Illegal Wildlife Trade (IWT) Challenge Fund
Annual Report

To be completed with reference to the "Project Reporting Information Note": (https://iwt.challengefund.org.uk/resources/information-notes/).

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

Submission Deadline: 30th April 2024

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IWT Challenge Fund Project Information

Project reference	IWT 111
Project title	Reducing IWT through Strengthening Livelihoods and Law Enforcement: Ruaha-Rungwa, Tanzania
Country/ies	Tanzania
Lead Partner	Southern Tanzania Elephant Program
Project partner(s)	Rungwa- Kizigo-Muhesi Game Reserves, MBOMIPA WMA
IWTCF grant value	386,000
Start/end dates of project	1st July 2022 - 31st March 2025
Reporting period (e.g. April 2022-Mar 2023) and number (e.g. Annual Report 1, 2, 3)	Annual Report 2 April 2023-March 2024
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1. Project summary

The Ruaha-Rungwa ecosystem (see annex C1 for project map) in south-central Tanzania is affected by illegal wildlife trade, especially a recent increase in bushmeat poaching and human-wildlife conflict. This project aims to reduce demand for and occurrence of IWT and reduce poverty by diversifying and developing sustainable livelihoods and strengthening household financial resilience, expanding educational outreach, reducing the costs of living with wildlife and strengthening law enforcement capacity through both tested and novel approaches in two critical zones of the ecosystem (MBOMIPA WMA and Rungwa-Kizigo-Muhesi Game Reserves and adjacent communities. The project aims to reduce IWT for a range of species affected by bushmeat poaching, to continue to guard against a possible resurgence in elephant poaching for ivory, as well as to reduce human-wildlife conflict related to elephants. In 2020-2021, 45% of arrests in MBOMIPA WMA were bushmeat-related. RKM GR data show that bushmeat poaching comprised the second highest number of arrests (Hariohay et al. 2019). Elephants declined by >50% in Ruaha-Rungwa in 2009-2015, and elephant population numbers were stable between 2015 and 2021. Following gains in reducing elephant poaching, a recent increase in poaching incidents and ivory seizures suggests the risk of a resurgence in ivory poaching remains. Studies from the project area have suggested that access to credit and supporting alternative income-

generating activities could be an effective way to reduce bushmeat poaching: 96% of poachers surveyed by Knapp et al. (2017) stated they would discontinue poaching if they received enough income to meet their needs. Human-wildlife conflict erodes household financial resilience, contributes to negative perceptions of protected areas, and reduces incentives for wildlife stewardship. We will reduce reliance on IWT for supplementing household income by facilitating access to safe credit, diversifying livelihoods, and reducing HWC that affects household income sources and household resilience. Research suggests that bushmeat poaching is opportunistic, occurring in conditions of low perceived risk (Ceppi & Nielsen, 2014). The project seeks to increase the opportunity cost for engaging in IWT (by increasing the risk of detection, arrest, and prosecution) by strengthening the law enforcement capacity for Rungwa-Kizigo-Muhesi Game Reserves and MBOMIPA WMA through trials of Instant Detect 2.0 as an early warning system, ground and aerial patrols, and strengthening of post-arrest judicial procedures. See C2 for references cited in this report.

2. Project stakeholders/partners

As planned, our partner Rungwa, Kizigo, Muhesi Game Reserves (RKM GR, managed by Tanzania Wildlife Management Authority), are deploying rangers to conduct HWC response in villages surrounding the Reserves, and are reporting on the outcome of HWC response missions. To date, 31 RKM GR rangers have received training in an elephant deterrent toolkit and 27 rangers have received training in elephant behaviour and safety around elephants. RKM GR continue to see the importance of community livelihood diversification for reducing IWT but have limited resources for implementation. RKM GR helped guide selection of sub-villages for implementation of livelihood activities and VSLAs, based on their knowledge of poaching hotspots, and participated in village meetings introducing the project, while STEP is leading the implementation of these activities.The RKM GR Community Outreach Officer participated in community outreach events as planned, as well as in distribution of hives and formation of VSLAs. RKM GR and STEP also conducted joint planning of aerial surveillance missions, provided aerial observers and deployed ranger teams to respond to illegal activities observed. Project planning and progress review meetings are held every two months with RKM GR. Our second project partner is MBOMIPA Wildlife Management Area (WMA). We held regular project progress review and planning meetings with MBOMIPA leadership and the District Game Officer. Under our MOU with MBOMIPA WMA, we manage protection activities in the WMA, and as planned, MBOMIPA mandates the management of all Village Game Scouts (VGS) to STEP to conduct ground patrols, collect patrol data, and submit patrol reports for project monitoring. We strategically plan patrols and monitor patrol outcomes in collaboration with the WMA management. Additionally, we conduct quarterly meetings with the protection committee and management to promote accountability, transparency, and collaboration among committee members in ensuring effective engagement and WMA management. MBOMIPA WMA are also committed to continue providing VGS to conduct HWC responses in villages surrounding the WMA and to collect data on the outcome of HWC response missions. Furthermore, under a BIOPAMA-funded grant, we have partnered with MBOMIPA WMA and Honeyguide Foundation to strengthen the governance and economic viability of MBOMIPA WMA. To date, this has included governance training for the MBOMIPA WMA leadership and an exchange and learning visit to successful WMAs in Northern Tanzania, and recruitment of a Manager and Accountant for the WMA. We are still in the process of developing a business plan and communications plan for the WMA. We used data and reports provided by RKM GR and MBOMIPA WMA to lead the writing of this progress report. We continued to collaborate closely with Lion Landscapes, an NGO focused on human-carnivore conflict mitigation, on large-scale outreach events and football tournaments around MBOMIPA WMA in Year 1 and Year 2, and we consulted closely with Lion Landscapes on optimal areas for the livelihood activities under the project. We are also collaborating with Pathfinder Foundation, whose focus is on expanding and improving community healthcare services, and jointly provide technical support to 7 VSLAs around MBOMIPA WMA.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1. 500 community members gain access to safe credit and have more diversified livelihoods to offset illegal wildlife use (bushmeat poaching).

1.1 Conducting orientation and sensitization meetings with partners and at village and sub-village level for the establishment of VSLAs, beekeeping and poultry health interventions. Completed: STEP conducted orientation and sensitization meetings in villages adjacent to Rungwa, Kizigo and Muhesi Game Reserves in Year 1 and around MBOMIPA WMA in Year 2.

1.2 Establish and train 20 Village Savings and Loan Associations (25 members per VSLA) with 500 members in 10 villages. VSLAs are community-based associations that provide access to loans and facilitate saving. Members contribute to shares on a weekly basis (Annex A1) which form the capital for loans. Loans, usually spanning three months, are granted with interest. The group collectively determines share value and interest rates at the onset of each annual VSLA cycle. At the end of each cycle, a share-out session redistributes shares and interest to members. In Year 2, we formed 21 new Village Savings and Loans Associations (VSLAs) with 338 members (44% women and 42% youth) in the Ruaha-Rungwa landscape (A2). We also continued technical support to 24 existing VSLAs (594 members, 42% women and 40% youth, of which 18 were formed in Year 1), including training, coaching and monitoring throughout the year. The 45 VSLA combined reach 932 farmers (43% women and 40% youth). In Year 2, these groups raised over TZS 162,000,000 in capital, issued 1,123 loans worth over TZS 200,000,000 and generated more than TZS 21,000,000 in profit through interest paid on loans and fines (A2). VSLA members who took out loans used these loans to start new small business enterprises, support existing enterprises, support (and in some cases improve) agricultural operations, pay for medications and other medical expenses, pay for school supplies and fees, and purchase food, livestock or land. In Year 2, our team of local elephant monitors continued to visit each group once per week, working with groups on record keeping, loan issuing and repayment planning (A3). Four VSLA groups are actively using CHOMOKA, a mobile application developed by Care International that helps group members to manage records, enforce on time repayments, fine, compliance, interest and issuing procedures (A4). Uptake of the CHOMOKA app has been challenging for other groups due to limited mobile network in their areas. 17 of the newly formed VSLA groups have been registered at their respective Districts (for the remainder, the registration remains in process) and qualify for loans from the District and other organisations interested in community (A5). Some VSLAs are running group projects of their own initiative that they hope will increase their profits that they will distribute to group members at the next share-out meeting. For example, Jipemoyo group from Rungwa village are collectively farming rice (1 ha) which they expect to harvest at the end of June and to sell when prices are high.

1.3 Establish a poultry health intervention trial with 100 participants in 5 villages. In Year 2, we completed a year-long Newcastle disease vaccination trial with households in Rungwa and Doroto villages (86% of whom had not previously vaccinated their chickens), which we begun in Year 1. The aim of this trial was to collect and provide farmers with data to demonstrate the benefit of vaccination and advise them to invest in it after a year (e.g., via a loan from a VSLA) of subsidised support for the vaccine. Results from this trial (A6) indicate a marked reduction in chicken mortality from disease (see text under Output 1) and all participating households said that there were benefits to vaccination. 78% of households said that they would be able and willing to pay for vaccination after trial end, however, a key challenge mentioned was the lack of a robust local supply chain for the vaccine. In Year 2, we expanded the poultry vaccine distribution trial to 93 households (55% women) in four villages around MBOMIPA WMA. Of the households around MBOMIPA WMA, 49% had not previously vaccinated their chickens. A total of 1,756 chickens were vaccinated during the first round. The Animal Specialist (Elia Msuya) from Animal Trust (a small company offering animal care services and consultation based in Arusha) trained 104 people (41% women) in 4 villages around MBOMIPA WMA on poultry and vaccine management (A7). Specifically, he trained them on vaccine transport, quality and assurance checks, chicken health assessment (pre- and post-vaccine), common disease signs and symptoms, and vaccine administration.

1.4 Provide 200 beehives and beekeeping training to 100 beekeepers in 5 villages.

In Year 2, we continued to support four existing beekeeping groups (109 members, 46% women, 37% youth), 46 individual farmers (4% women), and 18 existing VSLAs (at least 10 beehives delivered to each, reaching a total of 426 members, 38% women and 69% youth), ten groups around MBOMIPA WMA (106 members, 37% women, 63% youth; five formed in Year 2), two

village natural resources committees (24 members, 25% women), Itigi District (30 beehives given to a newly-established learning site). Our village-based local elephant monitor (LEM) team (14 members) supports beekeepers and farmers with close follow-up, mentoring, and monitoring of hive condition, hive occupancy and honey harvests. To date, we have distributed 460 hives (200 hives around MBOMIPA and 260 hives across Muhesi, Kizigo and Rungwa Game Reserves) (A8) and trained 10 groups (106 members, 37% women) around MBOMIPA WMA and 8 groups (210 members, 41% women) around Kizigo GR respectively on beekeeping (A9). Average hive occupancy was 64% across all groups in March 2024 and 15 groups have harvested at least once (A8). As the optimal beekeeping season in the landscape is February-July (due to availability of flowers and water), we will focus our support on groups with low numbers of occupied hives to increase the hive occupancy during this period (Year 3). The optimal honey harvesting season is May to July, and in these months in Year 3 we will be support groups with harvest planning and provide additional in-situ training in honey harvesting. STEP has an in-house beekeeping expert who will provide this training and mentoring support to groups.

1.5 Ongoing-capacity-building and monitoring of livelihood interventions by community-based teams. We continued to work closely with our 14 existing local elephant monitors (LEMs, 14% women) based in Rungwa,Kizigo and Muhesi villages (A10). All LEMs are from and based in the communities where we work. In Year 2, we provided refresher training to all LEMs in VSLA management (including their formation, how to keep records, loan procedure, supervision of compliance, conflict management and how to share weekly reports using Kobo Collect). We also trained LEMs on use of GPS units, monitoring of human-elephant interactions and elephant damage, delivering one-on-one education to farmers and household-level film shows and discussions (using a tablet) (A11). All of this work is to ensure that our community-based team can effectively manage livelihood interventions, understand human-elephant interactions, and improve human safety around elephants.

Output 2. Human-wildlife conflict is reduced through improved rapid HWC response by RKM GR and MBOMIPA WMA and increased knowledge among community members.

2.1 Provide vehicle for increasing human-wildlife conflict response capacity to RKM GR, together with training on effective use of vehicles for HWC response. In Year 1, STEP purchased and handed over a vehicle to Muhesi Game Reserve (with matched funding from the USFWS African Elephant Conservation Fund). We also shared training principles on how to use the vehicle during HWC response with the Muhesi Commanding Officer in Year 1 and these principles were reviewed during training with 31 rangers (see Activity 2.3). The principles included priority of vehicle use, linking vehicle use with use of the elephant deterrent toolkits, and safety while deterring elephants away from farms or settlements. In Year 2, the vehicle was used by Muhesi Game Reserve to respond to 69 human-wildlife conflict incidents in villages adjacent to the Reserve (A12).

2.2 Enable HWC response by MBOMIPA VGS and RKM GR Rangers through fuel provision. In Year 2, 10,612 litres of fuel were provided to Rungwa-Kizigo-Muhesi Game Reserves for human-wildlife conflict response and community outreach (including via matched funding). In Year 2, Rungwa Game Reserve responded to 71 HWC incidents in hotspot villages including Kambikatoto, Mwamagembe, Rungwa, Kintanula, Kapumpa, Majojoro, Kitunda, Sipa and Mwitikio (B1a-b). Kizigo Game Reserve responded to 220 HWC incidents in Nyabu, Chinguruka, Ilangali, Manda, Simbanguru, Chipogoro, Chilambo, Sasilo and Nkonko villages (B3a). Muhesi Game Reserve responded to 119 HWC incidents in Doroto, Kitaraka, Muhesi, Damwelu, Zinginali, Chisingisa, and Aghondi villages (B2a-b). In Year 2, MBOMIPA VGS responded to 56 HWC incidents in 14 sub-villages across 5 villages with fuel supported by the project (B17).

2.3 Train 32 RKM Rangers and 16 MBOMIPA VGS in safety around elephants and more effective elephant deterrent techniques. In Year 1, STEP facilitated training for 31 RKM GR rangers (13% women) on effective elephant deterrent methods. In Year 2, we organized safety around elephants training with the Kichaka Environment Expedition Program (KEEP) for 27 rangers from RKM GR (11% women) and 9 VGS (11% women) from MBOMIPA WMA and surrounding villages (9 from Muhesi Game Reserve, 6 from Kizigo, 9 from Rungwa, 3 from TAWA Central Zone, 4 MBOMIPA VGS, 2 rangers from Iringa KDU and 3 VGS from Pawaga). Also in Year 2, 12 MBOMIPA VGS (33% women) received training on the HEC elephant deterrent toolkit (a Honeyguide Foundation design) which the community and VGS around Randilen, Mburunge

and Makame WMA in northern Tanzania have used since 2017 (B15). The toolkit includes sequential use of LED torches, air-horns, chilli crackers and roman candles, with each subsequent step representing an escalation to be deployed only if the previous step did not deter the elephant(s). Toolkit supplies were handed over to ranger teams at RKM GR in Year 1 and to MBOMIPA WMA in Year 2. Via matched funding, we facilitated elephant rescue training for 48 RKM rangers (19% women) in Year 2 to enable rangers to respond effectively when elephants are trapped in village wells. In 2023, Muhesi Game Reserve made 9 successful elephant rescues (B18).

