# Illegal Wildlife Trade (IWT) Challenge Fund
# Final Report

*To be completed with reference to the "Writing a Darwin/IWT Report" Information Note: (https://iwt.challengefund.org.uk/resources/reporting-forms-change-request-forms-and-terms-and-conditions/). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes.*

## IWT Challenge Fund Project Information

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| Project reference | IWT064 |
| Project title | Determining the deterrent effect of combatting wildlife crime |
| Country(ies) | Malawi |
| Lead organisation | Lilongwe Wildlife Trust |
| Partner institution(s) | Department of National Parks and Wildlife |
| | Malawi Police Services |
| | Malawi Prison Services |
| | Netherlands Institute for the Study of Crime and Law Enforcement |
| | University of Southampton |
| | TRACE Wildlife Forensic Network |
| IWT grant value | GBP 239, 018 |
| Start/end dates of project | 1 April 2019 – 31 March 2022 |
| Project Leader's name | Jonathan Vaughan |
| Project website/blog/social media | N/A |
| Report author(s) and date | Jonathan Vaughan 20 June 2022 |

**Please note that this report, and all associated attachments are confidential due to security risks (as was advised in the application). We have papers and briefing reports in prep. which will be open access. Please do not share this report, or the outputs, without consultation with LWT – thank you.**

## 1.    Project summary

This research project aimed to: i) demonstrate the effectiveness and impacts of law enforcement deterrents for wildlife crime, ii) determine which deterrents are most effective for combatting wildlife crime and iii) test whether conventional law enforcement deterrents are effective in the socio-cultural context of Malawi. The project built on, and further developed, partnerships and results based on seven years of law enforcement activities delivered under Lilongwe Wildlife Trust's (LWT) Wildlife Justice Programme in partnership with the Government of Malawi (GoM).

**Districts of Malawi**
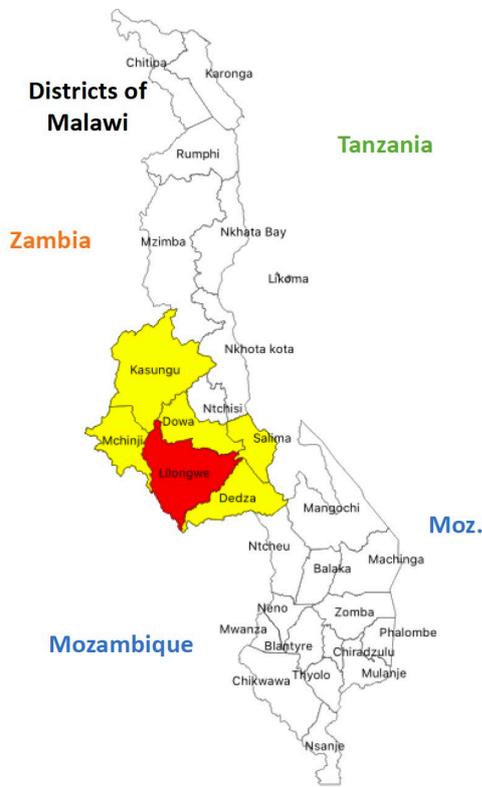
Our project is based in Malawi. The analysis of official law enforcement Arrest and Seizure data highlighted that Lilongwe district (in red) had the highest number of arrests for ivory trafficking. One element of the project was therefore to examine what effect a deterrence through law enforcement might have in arrest data in the districts bordering Lilongwe (in yellow).

## 1.1 Problem statement

Since 2014 (with the LWT-produced Review of Illegal Wildlife Trade in Malawi) and since the identification of Malawi as a "country of primary concern" (as a transit country for wildlife trafficking: see reports from CITES CoP17 in 2016, stemming from the ETIS data), LWT (and other partners) have been investing significant funds and effort to combat wildlife crime.

This has included putting in place strategies to disrupt wildlife crime, including several deterrents, the majority of which are conventional law enforcement deterrents. Throughout the implementation of this work, LWT and partners have collected data on process indicators (e.g., number of arrests, conviction rates). However, the impact or effectiveness of these disruptions and deterrents on wildlife crime had not been determined. The overall impact or effectiveness of the deterrents in use was therefore unknown. Similarly, if an impact had indeed occurred, which of the various deterrents in place were most effective in reducing wildlife crime could not be determined.

