Department for Environment Food & Rural Affairs

DARWIN INITIATIVE

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Darwin Initiative: Final Report

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

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Darwin Project Information

Project reference	26-007
Project title	Enhancing Tanzania human-wildlife coexistence through corridor restoration and livelihood projects
Country(ies)	Tanzania
Lead organisation	Southern Tanzania Elephant Program
Partner institution(s)	Morogoro Regional Administration, National Land Use Planning Commission, Tanzania Forestry Services, Reforest Africa, Associazione Mazingira
Darwin grant value	£241,796
Start/end dates of project	April 2019/March 2022
Project leader's name	Trevor Jones
Project website	www.stzelephants.or.tz
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1 Project Summary

The project area (Appendix 0) was the Kilombero Valley, a densely populated and fertile matrix of villages, agriculture and diminishing wildlife habitats, and the adjacent Udzungwa Mountains National Park, Magombera Forest Nature Reserve and Nyerere National Park (formerly Selous Game Reserve). This area is of global significance for biodiversity and supports more than 25% of Tanzania's elephant population. The Kilombero Valley is critical to the ecological functionality of the Udzungwa-Nyerere-Magombera protected area complex. Human-wildlife conflict has become a pressing conservation and poverty issue, due in large part to elephants crossing the valley in an effort to follow historical corridor routes. Human-elephant conflict (HEC) threatens elephant populations through retaliatory killing and increased hostility to elephants, contributing to the tolerance of poaching and low political will and eroding community support for conservation. HEC harms the livelihood of farmers, as crop raiding results in economic losses and reduced food security. For many households, agriculture is the only livelihood strategy and crop loss impacts the ability to seek medical care, pay for school fees and address other essential needs. HEC also deteriorates relations between communities and wildlife authorities; communities often feel powerless to achieve the problem.

The project sought to reduce HEC through crop loss reduction projects and livelihood-focused interventions to provide additional income to smallholder farmers and increase people's tolerance of elephants. Working with farmers and the wider community, the project aimed to implement beehive fence projects, agroforestry, community loan programs, and lay the initial foundations for coexistence tourism to increase and diversify incomes, reduce crop losses from elephants and conserve biodiversity and ecological connectivity. This project also engaged with the fundamental drivers of human-elephant conflict in Kilombero through making progress on restoration of a key wildlife corridor and facilitation of community-led livelihood projects along that corridor. A bottom-up land use planning process is in progress to designate the corridor and to facilitate restoration and community-led management of the corridor. It is hoped that the restoration of the corridor will further enhance livelihoods through conserving the ecosystem services the area provides, enhancing food security and (hopefully) providing a platform for income from tourism. Research has shown a highly positive correlation between the presence of elephants and large mammal diversity within corridor areas, meaning that a protected elephant corridor will also benefit greater biodiversity.

2 Project Partnerships

Morogoro Regional Administration and Kilombero District Council: The Regional Commissioner (RC) and his Regional Security Committee received a presentation from STEP in July 2020 on project progress, after which he and the Committee expressed their support for the project (Appendix 1). Previously, the Regional Administrative Secretary (RAS) had directed District Executive Director (DED) and the Kilombero District Land Use Planning (PLUM) Team to lead the participatory process of preparation and planning for the wildlife corridor, together with the District Game Officer, District Agriculture Officer, and District Natural Resources Advisor, in alignment with national goals and policy. However, in late July 2020 the District Administration was changed from Kilombero District Council to Ifakara Town Council, resulting in some changes of leadership at District level and a new PLUM team. This led to some delays in operations while the new team were sensitized and orientated. The Regional Natural Resources Officer (RNRO) was therefore assigned to support activities on the ground whenever required. STEP worked closely with the Regional team, conducting sensitization meetings with the village governments and farm owners in the three villages through which the corridor passes to discuss perspectives on human-elephant conflict, the importance of Land Use Planning, and the corridor as a permanent solution (Appendix 2.1 and 2.2). As of January 2021, the Kilombero District Commissioner stepped up to lead the corridor restoration effort, chairing meetings with stakeholders and the three village communities, chairing the Corridor Management Committee, and spurring colleagues in the District Council to move the project forward with greater haste. However, new appointments from Regional Commissioner, Regional Administrative Secretary to the District Commissioner, and Ifakara Town Director were made in June and July 2021. STEP engaged with the new appointed leaders through the Regional Natural Resources Officer and due to a solid foundation, the stakeholder engagement was successful. A major breakthrough came in September 2021, when the RC formed the Kilombero Elephant Corridor Management Committee (KECMC), the body in charge of overseeing corridor restoration and long-term corridor management.

National Land Use Planning Commission (NLUPC): The NLUPC worked closely with STEP and provided technical support to the District Administration and the District Land Use Planning Team, to support the process of creating the land us eplans for the three villages through which the wildlife corridor passes. We worked closely with NLUPC throughout the project, with members attending farm owners' sensitisation meetings, and regular strategy discussions with the former Director-General who remains a key advisor of the project. In January 2021, of his own initiative, the former DG appointed a new Eastern Zone Manager with specific instructions to focus on restoration of the Kilombero Elephant Corridor. The Zonal Manager arranged an extensive and productive meeting with the new Director-General at the STEP office, conducted training of the new PLUM team of Ifakara Town Council, and coordinated the first Corridor Management Committee meeting in collaboration with STEP (Appendix 3).

Tanzania Forestry Services Agency (TFS): STEP signed a new extended MOU with TFS on 6th August 2021, for a five-year period until August 2026. TFS are collaborating on restoration of the corridor as well as on livelihood projects including beekeeping. TFS agreed to placement of community beehive fences within the boundary of Magombera forest (as well as donating beehives to farmers groups) and to participating in sensitization and education activities with communities in support of the corridor solution (Appendix 4).

Reforest Africa: Experts in African forest and habitat restoration, the role of Reforest Africa was to advise and lead on habitat restoration within the corridor area, also bringing match funding towards support of their team and work. Due to delays in corridor designation, habitat restoration did not commence during the project period, however, Reforest Africa has begun drafting a habitat restoration plan (Appendix 5). Additionally, Reforest Africa entered into a partnership with TFS in 2019 to coordinate management of the new Magombera Forest Nature reserve, including patrolling by Village Game Scouts. This project supported patrols of the corridor-adjacent area: 58 patrols were conducted by community teams of Village Game Scouts during the project period.

Associazione Mazingira: Associazione Mazingira contributed to the community outreach and education aspects of the project: through their tree nursery scheme in schools, tree planting and agroforestry within and outside of the wildlife corridor, environmental education in schools and through their community outreach, supporting village sensitization to the aims and outcomes of the project. Associazione Mazingira reached 9,661 pupils in their environmental education program, trained 117 farmers in agroforestry, and supported three local schools to establish tree nurseries.

3 Project Achievements

3.1 Outputs

Output 1: Beehive fences established and operational and managed independently by registered farmers' cooperatives in four new villages. Beehive fences have been established and are operational and managed independently by registered farmers' cooperatives in three villages.

1.1 Four farmers' groups (30 members each, 50% women) are registered as CBOs with KLB District by the end of Year 2. Four farmers groups (92 members total, 51% women) are registered as CBO with

Kilombero District by the end of Year 3 (Appendix 4, Appendices 6.1-6.8). As evident in Appendix 6.4 (Current and Original Group Members), there have been changes in membership throughout the project period. This is largely due to the rules that govern Village Savings and Loan Associations (VSLAs) and CBOs (beekeeping groups) in group constitutions (Appendix 6.5). If a member misses three meetings in a row without providing a sufficient explanation to the group, they are removed. For the farmers' groups in Appendix 6.4:

- Katurukila Beekeeping Group has lost three female members and six male members, all due to attendance that violated the guidelines of the VSLA over the last four years of operation.
- Kanyenja Beekeeping Group has lost ten male members and four female members, all due to attendance that violated the guidelines of the VSLA over the last three years of operation.
- Ujasiri Beekeeping Group has lost five female members and seven male members who were removed due to attendance issues.
- UTEWASO Group has lost one male member and one female member due to poor attendance that violated the guidelines of the VSLA.

It was an assumption that group membership would remain constant throughout the project period. Attrition Surveys conducted in November 2020 focused on understanding the deeper reasons why farmer attendance was poor in some of these groups. In Ujasiri Group in Magombera, three farmers interviewed said that they left the group because they were frustrated to not have sold honey within their first year of fence establishment. Indeed, Ujasiri Group had a long period of fence construction due to wet conditions and these conditions further compounded beehive occupancy and honey production. The group did not harvest honey until 17 months after fully establishing the fence. From this, we learned the importance of managing expectations when starting work with a new farmers' group; we now work towards construction and occupancy goals in the first year rather than harvest and honey sales goals. Two other members from Ujasiri Group left due to personal or health reasons. A subset of Attrition Surveys focused only on female members of Ujasiri Group in Magombera and Kanyenja Beekeeping Group to determine if there were any obstacles specific to women with regards to group membership. Women from Ujasiri Group confirmed that both men and women left the group due to unmet expectations. Members from Kanyenja Group said that men who left "were not patient and they complained that they worked on the fence and they didn't see any benefits." There were no gender-specific reasons for female members to leave the group identified by these interviewees. Appendix 7 expands on these reasons in detail. In general, managing expectations has been a key lesson learned throughout the project period, particularly with regards to community engagement. Setting realistic expectations about the ability of beehive fences to deter crop damage, beehive fences to generate income from honey production and sales as well as the timescale of economic benefits generated from the corridor were critically important things to address in order to ensure the buy-in and trust of community partners.

1.2 Beehive Fences are constructed by farmers' groups in four villages by the end of Year 2 Beehive fences have been completed in Katurukila, Magombera and Kanyenja villages during the project period thus far (Appendix 8). As explained in 1.4, Sole's beehive fence has not yet been constructed due to pending construction of the Kidatu-Ifakara highway.

1.3 33% of beehives are occupied by the end of Year 2. Current 28% of beehives were occupied by the end of Year 2. 29.71% of beehives were occupied by the end of Year 3. See Appendix 9 for more data and discussion on occupancy over time.