2.4 Local Elephant Monitors conduct one-on-one training for 3000 community members at home and at farms on elephant behaviour and safety around elephants. Our team of 14 LEMs were equipped to deliver one-on-one farmer training in Year 1. LEMs provide this training when they visit farmers at their home or farms and they engage in discussion while they collect data on elephant movement and crop damage within village land (A13). The LEMs use the KoboCollect mobile application to collect data on one-to-one training and household-level film shows, including what topics were covered during the training and feedback from the training recipient (A14a-b and A15a-b). In Year 2, the LEMs reached 2,510 farmers through one-to-one training (A16). Covering topics such as elephant behaviour, benefits of elephants, wildlife corridors, farming away from corridors, and mitigation methods. In Year 2, the LEMs reached 1,137 farmers (30% women) via household-level film shows (A17), using a film specially developed for this landscape by STEP (with match funding). This film features the farmers and LEMs we work with, provides context for human-elephant interactions, advises on mitigation measures and safety around elephants, and shares information on direct benefits provided by RKM GR to adjacent communities.

2.5 Conduct wide-scale education and outreach programs (Tembo Cup Football Tournament). As planned, we conducted two Tembo Cup football tournaments in Year 2 in the villages around Muhesi Game Reserve, Kizigo Game Reserve and one football tournament (the MBOMIPA Cup) around MBOMIPA WMA (jointly with Lion Landscapes) (A18). At these tournaments, we reached an estimated 49,517 community members, including ~25,000 football spectators (reached through small group discussions before, during and after matches), ~14,408 students in 41 schools and ~10,109 attendees during film screenings held after the matches. We also distributed more than 3,000 fliers (A19) sets of posters as learning aids (A20) and copies of our human-elephant coexistence booklet, “Tembo na Watu” (“Elephants and People”) (A21). We use small group discussions to expand community understanding of human-elephant interaction (causes, impacts and its management) and to offer a forum for questions and discussion. We plan to conduct follow up on key concepts of safety around elephants to assess knowledge retention over time. Training in schools aims to build love and empathy for animals and to prepare pupils as future decision makers. Film screenings aim to strengthen what was discussed in schools and in small group discussions, as well as offering a safe and fun environment to observe elephants, carnivores and to learn more about their behaviour.

Output 3. Novel Instant Detect conservation technology is field-tested and its efficacy, viability and potential for scaling as an early warning system is assessed.

Our plan under Output 3 was to field test Instant Detect 2.0 (ID 2.0) technology as an early warning system with our project partner MBOMIPA Wildlife Management Area (WMA). When we applied to the IWT Challenge Fund in 2021, Zoological Society London (the manufacturers of the system) assured us that the system would be available for testing from Year 1 of the project. However, delays in hardware certification and testing (partly due to the COVID-19 pandemic) resulted in the system not being available in Year 1. The manufacturers subsequently informed us that the delivery of the system would also not be possible in Year 2 of the project. To manage this project delivery risk, we then researched and contacted suppliers for other similar technology. The most promising alternative we identified and hoped to begin field-testing in Year 2 was TrailGuard, which also uses a satellite link to send alerts and images from sensors deployed in the field. However, the manufacturers of TrailGuard did not respond to multiple emails that we sent to inquire about procuring their system. Another option we explored (Cuddelink) was not compatible with the Tanzanian cellular network, and so would not have functioned as an early warning system. We were thus unable to find a suitable alternative earl warning system for field testing. This has affected all activities planned under Output 3. We have submitted a change

request to BCF requesting a change in the focus of Output 3, from testing early warning technology to upgrading radio communications infrastructure and rolling our EarthRanger protected area management software and technology for MBOMIPA WMA - which we can implement and report on in Year 3 of the project.

3.1 Train 6 MBOMIPA VGS (2 women) in Instant Detect deployment, operation, monitoring and response. For the reasons outlined above, this was not done. We submitted a change request for an alternative training activity.

3.2 Deploy and monitor Instant Detect 2.0 system and set up Control Room for Phase 1 of field trial (operationalization). For the reasons outlined above, we could not conduct Phase 1 of the trial. We have prepared a Control Room with satellite internet for monitoring MBOMIPA WMA VGS in real-time using the EarthRanger system. The Control Room will also be used for radio communications to enhance VGS coordination. We have submitted a change request with a proposed alternative activity utilising this Control Room for Year 3.

3.3 Deploy and monitor Instant Detect 2.0 system for Phase 2 of field trial (efficacy, viability, VGS mobilisation). For the reasons outlined above, we could not conduct Phase 2 of the Instant Detect 2.0 system trial. We have submitted a change request with a proposed alternative activity for Year 3.

3.4 Produce Instant Detect 2.0 efficacy and viability assessment report and, if trial successful, Standard Operating Procedures for MBOMIPA WMA. Although this activity was planned for Year 3**,** it is affected by the Instant Detect 2.0 system not being available for trialling. We have submitted a change request with a proposed alternative activity for Year 3.

Output 4. Capacity for aerial surveillance and strategic ground patrol is strengthened and the professionalism of RKM GR rangers and MBOMIPA VGS is enhanced

4.1 Train 5 RKM GR rangers and 2 MBOMIPA VGS (2 women) to become aerial observers

In Year 2, we trained 8 MBOMIPA WMA VGS (3 women) to become aerial observers (B6a-b). This brings the total number of trained observers to 11, with two previously trained rangers in RKM GR and one in Lunda-Nwambi Game Controlled Area. Led by STEP's Protection team and pilots, the training focused on accurate observation; data collection using a paper form, handheld GPS unit and camera; species and carcass identification; and communication protocols. 50% of the trained observers have since participated in aerial missions. Due to access issues for ground teams to airstrips in RKM GR during the wet season, we decided to fly aerial missions in the Game Reserves during this period based out of airstrips in Lunda (in MBOMIPA WMA) and Msembe (in Ruaha National Park) with assistance from aerial observers from MBOMIPA WMA and Ruaha National Park. We will resume flights out of RKM GR in the 2024 dry season (August-November), and conduct training for 5 RKM GR rangers then.

4.2 Conduct 60 hours of aerial surveillance per year in coordination with rapid response ranger and VGS ground teams

In Year 2, we completed 209.8 flight hours (B16), exceeding our annual target of 60 hours. Flights were conducted in coordination with ground response teams and observers from MBOMIPA WMA, RKM GRs, and Lunda-Nkwambi GCA. In RKM GR, the pilot and observer identified 31 active timber cutting sites, 16 poachers' camps, 63 poachers' trails, seven mining sites and one elephant carcass. In MBOMIPA WMA & Lunda-Nkwambi GCA area, the pilot and observer recorded 15 active timber cutting sites, seven poachers' camps, 12 poachers' trails, four charcoal kilns, and 17 elephant carcasses (one fresh and the remainder old). Subsequent ground responses resulted in the arrest of three poachers found with five bags of charcoal in MBOMIPA WMA and arrest of two individuals engaged in illegal logging, with 12 pieces of timber seized in RKM GR (B4-5).

4.3 Enable 23 days of strategic patrols by 4 Village Game Scout teams every month in MBOMIPA WMA. This activity was implemented as planned. In Year 2, the Village Game Scouts (VGS) of MBOMIPA WMA conducted 1,713 effective person-patrol days of foot patrols covering a distance of 11,199.8 km, and 132 days of vehicle patrols, covering a distance of 3,117.1 km (see also B7 and B10). VGS apprehended a total of 41 suspects (37% for bushmeat) in Year 2. VGS also recovered 4 tusks from two elephants killed due to conflict on village land adjacent to

the WMA, thereby preventing these tusks from entering the illegal ivory trade (no elephants were poached for ivory in Year 2).

4.4 Train 8 MBOMIPA VGS (3 women) in basic tactical anti-poaching skills with PAMS Foundation. This activity was implemented as planned, with 8 MBOMIPA VGS (3 women) receiving one month of advanced training from PAMS Foundation at the Likuyu-Sekamaganga training facility. The training enabled participants to learn key skills through both practical sessions and classroom instruction. Training included physical fitness exercises, GPS usage, understanding laws and regulations concerning wildlife and natural resources in Tanzania, managing human-wildlife conflicts, mastering patrol techniques with a focus on ambush strategies, first aid training, protocols for conducting effective searches, differentiating poaching methods across various regions of the country, and effective radio communication. Seven of the eight VGS (two women) successfully passed the course (B14).

4.5 Generate ground and aerial patrol maps and trend analysis reports for protected area managers. We generated maps and ground patrol reports as planned (48 maps and 12 reports between April 2023 and March 2024) for MBOMIPA WMA managers. From aerial patrols conducted in Year 2, we generated 2 reports and 4 maps that highlighted key wildlife sightings and illegal activities detected during the aerial patrols, which were then shared with the respective protected area management. (B4-B5, B8)

4.6 Conduct refresher training for 39 VGS and 14 RKM GR rangers in human rights, just arrest and post-arrest procedures. Partially completed in Year 2. Refresher training is part of the contract renewal process for MBOMIPA WMA VGS. All 36 VGS reviewed and signed a code of conduct that includes detailed expectations on respect for human rights and just arrest and post-arrest procedures. MBOMIPA WMA plans to recruit additional VGS in Year 3, and we will facilitate this training for all newly recruited VGS. Training for 14 RKM rangers remains to be done, and is planned for Q2 of Year 3, with content and a trainer that we have used for such training with rangers in the past (e.g., with Tanzania Forestry Agency Services). The objective is to ensure that rangers and VGS can communicate respectfully with individuals, make lawful arrests, and detain individuals while respecting their rights in the course of performing their duties, with the goal of maintaining public trust and support for the essential work of rangers in protecting natural resources and wildlife.

4.7 Support MBOMIPA WMA VGS to provide witness testimony in court cases. In Year 2, the Iringa Magistrate Court opened one case related to bushmeat and unlawful possession of a firearm and bullets in MBOMIPA WMA, and the project supported MBOMIPA VGS to testify in five court hearings in April 2023, June 2023, August 2023, September 2023 and March 2024 (B9). These hearings were related to the following four cases from MBOMIPA WMA: 1) a suspect charged with unlawful use of poison and possession of a firearm, a suspect charged with unlawful possession of warthog meat valued at $953, impala meat valued at $413, guineafowl valued at $159, and eighteen doves valued at $3706; 2) suspects charged with unlawful possession of firearms and bullets without a licence or permit; 3) suspects charged with unlawful possession of impala meat valued at $390, and 4) suspects charged with unlawful possession of firearm and zebra meat valued at $1200.

3.2 Progress towards project Outputs

Output 1: 500 community members gain access to safe credit and have more diversified livelihoods to offset illegal wildlife use (bushmeat poaching)

We have made good progress towards this Output. In Year 2, we formed 21 new VSLAs with 338 members (44% women and 42% youth) and provided technical support to 24 existing VSLAs (594 members, 42% women and 40% youth, of which 18 were formed in Year 1). Thus, a total of 764 community members (41% women, 57% youth) have become members of VSLAs as a result of the project. M&E involves measuring the percentage of VSLA members who are actively engaged and have accessed loans as well as the percentage of VSLA members who resort to selling more than 30% of their harvest at harvest time. In Year 2, 401 VSLA members (44% women, 40% youth) took loans with a combined worth exceeding TZS 200,000,000 (£61,700). 91% of members of VSLAs facilitated by the project were not previously a member of a VSLA (A22). Prior to joining the VSLA, 25% of VSLA members said they did not take loans from any

source, 31% said they took loans from family or friends, and 33% said they took loans from informal lenders. Of a sample of VSLA members interviewed who were not VSLA members in the 2022-2023 farming season (n=37), 11% sold 30% or more of their harvest within a month of harvesting in the 2022-2023 farming season (baseline) (A23). Of a sample of VSLA members interviewed who had been VSLA members for one year in the 2022-2023 farming season (n=18), 6% sold 30% or more of their harvest within a month of harvesting in the 2022-2023 farming season. The average proportion of harvest sold within one month post-harvest was also higher for non-VSLA members (41%) than farmers who had been VSLA members for one year (35%). There is also evidence that VSLAs are contributing to livelihood diversification, as 60% of VSLA members (n=70 interviewees) said that the VSLA had helped them to gain a new source of income (A23). Of these members, 33% said they had started a new (small) business such as small shops, food establishments and trading goods, 19% had started keeping chickens, and 19% had bought cattle or small stock. 83% of VSLA members stated that their household income had increased since joining the VSLA. VSLA members also take part in beekeeping (34 VSLAs each have a minimum of 10 hives) and in other income-generating activities of their own choosing and design, as discussed under Activity 1.2. Hives were distributed in Year 1 and Year 2 and 18 groups (316 members, 40% women) received beekeeping training in Year 2. Average hive occupancy is good, at 64% in March 2024 across all groups (A8). The indicator for this activity is the percentage of engaged beekeepers who increase their honey harvest and see a minimum 10% increase in income from honey. Most groups (55%) have not yet begun to harvest honey. However, of 11 groups that received hives in 2020-2022 and harvested at least once, 72% saw an increase in honey harvests and income from honey in 2023 relative to 2022 (A8). Furthermore, for VSLA members interviewed who harvested at least once, 45% stated that their household income had increased as a result of beekeeping, while 55% stated their household income had not changed (A23). Another activity contributing towards this output is poultry vaccination trials, for which our output indicators involve measuring chicken survival rates. Results from a year-long poultry vaccination trial in two villages adjacent to RKM GR indicate that chicken mortality due to disease (measured over a three month period prior the first round of vaccination as the baseline and again in the three months after the third round of vaccination) decreased from 21.6% to 1.1% in Rungwa village and 34.2% to 2.8% in Doroto village (A6). In addition, the average number of chickens per household doubled in Doroto village and tripled in Rungwa village after three rounds of vaccination compared to the pre-vaccine baseline. All participating households said that there were benefits to vaccination. The (unprompted) benefits that households mentioned included good chicken health and reduced incidence of chicken disease and mortality (57% of households), an increase in the number of chickens (44%), and increased income and access to meat (15%). 78% of households said that they would be able and willing to pay for vaccination after trial end.

Output 2: Human-wildlife conflict is reduced through improved rapid HWC response by RKM GR and MBOMIPA WMA and increased knowledge among community members.

We have made good progress towards this Output. Around RKM GR, Muhesi GR has received a used Landcruiser pickup (via matched funding), Kizigo GR has rehabilitated a vehicle with repair support (via matched funding), all three GRs have received sets of HEC tool kits (LED torches, air-horns, chilli crackers and roman candles), 31 rangers have been trained on use of the HEC toolkit and 27 rangers received training on elephant behaviour, safety around elephants and situational awareness and are supporting farmers with responding to HWC incidents based on reports they receive. Around MBOMIPA WMA, 12 MBOMIPA VGS were trained on the use of the HEC toolkit, 4 MBOMIPA VGS and 3 VGS and rangers from villages surrounding the WMA were trained on safety around elephants and situational awareness. HEC toolkit supplies were provided to MBOMIPA WMA and we customized and provided an existing STEP vehicle for MBOMIPA VGS to conduct HEC response. M&E for this output includes monitoring the percentage of reported HWC incidents where rangers arrived at the site of the incident within 3 hours of reporting, the percentage of rangers who report that they feel safer and better prepared for HWC response, and the percentage of rangers who pass a test measuring key aspects of elephant deterrence. It has been difficult to get data on the timing of HWC response team arrival. However, RKM GR rangers and MBOMIPA VGS responded to 410 incidents in Year 2. Interviews (A24) with RKM GR rangers (n=13) indicate that 85% of rangers feel they arrive on time, while interviews with community members (n=70) indicate that 56% feel that rangers arrive on time.