As far as we are aware, this is the first IWT project which aimed to quantitatively examine i) the effectiveness and impacts of the deterrents, ii) which deterrents are most effective for combatting wildlife crime and iii) to test whether conventional law enforcement deterrents are effective in the socio-cultural context of Malawi.

The outcome of the project was that organisations involved in combatting the IWT in Malawi will utilise the findings of the project to improve their future deterrent law enforcement strategies. This will then lead to a reduction in wildlife crime in Malawi as agencies implement the deterrent strategies determined to be most effective. The project is in, and focuses on, Malawi, but through our work with regional partners, and publication of the results, it is likely that the methodology of the project and the results could be useful in other countries which are attempting to counter IWT, particularly with limited criminal justice budgets.

## 1.2 Aspects of the illegal wildlife trade addressed by the project

The project aimed to deliver a reduction in wildlife crime in Malawi once/if agencies implement the deterrent strategies demonstrated as effective by the project. This project is ground-breaking in terms of critically examining the efforts of strategies designed and implemented by LWT and law enforcement agencies over the past seven years. This reflection is essential to prevent an ongoing cycle of using the same techniques if they are not proven as effective in combating wildlife crime and ultimately protecting wildlife. Given the significant constraints on capacity and finances throughout Malawi's criminal justice system, it is also important to demonstrate value for money when determining appropriate deterrents.

The project therefore aimed to assess the impact of legislative penalties and law enforcement strategies in place in order to ultimately ensure an effective criminal justice process to better protect species endangered by the IWT both nationally and regionally.

### 1.3 Poverty challenges the project was designed to address

As noted in the independent review of the Year 1 Annual Report, "the project is not directly supporting poverty alleviation. Any intended poverty alleviation impacts are indirect".

The project will, in the long-term, indirectly, contribute to meeting the objectives of the following SDGs:

Goal 1 - Ending poverty - specifically by helping to reduce the number of people who would otherwise be involved in wildlife crime (increasing deterrents).

Goal 15 - Life on land – with effective deterrents in place, the project will contribute to preserving life on land, and promoting the conservation of terrestrial ecosystems, stopping biodiversity loss.

Goal 16 - Peace, justice and strong institutions - through promotion of the rule of law, and ensuring that Malawi has transparent, effective and accountable justice institutions that tackle wildlife crime.

Goal 17 - Means of implementation and partnerships by enhancing the cooperation and collaboration of the partnerships on which combatting wildlife crime is so dependent.

There are numerous potential results of the project which can contribute to poverty reduction such as proposals to amended sentencing rules. Determining the socio-economic status of offenders may help to target appropriate crime prevention strategies for different groups. Effective deterrents will reduce wildlife crime which could have a direct and positive impact on those people (and their extended families) who would otherwise become involved in wildlife crime. An indirect but long-term impact on developing sustainable livelihoods and economic development in areas made safer due to reduced crime - particularly for people living in the vicinity of protected areas.

## 2.      Project Partnerships

The project maintained strong and effective partnerships (with signed project agreements as submitted in Yr 1 AR) between the Lilongwe Wildlife Trust (as lead organisation), the University of Southampton, the Netherlands Institute for the Study of Crime and Law Enforcement (NSCR), TRACE Wildlife Forensics Network and the Malawi Prison Service throughout the project. The partnership included additional government partners in Malawi (Department of National Parks and Wildlife (DNPW), Malawi Police Service (MPS)). The independent Year 1 Annual Report Review queried whether LWT had in place MoUs with other arms of the State in Malawi; this was addressed in the Yr 2 annual review, noting that LWT's existing MoUs include, but are not exhaustive of, MPS (investigations and prosecutions), DNPW, Financial Investigation Agency (FIA). These MoUs were approved outside of this specific project but enabled LWT to access data and receive information needed for the effective implementation of this project. In addition, LWT is a civil society member of Malawi's Inter-Agency for Combating Wildlife Crime (IACCWC) which was also appraised of the project at the start and LWT delivered a presentation on the final report findings to the Committee in March 2022.

We also worked with Anne-Marie Weedon (independent consultant) to complete the Synthesis Report and with Welton Phalira, of Bigpot Consulting in Malawi to complete the internal independent project review. Regionally we work closely with the Tikki Hywood Foundation (THF) (Zimbabwe) and the PAMS Foundation (Tanzania).