Output 2: Establishment and development of sustainable and gender equitable income-generating opportunities for local people increase outcomes for 220 people through beekeeping, VSLAs, agroforestry and coexistence tourism. 92 individuals are involved in beekeeping in the four new villages in which STEP began working during the project period. Of those, 92 individuals are also involved in Village Savings and Loan Associations. 110 farmers (44% women) were practicing agroforestry during Year 3, totaling 202 individuals. Eight individuals are involved in coexistence tourism but revenue has not been consistent (see 2.6).

2.1 Annual honey yields of 175L per group by the end of Y3 with £1200 in annual sales revenue per group by end of Y3 (115L and £550 in Y2). At the end of Y3, 99L were harvested in total, an average of 24.75L per group. Farmers' groups collectively earned TZS 760,000 (£274.24), a drop from 1,246,000Tsh (£394.05) earned in Year 2 (which was a slight increase from £364 earned in Year 1). Income from honey sales was measurable, but modest and still did not reach our (already reduced) targets. As mentioned in the Year 2 Report, these targets were baselined off of the most optimistic projections and did not anticipate irregular rainfall years (2019-2020) or the prolonged impact of the COVID-19 pandemic on international tourism (the source of the highest-end honey market). COVID-19 likely contributed to the higher sales revenue in Year 2: at the height of the pandemic in Tanzania, the then president recommended drinking a mix of ginger, lemon juice and honey as a preventative measure. Honey was therefore desirable around the country. We continue to explore some of the marketing strategies outlined in Appendix 10. More details about our continued focus on beehive occupancy can be found in Appendix 9.

2.2 Number of farmers (target 40 farmers from 5 groups, 50% women) trained in honey processing and packaging at HCC by Year 3. All members of all farmers' groups started by STEP have been trained

on processing and packaging at the Centre. Throughout the project period, 132 farmers (56.9% women) have been trained.

2.3 Number of farmers (target 120 in four villages, 50% women) participating in VSLAs by Year 2. By the end of Year 2, 66 farmers in three villages (53% women) were actively participating in VSLAs. By the end of Year 3, 92 farmers in 4 villages, 57% women, were actively participating in VSLAs. 1.1 (above) has more detail on why farmers have been removed from groups as part of constitutional compliance. Average attendance over Year 3 for the four groups established within this project period was 60%.

2.4 Each VSLA disburses a minimum of £3510 in loans over the project timeframe (£1040 Y1, £1170 Y2, £1300 Y3).

In Year 1, two new VSLAs distributed 57 loans and an average distribution of £1160. In Year 2, three new VSLAs disbursed a total of 93 loans with an average annual distribution of £1090.92. In total, the three groups distributed loans valued at TZS 25,248,500 (£9,110.74). At the end of Year 3, Kanyenja Group distributed TZS 3,803,000.00 (£1,372.29) via 49 loans with an average loan size of TZS 200,157 (£72.22). Ujasiri Group distributed TZS 4,835,500 (£1,744.86) via 48 loans with an average loan size of 172,696Tsh (£62.32) and Katurukila Group distributed TZS 1,710,000 (£752.97) via 27 loans with an average loan size of 57,000Tsh (£20.56). UTEWASO Group distributed loans valued at 7,110,000 (£2565.59) via 41 loans with an average loan size of TZS 200,000 (£72.17). Katurukila Group had lower rates of lending during Year 3, not all members took out loans. For a more in-depth overview of loan uses and VSLA impact, see Appendix 11. The majority of loans outlined in this appendix were taken to support existing agricultural operations.

2.5 Number of farmers (target: 100 farmers (50% women) have increased capacity for agro-forestry and are involved in agroforestry in Y3. 117 farmers were trained in agroforestry throughout the project period. In 2020/2021 (Year 2), a total of 142 farmers (47% women) were practicing agroforestry. In Year 3, 110 farmers continued to practice agroforestry (44% women, Appendices 12.1, 12.2, 12.3). There was a reduction in the number of farmers practising agroforestry between Year 2 and Year 3, as several farmers harvested their trees and sold them for charcoal or firewood, and planted sugarcane instead. This shift to sugarcane is the result of expansion efforts by the Kilombero Sugar Company, which is seeking to rapidly expand the number of sugarcane outgrowers who supply to its factories. As such, it has proved hard for agroforestry to compete with sugarcane, at least in villages that have been the focus of the sugarcane outgrower expansion program to date.

2.6 100 tourists visit coexistence projects (corridor, fences) in Y3, generating £1000 in revenue. The timing of the COVID-19 pandemic severely impacted this output/outcome indicator. During Year 1 of the project, 54 people visited a rehabilitated beehive fence (first built in 2015). This generated 230,000Tsh (£80) in revenue. Only towards the end of Q1 in 2022 are we finally starting to see signs that tourism is recovering in Tanzania. Delays in the corridor restoration process have also limited marketing of coexistence tourism packages. However, it remains a key focus of STEP's continued work on restoration of the corridor and continued involvement in the landscape.

Output 3: Substantial progress toward gazettement and community managed protection of Udzungwa-Selous Corridor and preparation for habitat restoration in the corridor

3.1 Number of Village Land Use Plans approved (target 3, one per village) by Year 2. No Village Land Use Plans were completed by project end due to delays in the process of finalising land valuation and payment of farm owners' compensation, however the land valuation was completed and approved in January 2022 and compensation is due to be completed by end of July 2022. Thereafter the Land Use Plans will be completed. Significant groundwork progress has been made through the surveys and mapping of the corridor by the District Government Valuers that were central to the valuation process (Appendix 13). Preparations for the LUPs with the National Land Use Planning Commission are underway and we anticipate to complete the process by the end of October 2022.

3.2 Number of corridor Management Plans approved by end of Year 2 (1) After inauguration of the Kilombero Elephant Corridor Management Committee (KECMC) in September 2021, the KECMC Technical Committee met and prepared Key Responsibilities and Action Plan for restoration of the corridor, which were adopted by the KECMC (Appendix 47). Also, in January 2022, the KECMC approved the Valuation Reports for farm plots in the proposed wildlife corridor and authorised payment of compensation (Appendix 14).

3.3 50% of corridor habitat restoration preparation is complete by end of Y3 with habitat restoration plan complete and all planned tree nurseries established (2018 baseline 0%)

Three planned tree nurseries were established with partner Associazione Mazingira (Appendix 12.3). The establishment of a tree nursery with partner Reforest Africa was not completed during the project period, but this will continue beyond project end. Reforest Africa has a draft habitat restoration plan (for summary of key steps, see Appendix 5), which will be developed further beyond project end. This constitutes 30% of corridor habitat preparation achieved.

3.4 Number of community patrols of the corridor by Village Game Scouts (target: 52) by end of Year 3. While the corridor per se was not patrolled during the project period due to delays in the completion of the designation process, 58 patrols (16 in Y1, 20 in Y2, 22 in Y3) of the corridor area along the edge of

and within the adjacent Magombera forest (which forms one end of the corridor) were completed by a team of Village Game Scouts during the project period, exceeding the target (Appendix 15).

3.5 Elephants and minimum four other species are documented to use the corridor by end of Y3. From October 2018 to March 2022, STEP recorded minimum 4 successful crossings of the corridor area by elephants, and minimum 10 unsuccessful attempted crossings (defined as movements >1km in length from the forest edge with a clear orientation toward either corridor endpoint), demonstrating that without a designated corridor for elephants to follow, only 29% of recorded dispersal attempts were successful (Appendix 16). These all occurred prior to completion of corridor restoration, and are likely to be an underestimate of attempted crossings, of which comprehensive recording is challenging because most crossings happen at night, and because many unconfirmed attempted crossings thwarted by encounters with humans are conservatively not classified as such. Through camera trapping, elephants and 23 other mammal taxa were recorded at corridor endpoints (Appendix 16). As corridor designation was not completed during the project period, we were unable to document wildlife use along the entire corridor. Monitoring by local elephant monitors (Appendices 17.1-17.4) will continue beyond the lifetime of this project, and through camera traps (Green et al., 2018) and ground transects we will expand monitoring across the whole length of the corridor following its designation, including through our partnership with Lion Landscapes (Project Leader: Dr. Charlotte Searle) under a Darwin Initiative Capability & Capacity grant.

Output 4: Increased knowledge and research on human-wildlife coexistence (HWC) and ecological connectivity at local and national level

4.1 Number of Community members in four project villages showing increased understanding of ecological connectivity and HWC in Y3. In Year 1, STEP conducted corridor-focused film nights for farmers in two villages from May to September 2019, reaching 750 people. STEP also supported four student-led awareness days about human elephant coexistence which reached 1,575 students and parents in three villages. Also in Year 1, supported by matched funding, students were taught through a three module course aimed at building tolerance in areas impacted by the Corridor Restoration Project. 2210 students were taught Module One Elephant Behavior, Ecology and Biology; 2309 students were taught Module Two Human Elephant Coexistence and 1870 were taught Module Three: Wildlife Connectivity.

In Year 2, STEP provided education to adults in eight villages (including the four targeted in the proposal) through film nights. The Human-Elephant Coexistence Team provided additional education content on elephant biology and behavior, elephant ecology and wildlife corridors. 1000 copies of an HEC-focused flier designed by STEP were distributed (Appendix 44), as well as copies of a Human-Elephant Coexistence booklet (Appendix 45). A total of 1,510 adults and 785 children attended these film nights. Additionally in Year 2, also via matched funding, 2283 students were taught Module One Elephant Behavior, Ecology and Biology; 2262 students were taught Module Two Human Elephant Coexistence and 2170 were taught Module Three: Wildlife Connectivity.In Year 3, film nights reached over 2000 individuals (Appendix 18). STEP supported nine student-led awareness events, reaching more than 2,100 students. As expanded upon in the Tolerance Appendix (Appendix 19), we were unable to collect baseline data so change over time could not be assessed. However, the survey conducted at the end of the project period asked several questions about corridors to assess community understanding. 49% of respondents were able to identify what a corridor is and some of its key functions. 41% of respondents agreed with the statement “It is important to protect corridors that wildlife use.”