89% of rangers and VGS trained in Year 2 got a score of 70% or above on a test measuring key aspects of elephant deterrence (pre-training baseline was 68%). Interviews with a sample of RKM GR rangers who received training (n=13, interviews conducted >7 months post-training) indicate that 77% of rangers feel safe when conducting HEC response, 92% say they have the right tools for HEC response and know how to use those tools, 100% say they have the necessary knowledge and 85% say they have the necessary experience to conduct HEC response. Additional M&E involves collecting data on where the tool kit was deployed, at which point the elephants were intercepted (before entering the farm area or driven away once in the farmland), and which tools in the tool kit were deployed and how elephants responded to them (A12). Data from Muhesi GR rangers indicates that the toolkit was effective in 70% of cases (n=36) in which it was deployed to deter elephants from farmland. 100% of rangers interviewed said the HEC toolkit was effective or very effective for chasing elephants from farmland, and that the toolkit was useful for HEC response. Other activities contributing to this output are one-on-one training for community members on elephant behaviour and safety around elephants and large scale outreach events through Tembo Cup football tournaments. In Year 2, we reached 3,381 farmers (32% women) through one-on-one training and >49,500 community members through large-scale outreach events. The output-level indicator for these activities is the percentage of community members who are able to articulate key aspects of safety around elephants and carnivores (Baseline (2021): 48%), which will be measured in Year 3.

Output 3: Novel Instant Detect conservation technology is field-tested and its efficacy, viability and potential for scaling as an early warning system is assessed.

We have not made progress towards this output. The baseline condition was that the Instant Detect 2.0 conservation technology was not used or field-tested in MBOMIPA WMA. The project's original aim was to field-test this system and assess its efficacy, viability, and potential for scaling as an early warning system. Despite assurances at the time of proposal development that the system would be available, ZSL, the developers of the system, faced delays from their suppliers, and were unable to deliver the system in Years 1 and 2 of the project. We were also unable to find a suitable alternative early warning system for field testing. This has affected all activities planned under Output 3. We have submitted a change request to BCF requesting a change in the focus of Output 3.

Output 4: Capacity for aerial surveillance and strategic ground patrols is strengthened and the professionalism of RKM GR rangers and MBOMIPA VGS is enhanced.

We have generally made good progress towards this Output. VGS foot patrol effort (measured as effective person-patrol days) in MBOMIPA WMA increased in Year 2 of the project (1,713 effective person-patrol days) relative to Year (1,530 effective person-patrol days (B10). There has however, not been the expected increase in spatial extent of patrol coverage of MBOMIPA WMA (36% of MBOMIPA WMA was covered in Year 2 relative to 34% of MBOMIPA WMA covered in Year 1; target was 75% in Year 2; see sheet Summary in B10). This has been noted as an area for improvement, and will be addressed by increasing mobile camping patrols as well as provision of targeted patrol locations to increase coverage in Year 3. We exceeded our target of 60 hours of aerial surveillance in Year 2 (209.8 hours conducted). We were able to expand coverage of aerial patrols in MBOMIPA WMA to 95% of the WMA in Year 2 (baseline, 2020: 82%; target was 90%); but not yet to increase coverage for RKM GR in Year 2 (33% of the Reserves covered relative to target of 40%, and baseline of 49% coverage in 2020, B4-B5). Capacity for responding to observations made on aerial patrols was strengthened in MBOMIPA WMA relative to previous years, especially thanks to radio communications, as 45% of aerial patrols resulted in same-day VGS mobilizations (baseline, 2020: 0%; Y1: 25%). Capacity for responding to observations made on aerial patrols decreased somewhat in RKM GR, as 41% of aerial patrols resulted in same-day ranger mobilizations in RKM GR (baseline, 2020: 63%; Y1: 60%)'; this is partly due to accessibility issues given, but also in some cases due to absence a dedicated ranger team when operating out Rungwa GR headquarters (this has since been addressed by operating from an alternative airstrip with a dedicated ranger team). Information from aerial patrols resulted in the arrest of two poachers and provided valuable information for subsequent VGS and ranger patrols. The project also built capacity among MBOMIPA WMA VGS, with an additional 7 VGS (2 women) out of 8 VGS trained in Year 2 attaining the working standards of the International Ranger Federation (B14). As a result, the number of VGS with this skillset has increased from 8

VGS (2021 baseline) to 15 (2 women); our target was 16 (3 women) but one participant did not pass the course. In addition, 8 MBOMIPA VGS (3 women) underwent training in Year 2 (B6a) to attain the necessary skills to serve as aerial observers (baseline was 0). In addition, the professionalism of VGS is evident from the fact that 100% of suspects apprehended in the WMA attested that they were treated fairly and that their rights were respected during the arrest and post-arrest procedures (B11), meeting our target for this indicator. VGS also provided witness testimony in all bushmeat- and ivory-related court hearings that were held in Year 2 (B9), meeting our target for this indicator.

3.2 Progress towards the project Outcome

The project outcome is that livelihood diversification, reduction of human-wildlife conflict and strengthening of law enforcement capacity result in a reduction in bushmeat poaching, increase household resilience and begin to improve community perceptions of PAs. We comment on each of the outcome indicators below.

0.1 Reduction in detection rate of illegal activities (disaggregated by type, e.g. bushmeat, and protected area) on ground patrols (Baseline: to be established by 2021-2022 data, target 15% reduction in Year 2, 30% in Year 3). We are using a diversity of indicators to measure trends in illegal activities, as the trend in the detection rate of illegal activities on ground patrols alone may not provide a complete picture of trends. Evidence for all indicators below is in Part 1 of B7. To monitor trends in elephant poaching and ivory trade, we are measuring the following indicators:

- The number of elephant carcasses encountered and the percentage due to poaching and conflict in and around MBOMIPA WMA. Baseline: In 2021, 7 elephant carcasses were encountered by VGS in MBOMIPA WMA and adjacent village land, of which 86% were attributed to ivory poaching and 0% to conflict (In 2020, 2 carcasses, 100% due to conflict). Year 1: In 2022, 12 elephant carcasses were encountered by VGS, of which 75% were attributed to ivory poaching and 17% to conflict. Year 2: In 2023, 2 elephant carcasses were encountered on village land adjacent to MBOMIPA WMA, 100% due to conflict.
- As Ruaha-Rungwa is a MIKE site, we are also using data on the Proportion of Illegally Killed Elephants (PIKE) from the MIKE database to monitor ecosystem-level trends, however, data for 2023 is not yet available. PIKE was lower in 2022 relative to 2020-2021. Note that the MIKE site includes RKM GR and Ruaha National Park (which lies outside the project area) but excludes MBOMIPA WMA.
- The number of ivory seizures, number of tusks and ivory pieces seized in Iringa and Mbeya regions. These showed an increase in 2022 (Year 1) relative to 2019-2021 (pre-project baseline) but decreased in 2023 (Year 2; see B7 for detailed trends).

To monitor trends in bushmeat poaching, we are also measuring the following indicators:

- Bushmeat poacher encounter rates on VGS patrols in MBOMIPA WMA: 0.0035 bushmeat poachers per effective person-patrol day in 2021 (baseline), 0.0039 bushmeat poachers per effective person-patrol day in 2022 (Year 1, 11% increase relative to baseline), and 0.0030 bushmeat poachers per effective person-patrol day in 2023 (16% decrease relative to baseline).
- Bushmeat poaching camps encounter rates in MBOMIPA WMA: 0.0339 camps per effective person-patrol day in 2021, 0.0246 camp per effective person-patrol day in 2022 (27% decrease relative to baseline) and 0.0035 in 2023 (a 90% decrease relative to baseline).
- Percentage of suspects apprehended in MBOMIPA WMA that are bushmeat-related. Baseline: In 2021, 22% of suspects apprehended in the WMA (n=9) were bushmeat-related (67% in 2020, n=15 arrests). Year 1: In 2022, 44% of suspects apprehended in the WMA (n=13 arrests) were bushmeat-related. Year 2: In 2023, 34% of suspects apprehended were bushmeat-related (n=35 arrests).
- Encounter rates of carcasses of 5 key species targeted for bushmeat. Baseline: 0.0065 carcasses per effective person-patrol days in 2021 (In 2020, encounter rate was 0.0093). Year 1: 0.0055 carcasses per effective person-patrol days in 2022. Year 2: 0.0066 carcasses per effective person-patrol days in 2023.

- In addition, a database on bushmeat seizures in Iringa and Mbeya regions remains under development; this will provide complementary evidence on trends in the number and size of seizures, and key wildlife species involved.

To summarise, in Year 2, we observed a decrease in elephant poaching in MBOMIPA WMA compared to Year 1 of the project (2022) and the pre-project baseline 2021 (when ivory poaching showed an increasing trend). PIKE data for the Ruaha-Rungwa ecosystem suggest that poaching for ivory in RKM GR and Ruaha NP was lower in 2022 than in 2020-2021. Encounter rates for bushmeat poachers decreased by 16% in 2023 relative to 2021, thus meeting our target of a 15% reduction in Year 2 relative to 2021. However, encounter rates for key species targeted for bushmeat did not decrease in Year 2 relative to the pre-project baseline.

0.2 Reduction in the detection rate of illegal activities (disaggregated by type, e.g. bushmeat, and protected area) on aerial patrols (Baseline: to be established by 2021-2022 data, target 15% reduction in Year 2, 30% in Year 3). For evidence, see Part 2 in B7. In RKM GR, the encounter rate for poacher camps associated with bushmeat poaching, mining, and timber cutting was >80% lower in Year 2 (0.123 camps per flight hour in 2023) relative to the pre-project baseline (0.784 camps per flight hour in 2021). The timber cutting encounter rate in RKM GR decreased by 70% in Year 2 (0.238 sites per flight hour in 2023) relative to the pre-project baseline (0.825 sites per flight hour in 2021). Elephant carcass encounter rates for RKM GR dropped from 0.375 carcasses per flight hour in 2020 to 0.008 in 2023. In MBOMIPA WMA and Lunda-Nkwambi GCA, the encounter rates of poacher camps increased from 0 in 2020 and 2022 to 0.047 in 2023, which may reflect greater flight coverage relative to previous years, while timber cutting site encounter rates rose from 0 in 2022 to 0.100 in 2023. There was no change in the elephant carcass encounter rate per flight hour in 2022 relative to 2023. These findings suggest a decline in illegal activity encounter rates in RKM GR but a stable or slightly increasing trend in MBOMIPA WMA and Lunda-Nkwambi GCA.

03. Percentage of engaged beneficiaries who report being able to address the majority of acute household needs through VSLA loans and/or other livelihood activity (Baseline to be established in Year 1). We are measuring this indicator through the Basic Necessities Survey (BNS; Detoeuf, Wieland & Wilkie 2018). BNS is a poverty assessment tool based on a community-articulated assessment of 'basic needs'. A Basic Needs Score can be calculated per household and monitored over time. Baseline data have been collected and basic data summaries have been generated (A25, A26). Further analysis from baseline surveys will be completed in Year 3. Endline data will be collected in the final months of Year 3. In addition to BNS, we collected qualitative data (via interviews) on whether VSLA loans helped VSLA members to meet household needs. Of a sample of 104 VSLA members, 91% stated that the loan(s) they had taken from a VSLA in the previous cycle had helped them to meet household needs (98% for women, 82% for men). There was also consensus that VSLAs are the preferred option for accessing credit. In 2023-2024, 56% of VSLA loans were used to support either new or existing small businesses, 27% for farming activities, 8% for medical treatment, 3% for school fees, and <1% each for house improvements, food, and other household needs. Investment in small businesses and agricultural activities generate additional revenue for households, allowing families flexibility to meet their needs. 83% of VSLA members stated that their household income had increased since joining the VSLA.

0.4 Percentage of engaged beneficiaries who retain at least 50% of their crops for sale or consumption at high price periods due to income from poultry farming, beekeeping and access to credit from VSLAs (Baseline to be established in Year 1, 50% in Y3). See annex (A23). Of a sample of VSLA members interviewed who were not VSLA members in the 2022-2023 farming season (n=37), 27% sold at least 50% of their harvest during high price periods in the 2022-2023 farming season (baseline). Of a sample of VSLA members interviewed who had been VSLA members for one year in the 2022-2023 farming season (n=18), 22% sold at least 50% of their harvest during high price periods in the 2022-2023 farming season (however, this partly reflects that these members sold a lower proportion of their harvest overall [37%] compared to non-VSLA members [48%]). Of a sample of VSLA members interviewed who had been VSLA members for at least three years in the 2022-2023 farming season (n=15), 33% sold at least 50% of their harvest during high price periods in the 2022-2023 farming season. Considering just the portion of harvest from the 2022-2023 farming season that was sold (disregarding the portion

kept for food at the household), 61% of the harvest of non-VSLA members was sold during high price periods, 64% of the harvest of farmers who had been VSLA members for one year was sold during high price periods, and 85% of the harvest of farmers who had been VSLA members for at least three years was sold at high price periods. We will repeat these surveys with members who were not VSLA members in the 2022-2023 farming season but have become VSLA members since (in the 2023-2024 farming season), so that we can compare the timing of harvest sale relative to crop prices at an individual farmer level.

0.5 Engaged households show increased resilience as measured by the custom resilience index (ARSSI, Index of Social Capital, RIMA) from Baseline to Year 3. We are using the FAO's resilience index measurement and analysis (RIMA) tool to estimate household resilience to food insecurity. RIMA calculates a resilience capacity index based on access to basic services, assets, social safety nets, adaptive capacity, food security and shocks. Baseline data has been collected and basic data summaries have been generated (A25, A26). Further analysis from baseline surveys, using FAO's Shiny RIMA toolkit will be completed in Year 3. Endline data will be collected in the final months of Year 3. We have also collected qualitative data on whether VSLA membership enhances farmer resilience to elephant crop damage via interviews. Of a sample of households that had experienced crop loss to elephants in the past 12 months (n=12), 92% stated that being a member of a VSLA helped them to manage the impacts of crop loss (A22)). 45% of households used a loan from a VSLA to purchase food and 45% used the loan to invest in another income-generating activity. In addition, 92% of households stated their ability to cope with a crop damage incident had increased since becoming a member of the VSLA, primarily due to access to loans in case they faced a problem (64% of respondents) but also because of increased knowledge on safety around elephants and mitigation measures (36%), and 92% stated that they worry less about an elephant crop damage event happening since joining the VSLA. Furthermore, 83% of these households further stated that having chickens helped them to manage the impacts of crop loss: 40% had sold chickens to purchase food, 40% had sold chickens to pay children's school fees, and 20% sold chickens to purchase agricultural inputs. 58% of households stated that beekeeping helped them to manage the impacts of crop loss, by helping to address various household needs.

0.6 Reduction in human deaths and injuries and elephant mortalities in the landscape due to human-elephant conflict Across the wider landscape, in 2021, there were 4 human deaths (Simbangulu 1, Ilangali 1, Doroto 1, Manyoni 1), 4 human injuries (Simbangulu 1, Doroto 2, Ilangali 1), 2 elephant mortalities due to conflict (Simbangulu 2). In 2022, there were 6 human deaths (Simbangulu 2, Rulanga 3, Kazikazi 1); 3 human injuries (Simbagulu 1, Damwelu 1, Ilangali 1) and 5 elephant mortalities (Mpapa 1, Simbangulu 2, and Ilangali 2). In 2023, there were 5 human deaths (Doroto 1, Kitaraka 1, Chikola 1, Itagata 1, Idoyndole 1, Mbugani 1), 7 human injuries (Chisingisa 1, Chikol & Manzuchi 4, Mtakuja 1, Mpapa 1), and 3 elephant mortalities (Nkonko 2, Doroto 1) of which 2 were killed due to conflict and 1 was poached for bushmeat. Muhesi GR rangers successfully rescued 7 elephant calves (reuniting them with their families) from village wells in Doroto, Ipande and Lulanga villages. Most of these incidents occurred in either our newer project villages (e.g Mpapa and Simbangulu villages) or areas close to our newer project villages (Ilangali, Rulanga and Damwelu villages). In the villages where we have LEMs and conduct year-round outreach about safety around elephants, thu has been the trend: 2021: 2 human deaths, 3 human injuries, 2 elephant mortalities; 2022: 2 human deaths, 1 human injury, 3 elephant mortalities; 2023: 2 human deaths, 2 human injuries, 3 elephant mortalities (A13).