All partners were involved in project design, planning and decision making throughout the project, through regular online calls (LWT/NSCR/UoS/TRACE), meetings in-country (TRACE, Welton Phalira), briefing updates to Malawi partners (DNPW, MPS, IACCWC) and regular consultations throughout to implement activities and share data (DNPW, MPS, Prisons Service). Additionally, LWT/NSCR/UoS and Anne-Marie Weedon met online to finalise discussions on the in-prep papers and briefings for publication and to discuss aspects of this final report.

LWT has worked with Dr Andrew Lemieux from NSCR and Professor Rob Ogden from TRACE previously, so already had good working relationships. This was the first time we have worked with Dr Michelle Newberry from UoS, and this relationship worked very smoothly, the area of work is of particular interest to Michelle and she was able to add considerable insights from wider criminological research to interpret the offenders' interviews. As above, LWT works closely with Malawi government partners in the normal

course of our Wildlife Justice Programme, and this will continue. Considering the success of this project, we plan to engage with all partners/consultants as appropriate in on-going work.

A major strength of these partnerships was the harnessing of a diversity of skills and backgrounds to bring a breadth of knowledge to this project, encompassing strong law enforcement, criminology, and sociology expertise. The challenges were only around the COVID-19 restrictions as below, but despite these we managed to deliver all outputs.

The British High Commission in Malawi was sent a copy of the Year 1 and 2 Annual Reports and a copy of this Final Report and Synthesis Report will be shred once the independent review has been received.

## 3.    Project Achievements

### 3.1   Outputs
This project produced five main research outputs; for ease of reference throughout, they are listed here and the main conclusions of each are detailed under the respective Output; full reports are included as Annexes.

(i)    **Suspect Behaviour Analysis** (analysis of specific intel) authored by Dr Andrew Lemieux, NSCR

(ii)   **Analysis of Arrest and Seizure Data** (analysis of ivory-related arrests and seizures) authored by Dr Andrew Lemieux, NSCR. The reports for (i) and (ii) are combined in the **'Measuring Deterrence Report',** Annex 1.

(iii)  **Offender Study** (analysis of the prisoner interviews, **'Interviews with Offenders Report'**, Annex 2), authored by Dr Michelle Newberry, UoS

(iv)   **Forensic DNA Analysis** of the Malawian ivory stockpile, (DNA analysis to determine geographic origin of elephants represented in ivory seizures, Annex 3), authored by Professor Rob Ogden, TRACE Forensics

(v)    **Synthesis Report** 'Determining the Deterrent Effect of Combatting Wildlife Crime. A synthesis of arrest, seizure and offender research in Malawi' (secondary analysis of the four components of primary research above, Annex 4), authored by Anne-Marie Weedon

In addition, semi-structured interviews and personal correspondence with key representatives of the LWT project team were used to inform the Synthesis Report (responses referenced in the report). An internal evaluation of the project was carried out by Welton Phalira (Annex 5).


**Output 1: Demonstrate the disruptions and deterrents of wildlife trafficking and trade in Malawi through project.**
*Indicator 1.1 By the end of the project (2022), findings will be presented in a report, and this will be disseminated to Malawi's IWT law enforcement agencies. It is anticipated that this report will be used to inform the future law enforcement strategies used by agencies in the Inter-Agency Committee to Combat Wildlife Crime (IACCWC).*
**COMPLETED** – see Synthesis Report combining all primary data reports, and details below on how this has been shared and endorsed.

As per the problem statement (section 1.1), over the past seven years LWT and partners have collected data on various indicators (e.g. number of arrests and weight of ivory seizures), yet the deterrent effect and relative effectiveness of these activities had not been systematically measured. The baseline for this project was therefore that the impact and effectiveness of conventional law enforcement strategies of criminalisation and punishment had not been assessed. Clearly this evidence is crucial to inform on-going law enforcement activities and becomes a greater necessity in a country where the capacity and budgets of the criminal justice system are seriously constrained. Assessing the impact specifically within the socio-cultural context of Malawi is therefore equally important and is discussed further under Output 2.

This was an ambitious research project, and as far as we know is the first time an NGO has sought to determine the deterrence impact of law enforcement strategies for combating wildlife crime.