4.2 3000 school children show increased understanding of ecological connectivity and HWC in Y3 relative to pre-project baseline. Association Mazingira’s education program reached a total of 9,611 students during the project (2,911 in Y1, 3,620 in Y2, 3,000 in Y3). In Year 3, 72% of students received a grade of A or B on knowledge retention tests in the Association Mazingira’s education program. With matched funding, in Year 3, a subset of pupils were reached by STEPs educational program. The Program includes three modules: elephant behaviour, ecology and biology; human elephant coexistence and wildlife connectivity. We were able to reach a total of 1,621 students in Module 1 (645 secondary and 976 primary), 1,594 students in Module 2 (659 primary and 935 secondary) and 1,531 students in Module 3 (589 secondary and 942 secondary).

4.3 Number of research articles (target: 1) and popular articles (target: 3) published at the end of Y3. Baseline was zero. One research article led by our research collaborator was accepted (Pfeifer et al., 2021) titled: *A systems approach framework for evaluating tree restoration interventions for wellbeing and ecological outcomes in rural tropical landscapes* by the journal Philosophical Transactions of the Royal Society B: Biological Sciences (Appendix 20). A paper on lessons learned from the corridor restoration project has been written for submission to a journal. A further paper on predictors on spatial predictors of elephant crop damage prior to corridor restoration is in preparation (lead author: collaborator Lauren Barnes). While we were unable to meet our target of three popular articles, we did submit two articles to the Darwin Newsletter, both of which were published (Appendices 21.1-21.2). We also are presenting on the Kilombero Elephant Corridor in three presentations at the 2022 IUCN Africa Protected Areas Congress (APAC) in Rwanda post-project end.

4.4 Number of visitors to TZ Wildlife Corridors website. Baseline from April 2018 to March 2019 was 7,126 unique visitors. The number of visitors was 5,642 in Year 1, 7,329 visitors in Year 2, and 7,512

visitors in Year 3. The lack of increase in visitors relative to the baseline is because we were unable to launch the new website during the project period, as we were awaiting finalisation of the Tanzanian Government's new National Corridor Priority Action Plan (NCAP), which is being publicly launched by the Minister of Natural Resources and Tourism in the second half of 2022. Our website consultant is well prepared 'behind the scenes' for a launch of the website and has agreed to complete this work beyond project end.

3.2 Outcome

The intended outcome of this project was that elephant crop-losses would be reduced and retaliatory killing of elephants eliminated, that environmentally-friendly and sustainable enterprise would increase incomes for 220 people, and that enabling conditions would be created for wildlife corridor restoration with community support.

0.1: 25% reduction in number of elephant visits to farms per year protected by beehive fencing by project end relative to pre-project baseline of 34 visits in 2018-2019. Due to expanded coverage and increased survey effort in Year 1 (LEMs began data collection in April 2019 in Magombera and Kanyenja villages), our Year 1 data serves as a better baseline because of improved data coverage and quality. We recorded 305 crop-loss incidents in Year 1, 442 incidents in Year 2, and 571 crop-loss incidents in Year 3. Instead of a 25% reduction by project end relative to Year 1, we saw an 87% increase in recorded crop damage incidents between Year 1 and Year 3. This increase is at least partly attributable to expanded survey coverage in Year 3 relative to Year 1 (Appendix 16). If we compare Year 2 and Year 3 (for which survey coverage was more comparable), there was still a 30% increase in crop damage incidents between Year 2 and Year 3. This increase in crop-loss incidents is associated with greater elephant use of the project area, as indicated by the increasing trend in dung encounter rates along transects in Mwanihana and Magombera forests. Other possible reasons for this increase which require further investigation include the expansion of sugarcane cultivation in the valley, which has increased the availability of refugia for elephants within cropland, allowing elephants to 'hide out' in tall sugarcane during the day without needing to return to the forest, and allowing them to travel further from the forest edge into cropland. There also appears to have been a behavioural shift among some elephant males, for whom crop use is habitual and seem to have developed a greater tolerance for risk, as evidenced by their increased use of cropland and village land during the day (whereas previously, activity on village land was overwhelmingly nocturnal). A shift to increased daytime use of the forest edge in 2021 relative to 2019-2020 was observed from our camera trap data, though the shift remains relatively small (Appendix 16). It is not clear to what extent ecological 'push factors' (e.g., wild food availability) within the protected areas are contributing to increased crop foraging by elephants, as this is not something we monitored. When conceiving the project, we had hoped to measure a reduction in crop damage due to the combined approach of restoring a corridor and implementing mitigation measures, but as the corridor was not designated during the lifetime of the project, it was not possible to do so by project end. It is clear that current mitigation methods have not reduced crop damage, in part because no mitigation method is 100% effective, the interface between forest and farmland is so extensive and elephants are able to avoid fences and enter farmland in gaps, and an increase in elephant use of the project area. The current beehive fences and other crop protection measures do not block all elephant trails into farmland along the forest-farm boundary. Beyond the lifetime of the project, we will continue to monitor crop damage to evaluate the effect of corridor restoration. Through this project, we have established an excellent baseline against which to measure change following corridor restoration. We collaborated with an MSc student (Lauren Barnes, University of Newcastle) to develop a crop damage risk map pre-corridor restoration and to identify spatial predictors of crop damage (Appendix 22). This study will be repeated following corridor restoration.

0.2: Zero elephant mortality from retaliatory killing or Problem Animal Control in project area by project end relative to 2009-2017 baseline (0.6 elephants killed/year). Zero elephant mortality to retaliatory killing or Problem Animal Control occurred in Year 3 (as in Year 1 and Year 2). Two male elephants were killed in a train collision in 2021.

0.3: By project end, 220 project beneficiaries report an increase in income from beekeeping, agroforestry and coexistence tourism relative to project baseline of zero. As outlined above, by the end of Year 3, from the four groups started during this project, 92 people are involved in beekeeping activities and Village Savings and Loan Associations. Eight individuals are involved in initial coexistence tourism efforts at one of the beehive fences. 110 individuals (44% women) are still involved in agroforestry at project end. 2.1, 2.4 above and Appendices 9 and 11 on Beekeeping and VSLAs expand on the financial impacts of these livelihood activities. Sections 3.4 and 4.3 also address the limitations of focusing on income increases only as a measure of economic impact. Association Mazingira was unable to monitor incomes from agroforestry at the farmer level. However, farmers participating in agroforestry reported the following benefits from agroforestry: income and production of charcoal (sold at TZS 45,000 [£19.81] per bag) and firewood (sold for TZS 7,000 [£2.52] per pile) from harvesting or pruning of trees, income from selling tree leaves as animal fodder (TZS 15,000-20,000 [£5.41-7.22] per delivery), using poles cut from trees for house construction, and increased soil fertility. 45 farmers (40% women) are also engaged in

beekeeping (48% of hives are occupied, 7 litres of honey harvested to date), using a woodlot that was established under the agroforestry activity (Appendix 12.3).

0.4 Partial gazettement of Udzungwa-Selous corridor completed in progress by project end via agreement to and payment of 95% of compensation and progress made on final Land Use Plan relative to no protected status at pre-project baseline. After the three village valuation reports were published by the District Government in February 2022, 95% of corridor farmers have completed the payee documents verification (Appendix 14) process (a few farmers have not yet been located or are resolving issues with their documents). All of the funds required for compensating the farmers have now been raised (as of July 2022), with transfer of final instalment of these funds anticipated during July 2022. At project end, 71% of valuated farms had been compensated, and this is forecast to reach 95% by end of July 2022. Resolutions for set-aside of the land for wildlife corridor is stated in formal stamped and adopted Minutes of meetings of the three Village Governments and the Kilombero Elephant Corridor Management Committee. Agreements are in place and preparations ongoing with the National Land Use Planning Commission and District Land Use Authority for commencement of the final Land Use Plan process in August 2022, upon completion of the 95% of compensation payments.

0.5: By project end, there will be a 50% increase in the proportion of Village Council members and community members who support gazettement of the Udzungwa-Selous corridor relative to the pre-project baseline (65% of 132 village council members in Jan-March 2019). 100% of the three corridor village council members (total 90 members) have agreed on the corridor restoration (Appendix 23), as well as 95% of the farm owners (as evidenced in their signing of valuation form no. 2, in which the farmer gives consent for their plot to be valued for the purpose of compensation (Appendix 14).

0.6 By project end, there will be a 50% increase in the proportion of community members who demonstrate tolerance for elephants relative to the pre-project baseline. See Appendix 19 for an overview of tolerance in the project period. Due to COVID-19, STEP's Research Team was not able to pursue collaborations with external researchers that would have supplied baseline data. Establishment of formal baseline tolerance levels through questionnaire surveys was planned to begin in March 2020 in collaboration with MSc student Caitlin Melidonis from the University of Kent. However, this work was postponed and then cancelled due to the continued risks posed by conducting in-person questionnaire surveys due to COVID-19. A tolerance survey was conducted in early 2022 (Appendix 19) but there is not a formal pre-project baseline with which to compare it to, rendering this indicator difficult to assess. When we look at our positive tolerance indicators (preference for elephant populations to increase or stay the same over time) at the village level, there was not a consistent association between tolerance and length of exposure to STEP programming (short or long) within low or high elephant impact groups (Appendix 19). Tolerance at the village level was associated with elephant impact, and was lower in high-impact villages. Investigating tolerance at the village level is an indirect measure of the impact of STEP engagement on tolerance. For a more explicit investigation of the impact on tolerance between respondents engaged in a STEP program versus those not, we investigated tolerance by exposure to STEP education programming and VSLA membership. STEP VSLA members and those exposed to education had substantially higher tolerance scores than community members who were not VSLA members or had not been exposed to STEP's education programming (Appendix 19).