0.7 Percentage of surveyed community members around RKM GR who value improvement in HWC response and state there has been an improvement in RKM GR HWC response between pre-project and Year 2. See A23 and A24. 57% of community members interviewed (n=70) stated that there had been an improvement in RKM GR ranger HWC response in 2023 relative to 2022. 56% of community members stated RKM rangers arrive on time, 71% stated that RKM GR ranger response is effective, and 83% stated that they value this support from RKM rangers.

3.4 Monitoring of assumptions

Assumption 0.1: Limited access to safe and reliable credit is a driver of bushmeat poaching.

Comment: Best available evidence from previous studies of drivers of bushmeat (Knapp et al., 2017) suggest this likely holds true.

Assumption 0.2 Beneficiaries will reduce reliance on bushmeat and move away from IWT.
Comment: We will attempt to assess this in the endline surveys through asking indirectly about bushmeat consumption before and after household-level interventions; however, experience from the baseline household questionnaire survey indicates that people are very hesitant to disclose bushmeat consumption or hunting.

Assumption 0.3 Increasing detection of bushmeat poaching and arrests of poachers will effectively deter poaching. Comment: MBOMIPA VGS have observed that due to increased risk of detection in MBOMIPA WMA, there may be a shift to increased use of Ruaha National Park or village land instead. To mitigate these issues, VGS in the WMA are conducting more joint patrols with VGS in village areas, as well as collaborating with Park rangers. However, this project does not rely solely on increasing the risk of detection and arrest alone, and also aims to address some of the underlying issues that contribute to poaching, including poverty and lack of alternative livelihoods (Knapp et al., 2017). Therefore, while increasing detection and arrests is one component of the project, we are also working to enhance community engagement, education, and to develop alternative livelihoods, for a more comprehensive approach to address the root causes of bushmeat poaching.

Assumption 0.4: Improvement in HWC response will contribute to more positive community perceptions of RKM GR. Comment: 57% of community members interviewed (n=70) stated that there had been an improvement in RKM GR ranger HWC response in 2023 relative to 2022, and 83% stated that they value this support from RKM rangers. In Year 3, we will assess whether this also contributes to more positive community perceptions of RKM GR, but anecdotally, this appears to be the case.

Assumption 1.1: With targeted and sensitive outreach and tailored training, people engaged in IWT, women and youth will be interested to join VSLAs and engage in beekeeping and poultry trials, take on leadership positions within VSLAs and actively adopt and maintain these livelihood activities. Comment: Of the 21 VSLAs (338 members) established in Year 2, 44% of members are women and 42% are youth. Of the VSLAs established in Year 2, 33% of leadership positions are held by women. In 55% of the 215 households engaged through poultry vaccine distribution, poultry is a female livelihood activity.

Assumption 1.2: Poultry vaccine supply chains are sufficiently robust to support affordable vaccine purchase. Comment: Our vaccine distribution trial relies on vaccines purchased from a central supplier (affiliated with the government) in Arusha. While far from our trial location, it is relatively easy to coordinate safe delivery of the vaccine. In Year 3 we will explore more local options but have to keep in mind standards of quality and cold chain storage. Ensuring an affordable and robust supply chain is important as 78% of households from the year-long trial around RKM GR said that they would be able and willing to pay for vaccination after trial end.

Assumption 1.3 Extreme weather events (e.g., drought) do not affect the viability of beekeeping
Comment: The El Nino of 2023-2024 has caused challenges related to flooding and impeded access to some hives for hive care and monitoring. However, average hive occupancy in March 2024 across all groups remained relatively high (64%).

Assumption 1.4: Agricultural inputs constitute a significant expense for families. Comment: It remains true that agricultural inputs constitute a significant expense for families, although our VSLAs records show that members are taking more loans for uses other than agriculture (e.g., 46% took loans for small businesses while 19% took loans for agriculture), in part due to the unpredictability of a return on inputs into agriculture (i.e., concerns about unpredictable rainfall patterns).

Assumption 2.1: RKM GR and MBOMIPA WMA continue to allocate resources to HWC Response and to prioritise rapid response. Comment: MBOMIPA WMA is committed to dedicating VGS for HWC response, but rely on external funding. RKM GR is open to prioritising additional resources if they see the impact of this work under the current level of support. We are collecting data to help RKM GR measure both the effectiveness of this response and to what

extent it helps to improve their relationship with communities (which we expect to be an important benefit/impact). We have seen some variation at the level of the Game Reserve, with Muhesi Game Reserve prioritising HEC response more than Kizigo and Rungwa Game Reserve.

Assumption 2.2: Provision of targeted training and elephant deterrent toolkits will help rangers feel they are better prepared to conduct HWC response. Comment: Post-training interviews with RKM GR rangers (n=13, conducted >10 months after training) indicate that 77% of rangers feel safe when conducting HEC response, 92% say they have the right tools for HEC response and know how to use those tools, 100% say they have the necessary knowledge and 85% say they have the necessary experience to conduct HEC response. However, rangers have identified ongoing challenges including distances to village locations, the spatial distribution of farms and households in the landscapes, accessibility issues, and weather conditions.

Assumption 3.1 The Instant Detect system is available by the manufacturer's stated release date. This second release of the Instant Detect System has resolved technical issues experienced during the first release of the system. Comment: This assumption did not hold true, as the Instant detect system could not be delivered in Years 1-2 of the project. We have submitted a change request to BCF to change the focus of Output 3, which this assumption relates to. The change request also includes revised assumptions.

Assumption 3.2: The Instant Detect System can be protected against theft and environmental damage (eg flooding, fire) through careful deployment. Comment: See comment on Assumption 3.1.

Assumption 3.3: Following intensive training, VGS will be able to use the acquired skills and knowledge to deploy and monitor the system with minimum supervision. Comment: See comment on Assumption 3.1.

Assumption 3.4: The satellite internet connection for transmitting Instant Detect alerts to the Control Room is fast and reliable. Comment: See comment on Assumption 3.1.

Assumption 4.1: We assume that the new aircraft will operate issue-free with only minor maintenance requirements. Comment: Our pilot team is monitoring the performance of the aircraft closely to ensure that any issues are addressed promptly and that the aircraft remains operational. Regular maintenance and monitoring help to prevent small issues from becoming larger problems and can help to ensure that the equipment operates as intended and issue-free with only minor maintenance requirements. This assumption holds true to date.

Assumption 4.2: STEP will be able to maintain its established and trusted relationships with RKM GR and MBOMIPA leadership. Comment: This assumption holds true. STEP has a Memorandum of Understanding with MBOMIPA WMA, and our MOU with Tanzania Wildlife Authority, which manages RKM GR, is under renewal (TAWA have committed to extending this MOU with STEP). These agreements form the basis of our work, ensuring that our efforts are aligned with the current needs and challenges of the two protected areas. STEP, RKM GR, and MBOMIPA WMA leadership continue to communicate regularly about project progress, and retain flexibility as and where needed.

3.5 Impact: achievement of positive impact on illegal wildlife trade and poverty reduction

The proposed impact of this project is that reduction in IWT and HWC will increase security of Ruaha-Rungwa, enable recovery of wildlife populations, improve community perceptions of and benefits from protected areas and result in economically resilient communities. The activities in this project are intended to approach IWT (and HWC) from a holistic perspective of both drivers and enforcement. By simultaneously building up alternative livelihoods for communities and increasing knowledge of safety around elephants while also increasing the risk associated with bushmeat poaching through increasing enforcement potential, capacity and follow through, the project aims to build a foundation that will support communities to rely less on IWT.
Capacity building for more effective HWC response by protected area staff will hopefully reduce the cost of living with wildlife and will improve community perceptions of protected areas, perhaps impacting cooperation leading to increased IWT detection. Livelihood diversification and

reduction of HWC will strengthen household economic resilience, expanding communities' options for responding to economic challenges. As a result of the project, 764 community members have gained access to loans through VSLAs, 214 households have been engaged in a poultry vaccination trial (thereby improving poultry survival rates), and 641 community members are involved in beekeeping. As discussed under Output 1 and Outcomes 0.3-0.5, there is evidence that these interventions are helping community members meet household needs and contributing to more diversified livelihoods, increased household incomes and greater resilience to financial shocks such as elephant crop damage. As discussed under Outcome 0.7, community members also report that that there has been improvement in HWC response by protected area rangers, and that they value this support. MBOMIPA WMA management have similarly reported that communities around the WMA value the HWC response provided by VGS and see this as a key benefit provided by the WMA. The project also aims to increase security for the WMA in the long-term by increasing law enforcement capacity, introducing and enhancing conservation technologies, expanding ground and aerial patrols, and strengthening post-arrest judicial procedures to increase the risk of detection, arrest, and prosecution, such that bushmeat poaching will not be seen as a risk worth taking. In Year 1 (2022), we began expanding this capacity, anticipating a reduction in illegal activity in Years 2 (2023) and Year 3 (2024). In MBOMIPA WMA, we saw a marked decrease in elephant poaching for ivory in 2023 relative to 2021-2022 (B7). Bushmeat poaching, as measured from bushmeat poacher and camp encounter rates on VGS patrols, has also decreased in MBOMIPA WMA in 2023 relative to 2021-2022 (B7). These trends suggest improvement in security for the WMA. In addition, MBOMIPA VGS report that there is greater information sharing by villagers on IWT (such as poacher access routes into the WMA and places where bushmeat is being sold) as a result of HWC response provided by the WMA. In RKM GR, aerial patrols have increased the information available to protected area staff and managers for detection and response, and flight data indicate a decline in poacher camps and timber cutting sites in 2023 relative to 2021 (B7). Aerial support has also led to the arrest of one elephant poacher, confiscation of weapons, and arrests of two suspects involved in illegal timber extraction. One long-term impact anticipated from the project is the recovery of wildlife populations, especially for species targeted by bushmeat and ivory poaching. While it remains early to assess the project's impact on population trends, section 5 provides an overview of pre-project and Year 1-2 trends in the populations of focal species. Among the six focal species, two have experienced population declines in recent years, two are stable, and two are stable or increasing.

4. Thematic focus

The project aims to contribute to the theme "Developing sustainable livelihoods to benefit people directly affected by IWT" through livelihood diversification and reduction of human-wildlife conflict with the aim of strengthening household economic resilience and expanding communities' options for responding to economic challenges. As a result of the project, 764 people gained access to safe and reliable credit via VSLAs (91% of whom joined a VSLA for the first time), 641 people are engaged in beekeeping, and >200 households have been engaged in a poultry vaccine distribution program. Our monitoring is showing that people with these options for livelihood diversification report greater resilience to elephant impacts, and that these interventions are contributing to (self-reported) increases in household incomes. The assumption that this means households will also be less reliant on IWT/bushmeat has been difficult to measure directly because experience from the baseline survey indicates that people are hesitant to discuss bushmeat consumption. We will attempt to gain insight into this via focus group discussions/key informant interviews and data on bushmeat trends from RKM GR and MBOMIPA WMA. The project has also increased capacity among RKM GR and MBOMIPA to respond to human-elephant conflict incidents through training of rangers and VGS, provisioning of fuel, toolkits, and vehicles dedicated to HEC response. There is evidence that this is having a positive effect, as 57% of community members interviewed (n=70) state that there has been improvement in HEC response by RKM GR rangers in 2023 relative to 2022. The project also aims to contribute to the theme "Strengthening law enforcement" field testing of early warning technology, expanding capacity for and coverage of ground and aerial patrols, enhancing skills and professionalism of a VGS force in MBOMIPA WMA, and ensuring that robust legal cases for all ivory and bushmeat poaching incidents from MBOMIPA WMA are filed at the Iringa District Court. To date, we have not made progress on field-testing of early warning technology as the Instant

Detect 2.0 system (or alternative similar technology) was not available for purchase. We have submitted a change request to change the focus of this output to upgrading radio communications infrastructure and protected area management software (EarthRanger) for MBOMIPA WMA, which will improve coordination of VGS patrol teams, and facilitate rapid response to incidents, including early warning alerts from the aircraft. As a result of the project, VGS patrol effort in MBOMIPA WMA has been expanded, as has aerial coverage for RKM GR and MBOMIPA WMA ecosystem (with target flight hours exceeded in Year 2). Aerial patrols helped to detect and intervene in illegal activities such as timber-cutting sites, and bushmeat camps. MBOMIPA WMA has also been able to respond effectively to the uptick in ivory poaching that was observed in 2021-2022. VGS were able to arrest and recover 2 tusks and 3 muzzleloaders from one ivory poacher in Year 1, and a court case for this incident was filed and completed (with the defendant being found guilty) as a result of the enhanced coordination between MBOMIPA VGS and the TAWA Public Prosecutor. As a result, no elephants were poached for ivory in MBOMIPA WMA or adjacent village land in 2023. Five court cases were filed at the Iringa District Court, and court hearings of all ongoing cases were attended by MBOMIPA VGS. The project has also strengthened collaboration and coordination between the key law enforcement stakeholders in the project area (MBOMIPA WMA, Ruaha National Park, and Tanzania Wildlife Management Authority.

5. Impact on species in focus

All evidence for this section is in annex B7. Elephant encounter rates on VGS patrols in MBOMIPA WMA have generally increased since 2018. In the wider Ruaha-Rungwa ecosystem, elephant populations have been stable at around 15,000 elephants since 2015. The results of the most recent Tanzania Wildlife Research Institute (TAWIRI) aerial census from 2021 indicate there has not yet been an increase in the elephant population (slow recoveries have been observed for other heavily poached elephant populations in Africa; TAWIRI, 2022). In 2015-2022, the proportion of illegally killed elephants for the whole Ruaha-Rungwa ecosystem was generally below 50% (the level at which illegal killing is considered unsustainable), suggesting that poaching of elephants was generally low during this time. In MBOMIPA WMA (which is not part of the Ruaha-Rungwa MIKE site), there was an increase in elephant poaching in 2021-2022 relative to 2018-2022, but no elephants were poached for ivory in MBOMIPA WMA in 2023. Encounter rates of Greater Kudu (a species targeted for bushmeat) on VGS patrols in MBOMIPA WMA have generally declined since 2018, but encounter rates in 2022-2023 have been stable. TAWIRI aerial census data also indicate that this species declined in the wider Ruaha-Rungwa ecosystem between 2018 and 2021. Although there has been annual variation, giraffe encounter rates on VGS patrols in MBOMIPA WMA have been generally stable since 2018, and this stable trend continued in 2023. Across the wider Ruaha-Rungwa ecosystem, however, TAWIRI aerial census data indicate a decline in the giraffe population between 2018 and 2021, and giraffe carcass encounter rates were higher in 2023 relative to 2021-2022. MBOMIPA VGS have reported a shift towards increased hunting of giraffes (relative to other species such as impala), typically by groups using firearms. Encounter rates of buffalo and eland on VGS patrols in MBOMIPA WMA have increased since 2018, and TAWIRI aerial census data indicate these species are either stable or increasing in the wider Ruaha-Rungwa ecosystem since 2015. Roan and sable antelope are rare and generally wary in MBOMIPA WMA. Roan sightings on VGS patrols in MBOMIPA WMA were too few to warrant analysis. TAWIRI aerial census data indicate that roan populations were stable and sable antelope populations increased between 2018 and 2021 in the Ruaha-Rungwa ecosystem. The next TAWIRI aerial census will likely be in 2024, and provide insight into trends between 2021 and 2024. A camera trapping collaboration in MBOMIPA WMA between Lion Landscapes and STEP has also provided insight into wildlife trends, as between 2018 and 2022, lion and leopard densities were stable (Searle et al., 2023).