**Output 1** was achieved through the production of the **Suspect Behaviour Analysis, Analysis of Arrest and Seizure Data** (combined in the **Measuring Deterrence Report**) and the **Synthesis Report.** The central methodologies and conclusions of each are as below, noting that these are detailed reports and significant additional results can be read in full in each attached report.

**1) Suspect Behaviour Analysis (Measuring Deterrence Report)**

The data used for the specific deterrent analysis was based on two previous investigations as case studies. The data was logged in a debrief database and included 5 key types of information, including the actor(s) observed, the description of the observation, information about the trafficking route (if relevant), the concealment method (if relevant), and the price for products or services offered. Intel from human sources held in government intelligence databases, was also examined to detect deterrence impacts.

- A general deterrent impact was observed in the way known offenders changed their behaviour in response to high-profile arrests or sanctioning events of others, such as Chinese nationals living in Lilongwe destroying wildlife goods by throwing them in the river after Police raids in Lilongwe against other Chinese residents and Zambian ivory traders refusing to come to Malawi for fear of arrest.
- These indicators are highly significant, as they show a clear causal relationship between highly-targeted enforcement activity and general deterrence. Notably, they all follow the high-profile arrests and prosecutions of multiple Chinese members of the Lin-Zhang syndicate following covert intelligence-led investigations that led to the arrests in May and August 2019, in Lilongwe.
- The report also notes challenges with investigation data for studying specific deterrence (e.g. low quantity of data due to few investigations of high-profile targets, collecting and analysing the data is challenging as the investigation – rather than long-term longitudinal research – is the focus with limited resources). However, this type of methodology has significant potential for long-term studies into deterrence impacts, whether in Malawi or elsewhere if resources and funding are available.

**2) Analysis of Arrest and Seizure data (Measuring Deterrence Report)**

This report analysed court reporting of ivory seizures including district, weights, number of pieces, and year; and arrest information including the number of suspects, case outcomes and sentencing. In addition, it included some secondary analysis and comparisons to results of the offender interview study and the analysis of suspect behaviour.

- Number of arrests for ivory offences saw a steady decline from 70 in 2017 to 40 in 2021. The weight and number of pieces of ivory seized also declined during this period, notably from 2020 onwards.
- The analysis observed a classic Pareto Principle in effect, with 7 out of 28 districts accounting for 75% of all ivory arrests and 82% of ivory weights seized during 2017-2021. Lilongwe is a clear outlier, accounting for 26% of all arrests.
- Ivory trafficking arrests in Lilongwe district dropped from 27 in 2017 to just 1 in 2020 and 5 in 2021.
- Temporal analysis of the ivory seizure data, showed that the number of pieces of ivory per seizure in Lilongwe and Mzimba, despite upticks in 2020/2021, are still showing declines of 50% and 70% compared to 2019 levels.
- National trends of seizure weights show that very large seizures (>50kg) are rare. Only one seizure of >100kg occurred during the timeframe (in 2017). Trade of <2kg , 5-10kg and 10-20kg weights were relatively stable over the period, but trade in 2-5kg seizures dropped dramatically in 2020-2021.
- Half of all seizures involved pieces of ivory which weighed less than 3kg, and this weight category has declined over time - the average weight per piece seized has increased over time.
- 50-100kg seizures made up only 4% of all seizures but contributed to 17% of all weight.
- Larger individual pieces of ivory are only found in larger shipments, and small pieces of 1-2kg are rarely found in shipments above 20kg. This indicates that large-volume traders prefer bigger pieces. This insight aligns with qualitative responses which observe that the high-value Chinese traders in Malawi prefer ivory of a certain standard and quality.
- Conviction rates in Lilongwe district rose from <75% in 2017 to 100% in 2020 and 2021, and all convicted offenders were sentenced with incarceration, with sentences rising steadily in severity from 2017-2021. Placing suspects on remand became standard practice in later years, having been less common in the first period of the study. Both certainty and severity of punishment therefore increased significantly over the period, which may have strengthened the general deterrence effect.
- The report concludes that **a deterrent effect is clearly seen in Lilongwe district during the period of study, with significant reductions in arrest and seizure indicators seen after 2019. This correlates with the timing of the Lin-Zhang syndicate arrests,** which interviews with LWT representatives suggested resulted in a "fear factor" developing among members of the Chinese

wildlife offender community in Lilongwe after that time. Anecdotally, this resulted in the cessation of their ivory-trading activities, and also led to a decline in demand for pangolins, as well as resulting in significant levels of restrictive deterrence behaviour by suspects.