3.3 Monitoring of assumptions

01. Beehive fencing continues to deter elephants from farmers (no habituation). **Comment**: To monitor this assumption, local elephant monitors surveyed beehive fences regularly to determine if and where elephants crossed beehive fences. Our monitoring (Appendix 16) shows that elephants generally did not cross beehive fences between occupied hives. Rather, elephants breached fences most often between dummy hives (simple wooden cutouts meant to imitate real hives), or between a dummy hive and an unoccupied real hive, or between two unoccupied real hives. In 2020, 90% of elephant breaches of beehive fences occurred between a dummy hive and a real hive, or between two dummy hives, and only 10% of breaches between two real hives. In 2021, 66% of breaches occurred between two dummy hives, a dummy hive and a real hive, or in a gap in the fence, and 24% of breaches occurred between two real hives. In 2020, when elephants crossed between two real hives, elephants crossed either between two unoccupied hives (40% of cases) or between one occupied and one unoccupied hive (60% of cases). In 2021, when elephants crossed between two real hives, elephants crossed either between two unoccupied hives (63% of cases) or between one occupied and one unoccupied hive (29% of cases). In 2020, there was no instance recorded of elephants passing between two occupied hives. In 2021, there were only 2 instances recorded of elephants passing between two occupied hives. There is no substantial evidence of elephants habituating to occupied hives, as elephants overwhelmingly avoided crossing between two occupied real hives in both years. As such, increasing occupancy of hives is likely to be key to the efficacy of beehive fences as an elephant deterrent. Our monitoring does demonstrate that dummy hives are vulnerable to elephant breaches. As elephants do walk around beehive fences and learn to cross between dummy hives or unoccupied real hives, we continued to work on increasing beehive occupancy, and through matched funding, trialled additional elephant deterrents (solar-powered strobe lights beginning in 2021, and metal strips beginning in July 2022) as options for reinforcing beehive fences. These trials will continue beyond project end.

0.2 Crop protection efforts, corridor conservation, beekeeping training and benefits and education are effective in fostering tolerance of elephants. **Comment:** As outlined in 0.6 above (Section 3.2), to monitor this assumption we planned a questionnaire survey to identify drivers of tolerance and the role of interventions in fostering tolerance to begin in March 2020 in collaboration with an MSc student from the University of Kent. However, this questionnaire survey was postponed due to COVID-19 as were several other opportunities for external collaboration. STEP was able to conduct a survey informed by tolerance research at the beginning of 2022 but it does not allow for change over time comparison that would enable statistically significant assessments of the impact of these interventions on tolerance. It is worth noting that no elephants have died from retaliatory killing in the project area relative to a 2009-2017 baseline, but any correlation is speculative. We plan to analyze the survey findings in detail and to replicate this survey in the future.
0.3 Other motives for elephant killing (i.e. poaching for ivory) do not override increased tolerance of elephants. **Comment:** STEP records incidents of elephant mortality to monitor this assumption. In all years, there was zero elephant mortality to PAC or retaliatory killing, suggesting this assumption holds true.
0.4 Health of local bee populations: Seasonal variation in occupancy data. **Comment:** To monitor this assumption, STEP records beehive occupancy for all beehive fences at least twice every month. An overview of beehive occupancy over time is provided in Appendix 9. Throughout the project there has been village-level variation in beehive occupancy trends but generally there is an increase in the early dry season (May/June to August), and a decrease in occupancy during the wettest months (January/February onwards). This was especially pronounced in Year 2, likely due to exceptionally heavy rainfall from the Indian Ocean Dipole in the 2019-2020 season. Year 3 saw an opposing trend: rainfall was late and not as abundant during the early part of the rainy season. Occupancy during early Q1 of 2022 reflected this trend but seems to be on the rise as the project period ends. While we have no reason to suspect that local bee populations are in danger, we continue to work to translate beehive occupancy into increased honey production (see Appendix 9 and Assumption 2.1 for more details).
0.5 Political interference does not negatively affect communities' support for corridor conservation.
Comment: Intra-village politics between the two main political parties raised some challenges in one of the corridor villages (Mang'ula A) in the lead-up to the nationwide Village Council (VC) elections in November 2019, however the elections resolved these issues when all villages in the area elected the Ruling Party CCM. During 2020, a small faction of maximum 10 villagers who do *not* farm within the corridor sought to recruit the local MP to mobilise communities against the project, however the increased involvement and leadership of the District Commissioner and other Government officials meant that this effort came to nothing. In 2021-22, activism by this small group of non-corridor farmers against the corridor project continued, primarily in the form of spreading negative disinformation. Thankfully, continued monitoring by our team who are embedded in the community, and countering of this disinformation, were able to mitigate these efforts. Throughout 2021-22, STEP also increased the level of involvement of regional and district leadership in the restoration of the Corridor in 2021-2022. The Inauguration of the KECMC including the Village Chairpersons of all three villages demonstrated the authenticity of the project and its goals. Meetings between the DC and Village Assemblies were also impactful and have demonstrated the majority support among the communities for the corridor restoration. The main thrust of the disinformation was that households would not be compensated for their farms within the corridor, a potentially effective tactic due to previous Government projects in the region where compensation did not happen. Nevertheless, the majority of farm owners along the corridor agreed with the land valuation, and this year, the payment of compensation has put paid to this negative political approach. STEP also worked on sensitizing the progress of the Corridor Restoration Project to the Council of Ward Councillors of Ifakara, who unanimously approved the project.
1.1 Following comprehensive beekeeping training and set up of a monitoring system, farmers' groups will conduct proper maintenance of beehives. **Comment:** Throughout the project period, beekeeping groups have remained involved in monitoring and maintaining beehive fences. There have been challenges in maintaining motivation as many groups have had to manage high expectations for honey production and sales with the realities of irregular rainfall, the need for adaptive beehive monitoring and the complexity of the honey market (Appendix 24). Training visits with beekeeping experts in Years 2 and 3 (matched funding) helped to map out actions to maximize occupancy and transfer that into production. Investments in the Udzungwa Honey Collection Center, also facilitated by matched funding, will also hopefully improve the quality of harvested honey, enabling more lucrative sales. Additionally in Year 2, STEP was able to augment beehive fences with beehive huts, structures that enable the close proximity of 10-20 hives (Appendices 25.1-25.2). Ensuring that hives are in shade contributes to a conducive environment for occupancy and increased production. The hope is that beehive huts will ultimately boost revenue, increasing the efficacy of beekeeping initiatives as sources of livelihood diversification. We hope this increases satisfaction and enhances motivation.
1.2 The project area continues to maintain a healthy bee population. **Comment:** See comment for Assumption 0.4. This assumption remains true (without conducting a rigorous bee population assessment). Occupancy levels have not dropped substantially over the duration of the project, nor have other beekeepers made comments about the status of the population in general.

1.3 That group membership remains steady throughout the project period. **Comment**: This is expanded widely on in Output 1.
2.1 There will be a continued market for elephant friendly honey (and that this market was accurately assessed at project inception). **Comment:** The assessment of the market for elephant friendly honey made at the time of this application was insufficiently robust. It used best-case-scenario projections (using purchasing data from one specialty buyer and best-possible harvest projections) without adjusting down for the potential impacts of rainfall irregularities or other limiting factors. Based on research referenced in (Appendices 10 and 26), more accurate phrasing could have been "There **is** a market for elephant friendly honey **which enables farmers to consistently access a better selling price than that of the local market**." The tourism challenges brought on by COVID-19 limited the potential for a high end market access in Year 2, but opportunities to sell on the local market (for a significantly lower price) were abundant due to the perceived role that honey played in preventing COVID-19. As mentioned previously, through matched funding, support from a professional beekeeping company has been provided to farmers in the Kilombero valley. A total of three visits have been done by this professional beekeeping company in Year 3. The first visit was conducted in June 2021 and included an in depth evaluation of all seven of STEP's beekeeping groups. The result of this evaluation was a plan to increase honey production and occupancy with each group. The second visit, conducted in December 2021, included training for farmers' groups on best practices for honey harvesting. This in-depth training was critical to ensure that farmers were harvesting honey at the right time using the right methods. Honey is hygroscopic, meaning it absorbs moisture from the air. In a humid environment such as the Kilombero Valley, honey can have too high water content, which causes honey to rot, if not managed properly. The third (and most recent) visit included a training for farmers on how to split and move colonies from catch boxes to beehives. Catch Boxes are small boxes which are used to capture colonies in trees as they are small and easier for bees to occupy. After a few weeks, these colonies are relocated to normal hives. As evident from Appendix 9, there is still room to grow on optimizing honey production. We hope that the 2022 dry season will be a productive one.
2.2 There is continued interest and buy-in from members of members for VSLAs. **Comment:** This assumption still holds true. Weekly attendance of 60% shows that a majority of members attend weekly meetings. Group members buying an average of 45.13 (a 26% increase) per week per group. Each individual is buying an average of 3.59 shares per week, an increase from Year 2. We track the number of shares purchased per attendee as a key performance indicator weekly in our HEC Dashboard to monitor participation (Appendix 27). For the newer groups, 90% of members have taken loans. This is indicative of need, demonstrating that there is considerable interest in access to credit. As expanded upon in Appendix 11, our initial qualitative assessments show that most group members did not have access to safe credit before STEP's VSLAs began operating. We can thereby infer that interest will continue while this is the case.
2.3 Tourist operators continue to show interest in coexistence projects as a tourist attraction and that international tourism recovers from the impact of COVID-19.
Comment: This assumption likely should have been phrased as "tourist operators **show interest**" in coexistence projects in our application materials. Research conducted during the reporting period shows that coexistence tourism is still an emerging concept in tourism in Tanzania and the level of existing interest may have been overly optimistic. We are still seeing how tourism in Tanzania recovers after the impacts of COVID-19. Popular articles point to an emerging trend in 'more conscious travel' based on social justice movements and increased awareness of ecological impacts of travel as a result of the events of 2020-2021, however it is too early to affirm this statement with any certainty.
2.4 Tanzania remains peaceful and a popular destination for international tourists and that international tourism recovers from the impact of COVID-19. **Comment:** The impacts of COVID-19 have continued throughout years 2 and 3 of this project. Tanzania's response to COVID-19 for most of 2020 (which continued through Q1 of 2021) was to not publicly monitor or report case data as well as, throughout 2020, deny the existence of the virus and refuse vaccination support. Tanzania's new president, inaugurated in March 2021, has taken a significantly different approach, urging vaccination and openness about COVID-19. The current administration is taking an assertive stance to communicate that Tanzania is open for business and remains a safe and exciting destination for tourism. However, it remains to be seen how effective this will be.
3.1 No negative changes in Tanzanian law pertaining to corridor conservation. **Comment:** No negative changes have occurred. The Tanzanian government continues to view corridors as a conservation priority, through Wildlife Act number 5 of 2009 and its regulation of March 2018, National Human - Wildlife Conflict Management Strategy 2020 – 2024 (Appendix 28.1-28.2) and the new National Corridor Assessment and Action Plan due to be launched in 2022 by the Minister of Natural Resources and Tourism.
3.2 Political interference does not negatively affect communities' support of corridor conservation. **Comment:** See comment for Assumption 0.5.
3.3 Wildlife accepts the corridor as safe enough to use. **Comment:** As the corridor was not designated during the project lifetime, we were unable to verify this assumption. This assumption will be monitored beyond project end, as we will expand camera trapping along the full extent of the corridor once it is