6. Project support for multidimensional poverty reduction

This project focuses on the communities in the Ruaha-Rungwa ecosystem, specifically those around RKM GR and those that have contributed land to the MBOMIPA WMA. While variable, these communities are primarily characterised by a mix of seasonal rainfed agriculture (with primary crops including maize, rice and a mix of sunflower, millet and limited commercial chickpea production), livestock (cows, sheep and goats), lack of infrastructure (power, water, healthcare, road networks) and poor dietary diversity. Human-wildlife conflict, specifically human-

elephant conflict, has increased in the ecosystem, driven by rapidly increasing human populations and associated expansion of agriculture, settlements and activity along protected area boundaries and within corridors and dispersal areas. The Ruaha-Rungwa landscape has experienced significant in-migration from other parts of Tanzania in the last 20 years. Establishment of settlement by new arrivals is often done without consultation of local knowledge banks (or land use plans - where they exist), resulting in expansion of agriculture and settlement in areas heavily utilised by wildlife. This puts people at risk of elephant impacts and, without sufficient economic resilience, these impacts can devastate a household's financial situation. It is in this context that we see a recent increase in bushmeat poaching as driven by a need to supplement household income. Bushmeat in the Ruaha-Rungwa ecosystem is sold within villages and transported for sale in regional towns and major cities. Bushmeat poaching appears in part to be a livelihood diversification strategy employed by moderately poor households to address capability deprivation and gain greater economic agency (Knapp et al/, 2017). This project intends to increase livelihood diversity for 500 households directly through improving access to credit through VSLAs, diversifying (and improving existing) livelihood strategies through beekeeping and improving survival of poultry. Increasing access to credit through VSLAs not only enables investment in future income generating projects, it also reduces the likelihood of liquidation of assets (including harvests and livestock) that could negatively affect households. As a result of the project, 764 community members (41% women, 57% youth) have become members of VSLAs, with 29 VSLAs established during the project period. In Years 1 and 2, these VSLA issued 1,123 loans to members. As described under Output 1 and Outcome 0.3, there is evidence that VSLA membership enables farmers to hold onto their harvest for longer and to sell during higher price periods for their crops, thereby increasing farmer's returns. There is also evidence that VSLAs are contributing to livelihood diversification and increases in household income, as 60% of VSLA members said that the VSLA had helped them to gain a new source of income and 83% stated that their household income had increased since joining the VSLA. New income sources were mostly non-agricultural, and included starting small businesses and keeping poultry, cattle or small stock. While most VSLA groups engaged in beekeeping have yet to harvest honey, 45% of members of groups who harvested at least once stated that their household income had increased as a result of beekeeping. The project has also engaged over 200 households in a poultry vaccine distribution trial. As described in Output 1, results from a year-long trial indicate that chicken mortality from disease declined considerably as a result of vaccination, and that the average number of chickens per household doubled in one trial village and tripled in another trial village. All households participating in the trial said that there were benefits to vaccination; these (unprompted) benefits included reduced incidence of chicken disease and mortality, an increase in the number of chickens, and increased income and access to meat. The project also seeks to enhance household resilience to financial shocks, including elephant crop damage (see also Outcome 0.5). Through interviews with VSLA members that experienced crop loss to elephants in the previous 12 months, 92% stated that their ability to cope with a crop damage incident had increased since becoming a member of the VSLA, primarily due to access to loans in case they faced a problem (64% of respondents) but also because of increased knowledge on safety around elephants and mitigation measures (36%). Furthermore, 83% of households stated that having chickens helped them to manage the impacts of crop loss, and 58% of households stated that beekeeping helped them to manage the impacts of crop loss. The project also indirectly addresses issues of poverty through reducing the cost of living with wildlife by increasing the capacity of protected area staff to respond to HEC. 57% of community members interviewed stated that HWC response by RKM GR rangers improved in 2023 relative to 2022, and 83% stated that they value this support from RKM rangers. By increasing the efficacy and efficiency of HWC response by protected areas, we hope food security will increase, tolerance for elephants will improve and perceptions of the value of protected areas will increase.

7. Gender equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board[1].	50%
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women[2].	TAWA RKM GR project managers: 0% women. TAWA Central Zone (Manyoni): 33% women. MBOMIPA Authorised Association: 14% women, senior VGS leadership: 33% women.

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	X
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Gender dynamics in the project area are characterised by highly defined spheres of distinct responsibility, especially among agro-pastoral communities. Women are often not involved in 'official' decision-making forums (traditional authorities, sub-village and village government) but exert influence within the household sphere. Given this context, in our project orientation meetings at village and community level, we have taken proactive measures to ensure that all individuals, regardless of gender or social background, have opportunities to participate and

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

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

benefit from the project, and to actively promote gender equality and social inclusion. A key way in which we seek to promote women and youth is through VSLAs which allow members to independently access capital that can be utilised for household-level priorities. Female participation in VSLAs has been enhanced by ensuring that meetings are held at times and locations suitable for women, as decided in a participatory process during group formation. Of the 764 community members that have become members of VSLAs as a result of the project, 41% are women and 57% are youth, and 33% of leadership positions in VSLAs are held by women. VSLA membership contributes to economic empowerment for women, as 98% women who took VSLA loans said the loan helped them to meet household needs. Out of 214 households engaged in poultry vaccine distribution, 55% of the beneficiaries are women. As our experience under IWT052 demonstrated that women are less likely to attend large scale outreach events due to competing household priorities, we have designed a home-based training program (one-on-one and film screening using tablets) with the goal of reaching more women and youth. Out of the 3,381 people reached in Year 2, 32% were women. The percentage of women reached remains lower than we would like, and we will make a concerted effort to reach more youth and women through this one-one-training in Year 3. Our team of community-based LEMs comprises 14% women and 78% youth. Among the rangers and VGS that were trained on the use of elephant deterrent toolkits and elephant behaviour, 15% were women. While female employment as VGS remains limited (17% of MBOMIPA VGS are women, [B12]), increasing the proportion of women VGS is a priority whenever opportunities for recruitment arise. In Year 3, the WMA plans to recruit additional VGS and STEP is advocating strongly that more women should be invited for interviews and hired as VGS. In Year 2, three female VGS were trained to become aerial observers and three female VGS received advanced anti-poaching skills training (B6a, B14). We have collaborated with MBOMIPA WMA to promote more women VGS to leadership positions: among the three VGS commanders every month, one is a woman. This has shown the WMA that women VGS are effective post commanders, earning the respect and trust of their fellow VGS. In the next year, we will advise MBOMIPA management to appoint a woman as the assistant to the WMA VGS commander. We also ensure safe working conditions for women VGS, such as providing separate accommodation, and offer flexibility in work schedules to accommodate childcare responsibilities.

8. Monitoring and evaluation

For Output 1, Year 2 has focused on a combination of operational indicators (monitoring establishment and performance of VSLAs, distribution of poultry vaccines and distribution of beehives) and output-level indicators. We have begun to assess the degree to which VSLAs impacting the timing of crop sales by farmers (Outcome 0.4), and will continue to monitor this for the 2023/2024 farming season in Year 3. We have assessed other impacts of VSLAs, including their reported impact on livelihood diversification and household income. We have been able to evaluate change in chicken survival rates as a result of vaccination, as well as other impacts such as changes in household chicken flock size, which were not in our original project logframe. In the ongoing trial in villages around MBOMIPA WMA, we will also assess if there is a change in the number of chickens sold and consumed for food at household level as a result of vaccination. We are also collecting data on household perceptions of the efficacy of the vaccine and their willingness to pay for the vaccine. These are all indicators that we have incorporated into the monitoring but which were not in the original logframe. For beekeeping (output indicator 2.4), we collect regular data on hive occupancy, honey harvests and honey sales at the group level. Data on individual income from honey will be collated from group share-out records. For Output 2, we monitored both operational (focused on trainings and outreach and awareness-raising events conducted) and output-level indicators in Year 2. We conducted interviews with rangers to hear their opinions regarding their preparedness and safety. We also have begun to assess community perceptions of HWC response by rangers and relationships with RKM GR (Outcome 0.7), and to asssess knowledge retention of key concepts by community members over time; this will continue into Year 3. These indicators and means of verification remain larlgely appropriate. However, output indicator 2.1 (the percentage of reported HWC incidents where rangers arrived at the site of the incident within 3 hours of reporting) has proved challenging to collect data on as the time of arrival on site and the time when information was received was not consistently recorded. We will try to improve data collection for this indicator, but have also asked

rangers and community members about the timing of HWC response in order to understand how this is perceived. Baseline data for Outcome Indicators 0.3 and 0.5 have been collected (A25, A26) and endline data will be collected in the final months of Year 3. For these indicators, we are measuring impact on household resilience via RIMA (Resilience Index Measurement and Analysis, developed by the Food and Agriculture Organization which includes the Food Insecurity Experience Scale [FIES]), and impact on poverty alleviation through the Basic Necessities Survey (BNS), which uses a community-generated list of basic needs to assess whether those needs are met. We also decided to collect additional interim qualitative data on whether VSLA loans are helping VSLA members meet household needs and contributing to resilience to elephant crop damage. Our planned approach for 0.6 is still appropriate but we remain unable to fully control this outcome given the multitude of reasons that can cause elephant and human injury and death. A change request with revised indicators for Output 3 has been submitted. For Output 4 and Outcome 0.2, our judgement at this stage is that the indicators and means of verification in the original M&E plan and logframe remain appropriate. To track progress towards these output indicators, we continue to track activity-level indicators internally (e.g., hours of aerial surveillance, VGS patrol effort). Patrol coverage (using GPS tracklogs) is mapped and measures of effort (distance, effective-person patrol days) are tracked in a patrol database. Additional indicators that we have learned would be valuable to track, in addition to total monthly patrol coverage of the WMA, are a spatial indicator of patrol intensity (e.g., density of patrol coverage across 2.5 km^2 grid cells) and spatial distribution of illegal activities corrected for patrol effort), to help us better understand patrol effectiveness and allocate patrol effort; these indicators will be reported on for the pre-project baseline and the project period in the Year 3 report. Observations on key wildlife species and illegal activities are recorded in a patrol form in a mobile app in MBOMIPA WMA (we shifted from Survey123 to EarthRanger in late 2023) and on a paper datasheet in the case of aerial patrols, and trends and output and outcome indicators are tracked via an EarthRanger dashboard (B13) and Excel databases with linked dashboards. VGS compliance with post-arrest procedures is monitored through post-arrest forms which include a declaration that the suspect felt his/her rights were observed/not observed (B11). All court cases from MBOMIPA WMA and hearings attended by VGS are tracked in a cases database (B9). As discussed in the Year 1 report, we believe that Outcome 0.1 remains appropriate, but also monitor other indicators for a comprehensive picture of trends in ivory poaching (elephant carcasses and cause of mortality, ivory seizures) and bushmeat poaching (# and % of suspects arrested for bushmeat poaching, trends in carcass encounters for key species targeted for bushmeat, trends in bushmeat seizures), see annex B7. In addition, to monitor the impact of the project on key wildlife species (again, additional indicators that were not part of the original project logframe) we are monitoring encounter rates of these species on VGS patrols in MBOMIPA WMA, and use supplementary data from camera trapping surveys and TAWIRI aerial censuses when available. The results of ground patrols in MBOMIPA WMA (for which VGS collect data that are then summarised and mapped by STEP) are shared with the MBOMIPA Protection Committee on a monthly basis, and broader discussions around trends and priorities are held during quarterly meetings of the WMA Board. The results of aerial patrols (which are summarised and mapped by STEP) are shared with relevant PA managers in a report immediately after a mission and daily sightings are also communicated to VGS/ranger teams on the ground. We plan to do a multi-year analysis of aerial patrol outcomes under this project that will be shared with PA managers for insight into longer-term trends. To assess to what extent the activities and outputs of this project are contributing to the outcome, we will also continue to hold discussions with our project partners (RKM GR managers and MBOMIPA Authorised Association members, all of whom are from the villages around the WMA) and village leaders about trends and drivers of these trends, gauge VGS perceptions, and monitor external factors (e.g., droughts, failed harvests, changes in policy or capacity) that may contribute to observed trends in IWT.

9. Lessons learnt

Although monthly foot patrol coverage in MBOMIPA has not increased as much as we planned by Year 2, the implementation of strategic patrol management techniques, such as evidence/intelligence-led patrol planning, has meant that previously underpatrolled areas have received more patrol effort, enhanced detection of illegal activities in these areas. To come closer to our planned monthly target for the spatial coverage of ground patrols in MBOMIPA WMA, we will advise the WMA to increase the proportion of mobile, multi-day camping patrols in Year 3 to

expand coverage. Although difficult to quantify, it is our perception and that of our partners and stakeholders in the landscape that increased aerial support to the ecosystem is having a deterrent effect on illegal activity; trends in illegal activities observed on flights support this observation. We have also learned that, as hoped, HWC response by MBOMIPA VGS is seen by community members as a key benefit provided by the WMA and has stimulated greater information sharing on IWT by community members with the WMA. Our HEC and livelihood focused work is largely a continuation of our existing programming, with the exception of poultry vaccine provision. Through the year-long poultry trial we have learned that we need to monitor indicators other than chicken mortality, such as chicken flock size and household income (which we are monitoring with trial participants in Year 3). We have also learned that there is strong interest and willingness to pay for the vaccine after trial end, but that supply chains are a key barrier to those who wish to vaccinate chickens. In Year 3, we will work with community members and the District to address this barrier. We have also learned that a number of human injuries and deaths to elephants occur in villages further removed from the Game Reserves (the project is focused on villages directly adjacent to the Reserves) and advised RKM GR on the need for their community outreach teams to conduct outreach on safety around elephants in those villages. We have also learned that rapid deforestation has been a challenge to some VSLA groups practising beekeeping around RKM GR (and in separate analysis of the spatial distribution of elephant crop damage have found that crop damage risk is higher in more recently deforested areas) and intend to discuss these findings with village leaders in Year 3..

10. Actions taken in response to previous reviews (if applicable)

The reviewer of the Year 1 report asked that we detail the frequency of regular contact with RKM GR (this has been added), and that we explain the “effective person-patrol” metric used in Annex B7 (this has been done)

11. Risk Management

An updated risk register is submitted with this report. The major adaptation in project design is that due to continued unavailability of Instant Detect 2.0 (which was a foreseen risk) and the lack of suitable alternative early warning technology for field-testing, we have submitted a change request to shift the focus of Output 3.