- The report speculates it is possible that part of the decline can be attributed to Covid-19 related impacts, such as travel restrictions. Monitoring arrests and seizures in 2022 will be important to determine whether activity returns to pre-pandemic levels.
- Analysis of arrest and seizure data alone has limitations, and as proposed in the methodological design of the Deterrence project, results need to be compared to other research including qualitative insights to further explain their significance and verify or eliminate certain hypotheses.

## 3) Synthesis Report

The Synthesis Report provides further analysis of the primary data discussed in reports (i), (ii), (iii) and (iv) above. In addition, it provides valuable contextual analysis through establishing a timeline of key events including major international policy changes, notable local interventions including the passage of various laws and regulations, and the implementation of public-private prosecution and court monitoring programmes (supported by LWT). Correlating the highly significant event of enforcement success against the Lin-Zhang syndicate, including high profile arrests in May and August 2019, became central to understanding the deterrent effect observed in the primary data analysis. The Synthesis Report also provides insights on the role of women in IWT in Malawi and centres the results in wider theories of criminology.

- **The report confirms that there is significant evidence of deterrence impacts occurring in Malawi.** By arresting and punishing (imprisoning) Listed Species wildlife offenders, a specific deterrent impact is achieved, as readily gleaned from responses in the 'Interviews with Offenders' report.
- Further analysis of arrest and seizure data establishes that the **general deterrence is most impactful when enforcement activities are trained against high-status offenders,** using covert techniques and intelligence-led investigations. This is clearly seen in the sharp and sudden reduction in arrests and seizures in Lilongwe district in 2019, after the arrest and prosecution of multiple members of the Lin-Zhang network. This created a powerful general deterrent effect because arrest operations and prosecution were 'punishing the unpunishable', thus strongly reinforcing the dimensions of deterrence which depend upon certainty and severity and amplified by prolonged media exposure.
- Restrictive deterrence, manifests as offenders using adaptive and avoidant behaviour to evade detection, the shifting of cross-border ivory outflows from central to southern exit points, and the refusal of Zambia and Mozambican traders to visit Malawi to sell their ivory.
- **There are elements of deterrence which are at odds with the socio-cultural landscape in Malawi,** such as perceived injustice related to sentencing inconsistencies. These are amplified when enforcement is targeted against lower-level offenders. Implicit in observations throughout the Synthesis Report is that wildlife offenders are not a homogenous group. **Understanding the different typologies of offender groups may be the key to strengthening the impact of deterrence,** as enforcement-based approaches may be counter-productive and harmful if used to unjustly punish lower-level offenders and can be exponentially effective if they succeed in 'punishing the unpunishable'.
- **It is vital for Malawi to focus its deterrence strategy at high level offenders to avoid unintended social harms which can erode government legitimacy and rule of law in the longer term.**

- The Report produced a series of **lessons learnt** covering methodology refinements for the (i), (ii) and (iii) reports including the importance of triangulating gaps in quantitative data on arrests/seizures using qualitative insights, media coverage, human intelligence analysis (i.e., suspect behaviour) and the wider literature; contextualising data trends against real world events and timelines and the importance of mixed methods approaches for optimal interpretation and accuracy of findings.

- **Recommendations** include a range of opportunities to optimise both formal and informal controls, in the areas of research and analysis, education and awareness, enforcement and justice, and international community support. These areas are arguably already well-established: Malawi has spent seven years building a strong toolbox for successfully tackling the illicit flows of IWT which have plagued the country for so long. However, as evidenced by the research and analysis conducted under the Deterrence Project, there are specific and varied opportunities which can be carefully calibrated and used in concert to amplify and maximise the deterrent impact of enforcement strategies in Malawi and avoid unintended social harms.

**Sharing the results with law enforcement agencies in Malawi and regional partners**

The findings of the Suspect Behaviour Analysis, Analysis of Arrest and Seizure Data, Offender Study and Forensic DNA Analysis were presented by LWT to the Inter-Agency Committee on Combating Wildlife Crime on 25th March 2022. The Synthesis Report and a summary of the main conclusions regarding the impact of focusing on higher level offenders as an effective deterrent strategy for combating wildlife crime was shared with DNPW. In their letter (Annex 6) DNPW outline their commitment (and through their role as Secretariat to IACCWC, their guidance to the Committee on the same) to implementing the recommendations of the report and acceptance of the guiding framework of targeting high-level, high-status offenders for ongoing law enforcement strategies.