designated. Experience from other corridor projects (e.g., Mount Kenya Elephant Corridor, Nyaligu & Weeks, 2013) suggests this assumption is likely to hold true.
4.1 Outputs 1-4 lead to greater understanding of ecological connectivity and increased tolerance of wildlife. **Comment:** In Year 1, STEP delivered an educational program about human-elephant coexistence and wildlife corridors to >2,000 students in the project area. There was a 12% increase in the number of students who perceived wildlife corridors to be important at the end of the program. Before the program, most students were not aware of the reasons why wildlife corridors are important. In the endline questionnaire, students provided a range of answers, including reducing human-wildlife conflict (36.8%), and habitat and wildlife conservation (14.8%). STEP continues to collect 'rapid knowledge retention' data that consists of mini quizzes before and after training in schools. While most of this data shows an initial positive impact, we are still working to determine how to assess retention over the long term with students. In an interview conducted for a match-funded project, we saw a glimpse of the impact that park visits (a new intervention) and educational outreach in schools has (Appendix 29). Film nights have a similar 'instant retention impact,' as evident from this report from November 2020 (Appendix 30), but again, we are still working to build a more robust assessment of knowledge and tolerance over the long term.
4.2 Self-funded academic partners will conduct relevant and timely corridor research. **Comment**: COVID-19 hampered fieldwork by academic partners. To mitigate this, STEP provided data collected by our own team to academic partners. Research collaborations begun under this project are planned to continue beyond project end to measure change in crop damage and farmer welfare following corridor restoration.

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

The intended impact of the project was enhanced human-elephant coexistence, growth of sustainable local livelihoods linked to biodiversity conservation, and restoration of landscape ecological connectivity in the Kilombero Valley, Tanzania. The project did contribute to biodiversity conservation by enhancing connectivity for the elephant meta-population of southern Tanzania (comprising >50% of East Africa's elephants), as significant progress was made towards designation of a wildlife corridor that connects two high biodiversity landscapes (Udzungwa and Selous-Nyerere). As the corridor designation and restoration will be completed beyond project end, this is a positive impact on biodiversity expected beyond the lifetime of the project. Prior to corridor restoration, only 29% of document elephant dispersal attempts were successful (Appendix 16); following corridor restoration, we hope to see a significant increase in this measure (and monitoring will continue beyond project end). Connecting the two important elephant populations will ensure gene flow (particularly important for the smaller semi-closed Udzungwa population) and resource access. As research has shown a highly positive correlation between the presence of elephants and large mammal diversity within corridor areas (Epps et al. 2011), it is expected that habitat restoration along the corridor will enhance connectivity between the Mwanihana and Magombera forests, as well as population resilience, of a range of threatened species (including local endemics), especially among the taxa of birds, small mammals and insects including pollinators. We estimate that the corridor will benefit eleven mammal species for which recent/historical connectivity has been documented, including the endemic and endangered Udzungwa Red Colobus (*Procolobus gordonorum*), leopard (*Panthera pardus*), and buffalo (*Syncerus caffer*). Again, this is a benefit expected beyond the lifetime of the project, for which monitoring will continue beyond project end. Habitat restoration in the corridor will benefit native trees, and serve as a valuable case study for habitat restoration efforts elsewhere. As outlined in section 4.3, the anticipated poverty alleviation aspects of corridor restoration include reduced crop damage and increased personal security, though this is an impact that can only be measured beyond the lifetime of this project. During the project period, we observed an increase in use of the project area, in particular the Mwanihana and Magombera forests, which form the endpoints of the Kilombero Elephant Corridor (Appendix 16). It is not clear at this stage whether this is linked to elephant population recovery in the Mikumi-Nyerere-Selous ecosystem post-poaching, as the population has not been censused since 2018 (the population was stable between 2015-2018). Increased elephant use of the project area could be driven by a range of factors, as such, it is difficult to attribute this increased use to any one factor, but it is likely that the project area has become safer for elephants due to a reduction in poaching and the fact that no elephants were killed in retaliation for crop damage or for problem animal control (PAC) in the last three years. It is notable that during a three-year period with a substantial increase in crop damage (Appendix 16), no elephants were killed due to PAC or retaliatory killing.

While the development of income generating opportunities from beekeeping was lower than expected and was almost negligible from coexistence tourism due to the impacts of COVID-19, the opportunities provided by increased access to financial services through Village Savings and Loan Associations (VSLAs) are real and measurable. From these groups, 92 people have gained access to loans, bringing the total number of individuals with access to loans over the lifetime of the project to 126. A total of 177 loans have been distributed. When STEP first began working with the VSLA model, we initially focused on "growth in capital, loan issuing and repayment rates" as key indicators. The Theory of Change of VSLAs focused on the end of cycle share out in which 'profit' from interest generated during lending is distributed according to shares purchased throughout the cycle. After 3+ years working with VSLAs

across two diverse landscapes, we have found that these indicators do not adequately capture the range of VSLA impacts. Loans from VSLAs help members to diversify their household economies, adding other sources of income or strengthening existing enterprises. A key outcome, reported widely in qualitative research (Appendix 31, page 15), is that accessing loans through VSLAs reduces the need to sell future harvest at a low price. It is often the case that a lender will ask for repayment in the form of bags of rice (usually future bags of rice that have not yet been harvested). These bags are devalued to the lowest possible price point, meaning that the borrower gets minimal return on her harvest, whereas the lender can sell these bags for 2-4x the value at which money was borrowed 'against' the bags. VSLAs offer an alternative source of credit that does not necessitate sale of crops. Access to credit through VSLAs therefore does not just increase the value of critical harvest assets, it also positively impacts food security by allowing farmers to hold on to more harvest for longer. Through VSLAs, this project helped families to access safe and reliable credit, facilitating access to capital enabling investment in agriculture and small business. These in turn generate more revenue, diversifying household incomes. The majority of loans taken during this project period (for which we have data, see Appendix 11), were used to support existing agricultural operations. Some were also used to supplement food for the household, to pay school fees and to start new business enterprises (a small shop and a motorcycle for ferrying goods and passengers). In the past, loans have also been taken to improve household infrastructure and for healthcare expenses, which often require significant transport costs due to poor infrastructure in the area.

While beehive fences did not generate the revenue projected in the application, beekeeping, especially with the addition of beehive huts for each group, shows promise in generating revenue through honey production and sales. Training on elephant behaviour has given communities knowledge on how to stay safe around elephants. This contributes positively to wellbeing as it can help to reduce injury and death. Indirectly, this project has contributed to a broader sense of awareness and knowledge of the larger ecosystem regarding human-elephant interaction. This supports biodiversity and human development through a deeper understanding of humans' role in the wider world.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

SDG 1: End Poverty. This project contributed to this goal by providing smallholder farmers with access to safe and reliable credit through VSLAs, and livelihood diversification options (beekeeping, agroforestry, coexistence tourism). Through the project, 92 farmers gained access to VSLAs (with an additional 76 farmers gaining access to VSLAs post project end following compensation of their plots for the corridor, see section 4.3) 177 farmers received training in agroforestry, and 132 farmers received training in beekeeping. VSLAs enabled members to develop existing or new enterprises, diversifying household incomes (Appendix 11). Beyond the lifetime of the project, we hope that corridor restoration will reduce crop losses from elephants. Through STEP's research collaboration with the Agrisys project (PI: Dr. Marion Pfeifer), we hope to measure potential change in farmer well-being and crop productivity and health following corridor restoration, again beyond the lifetime of the project.
SDG 2: Zero Hunger. While we did not conduct a rigorous assessment of food security, the project likely contributed to food security indirectly by providing access to safe and reliable sources of credit via VLSAs, giving farmers an alternative option for financial support that did not require selling their harvest (Appendix 11).
SDG 5: Gender Equality. The project contributed to gender equality by promoting women's participation and leadership in economic and nature conservation activities (VSLAs, beekeeping, agroforestry). VSLAs provided women and youth with access to loans and savings mechanisms and business training. Women comprised 51% of CBO and VSLA members in Year 3. We ensured that at least two out of the five leaders of CBOs and VSLAs were women. At project end, 48 women continued to practice agroforestry. In Year 2, STEP hired its first ever female local elephant monitor. As expanded on in section 4.4, through the corridor restoration aspect of the project, several support processes were established to enable women to verify and/or claim their ownership of land and to navigate the compensation process.
SDG 15: Life on Land. The project created enabling conditions for the designation and restoration of a wildlife corridor between the Udzungwa and Nyerere-Selous ecosystems and will therefore contribute to the maintenance of biodiversity and associated ecosystem services at the landscape scale.

4.2 Project support to the Conventions or Treaties (e.g. CBD, Nagoya Protocol, ITPGRFA, CITES, Ramsar, CMS, UNFCCC)

The project contributed to three Aichi Targets and three targets in Tanzania's National Biodiversity Strategy and Action Plan (2015-2020; no new Action Plan has been made public to date). Through

creating enabling conditions for corridor restoration, the project will, in the longer term, reduce degradation and fragmentation of ecosystems by connecting two important protected areas and restoring degraded habitat, as well as restoring and safeguard essential ecosystem services (Targets 5 and 14 in Tanzania's NBSAP, Aichi Targets 3 and 14). The project provided positive incentives for biodiversity conservation via sustainable use of natural resources via beekeeping (a total of 92 farmers, 51% women in four CBOs involved in beekeeping at project end) and agroforestry (110 farmers active at project end) (Target 3 in Tanzania's NBSAP, Aichi Target 3). Through extensive education and outreach, the project also helped to generate awareness of the value of biodiversity (Aichi Target 1). While no direct contact was made with the Tanzanian focal point for the convention, STEP worked closely on the project with a range of government partners (Tanzania Wildlife Research Institute, Tanzania National Parks, the National Land Use Planning Commission, Tanzania Wildlife Management Authority, Wildlife Division). The project also contributed towards the implementation of Tanzania's first National Human-Wildlife Conflict Strategy (Appendices 28.1-28.2).

