANAPA 5 LL/STEP At least 50% F
DI-A01* DI-A03*	[1.2] Two TAWIRI researchers, ten TAWA/TANAPA Ecologists, and five LL/STEP research assistants (at least 30% women, or all women eligible for training if they make up less than 30% of the cohort) attend a week-long training workshop on how to analyse the data collected and use findings to identify threats and inform population management (one workshop each year, in both Year 1 and 2)	Number of people from stakeholder organisations completing analytical training workshop	People	Gender Stakeholder group	1 TAWIRI 2 TANAPA 3 TAWA (all M)	2 TAWIRI 10 TAWA /TANAPA 5 LL/STEP At least 50% F

DI Indicator number (*core)	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Total planned during the project
DI-B01* DI-B02* DI-D01*	[1.3] Senior TAWA & TANAPA PA Managers in Ruaha-Rungwa and Selous-Nyerere are made aware of how findings can be used to inform PA management strategies, by attending a day-long meeting at TAWA & TANAPA HQs in Year 2	Number of meetings held with senior members of management authorities	Number	Stakeholder group	NA	1 TAWA 1 TANAPA
DI-A01* DI-A03*	[1.4] Two additional TAWA ecologists (50% women) receive training in large carnivore monitoring field skills by attending a week-long field skills training course in MBOMIPA WMA in Year 2	Number of TAWA ecologists completing field techniques training course	People	Gender	NA	2 At least 50% F
DI-A02*	[2.1] Four Tanzanian Master's students and one PhD student (at least 50% women) begin research projects with a focus on large carnivore research, monitoring, and conservation (two Master's students register in Year 1; two Master's students and one PhD student register in Year 2)	Number of students undertaking research in collaboration with project	People	Gender Degree level	1 F MSc 1 M MSc 1 M PhD	4 MSc 1 PhD At least 50% F
DI-A01*	[2.2] Ten additional UDSM students (at least 50% women) and two staff (at least 50% women) receive training in large carnivore monitoring field techniques by attending a week-long field skills training course in MBOMIPA WMA in Year 2	Number of people completing field techniques training course	People	Gender Stakeholder group	NA	10 students 2 staff At least 50% F
DI-A01*	[2.3] 50+ BSc and Masters students (at least 50% women), and 5+ faculty staff (at least 50% women) receive training in wildlife monitoring techniques by attending a week-long training course at UDSM in Year 2	Number of people attending wildlife monitoring course	People	Gender Stakeholder group	NA	Full Zoology undergrad cohort & staff
DI-B01* DI-B02* DI-D01*	[3.1] Summary report on findings of field project in Ruaha-Rungwa and Selous-Nyerere drafted and shared with relevant PA management authorities at the end of Y2	Number of management authorities sent summary report	Number	Stakeholder group	NA	3 (TAWA, TANAPA, WMA board)
DI-B01* DI-B02* DI-D01*	[3.2] Meetings held with senior management of Nyerere NP, Selous GR, Ruaha NP, and MBOMIPA WMA to collaboratively draft large carnivore conservation strategies based on the above findings by the end of Y2	Number of meetings held with senior members of management authorities to develop carnivore conservation strategies	Number	Stakeholder group	NA	At least 2 (TAWA, TANAPA)

DI Indicator number (*core)	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Total planned during the project
DI-C17 DI-C18	[3.3] Findings shared with wider public through the submission of at least five scientific papers, to be led or co-led by Tanzanian training participants from TAWIRI, TANAPA, TAWA, Universities, LL and STEP, in open access journals by the end of Y2	Number of papers with Tanzanian authors submitted	Number	-	1	At least 5
DI-B01*	[4.1] Collaborative corridor assessments and preliminary data analyses are carried out in both corridors of interest in Y2	Number of corridor assessments completed	Number	-	NA	2
Unclear	[4.2] Findings are shared with relevant stakeholders by the end of the project, through the production of a final report by the end of Year 2	Number of reports shared	Number	-	NA	2

**Table 2 Publications**

Title	Type	Detail	Gender of Lead Author	Nationality of Lead Author	Publishers	Available from
<i>None in Y1</i>						