12. Sustainability and legacy

A key goal of this project is to build the capacity of community members, village and District government leaders, and RKM GR and MBOMIPA WMA leadership. We work with RKM GR staff, District authorities and village leaders during implementation and monitoring of activities including formation of VSLAs, outreach events, beekeeping training and poultry vaccination, so that they gain experience with these activities. In all community meetings, we shared the contact details of relevant Government and RKM GR staff to enhance their connections with communities. We also work with village-based local elephant monitors who are members of the same communities to ensure both proper context but also that capacity remains in communities beyond the project lifetime. Ranger and VGS capacity for HWC response has been built by the project (79 rangers/VGS trained), with a majority of trained rangers saying that they feel prepared and safe when conducting HWC response. As a result, 56% of community members interviewed say that HWC response by rangers improved between 2023 and 2022. Our model for ranger training has been adopted by other organisations in Tanzania, including the Frankfurt Zoological Society and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Human-Wildlife Conflict Mitigation Project in southern Tanzania. HWC response by VGS in MBOMIPA WMA has also generated interest from Tanzania’s Ministry of Natural Resources and Tourism, to whom we presented a report. Similarly for the aspects of the project that aim to strengthen law enforcement capacity, all project activities are done through partnerships with MBOMIPA WMA and RKM GR. One of the proposed post-project benefits was that an early warning system would be field-tested; however, due this technology not being available, we have submitted a change request. The project has built the capacity of VGS through advanced skills and aerial observer training for 16 VGS, by increasing resources for patrols, and enhancing aerial support to MBOMIPA WMA and RKM GR. The project has also contributed to increasing MBOMIPA WMA’s capacity to respond to a short-term uptick in ivory poaching, by making arrests, confiscating ivory, and filing a court case, such that no elephants were poached in 2023. We have also had feedback from various

partners, including tourism operators within Ruaha National Park in an area bordering MBOMIPA WMA (the WMA serves as an entry route into the park), that signs of illegal activity have declined, with 2023 marking the most notable improvement. They reported a decrease in poacher footprints, fewer wildfire events, and more undisturbed herds of elephants and buffalo. A key challenge for sustaining the project's legacy in MBOMIPA WMA is that the WMA has no tourism revenue; as such, it relies on external funding for its HWC response and law enforcement operations. Through a BIOPAMA-funded project, we are working to strengthen the future economic viability of MBOMIPA WMA by improving governance, securing tourism investment and exploring other income sources so that MBOMIPA eventually becomes self-sufficient. To date, STEP and Honeyguide Foundation have facilitated governance training for all MBOMIPA Authorised Association members (42 members, 14% women). A Manager and Accountant for the WMA were recruited and trained on key skills and we supported the WMA to develop a range of management tools and policies including a financial manual, procurement manual, women empowerment policy, environmental management guidelines, and code of conduct. STEP facilitated stakeholder engagement workshops and training sessions to ensure community awareness of WMA governance, roles, and rights. We also facilitated training sessions for 42 WMA AA members on Principles of Sustainability and hosted a workshop with Honeyguide Foundation to support the AA to develop Business Enterprise Sustainability Tools (BEST) - a business plan for the WMA. As the WMA works towards securing tourism investment and diversifying income streams, we will evaluate potential for cost-sharing of VGS patrol support and assess the need and most cost-effective approach for continuing aerial surveillance in RKM GR and MBOMIPA WMA beyond project end, and raise additional funds as necessary.

13. IWT Challenge Fund identity

The IWT Challenge Fund, UKAID and DEFRA logos are on the STEP website, and was included in included in STEP's 2022 Annual Report (C3) and will be included in STEP's 2023 Annual Report (in preparation). Financial support from the has been acknowledged in reports to (B4-5; B8) and meetings with project partners, village leaders, and project beneficiaries, and has been communicated as forming part of a larger program. STEP's social media accounts include a Facebook page (16,494 followers), Twitter page (1,620 followers), and Instagram page (1,871). In 2023, due to staffing challenges, STEP was less active on social media, but we have resumed near-weekly posts in 2024. Two social media posts were posted on Instagram, which we linked to the Biodiversity Challenge Funds account. Following a visit from the British High Commission in Tanzania and a representative from the IWT Challenge Fund in April 2023, both STEP and the British High Commission posted about the visit on Twitter (links to posts: https://twitter.com/STzElephants/status/1656247833425588224?s=20, and https://twitter.com/UKinTanzania/status/1656239768634634240).

14. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	Yes
Have any concerns been reported in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes. Grace [redacted]
Has the focal point attended any formal training in the last 12 months?	Yes. Training on social safeguards on 19th-20th October 2023, hosted by the USAID Tuhifadhi Maliasili project.

What proportion (and number) of project staff have received formal training on Safeguarding?	**Past: 100% [8]** **Planned: 100% [8]**

Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.

Regular training in the observance of human rights and just arrest and post-arrest procedures for MBOMIPA WMA VGS, the requirement that they adhere to a Code of Conduct (breach of this code is cause for termination), and monitoring of VGS compliance through regular monitoring visits by STEP and post-arrest forms have helped to ensure a professional VGS force.

Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.

Annual refresher training for all project staff to be led by STEP's Human Resources, Compliance and Administration Manager. Annual refresher training for human rights and just arrests and post-arrest procedures for 36 MBOMIPA WMA VGS. Training in human rights and just arrest and post-arrest procedures for 14 RKM GR rangers in Year 3.

Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants.

All community-based Local Elephant Monitors (14, 2 women) received training on safeguarding. Topics included STEP's sexual harassment and child protection policies and code of conduct. (C4, C5).

Have there been any concerns around Health, Safety and Security of your project over the past year? If yes, please outline how this was resolved.

None.

15. Project expenditure

Table 1: Project expenditure during the reporting period (April 2023-March 2024)

Project spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total actual IWT Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
TOTAL	**128,000**	**128,000**		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)	[redacted]		USFWS African Elephant Conservation Fund, USG Department of State
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

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

1. Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
Impact Reduction in IWT and HWC will increase security of Ruaha-Rungwa, enable recovery of wildlife populations, improve community perceptions of and benefits from protected areas, and result in economically resilient communities.		48 rangers and VGS have been trained in HWC response and safety around elephants. Communities have been trained on safety around elephants. 764 individuals have become involved in livelihood activities.	
Outcome Livelihood diversification, reduction of human-wildlife conflict and strengthening of law enforcement capacity result in a reduction in bushmeat poaching, increase household resilience, and begin to improve community perceptions of PAs	0.1 Reduction in the detection rate of illegal activities (disaggregated by type, e.g. bushmeat, and protected area) on ground patrols (Baseline: to be established from 2021-2022 data, target: 15% reduction in Y2 and 30% reduction by Y3). 0.2 Reduction in the detection rate of illegal activities (disaggregated by type, e.g. bushmeat and protected area) on aerial patrols (Baseline: to be established from 2021 data, target: 15% reduction in Y2 and 30% reduction by Y3).	0.1 We are using multiple indicators to assess progress towards this outcome: Bushmeat poacher encounter rates on VGS patrols in MBOMIPA WMA: 0.0035 bushmeat poachers per effective person-patrol day in 2021, 0.0039 bushmeat poachers per effective person-patrol day in 2022, and 0.0030 bushmeat poachers per effective person-patrol day in 2023. Bushmeat poaching camp encounter rates in MBOMIPA WMA: 0.0339 camps per effective person-patrol day in 2021, 0.0246 camps per effective person-patrol day in 2022, and 0.0035 camps per effective person-patrol day in 2023.. Elephant poaching: Baseline: In 2021, 7 elephant carcasses were encountered by VGS in MBOMIPA WMA and adjacent village land, of which 86% were attributed to ivory poaching and 0% to conflict (In 2020, 2 carcasses, 100% due to conflict). Year 1: In 2022, 12 elephant carcasses were encountered by VGS in MBOMIPA WMA and adjacent village land, of	

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		which 75% were attributed to ivory poaching and 17% to conflict. Year 2: In 2023, 2 elephant carcasses were encountered on village land adjacent to MBOMIPA WMA, 100% due to conflict. Bushmeat poaching 1:Baseline: In 2021, 22% of suspects apprehended in the WMA (n=9) were bushmeat-related (67% in 2020, n=15 arrests). Year 1: In 2022, 44% of suspects apprehended in the WMA (n=13) were bushmeat-related. Year 2: In 2023, 34% of suspects apprehended were bushmeat-related (n=35). Bushmeat poaching 2: Baseline: Encounter rates of carcasses of 5 key species targeted for bushmeat were 0.0065 carcasses per effective person-patrol day in 2021 (In 2020, the encounter rate was 0.0093). Year 1: Encounter rates of carcasses of 5 key species targeted for bushmeat were 0.0055 carcasses per effective person-patrol day in 2022. Year 2: Encounter rates of carcasses of 5 key species targeted for bushmeat were 0.0066 carcasses per effective person-patrol day in 2023. 0.2.In RKM GR, the encounter rate for poacher camps associated with bushmeat poaching, mining, and timber cutting was >80% lower in Year 2 (0.123 camps per flight hour in 2023) relative to the pre-project baseline (0.784 camps per fligh hour in 2021). The timber cutting encounter rate in RKM GR decreased by 70% in Year 2 (0.238 sites per flight hour in 2023)	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	0.3 Percentage of engaged beneficiaries who report being able to address the majority of acute household needs through VSLA loans and/or other livelihood activity (Baseline to be established in Y1; target: 80% in Y3). 0.4 Percentage of engaged beneficiaries who retain at least 50% of their crops for sale or consumption at high price periods due to income from poultry farming, beekeeping and increased access to credit from VSLAs (Baseline to be established in Year 1; target: 50% in Y3). 0.5 Engaged households show increased resilience as measured by custom resilience index (ARSSI, Index of Social Capital, RIMA) from Baseline to Year 3 (Baseline to be established in Year 1). 0.6 Reduction in human deaths and injuries and elephant mortalities in the landscape due to human-elephant conflict (Baseline: 5 human deaths, 1 human injury, 2 elephant mortalities in 2021; Target: <5 human deaths/injuries and <2 elephant mortalities in Y3). 0.7 Percentage of surveyed community members around RKM GR	relative to the pre-poject baseline (0.825 sites per flight hour in 2021). Elephant carcass encounter rates for RKM GR dropped from 0.375 carcasses per flight hour in 2020 to 0.008 in 2023. In MBOMIPA WMA and Lunda-Nkwambi GCA, the encounter rates of poacher camps increased from 0 in 2020 and 2022 to 0.047 in 2023, which may reflect greater flight coverage relative to previous years, while timber cutting site encounter rates rose from 0 in 2022 to 0.100 in 2023. There was no change in the elephant carcass encounter rate per flight hour in 2022 (0.111) relative to 2023 (0.113). 0.3 Baseline data has been collected through a Basic Necessities Survey (BNS), and basic data summaries have been generated. Further analysis from baseline surveys will be completed in Year 3; endline data will be collected in the final months of Year 3. In addition to BNS, we collected qualitative data (via interviews) on whether VSLA loans helped VSLA members to meet household needs. Of a sample of 104 VSLA members, 91% stated that the loan(s) they had taken from a VSLA in the previous cycle had helped them to meet household needs (98% for women, 82% for men). 0.4 Of a sample of VSLA members interviewed who were not VSLA members in the 2022-2023 farming season (n=37), 27% sold at least 50% of their harvest during high price periods in the 2022-2023 farming season (baseline). Of a sample of	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	who value improvement in HWC response and state there has been an improvement in RKM GR HWC response between the pre-project period and Y2 (Baseline: to be established in Y1; target: 70% in Y2)	VSLA members interviewed who had been VSLA members for one year in the 2022-2023 farming season (n=18), 22% sold at least 50% of their harvest during high price periods in the 2022-2023 farming season (however, this partly reflects that these members sold a lower proportion of their harvest overall [37%] compared to non-VSLA members [48%]). Of a sample of VSLA members interviewed who had been VSLA members for at least three years in the 2022-2023 farming season (n=15), 33% sold at least 50% of their harvest during high price periods in the 2022-2023 farming season. Considering just the portion of harvest from the 2022-2023 farming season that was sold (disregarding the portion kept for food at the household), 61% of the harvest of non-VSLA members was sold during high price periods, 64% of the harvest of farmers who had been VSLA members for one year was sold during high price periods, and 85% of the harvest of farmers who had been VSLA members for at least three years was sold at high price periods 0.5 Baseline data has been collected and basic data summaries have been generated. Further analysis of RIMA data from baseline surveys will be completed in Year 3. Endline data will be collected in the final months of Year 3. We have also collected qualitative data on whether VSLA membership enhances farmer resilience to elephant crop damage via interviews. Of a sample of households that had	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
		experienced crop loss to elephants in the past 12 months (n=12), 92% stated that being a member of a VSLA helped them to manage the impacts of crop loss; 83% stated that having chickens helped them to manage the impacts of crop loss; and 58% of households stated that beekeeping helped them to manage the impacts of crop loss. 0.6 Across the wider landscape, in 2021, there were 4 human deaths (Simbangulu 1, Ilangali 1, Doroto 1, Manyoni 1), 4 human injuries (Simbangulu 1, Doroto 2, Ilangali 1), 2 elephant mortalities due to conflict (Simbangulu 2). In 2022, there were 6 human deaths (Simbangulu 2, Rulanga 3, Kazikazi 1); 3 human injuries (Simbagulu 1, Damwelu 1, Ilangali 1) and 5 elephant mortalities (Mpapa 1, Simbangulu 2, and Ilangali 2). In 2023, there were 5 human deaths (Doroto 1, Kitaraka 1, Chikola 1, Itagata 1, Idoyndole 1, Mbugani 1), 7 human injuries (Chisingisa 1, Chikol & Manzuchi 4, Mtakuja 1, Mpapa 1), and 3 elephant mortalities (Nkonko 2, Doroto 1) of which 2 were killed due to conflict and 1 was poached for bushmeat. Muhesi GR rangers successfully rescued 7 elephant calves (reuniting them with their families) from village wells in Doroto, Ipande and Lulanga villages. Most of these incidents occurred in either our newer project villages (e.g Mpapa and Simbangulu villages) or areas close to our newer project villages (Ilangali, Rulanga and Damwelu villages). In the	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
		villages where we have LEMs and conduct year-round outreach about safety around elephants, thu has been the trend: 2021: 2 human deaths, 3 human injuries, 2 elephant mortalities; 2022: 2 human deaths, 1 human injury, 3 elephant mortalities; 2023: 2 human deaths, 2 human injuries, 3 elephant mortalities. 0.7 In Year 2, 57% of community members interviewed (n=70) stated that there had been an improvement in RKM GR ranger HWC response in 2023 relative to 2022. 71% stated that RKM GR ranger response is effective, and 83% stated that they value this support from RKM rangers.	
Output 1. 500 community members gain access to safe credit and have more diversified livelihoods to offset illegal wildlife use (bushmeat poaching).	1.1 Percentage of VSLA members who are actively engaged (as measured by attendance and share participation score) and have accessed loans (Baseline to be established in Y1; target: 80% of 500 members in Y3, 50% women, 35% youth) 1.2 Percentage of VSLA members who resort to selling more than 30% of harvest at harvest time by the end of Year 3. (Baseline to be established in Y1; target: <50% in Y2 and <20% by Y3). 1.3 Percentage increase in poultry survival rate among 100 vaccine program participants (50% women)	1.1 In Year 2, 401 VSLA members (44% women, 40% youth) accessed loans with a combined worth exceeding TZS 200,000,000 (£61,700). 1.2 Of a sample of VSLA members (n=37) interviewed who were not VSLA members in the 2022-2023 farming season, 11% sold 30% or more of their harvest within a month of harvesting in the 2022-2023 farming season. Of a sample of VSLA members (n=18) interviewed who had been VSLA members for one year in the 2022-2023 farming season, 6% sold 30% or more of their harvest within a month of harvesting in the 2022-2023 farming season. 1.3 Chicken mortality due to disease (measured over a three month period prior the first round of vaccination and again in the three months after the third round of vaccination) decreased from 21.6% to 1.1% in Rungwa village and 34.2% to 2.8% in Doroto village.	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	(Baseline to be established in Y1; target: average 25% increase in poultry survival rate in Y2, disaggregated by gender). 1.4 Percentage of engaged beekeepers who increase their honey harvest and see a minimum 10% increase in honey sales (100 beekeepers; baseline to be established in Y1; target: 90% in Y3, disaggregated by gender)	1.4 Most groups (55% of 34 VSLA with beehives) have not yet begun to harvest honey. However, of 11 groups that received hives in 2020-2022 and harvested at least once, 72% saw an increase in honey harvests and income from honey in 2023 relative to 2022.	
Activity 1.1 Conduct orientation and sensitization meetings with partners and at village- and sub-village level for the establishment of VSLAs, beekeeping & poultry health interventions		Completed.	Follow-up meetings for updates on progress.
Activity 1.2 Establish and train 20 Village Savings and Loans Associations (25 members per VSLA) with 500 members in 10 villages		45 VSLAs formed in total in Years 1 and 2, with 932 members (43% women and 40% youth).	Provide mentorship and coaching and conduct monitoring for all VSLAs.
Activity 1.3 Establish poultry health intervention trial with 100 participants in 5 villages		Completed the first trial in two villages around RKM GR with 121 participants (55% women). Second trial in progress in villages around MBOMIPA WMA (first and second vaccine distribution conducted in November 2023 and February 2024 with 94 participants (55% women).	Provide third and fourth round of vaccines for second trial, conduct monitoring and evaluation.
Activity 1.4 Provide 200 beehives and beekeeping training to 100 beekeepers in 5 villages		Hive distribution completed, 18 groups (316 members, 40% women) have been trained in beekeeping	Complete coaching and in-situ training, monitor hive occupancy, harvests and honey sales.
Activity 1.5 Ongoing capacity-building and monitoring of livelihood interventions by community-based team		14 community-based local elephant monitors recruited and trained, refresher training for LEMs conducted in March 2024. LEMs continue to assist with monitoring of livelihood interventions.	Continue to provide mentorship and coaching to LEMS in Year 3, LEMs continue to conduct monitoring of livelihood interventions in their respective villages.