4.3 Project support to poverty alleviation

Beneficiaries of this project are the inhabitants of the communities within the Kilombero Valley. Directly, the project benefitted Village Savings and Loan Members in Katurukila, Magombera, Kanyenja and Sole villages and sub-villages through access to loans and safe access to capital (At the end of Year 3, 93 individuals have access to loans). Less directly, through education and outreach, the project has benefited students in primary and secondary schools who have received training on elephant ecology and behaviour and adults who have received education on elephant education and mitigation methods for crop damage (Over 5000 people, Indicator 4.1, 4.2). As expanded upon in Section 3.4, the contribution this project made to poverty alleviation is through improved household resilience via VSLAs, improved safety and well-being via education about elephant behaviour and improved development through a more comprehensive understanding of human-elephant interaction.

The corridor restoration aspect of the project resulted in significant progress towards restoration of the Kilombero Elephant Corridor. Corridor designation and restoration will ultimately be completed beyond project end. We anticipate that restoration of the corridor traversing the valley (which will be fenced) will allow elephant movement to be managed more effectively and reduce crop damage, thereby contributing to increased food security and wellbeing for smallholder farmers and the wider community. We will measure the impact of corridor restoration on elephant crop damage risk beyond project end (pre-corridor restoration, we measured a substantial increase in crop damage during the project period, see Outcome 0.1). Through STEP's research collaboration with the Agrisys project at the University of Newcastle (PI: Dr. Marion Pfeifer, Appendix 32), we hope to measure potential change in farmer well-being and crop productivity and health following corridor restoration, again beyond the lifetime of the project. The Agrisys project has pre-corridor restoration baseline data on the well-being of farmers (467 households from 2019) and crop productivity, health, and damage (72 plots from 2019).

The corridor project directly engaged 279 smallholder landowners who agreed to have (a portion of) their farm plots used as a wildlife corridor and to receive compensation in accordance with Tanzanian law and regulations.At project end, 203 farm owners have received compensation (matched funding), and we hope to complete compensation of all farm owners by the end of July 2022. To date, 233 beneficiaries (household head plus spouse, 45% women) who received compensation funds have received financial training to help make decisions about how to use or invest compensation funds (this activity continued beyond project end with matched funding) (Appendix 33). 76 compensated farm owners were supported to form VSLAs (Appendix 34), and beyond project end, will be supported to develop income-generating activities to enable them to further diversify their livelihoods.

4.4 Gender equality

In rural Tanzania, women face cultural and practical barriers to involvement in the formal economic sector, including primary responsibility for childcare and domestic tasks, as well as lack of access to capital, resources and training, that can pose a challenge to their participation in human-elephant coexistence projects. Throughout this project period, we considered these challenges and insisted on equal representation in groups and meeting times that accommodate all types of labor and leadership quotas. STEP's newest group, UTEWASO has 13 women (43%) and a female chairperson. STEP continues to seek feedback through focus groups and key informant interviews. As mentioned in regards to Output Indicator 1.1, key informant interviews were conducted to ascertain whether there was a gender-specific reason for group attrition (Appendix 7). In January 2021, STEP hired its first female Local Elephant Monitor. As our farmers' groups have mentioned, our female Kilombero Elephant Coordinator is a role model for women who hope to hold leadership positions. We hope our female LEM will also be seen this way. Of the three new groups, women and youth constitute 63% of members in Katurukila, 79% in Kanyenja, and 54% in Magombera. In Year 2, 26 women (in the groups formed during this project period) took out 49 loans from VSLAs (53% of total loans) with a total value of TZS 3,711,000 (£1339.09), primarily for renting

farmland, purchasing agricultural inputs, and paying children's school fees. In Year 4, 39 women in the groups formed during the project period out 62 loans (~41% of all loans) with a value of TZS 8,093,000.00 (£2920.03). For the corridor restoration aspect of the project, it was important to consider gender differences in land management, land ownership and financial gain from the compensation of land for the corridor. Most farm owners in the proposed corridor area are men, and male landowners were more confident in navigating the process of valuing plots and preparing compensation claims for their plots. To help female landowners navigate the process of claiming compensation, we helped women to claim or verify their legal ownership of land through village leadership, and established a help desk at the Village Executive Officer office in each village to assist women in navigating the barriers of inheritance claims to land at the family, village, and ward or district levels. These processes assisted women who inherited a farm from their husband or parents to process their compensation claim in a timely manner. We also integrated gender into our financial training for compensation recipients. All farm owners receiving compensation funds(most of whom were male) were required to attend financial training with their spouse to increase household participation and female involvement in decision-making on use of the compensation funds. To date, we conducted financial training for 223 participants (45% women; some training was done beyond project end). Financial training for all compensation recipients will continue beyond project end. STEP also facilitated the formation of four VSLAs for compensation recipients, and 40% of leadership positions across the VSLAs are held by women.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**
- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures?**

The project led to the formation and official launch (Appendices 35.1-35.2) of the Kilombero Elephant Corridor Management Committee (KECMC), which oversees the corridor designation process and will be responsible for its management. The core committee comprises 9 members, 3 of whom are village chairpersons, 3 of whom are from Local Government Authorities, and 3 of whom are managers of the relevant protected areas (Appendix 35.3). One of the members of the KECMC is a woman. The KECMC was formed through a participatory process and its composition decided through a workshop (held in Year 2) with stakeholders from local, regional and national levels, as well as consideration of regulatory guidance (Appendices 36.1-36.2). The KECMC further established a technical sub-committee to advise on technical aspects of the implementation of the corridor, which includes the Zonal Manager of NLUPC, the Zonal Manager of TANAPA, the Regional Natural Resources Officer and invited NGOs (Appendices 37.1-37.4). The project also initiated participatory land use planning processes towards corridor designation. Year 1 was focused on extensive sensitization and consultations with village communities, farm owners, and Government stakeholders to build consensus for the corridor restoration. After consent was given by the village governments of Kanyenja, Sole and Mang'ula A and farm owners, a participatory process (led by the Senior Land Valuer of Ifakara Town Council, Land Authorized Officer, Land Surveyors, and Land Valuer from Ifakara Town Council and Mlimba District) of mapping and valuing farm plots within the proposed corridor was conducted with 95% of the 288 farm owners within the corridor area (Appendices 14, 38). Subsequently, the District Land Use Planning team led the process of signing land valuation agreements with farm owners, enabling compensation to start. At project end, 71% of valuated farms had been compensated, and this is forecast to reach 95% by end of July 2022. This process also produced a provisional revised land use plan for Kanyenja village, showing the location of the wildlife corridor (Appendix 13). Resolutions for set-aside of the land for wildlife corridor is stated in formal stamped and adopted Minutes of meetings of the three Village Governments and the Kilombero Elephant Corridor Management Committee. Agreements are in place and preparations ongoing with the National Land Use Planning Commission and District Land Use Authority for commencement of the final Land Use Plan process in August 2022, upon completion of compensation payments.

- **Were any management plans for biodiversity developed and were these formally accepted?**

The Kilombero Elephant Corridor Management Committee (KECMC) drafted and ratified an Action Plan for the Kilombero Elephant Corridor in Year 2 of the project (Appendix 47).

- **How did the project positively influence household (HH) income and how many HHs saw an increase?**

Sections 3.4 and 4.3 as well as Appendix 11 have discussed the project's impact on poverty in detail. It was not part of this project's original logframe or M&E plan to look at HH income in detail. Determining HH income is a complex and often imprecise process, particularly in the dynamic agricultural systems of

the Kilombero Valley. 86% of respondents in the survey conducted at the end of the project period cited at least one other (seasonal or inconsistent) source of income in addition to agriculture with more than 30% of those respondents citing more than two sources. We are exploring the development of a more comprehensive measurement, a combination of HH indices that we'll use to develop a HH resilience index. This index will take into account different income sources and assets, making it more likely to be representative of the reality of the HH economies in Kilombero. 92 individuals participated in VSLAs and were also members of our beekeeping groups. 203 smallholder farmers had been compensated for their farmland as part of restoration of the corridor (by project end).

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Again, quantitative measurements of changes in HH income were not a part of STEP's initial logframe or M&E Approach. This is largely due to the complexities of HH economies in the Kilombero Valley and whether STEP had (or has) the resources to accurately assess them. From Share Out records over the last two years of the project period, we know that the average amount received from a share out was TZS 42,561, with some farmers receiving share outs as high as TZS 369,100.00 (£133.19). The median of TZS 23,123.50 (£8.34) demonstrates the range of share out revenue (see Appendix 11 for more insight on share outs).

4.6 Transfer of knowledge

STEP and one member of the KECMC will present on experiences and lessons learned in the process of corridor restoration efforts at the IUCN African Protected Areas Congress in Kigali, Rwanda, 17-24 July 2022. The project also sought to transfer knowledge by using the Kilombero valley as a case study (with our data on crop damage risk) for developing a framework for evaluating tree restoration interventions for wellbeing and ecological outcomes (Appendix 20). A paper on lessons learned from the corridor restoration project has been written for submission to a journal. One Tanzanian MSc student (male) received training and mentoring through the research and monitoring aspects of this project via matched funding (Appendix 16), and is on track to receive a degree by the end of 2022. One UK MSc student (female) used data from this project towards the dissertation for her MSc degree (Appendix 22)

4.7 Capacity building

During the sensitization phase of the corridor aspect of this project, STEP (with matched funding) facilitated a learning and exchange visit to the Mount Kenya Elephant Corridor for village leaders (all men) from the villages through which the corridor passes, as well as two Tanzanian STEP staff (both men). This visit allowed village leaders to see a fenced wildlife corridor first-hand and to discuss perspectives and challenges with people from the communities living around the Mount Kenya Elephant Corridor. The role of village leaders in corridor designation restoration was elevated by the project as three of the positions on the KECMC are held by village leaders (all men). The project has brought increased recognition and visibility for the District Commissioner of Kilombero (Chair of KECMC), through visits to the corridor project by several high-level Government officials including the Director-General of the National Land Use Planning Commission, Morogoro Regional Commissioner and Deputy Minister of Natural Resources and Tourism. Another key partner and member of the KECMC, Mr. Abel Mtui, Assistant Conservation Commissioner of the Udzungwa Mountains National Park has, as a result of his strong support and collaboration on the corridor project, been sponsored by USAID to participate and speak on the KEC at the IUCN African Protected Areas Congress in Kigali, Rwanda, 17-24 July 2022.

5 Sustainability and Legacy

There has been significant interest in the project from the Tanzanian Government, as demonstrated through 1) Regional, District and National support for corridor restoration; 2) STEP's involvement in a National Corridor Priority Action Plan; and 3) STEP's CEO being asked to lead the development of Tanzania's first National Strategy on Human-Wildlife Conflict (Appendix 28.1-28.2), which includes a chapter on land use planning and corridor restoration and highlights the Kilombero Elephant Corridor as a case study. Increased emphasis on land use planning and corridor conservation in Tanzania will be an important aspect of this project's legacy.

Sharing of results and lessons was done through quarterly and annual progress reports to project partners. Analysis of human-elephant interaction and corridor monitoring data was shared with project partners and Tanzania Wildlife Research Institute. In addition, a paper on lessons learned to date throughout the corridor restoration project is in preparation, led by STEP's CEO and in collaboration with partners from the National Corridor Priority Action Plan project.

A key component of our exit strategy remains to build the capacity of farmers groups to take charge of the maintenance of beehive fences by project end through training and on-going capacity-building. One crucial

aspect of sustainability for farmers groups is their links to honey markets and income from honey sales and coexistence tourism, and progress on this front is still not satisfactory. We worked towards a 'portfolio approach' to honey sales with groups whereby groups may opt to sell a percentage of harvest via a high end, opportunistic market and a percentage of harvest to a slightly lower-end but constant market. A diversified market strategy, which employs a variety of both locally available and more remote markets will be more sustainable than a high end market that requires constant management, a working knowledge of English and often relies on networks that are not fully equitable. As conditions for beehive fence handover (as stipulated in MOUs with farmers groups) were not met by project end, STEP will honour these agreements beyond the lifetime of this project to ensure that handover is completed in a just and sustainable manner.
The exit strategy for the corridor restoration component of this project is as follows. Following completion of the joint land use planning process, and official and legal corridor designation, the Kilombero Elephant Corridor Management Committee will continue to manage the corridor, including monitoring and protection (employing the Village Game Scouts), development of corridor ecotourism and other income-generating activities such as beekeeping and agroforestry. However, STEP and partners are all committed to providing long term technical guidance and assistance. For contingency purposes, STEP will continue to be engaging with other potential donors for additional fundraising needs for the project and community support.

6 Lessons learned

We are always learning. The biggest lesson we have learned from the perspective of community engagement and buy in is the importance of managing expectations. We anticipated that beehives would be populated faster than they were, that beehive occupancy translated directly to honey production and that farmers would be able to access best case scenario prices, translating to revenue for farmers groups. Expectations did not meet reality, and this contributed to group membership attrition in some cases.Setting realistic expectations about the ability of beehive fences to deter crop damage, beehive fences to generate income from honey production and sales as well as the timescale of economic benefits are critically important things to address in order to ensure the buy-in and trust of community partners. As a result, we now work towards construction and occupancy goals in the first year rather than harvest and honey sales goals. Other lessons learned that inform our future beehive fence work include:

- Closer monitoring of beehive occupancy and follow up to observe the critical factors for honey production. Our groups have received training from commercial beehive experts on optimizing this step on the honey process.
- More diversification in our beekeeping work (and our livelihood work in general). Each beehive fence group also has a beehive hut to boost production (and occupancy if hives are moved to and from the fence).
- More diversification in our honey marketing so that we are not putting all product into a small and unpredictable high end market.

On the VSLA front, we continue to learn everyday how to better measure and assess the impact of this critically-important work as well as how to improve it. We plan to develop a household resilience index to assess the households in our project areas and work with farmers to understand what they want to target for increases in the future. We hope this more robust metric will help deepen our ability to demonstrate the transformative impact of our VSLAs. In terms of optimizing operability, we continue to work with CHOMOKA, an app developed by CARE that makes VSLA record keeping more transparent and simple. We hope to transition all groups to CHOMOKA by the end of 2022. We continue to learn more about the optimal timing for VSLAs, something we're working on with our existing groups and for new groups. The timing of the start of a VSLA cycle should be informed by a detailed understanding of income flows in the project area. Without ensuring that there is a source of income for repayment, particularly if a loan is used for an emergency, an ill-timed VSLA cycle can lead to financial ruin. We are trying to get existing groups onto a more suitable timeline. New groups (UTEWASO, for example) are not allowed to start their VSLA until it is an optimal time with regards to agricultural potential.

From the corridor side, a key lesson learnt is that discussions with Government on compensation funds should start early in the project. Although the issue of compensation is addressed through the Land Act and the Land Use Planning Act, it is currently a blind spot in the Corridor Regulations. Considering that most, if not all, wildlife corridors run through village land, some form of land acquisition usually has to take place when designating a corridor. To compensate landowners fairly is also likely to be the most expensive component of any corridor restoration project, and presents a major fundraising challenge, especially since some donors are reluctant to pay for land acquisition or compensation. The Government (in theory, at least) compensates landowners when acquiring land for development projects like roads and railways, but not yet for wildlife corridors. Ideally, the authorities who are mandated to support the LUP process, e.g. TANAPA, TAWA, District Council, should commit to the compensation process. In the case of the Kilombero Elephant Corridor, no funds were committed by Government for compensation, and the NGO actors have had to drive the fundraising. Given the small number of donors globally that fund land

acquisition, and the significant number of corridors that require restoration in Tanzania, this will not be a sustainable approach for the future. We propose that Government and donors coordinate their efforts to address this challenge, and that in the future, such discussions take place during the conception of corridor projects.

Another lesson learnt is that broad support for wildlife corridors is critical to securing support for infrastructure. If the wildlife corridor being restored requires major infrastructure such as road or rail underpasses or overpasses, this presents additional challenges because (a) it will be one of the most expensive aspects of the project, requiring significant extra fundraising; and (b) political support is required from numerous Ministries and Agencies. These two challenges are inter-related in the sense that established wide support for the Corridor helps to overcome the concerns of both donors, and the Government bodies and officials from whom permission for construction is necessary. In the case of the Kilombero Elephant Underpass, we convinced the lead donors of the rehabilitation of the Kidatu-Ifakara highway, the European Union, to agree to modification of the project budget to pay for the Underpass. Key to convincing them was the support of the Morogoro Regional Administration and the Ministry of Natural Resources and Tourism. Additionally, the modification required the permission of the Ministry of Finance and TANROADS, who assigned an assessment team. Again, the support of the MNRT (Director of Wildlife and Director-General of TANAPA) was key to convincing this team to approve the construction of the Underpass. It took several meetings with all of the above over 1.5 years to finally obtain all the authorization required. Another lesson learnt by the corridor restoration team is that engaging the private sector is hard but worth pursuing. In order to engage all stakeholders in the project for the purpose of integrated landscape management, major private companies in the landscape should be included, and invited to contribute to the project, even though this can be challenging. In the Kilombero Valley, the largest company and employer is the Kilombero Sugar Company Limited, with whom we held several meetings to engage and elicit collaboration. The idea of in-kind support by the company for construction was explored. It took several months to move forward, mostly due to the difficulty of meeting the appropriate managers in the company, who all have busy schedules. This could be expected with companies for whom conservation or development are not their primary goal or business. Another factor was the company requiring a very precise timeframe and other details of the activities and work to which they are committing, before signing an agreement. This presented a challenge since those details could not be specified until closer to the construction phase of the project; however, this problem was overcome by reaching agreement in principle, explaining why the precise details are not available, and then keeping the company updated regularly on project progress. Reassurance was also enhanced by inviting KSCL staff to one or more of the project's stakeholders meetings, including with community partners. The process of engaging a company that operates a core business which does not depend directly on biodiversity conservation can be a very time-consuming process, and from the NGO perspective, there is a trade-off judgement between capacity to push for the agreement, and the value of the eventual support. However, engagement may have significant impacts if the company is a key player in the landscape.

Overall, a lesson that is specific to Tanzania is the need for the communities to perceive from the outset that efforts to engage communities and win their support for corridor restoration are led by the Government, with NGO/civil society's role (if any) being to facilitate this engagement and the ultimate implementation of the project. In other words, strong support and leadership from Government can be key to success. As is necessary in Tanzania, STEP did, from the outset, sensitize and earn the support of Government at all levels, and include Government representation in all community-level consultations from the start. However, because extensive community consultations over a 2-year period were pushed by STEP which sometimes involved only low-level Government officials (mostly due to availability but also cost of higher-level officials' per diems), minority local opposition to the corridor capitalised on this to push false (and ultimately unsuccessful) narratives about the project and its potential outcomes (see 3.3, 0.5 above). This might have been better mitigated if stronger, more regular local presence and more visible support from higher-government officials had happened leading to stronger community perception that the project was 'Government-led' (as is now the case).