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
Output 2. Human-wildlife conflict is reduced through improved rapid HWC response by RKM GR and MBOMIPA WMA and increased knowledge among community members.	2.1 Percentage of reported HWC incidents where rangers arrived at the site of the incident within 3 hours of reporting (Baseline to be established in Y1; target: 50% in Y2; 80% in Y3). 2.2 Percentage of rangers who report that they feel safer and better prepared for HWC response (Baseline to be established pre-training; target: 80% of 32 RKM GR rangers trained in Y1 and 80% of 16 MBOMIPA VGS trained in Y2). 2.3 Percentage of rangers who pass a test measuring key aspects of elephant deterrence (Baseline to be established Pre-Training; target: 75% of 32 rangers trained in Y1 and 75% of 16 VGS trained in Y2). 2.4 Percentage of community members who are able to articulate key aspects of safety around elephants and carnivores (Baseline (2021): 48%; target 75% in Y3).	2.1 It has been difficult to get data on the timing of HWC response team arrival. However, RKM GR rangers and MBOMIPA VGS responded to 410 HWC incidents in Y2. Interviews with RKM GR rangers (n=13) indicate that 85% of rangers feel they arrive on time, while interviews with community members (n=70) indicate that 56% feel that rangers arrive on time. 2.2 Interviews with a sample of RKM GR rangers who received training (n=13) indicate that 77% of rangers feel safe when conducting HEC response, 92% say they have the right tools for HEC response and know how to use those tools, 100% say they have the necessary knowledge and 85% say they have the necessary experience to conduct HEC response. 85% of rangers say that HEC response is effective. 2.3 89% of rangers and VGS trained in Year 2 got a score of 70% or above on a test measuring key aspects of elephant deterrence (pre-training baseline was 68%). 2.4 To be measured in Year 3 (compared against the 2021 baseline).	
Activity 2.1 Provide vehicle for increasing human-wildlife conflict response capacity to RKM GR, together with training on effective use of vehicle for HWC response		Completed.	Follow-up on vehicle use, provide coaching as needed.
Activity 2.2 Enable HWC response by MBOMIPA VGS and RKM GR rangers through fuel provision		Fuel provision is ongoing,	Continue with fuel provision, assist MBOMIPA WMA to develop the HWC response framework.
Activity 2.3 Train 32 RKM GR rangers and 16 MBOMIPA VGS in safety around elephants and more effective elephant deterrent techniques		31 RKM rangers were trained on use of HEC toolkit in Year 1; 12 MBOMIPA VGS were trained on HEC toolkit in Year 2; 27 RKM rangers, 4 MBOMIPA VGS, 2 TAWA ragers, and 2 village-	Conduct post-training follow-up interviews to monitor application of acquired skills.

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
		based VGS were trained on safety around elephants in Year 2.	
Activity 2.4 Local Elephant Monitors conduct one-on-one training for 3000 community members at home and at farms on elephant behaviour and safety around elephants		1,626 community members (31% women) reached by LEMs in Year 1. 3,381 farmers (32% women) reached by LEMs in Year 2.	Continue training, focus on increasing number of women reached.
Activity 2.5 Conduct wide-scale education and outreach programs (Tembo Cup Football Tournament)		In Year 1, 4 tournaments were conducted, reaching >45,000 people. In Year 2, 3 tournaments were conducted, reaching >49,000 people.	Conduct Year 3 tournaments from July to October 2023
Output 3. Novel Instant Detect conservation technology is field-tested and its efficacy, viability and potential for scaling as an early warning system is assessed.	3.1 Percentage of deployment time that the ID system is operational and problem-free (Baseline: 0; Y1:50%; Y2: 75%; Y3: 90%). 3.2 Number of technical issues encountered with the Instant Detect system(Y1: <10, Y2: <5; Y3: <3) 3.3 Percentage of Instant Detect alerts that are verified as accurate detections of illegal activity (i.e. not false triggers) (Y1: 75%, Y2&Y3: 90%) 3.4 6 MBOMIPA WMA VGS (2 women) have 100% of the required skills to operate the Instant Detect system (Baseline: 0; Y1: 70%; Y2&Y3: 100%). 3.5 Percentage of Instant Detect deployment days that the ID Control Room is operational (Baseline: 0; Y1: 70%; Y2&Y3: 100%) 3.6 Percentage of Instant Detect alerts that result in a VGS mobilisation (Baseline: 0; Y1: 70%; Y2&Y3: 100%) 3.7 Percentage of VGS mobilizations in response to Instant Detect alerts	3.1 -3.7 We are unable to report on these indicators due to ID 2.0 system or similar alternative technology not being available for testing in Years 1-2. We have submitted a change request with revised output, activities and indicators on which we can report in the Year 3 report.	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	that result in encounters (Baseline :0; Y1: 20%; Y2&Y3: 40%).		
Activity 3.1 Train 6 MBOMIPA VGS (2 women) in Instant Detect deployment, operation, monitoring and response		Not completed due to ID 2.0 system or similar alternative technology not being available for testing in Years 1-2.	We have submitted a change request for alternative training, which we will report on in the Year 3 report.
Activity 3.2 Deploy and monitor Instant Detect 2.0 system and set up Control Room for Phase 1 of field trial (operationalization)		Control room preparations were made (satellite internet installation, started EarthRanger system rollout), but Phase 1 was not completed due to ID 2.0 system or similar alternative technology not being available for testing in Years 1-2.	We have submitted a change request with a revised activity which we can implement in Year 3.
Activity 3.3 Deploy and monitor Instant Detect 2.0 system for Phase 2 of field trial (efficacy, viability, VGS mobilisation)		Not completed due to ID 2.0 system or similar alternative technology not being available for testing in Years 1-2.	We have submitted a change request with a revised activity which we can implement in Year 3.
Activity 3.4 Produce Instant Detect 2.0 efficacy and viability assessment report and, if trial successful, Standard Operating Procedures for MBOMIPA WMA		This is a Year 3 activity, although it is affected by ID 2.0 system or similar alternative technology not being available for testing in Years 1-2..	We have submitted a change request with a revised activity which we can implement in Year 3.
Output 4. Capacity for aerial surveillance and strategic ground patrols is strengthened and the professionalism of RKM GR rangers and MBOMIPA VGS is enhanced.	4.1 Percentage of MBOMIPA WMA and RKM GR covered by aerial patrol missions (Baseline to be established from 2020 data; target: 90% of MBOMIPA WMA; 40% of RKM GR in all years). 4.2 Percentage of aerial surveillance patrols that result in a same-day ranger/VGS ground mobilisation (Baseline: to be calculated from 2020 data; Y1: 50%; Y2&Y3: 70%). 4.3 Percentage of MBOMIPA WMA covered by monthly VGS ground	4.1 Baseline (2020): 82% of MBOMIPA WMA and 49% of RKM GR covered by aerial patrol missions. Year 2: 94% of MBOMIPA WMA and 31% of RKM GR covered by aerial patrol missions. 4.2 Baseline (MBOMIPA WMA, 2020): 0% of aerial surveillance patrols resulted in same-day VGS ground mobilisation in MBOMIPA WMA. Year 2: 45% of aerial patrols resulted in same-day VGS ground mobilisation in MBOMIPA WMA (25% in Year 1). Baseline (RKM GR, 2020): 63% of	Expand and collect data on spatial coverage of aerial patrols and VGS ground patrols, increase VGS same-day response rate following aerial patrols Facilitate VGS ranger trainings (aerial observers, advanced skills training with PAMs Foundation), conduct pre– and post- training assessment

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	patrols (Baseline: to be computed from 2021 data; Y1: 60%; Y2, Y3: 75%, disaggregated by season). 4.4 Number of VGS who, through training, attain the working standards of the International Ranger Federation. (Baseline (2021): 8 VGS; target: 16 VGS by Y2 (3 women)). 4.5 Number of RKM rangers and MBOMIPA VGS who, through training, attain the necessary skills to serve as aerial observers. (Baseline (2022): 1 RKM Ranger, 0 women; Target: 5 RKM GR rangers and 2 MBOMIPA VGS by Y1 (2 women)). 4.6 Percentage of suspects arrested by VGS that attest in the presence of an independent witness that they were treated fairly during post-arrest procedures (target: 100% in all years) 4.7 Percentage of ivory and bushmeat poaching court case hearings that are attended by MBOMIPA VGS (Baseline (2021): 100%; target: 100% in all years).	aerial surveillance patrols resulted in same-day ranger ground mobilisation in RKM GR. Year 2: 41% of aerial patrols resulted in same-day ranger ground mobilisation in RKM GR (60% in Year 1). 4.3 Baseline: 33% of MBOMIPA WMA covered by monthly VGS ground patrols. Year 1: 34% and Year 2: 36% of MBOMIPA WMA covered by monthly VGS ground patrols. 4.4 In Year 2: an additional 7 VGS (2 women) attained the standards of the International Ranger Federation, bringing the total to 15 VGS (2 women). 4.5 In Year 2, 8 VGS (3 women) underwent training to acquire the necessary skills to serve as aerial observers. 4.6 In Year 2, 100% of suspects arrested by VGS attested (via post-arrest forms) in the presence of an independent witness that they were treated fairly during post-arrest procedures (n=35 arrests). 4.7 In Year 2, 100% of ivory and bushmeat poaching court case hearings were attended by MBOMIPA VGS (n=5 hearings).	
Activity 4.1 Train 5 RKM GR rangers and 2 MBOMIPA VGS (2 women) to become aerial observers		Completed for MBOMIPA (3 women trained), training rescheduled to Year 3 for RKM GR.	In Year 3, efforts will continue to identify opportunities to train more VGS.
Activity 4.2 Conduct 60 hours of aerial surveillance per year in coordination with rapid response ranger and VGS ground teams		209.8 hours of aerial surveillance conducted in Year 1.	Extensive aerial mission planned for Year 3.

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
Activity 4.3 Enable 23 days of strategic patrols by 4 Village Game Scout teams every month in MBOMIPA WMA		Fully implemented.	Continue VGS patrols.
Activity 4.4 Train 8 MBOMIPA VGS (3 women) in basic tactical anti-poaching skills with PAMS Foundation		Completed: 8 VGS (3 women) received training and 7 VGS (2 women) passed the course.	Completed in Year 2.
Activity 4.5 Generate ground and aerial patrol maps and trend analysis reports for protected area managers		Fully implemented: 12 ground patrol reports with maps, and 5 aerial patrol reports generated.	Continue with reporting and mapping of aerial and ground patrols.
Activity 4.6 Conduct refresher training for 39 VGS and 14 RKM GR rangers in human rights, just arrest, and post-arrest procedures		Code of conduct (including human rights, just arrest procedures) reviewed with 36 VGS	Training to be completed in Q2 of Year 3.
Activity 4.7 Support MBOMIPA WMA VGS to provide witness testimony in court cases		VGS were supported to provide witness testimony in 5 court hearings in Year 2.	Continue to support VGS to attend court cases.

2. Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	SMART Indicators	Means of verification	Important Assumptions
Impact: Reduction in IWT and HWC will increase security of Ruaha-Rungwa, enable recovery of wildlife populations, improve community perceptions of and benefits from protected areas, and result in economically resilient communities. .			
Outcome: Livelihood diversification, reduction of human-wildlife conflict and strengthening of law enforcement capacity result in a reduction in bushmeat poaching, increase household resilience, and begin to improve community perceptions of PAs.	0.1 Reduction in the detection rate of illegal activities (disaggregated by type, e.g. bushmeat, and protected area) on ground patrols (Baseline: to be established from 2021-2022 data, target: 15% reduction in Y2 and 30% reduction by Y3). 0.2 Reduction in the detection rate of illegal activities (disaggregated by type, e.g. bushmeat and protected area) on aerial patrols (Baseline: to be established from 2021 data, target: 15% reduction in Y2 and 30% reduction by Y3). 0.3 Percentage of engaged beneficiaries who report being able to address the majority of acute household needs through VSLA loans and/or other livelihood activity (Baseline to be established in Y1; target: 80% in Y3). 0.4 Percentage of engaged beneficiaries who retain at least 50% of their crops for sale or consumption at high price periods due to income from poultry farming, beekeeping and increased access to credit from VSLAs (Baseline to be established in Year 1; target: 50% in Y3). 0.5 Engaged households show increased resilience as measured by custom resilience index (ARSSI, Index of Social Capital, RIMA) from Baseline	0.1 MBOMIPA WMA VGS patrol forms (Survey123) and GPS tracklogs; RKM GR patrol records 0.2 Aerial patrol database generated from aerial patrol datasheets, flight tracklogs and aircraft Journey Logbook 0.3 Baseline and endline surveys 0.4 Crop Sale Survey, ongoing at weekly VSLA Meetings from May-September annually 0.5 Resilience Assessment results, baseline and endline surveys 0.6 Protected Area and Village Government records 0.7 Protected Area Benefit Audit for RKM GR	0.1 Limited access to safe and reliable credit is a driver of bushmeat poaching. 0.2 Beneficiaries will reduce reliance on bushmeat and move away from IWT. 03. Increasing detection of bushmeat poaching and arrests of poachers will effectively deter poaching. 0.4 Improvement in HWC response will contribute to more positive community perceptions of RKM GR.