6.1 Monitoring and evaluation

There were several major changes to the logframe during the project period, most notably that the corridor was not able to be formally gazetted during the project lifetime. Several indicators also changed due to the impacts of COVID 19. The M&E System was broadly useful in providing direction and feedback to partners and stakeholders. However, too many assumptions were made without developing sub-assumptions that could provide more of an interim progress update, enabling the project to pivot more easily. Corridor establishment and several of the revenue-focused indicators for beehive fences and coexistence tourism were not fully built out. The Framework did guide the creation of an operationally-focused Human Elephant Coexistence Dashboard (Appendix 27) which allows us to track interim indicators and provide updates to partners. The Programs Manager and the Kilombero HEC Coordinator meet several times a week to discuss key activities, progress against key performance indicators and strategic planning for the

landscape. The HEC Coordinator regularly travels to Kilombero for site-level follow up and is in constant contact with the HEC Team on the ground. The HEC Coordinator is then able to ask follow up questions and/or provide directive feedback and follow up. Data from farmers' groups is entered each week on the dashboard with VSLA data available instantly for those groups who have transitioned to CHOMOKA (a mobile app for VLSA record-keeping). This has brought some key performance issues to our attention. As noted elsewhere in the report, we were conflating beehive occupancy with an automatic uptick in honey production which is not the case. Our rapid, real time analysis allowed us to see that we needed to focus beekeeping interventions on translating occupancy into harvest rather than increasing occupancy only. Our qualitative data collection on the use of loans in VSLAs allowed us to learn more about how farmers are able to make better choices for their families now that they have safe and reliable access to credit. Before, we thought that the only 'impact' from VLSAs was revenue earned from share outs, something that doesn't always happen, precisely because members are choosing to optimize their experience when and where they need it most. During the project period we have also shifted to mobile data collection with the Local Elephant Monitor Team. This saves time on data entry and allows easier integration of spatial data with crop damage data. This data has recently been shared with the leadership of both Udzungwa Mountains and Nyerere National Parks as part of a landscape-wide rapid response framework to better respond to HEC incidents in the valley. We look forward to continuing to analyze survey data to derive further insight about the factors that influence tolerance (Appendix 19). We hope to collaborate with external research partners to make the analysis as rigorous and unbiased as possible. We plan to integrate all findings into our programming and expect to revise our educational and outreach content extensively based on these findings.

6.2 Actions taken in response to annual report reviews

Recommendation 1: Review output indicator 2.1 and 2.6. Response: These indicators were revised through a change request.

Recommendation 2: Review outcome indicator 0.1 (0.1: 50% reduction in the number of elephant visits to farms per year protected by beehive fencing by project end relative to pre-project baseline of 34 days with crop losses in 2018-2019). Response: This indicator was revised to a 25% reduction in the number of elephant visits through a change request.

Recommendation 3: Review outcome indicator 2.1 as per AR2 suggestion. Outcome indicator 2.1 states 'There will be a continued market for elephant friendly honey (and that this market was accurately assessed at project inception.' Response: There was no outcome indicator 2.1, we assume the reviewer makes reference to an assumption we were monitoring. We did not revise this assumption, though we explain in the report that in retrospect, it should have been phrased differently at project outset.

Recommendation 4: Review outcome indicator 2.3 as per AR2 suggestion. Outcome indicator 2.3 states 'Tourist operators continue to show interest in coexistence projects as a tourist attraction and that international tourism recovers from the impact of Covid-19.' Response: There was no outcome indicator 2.3, we assume the reviewer makes reference to an assumption we were monitoring. We did not revise this assumption, though we explain in the report that in retrospect, it should have been phrased differently at project outset.

Recommendation 5: Develop a standalone exit strategy outlining specific actions to be undertaken in each quarter for Y3 in order to track and sustain project outputs, outcomes and impacts. Response: Many of the project activities, including M&E, are part of STEP's ongoing programmatic work in the Kilombero Valley and will continue beyond project end. STEP has considered its short-term and long-term role in these activities, including possibilities for handover, but in brief, STEPs engagement will continue beyond the lifetime of the Darwin Initiative-funded project.

Recommendation 6: Ensure that all publicity materials produced by the project acknowledge Darwin Initiative support. Response: Darwin support was acknowledged in the 2021 Annual Report and will be acknowledged in future iterations of HEC materials produced for use in the Kilombero Valley.

7 Darwin identity

The Darwin Initiative, DEFRA and UKAid logos were included in STEP's Annual Reports in 2019-2021 (Appendices 39.1-39.2) and continue to be featured on the STEP website and a brief about the Kilombero Elephant Corridor shared with partners (Appendix 40). Darwin Initiative funding was also recognised in quarterly reports to Kilombero District and other partners as funding towards a larger human-elephant coexistence programme. The Kilombero District and Morogoro Regional Governments are aware of the Darwin Initiative project and funding. STEP hosted a visit by the last British High Commissioner for Tanzania in 2020 and shared a presentation on the work being done under the Darwin Initiative project. In 2021, STEP's CEO also met the new British High Commissioner on his first visit to Iringa and updated him on our activities. STEP has social media accounts on Facebook (16,474 followers), Instagram (1,370 followers) and Twitter (1,628 followers). We tagged the Darwin Initiative in seven social media posts on

Facebook and ten posts on Instagram. STEP was featured in the September 2020 and June 2021 Darwin Newsletter (Appendices 21.1-21.2).

8 Impact of COVID-19 on project delivery

The article we submitted to the September 2020 Darwin Newsletter (Appendix 21.1) explains our COVID-19 response quite fully. As outlined elsewhere in the report, the inconsistency of the GoT's response made it difficult to adhere to a consistent plan. The impacts of COVID-19 have been outlined throughout the report and range between delayed exams in the school calendar impacting our ability to conduct educational activities to wiping out our efforts at building coexistence tourism. In the summer of 2022, tourism appears to be on a path to recovery in Tanzania after a significant drop in 2020 and 2021, but this uptick in tourism occured beyond the lifetime of the project. The impact of the pandemic impacted our coexistence tourism work directly, our honey sales prospects and our ability to work with international researchers and volunteers. Our Baseline Survey work was significantly impacted. For a period during the pandemic, village meetings were banned, resulting in delays to the corridor aspect of this project. We worked to ensure the health of our staff by regularly checking in with our Kilombero-based team to understand the situation on the ground as best we could in terms of managing risk with our beneficiaries and our staff. A longer-term change in practice is that we have more remote meetings, reduced travel, more remote work for our team to accommodate their personal needs, and continue to prioritize hygiene. All of our in-person engagement in project activities with beneficiaries has now resumed.

9 Finance and administration

9.1 Project expenditure

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[redacted]	[redacted]	0%	
Consultancy costs	0	0	0%	
Overhead Costs	[redacted]	[redacted]	0%	
Travel and subsistence	[redacted]	[redacted]	1%	
Operating Costs	[redacted]	[redacted]	5%	
Capital items (see below)	0	0	0%	
Others (see below)	[redacted]	[redacted]	3%	
TOTAL				

Staff employed (Name and position)	Cost (£)
Trevor Jones, Project Leader	[redacted]
Athumani Mndeme, Community Officer	[redacted]
Kim Lim, Human-Elephant Coexistence Coordinator	[redacted]
Emma Impink, Programs Manager & M&E	[redacted]
Paulo Mdneme, Human-Elephant Coexistence Officer	[redacted]
Joseph Kidibule, Human-Elephant Coexistence Officer	[redacted]
Geofrey Lubengo, Finance and Administration	[redacted]

Joseph Mwalugelo, Corridor Project Coordinator	[redacted]
TOTAL	[redacted]

Capital items – description	Capital items – cost (£)
Not applicable	
TOTAL	0

Other items – description	Other items – cost (£)
Crop-raiding monitors and M&E	[redacted]
Partner M&E expenses	[redacted]
TOTAL	[redacted]

9.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
USAID PROTECT	[redacted]
Polish Aid	[redacted]
Pro Wildlife	[redacted]
World Land Trust (for corridor compensation funds)	[redacted]
TOTAL	[redacted]

Source of funding for additional work after project lifetime	Total (£)
USAID Tuhifadhi Maliasili	[redacted]
AVJ Foundation (for corridor compensation funds)	[redacted]
Polish Aid	[redacted]
Pro Wildlife	[redacted]
TOTAL	[redacted]

9.3 Value for Money

The project was a good value for money as it cost-effectively built capacity among a range of stakeholders. All project staff are based in Tanzania. Our salaries for project personnel were commensurate with going rates according to experience and qualifications in Tanzania, as reflected in staff retention over the project period. This has allowed us to build capacity and maintain effective relationships with partners. We remain committed to providing value for money to donors. As such, our overheads in the 2019-2021 financial years were 8% or less of annual operating costs. In terms of our programmatic work, our field stipends are sufficient for safe, clean and simple accommodation and meals at rates reflecting actual costs in the project

area. Our HEC Team uses key performance indicators to evaluate projects and team performance, allowing our HEC Coordinator to provide targeted feedback and support by phone as much as possible. When field trips are taken, they often combine 3-4 tasks/goals/projects and frequently involve more than one Team (Research and HEC) to optimize costs. When purchasing supplies for the project, we prioritised suppliers within the project area if they met quality criteria, to invest in the local economy. While vehicles are used for transporting staff to and from project sites for safety reasons, motorcycles are used for transport within the project area. For meetings involving government officials, government per diem rates were adhered to. STEP was able to raise significant matched funds for the largest cost of this project, namely compensation of smallholder farmers in the corridor area, thereby adding significant additional value to the project.

10 OPTIONAL: Outstanding achievements of your project during the (300-400 words maximum). This section may be used for publicity purposes

Under a Darwin Initiative-funded project, STEP enabled smallholder farmers affected by elephant crop damage in the Kilombero Valley to form Village Savings and Loan Groups (VLSAs). Through this project, 92 farmers (51%) have gained access to loans via VSLAs, enabling farmers to invest in their future and diversity their livelihoods. Here is one account about how VSLAs have played a role in the life of Ms. Aziza Sauka from Kanyenja village: "If I wanted a loan, I would have to ask someone for 50,000 TZS ($21.50) and repay them with a 50kg bag of rice that I harvested. In the high season, that person could sell my bag of rice for 100,000-120,000 TZS ($45-51), making a 50-60% profit. If I needed 100,000 TZS, I would have to give two bags of rice. You do the math! And I would have to pay back this loan within one month; if you're late, there is a fine. STEP's VSLA has been very helpful, not only have I been able to access loans easily, but the interest rate is also low. I also have more time to repay. In Kanyenja, we depend only on agriculture which is seasonal. The VSLA gives us a much better solution. I am very thankful to STEP for bringing this idea. In the beginning, I was worried if I would be a success but I am glad that I have joined."

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