Project summary	SMART Indicators	Means of verification	Important Assumptions
	to Year 3 (Baseline to be established in Year 1). 0.6 Reduction in human deaths and injuries and elephant mortalities in the landscape due to human-elephant conflict (Baseline: 5 human deaths, 1 human injury, 2 elephant mortalities in 2021; Target: <5 human deaths/injuries and <2 elephant mortalities in Y3). 0.7 Percentage of surveyed community members around RKM GR who value improvement in HWC response and state there has been an improvement in RKM GR HWC response between the pre-project period and Y2 (Baseline: to be established in Y1; target: 70% in Y2)		
Output 1 500 community members gain access to safe credit and have more diversified livelihoods to offset illegal wildlife use (bushmeat poaching).	1.1 Percentage of VSLA members who are actively engaged (as measured by attendance and share participation score) and have accessed loans (Baseline to be established in Y1; target: 80% of 500 members in Y3, 50% women, 35% youth) 1.2 Percentage of VSLA members who resort to selling more than 30% of harvest at harvest time by the end of Year 3. (Baseline to be established in Y1; target: <50% in Y2 and <20% by Y3). 1.3 Percentage increase in poultry survival rate among 100 vaccine program participants (50% women) (Baseline to be established in Y1; target: average 25% increase in poultry survival rate in Y2, disaggregated by gender). 1.4 Percentage of engaged beekeepers who increase their honey harvest by at	1.1 VSLA weekly meeting and CHOMOKA app records 1.2 Crop Sale Survey, ongoing at weekly VSLA Meetings from May-September annually 1.3 Poultry pre- and post-vaccine assessment data 1.4 Beekeeping monitoring data and reports (occupancy, harvest and sales)	1.1 With targeted and sensitive outreach and tailored training, people engaged in IWT, women and youth will be interested to join VSLAs and engage in beekeeping and poultry trials, take on leadership positions in VSLAs and actively adopt and maintain these livelihood activities. 1.2 Poultry vaccine supply chains are sufficiently robust to support affordable vaccine purchase. 1.3 Extreme weather events (e.g., drought) do not affect the viability of beekeeping.

Project summary	SMART Indicators	Means of verification	Important Assumptions
	least 20% and see a minimum 10% increase in honey sales (100 beekeepers; baseline to be established in Y1; target 90% in Y3, disaggregated by gender)		
Output 2 Human-wildlife conflict is reduced through improved rapid HWC response by RKM GR and MBOMIPA WMA and increased knowledge among community members.	2.1 Percentage of reported HWC incidents where rangers arrived at the site of the incident within 3 hours of reporting (Baseline to be established in Y1; target: 50% in Y2; 80% in Y3). 2.2 Percentage of rangers who report that they feel safer and better prepared for HWC response (Baseline to be established pre-training; target: 80% of 32 RKM GR rangers trained in Y1 and 80% of 16 MBOMIPA VGS trained in Y2). 2.3 Percentage of rangers who pass a test measuring key aspects of elephant deterrence (Baseline to be established Pre-Training; target: 75% of 32 rangers trained in Y1 and 75% of 16 VGS trained in Y2). 2.4 Percentage of community members who are able to articulate key aspects of safety around elephants and carnivores (Baseline (2021): 48%; target 75% in Y3).	2.1 Ranger HWC response records; Key Informant interviews with Village Leaders 2.2 Ranger Training Feedback, pre-training and post-training assessment 2.3 Test Results (test designed by STEP with input from Protected Area staff and trainer) 2.4 Knowledge retention assessments conducted at Outreach Events and by LEMs	2.1 RKM GR and MBOMIPA WMA continue to allocate resources to HWC Response and to prioritise rapid response. 2.2 Provision of targeted training and elephant deterrent toolkits will help rangers feel they are better prepared to conduct HWC response.
Output 3 Novel Instant Detect conservation technology is field-tested and its efficacy, viability and potential for scaling as an early warning system is assessed.	3.1 Percentage of deployment time that the ID system is operational and problem-free (Baseline: 0; Y1:50%; Y2: 75%; Y3: 90%). 3.2 Number of technical issues encountered with the Instant Detect system(Y1: <10, Y2: <5; Y3: <3)	3.1 Instant Detect system report and Daily Instant Detect Operations Logbook (filled out by VGS in Control Room). 3.2 Instant Detect system report and Daily Instant Detect Operations Logbook (filled out by VGS in Control Room).	3.1 The Instant Detect system is available by the manufacturer's stated release date. This second release of the Instant Detect System has resolved technical issues experienced during the first

Project summary	SMART Indicators	Means of verification	Important Assumptions
	3.3 Percentage of Instant Detect alerts that are verified as accurate detections of illegal activity (i.e. not false triggers) (Y1: 75%, Y2&Y3: 90%) 3.4 6 MBOMIPA WMA VGS (2 women) have 100% of the required skills to operate the Instant Detect system (Baseline: 0; Y1: 70%; Y2&Y3: 100%). 3.5 Percentage of Instant Detect deployment days that the ID Control Room is operational (Baseline: 0; Y1: 70%; Y2&Y3: 100%) 3.6 Percentage of Instant Detect alerts that result in a VGS mobilisation (Baseline: 0; Y1: 70%; Y2&Y3: 100%) 3.7 Percentage of VGS mobilizations in response to Instant Detect alerts that result in encounters (Baseline :0; Y1: 20%; Y2&Y3: 40%).	3.3 Physical verification of a randomly selected subset of Instant Detect alerts (e.g. checking for tracks at the deployment site), recorded by VGS in a mobile data collection form (Survey123) 3.4 Pre- and post -training evaluation in Year 1; Skills Evaluation Test in Y2 and Y3: verification of Instant Detect Daily Operations Checklist in Control Room 3.5 Daily Instant Detect Operations Logbook (filled out by VGS in the Control Room). 3.6 VGS patrol forms (mobile data collection using Surveys 123) records, Daily Instant Detect Operations Logbook 3.7 VGS patrol forms (mobile data collection using Surveys 123) records, Daily Instant Detect Operations Logbook	release of the system. 3.2 The Instant Detect system can be protected against theft and environmental damage (e.g. flooding, fire) through careful deployment. 3.3 Following intensive training, VGS will be able to use the acquired skills and knowledge to deploy and monitor the system with minimum supervision. 3.4 The satellite internet connection for transmitting Instant Detect alerts to the Control Room is fast and reliable.
Output 4 Capacity for aerial surveillance and strategic ground patrols is strengthened and the professionalism of RKM GR rangers and MBOMIPA VGS is enhanced.	4.1 Percentage of MBOMIPA WMA and RKM GR covered by aerial patrol missions (Baseline to be established from 2020 data; target: 90% of MBOMIPA WMA; 40% of RKM GR in all years). 4.2 Percentage of aerial surveillance patrols that result in a same-day ranger/VGS ground mobilisation (Baseline: to be calculated from 2020 data; Y1: 50%; Y2&Y3: 70%). 4.3 Percentage of MBOMIPA WMA covered by monthly VGS ground patrols (Baseline: to be computed from 2021 data; Y1: 60%; Y2 Y3: 75%, disaggregated by season).	4.1 Mapping and spatial analysis of aerial patrol tracklogs 4.2 Aerial patrol datasheets 4.3 Mapping and spatial analysis of VGS patrol tracklogs 4.4 Pre- and post-training assessments; spot checks of pre-patrol plans and checklist. 4.5 Pre- and post-training assessment 4.6 Post-arrest forms 4.7 Court attendance monitoring form, court cases database	4.1 We assume that the new aircraft will operate issue-free with only minor maintenance requirements. 4.2 STEP will be able to maintain its established and trusted relationships with RKM GR and MBOMIPA leadership.

Project summary	SMART Indicators	Means of verification	Important Assumptions
	4.4 Number of VGS who, through training, attain the working standards of the International Ranger Federation. (Baseline (2021): 8 VGS; target: 16 VGS by Y2 (3 women)). 4.5 Number of RKM rangers and MBOMIPA VGS who, through training, attain the necessary skills to serve as aerial observers. (Baseline (2022): 1 RKM Ranger, 0 women; Target: 5 RKM GR rangers and 2 MBOMIPA VGS by Y1 (2 women)). 4.6 Percentage of suspects arrested by VGS that attest in the presence of an independent witness that they were treated fairly during post-arrest procedures (target: 100% in all years) 4.7 Percentage of ivory and bushmeat poaching court case hearings that are attended by MBOMIPA VGS (Baseline (2021): 100%; target: 100% in all years).		
Activities 1.1 Conduct orientation and sensitization meetings with partners and at village- and sub-village level for the establishment of VSLAs, beekeeping & poultry health interventions 1.2 Establish and train 20 Village Savings and Loans Associations (25 members per VSLA) with 500 members in 10 villages 1.3 Establish poultry health intervention trial with 100 participants in 5 villages 1.4 Provide 200 beehives and beekeeping training to 100 beekeepers in 5 villages 1.5 Ongoing capacity-building and monitoring of livelihood interventions by community-based team 2.1 Provide vehicle for increasing human-wildlife conflict response capacity to RKM GR, together with training on effective use of vehicle for HWC response 2.2 Enable HWC response by MBOMIPA VGS and RKM GR rangers through fuel provision 2.3 Train 32 RKM GR rangers and 16 MBOMIPA VGS in safety around elephants and more effective elephant deterrent techniques 2.4 Local Elephant Monitors conduct one-on-one training for 3000 community members at home and at farms on elephant behaviour and safety around elephants 2.5 Conduct wide-scale education and outreach programs (Tembo Cup Football Tournament) 3.1 Train 6 MBOMIPA VGS (2 women) in Instant Detect deployment, operation, monitoring and response 3.2 Deploy and monitor Instant Detect 2.0 system and set up Control Room for Phase 1 of field trial (operationalization) 3.3 Deploy and monitor Instant Detect 2.0 system for Phase 2 of field trial (efficacy, viability, VGS mobilisation)			

Project summary	SMART Indicators	Means of verification	Important Assumptions
3.4 Produce Instant Detect 2.0 efficacy and viability assessment report and, if trial successful, Standard Operating Procedures for MBOMIPA WMA 4.1 Train 5 RKM GR rangers and 2 MBOMIPA VGS (2 women) to become aerial observers 4.2 Conduct 60 hours of aerial surveillance per year in coordination with rapid response ranger and VGS ground teams 4.3 Enable 23 days of strategic patrols by 4 Village Game Scout teams every month in MBOMIPA WMA 4.4 Train 8 MBOMIPA VGS (3 women) in basic tactical anti-poaching skills with PAMS Foundation 4.5 Generate ground and aerial patrol maps and trend analysis reports for protected area managers 4.6 Conduct refresher training for 39 VGS and 14 RKM GR rangers in human rights, just arrest, and post-arrest procedures 4.7 Support MBOMIPA WMA VGS to provide witness testimony in court cases			

Annex 3 Standard Indicators

Table 1 Project Standard Indicators

IWTCF Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with IWTCF Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
IWTCF-A01	Number of people who received training in sustainable livelihood skills	1. 500 community members gain access to safe credit and have more diversified livelihoods to offset illegal wildlife use (bushmeat poaching) through training	Number	Gender (Male and Female), Type of Training (VSLA, beekeeping, poultry vaccine administration	426	338		764	500
IWTCF-A05	Number of credit and savings groups established	Not an indicator currently discretely tracked in the logframe	Number	VSLAs per location	18	21		39	20
IWTCF-A06	Total number of loans provided to Micro Small and Medium Enterprises (MSMEs)	Not an indicator currently discretely tracked in the logframe	Number	Number of loans per type (agriculture, business establishment, emergency response)	686	1,123		1,809	TBD
IWTCF-A07	Total Value of Loans Provided	Not an indicator currently discretely tracked in the logframe	Value in £	Amount lent per type (agriculture, business establishment, emergency response)	~£41,300	~£61,700		~£103,000	TBD
IWTCF-A08	Number of sustainable livelihoods enterprises established	Not an indicator currently discretely tracked in the logframe	Number	VSLAs per location	18	21		39	TBD
IWTCF-A09	Number of existing enterprises receiving capacity building support	Not an indicator currently discretely tracked in the logframe	# existing VSLAs	VSLAs per location	8	8		8	8
WTCF-B01	Number of people trained in law enforcement skills.	4.4 Number of VGS who, through training, attain the working standards of the International Ranger Federation. (Baseline (2021): 8 VGS; target: 16 VGS by Y2 (3 women)).	Number	Gender (Male & Female) Stakeholder group: village game scouts. Type of Law Enforcement training: IRF by PAMS Foundation.	0	8		0	8

IWTCF Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with IWTCF Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
WTCF-B01	Number of people trained in law enforcement skills.	4.5 Number of RKM rangers and MBOMIPA VGS who, through training, attain the necessary skills to serve as aerial observers. (Baseline (2022): 1 RKM Ranger, 0 women; Target: 5 RKM GR rangers and 2 MBOMIPA VGS by Y1 (2 women)).	Number	Gender (Male & Female) Stakeholder group: rangers and village game scouts. Type of Law Enforcement training: aerial patrol observer training.	0	8		8	7
WTCF-B05	Number of best practice guides and knowledge products[5] (i.e. product identification etc.)6 published and endorsed[7]	Number of assessments and best practice guides produced for novel early warning technology	Number	Languages: English, Kiswahili Type of tool: assessment report and best practice guide	0	0		0	2
IWTCF-B09	Duration or frequency of patrols by law enforcement rangers supported through the project.	Number of patrol days supported by the project in MBOMIPA WMA.	Duration (days)	Type of patrol: Foot patrol or vehicle patrol	863 (699 foot, 164 vehicle)	998 (862 foot, 136 vehicle)		1861	3036
IWTCF-B10	Number of arrests (linked to wildlife crime) facilitated by the project	Number of arrests linked to wildlife crime	Number	Level of offence charged: bushmeat, ivory	7 (6 bushmeat, 1 ivory)	13 (all bushmeat)		20	No specific target
IWCF-B12	Number of wildlife crime cases submitted for prosecution[9]	Number of wildlife crime cases submitted for prosecution	Number	Type of charges: unlawful possession of bushmeat, firearms, and ivory	5 (bushmeat 3, firearm	3 (bush,meat 2, firearms 1)		8	No specific target

IWTCF Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with IWTCF Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
					s 1, ivory 1)				
IWCF-B13	Number of individuals charged for wildlife crime	Number of individuals charged for wildlife crime	Number	Type of charges: unlawful possession of bushmeat, firearms, and ivory	5 (bushmeat 3, firearm 1, ivory 1)	11 (bushmeat 8, firearm 3)		16	No specific target
WTCF-B14	Number of individuals successfully prosecuted for wildlife crimes	Number of individuals successfully prosecuted for wildlife crimes	Number	Type of charges: unlawful possession of bushmeat, firearms, ivory	0	2		2	No specific target
IWTCF-B23	Number of databases established that are used for law enforcement.	Number of databases established that are used for law enforcement in MBOMIPA WMA.	Number	Type of Database: ESRI PAMS database (shifted to EarthRanger in Y2)	1	1		1	1
IWTCF-D03	Number of local/national organisations[15] with improved capability and capacity as a result of the project.	Number of local and national organisations with improved capacity	Number of organisations	Organisation Types: MBOMIPA Wildlife Management Area (local), Tanzania Wildlife Management Authority (national)	2	2		2	2
IWTCF-D19	Social media presence[21]	Number of social media followers	Number of followers	By platform	19,903 (Facebook 16,619, X 1,642, Instrag	19,985 (Facebook 16,494, X 1,620, Instagram 1,871)		19,903	No specific target

IWTCF Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with IWTCF Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
					ram 1,642)				

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i. Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the **correct template** (checking fund, type of report (i.e. Annual or Final), and year) and **deleted the blue guidance text** before submission?	Yes
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the subject line.	NA
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the subject line.	Yes
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 17)?	NA
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	