The Synthesis Report was also well received by LWT's two main regional partners, the Tikki Hywood Foundation (THF) (Zimbabwe) and the PAMS Foundation (Tanzania). The main conclusions were discussed through regular partner meetings and supportive responses to the final report (see e.g. from PAMS, Annex 7) indicate their plans to use the lessons learnt and recommendations in their own similar programmes.

*Assumption for Output 1: This assumes that law enforcement agencies will remain open to alternative strategies that may emerge from the analysis.*

**This assumption held**, as evidenced in DNPW's letter (Annex 6). Noting that a focus on higher-level offenders was already integral to the strategy of LWT's Wildlife Justice Programme, in association with national law enforcement agencies, the outputs of this project confirmed that our current strategy and activities are proving effective and no significant changes are required to the current enforcement strategy.

**Output 2: Associations between offender motivations, perceptions of deterrents and demographic characteristics demonstrated.**

**Indicators:**

*2.1 All project MoUs, methodologies, tools, and preliminary assessments for component 1/2, including, but not exhaustive of MoUs, historic data review, deterrence metrics, data inventories, data capture forms, data analysis strategies, prisoner interview transcripts etc. developed and completed (by September 2020).*

**COMPLETED** - MoUs in place (Section 2); data collected and analysed as per reports (i) – (v) above.

*2.2 New data capture and analysis commences by Sept 2020 and by January 2022 the project will:*
*a) Determine spatial-temporal trends in wildlife crime arrests for Malawi at the district level*
*b) Determine change in sentences handed down for wildlife crime arrests in Malawi pre- and post-change in national legislation.*

**COMPLETED** - see Measuring Deterrence Report and Synthesis Report.

*2.3 The complete findings from Component 1/2 will be presented in a report (output 2) by January 2022 (and potentially a peer reviewed publication by the end of the project in 2022). The report will be shared with law enforcement agencies (IACCWC) with a view of it being endorsed by the Government of Malawi*

*by the end of the project (2022). The findings from component 1/2 will also be presented at a seminar by the end of the project (2022).*

**COMPLETED** - see reports (i) – (v) above; LWT presented findings to the IACCWC on 25 March 2022, support letter from DNPW in Annex 6, findings presented to regional partners in an online meeting and through sharing the Synthesis Report, see Annex 7.

**Output 2** was mainly achieved through the production of the **Offender Study** and the **Synthesis Report**. The central methodologies and conclusions of these are as below, noting that these are detailed reports and significant additional results can be read in full in each attached report. In addition, partners met in June to discuss progress with a peer reviewed paper and several briefings (targeted at law enforcement practitioners) which will be plan to submit/publish in the coming months.

Despite pandemic-related delays, the **Offender Study** was able to analyse interviews with 119 incarcerated wildlife offenders, of which 80 were considered to be higher level offenders convicted for offences related to trafficking of ivory/rhino horn or pangolins; 3 interviewees identified as female.
Questions were designed to capture data on offence details: e.g., species targeted/degree of planning/livelihood reliance/motivations; demographic variables: e.g., age/gender/education/ socioeconomic status/religion; criminal justice process: e.g., awareness of legislation/views about wildlife ownership/perception of sentencing; risk and deterrence perceptions: perceptions of risk/experience of prison, plans upon release.

This study offers a relatively unique insight, which is likely to be valuable to counter wildlife crime understanding and practice and builds on nascent research in this area, with only a handful of similar studies conducted to date. Some highlights from the report include:

- **Ivory and pangolin traders have an above average socio-economic status** as demonstrated by reported monthly incomes and asset ownership, (pangolin offenders report earning approximately twice as much in monthly incomes compared to ivory/horn offenders); many prisoners surveyed were likely motivated by aspirational strain, not desperation.
- Offenders express a **low awareness of wildlife legislation**, roughly, half of offenders claim to be aware of such legislation existing, and 66.3% of offenders claimed they did not realise their offence was illegal – this inhibits general deterrence.
- Offenders who provided mediation or transport-related services in their offence, **did not consider such ancillary roles to be unlawful** (as opposed to being involved in killing or buying/owning the wildlife products, which they do perceive to be criminal) – leading to recommendations for campaigns drawing attention to the risks of arrest and sanctions for the transporter and broker roles in wildlife trafficking.
- **57.5% of all respondents believe God owns wildlife**, rising to 71% for pangolin traders. This may align with the greater perceptions of risk seen among ivory/horn offenders, i.e., they perceive elephants and rhinos as more protected by the state, and therefore a greater sense of ownership is imbued to government.
- **Perceived injustice is most pronounced in pangolin offenders** (87.1% compared to ivory/horn traders at 59.6%). This may reflect a wider misapprehension that pangolins are less protected, less valuable (to the state) and therefore lower risk as a target species for wildlife trafficking. Therefore, whilst there is a role for general communications to raise awareness of wildlife sanctions, there appears to be a need for specific engagement around the gaps in understanding and perception of pangolins.
- **Risk perception is low overall** and correlates with awareness of illegality. Only 11.3% of offenders thought what they were doing at the time of arrest was risky. By comparing ivory/horn traders and pangolin traders, we see that awareness of illegal acts correlates strongly with perceptions of risk. Zero per cent of pangolin offenders thought their activity was risky, and only 3.2% thought it was illegal. Conversely, 19.2% of ivory traders believed their behaviour was risky, and 23.4% admit they knew it

was illegal. **This is a powerful demonstration on how awareness of legislation and sanctions increases the risk perception of crime.** This suggests that by raising awareness of the law with would-be pangolin offenders, risk perceptions of committing pangolin-related offences will increase, and general deterrence impacts will broaden across this group of offenders. Furthermore, it is a reminder that wildlife offenders are not a homogenous group, and there is a need for further research to improve understanding of different offender profiles which can inform policies and strategies to improve deterrence, prevent crime and ensure against unintended social harms.

- Prison is a highly effective specific deterrent for convicted offenders, **nearly 81% (ivory/horn) and just over 90% (pangolin) offenders named prison as the most effective deterrent**. This was reinforced in several qualitative responses e.g.: "Imprisonment is the biggest deterrent. Life here is so tough." "After my stay and experience in the prison I can never be part of these wildlife crimes no matter what."

- However**, 64% of ivory/horn offenders and 71% of pangolin traders suggested that educating people about the consequences of wildlife crime would be the best deterrent.** The endorsement of educational awareness-raising activities by those who fit the target audience profile is highly encouraging.

The **lessons learnt** from this study included ensuring future offender research includes scenarios to aid comprehension and improve data validity. The Study also notes the challenges with the validity and reliability of the data, because of the obvious risk that offenders may conceal, exaggerate, or forget. The **Recommendations** noted that longitudinal approaches to self-reported offender data collection can provide benefits over time – with the validity of responses improving as offenders become more trusting – so **this study could form an interesting baseline for a future long-term Offender Study**. The potential to harness offenders' experiences in future awareness campaigns, with the added benefit of supporting their rehabilitation and disrupting higher level offenders by helping to deter lower-level offenders they rely upon within their wildlife supply chains is also discussed.

*Assumptions for Output 2:*
*- The interviews of CHISs, suspects and prisoners assumes that the information will be reliable, although the project is taking various steps to mitigate against the risk of unreliable information, including: i) assuring the participants of their anonymity/confidentiality; ii) the interviews will be conducted in the language (either English or Chichewa) with which the interviewees feel most comfortable, and in the circumstances in which the interviewees cannot or wish not to read questions, they will be read out to them, and iv) triangulation with other components of the project and intelligence gathered on cases by law enforcement partners.*
*- This assumes that the impacts of COVID-19 have lowered by September 2020 insofar that that prison interviews can commence (COVID-19 led to the closure of prisons to visitors in March 2020).*

**Both assumptions held.** All mitigation steps i-iv above were implemented; whilst authors noted the caveats with all forms of prisoner interviews, the sample size, and mixed-methods approach ensured that the data remained valuable despite some offenders providing some responses which were incompatible with proven intel. COVID-19 caused a delay in prisoner interviews, and restrictions and early releases lowered the final number of interviews conducted, however a sufficient sample size was still achieved.

**Output 3: Location from which seized IWT product (mainly elephant ivory) originates mapped over time.**

**Indicators:**
*3.1 By December 2020, the Malawi ivory stockpile will have been assessed and samples identified for DNA testing*
*3.2 By September 2021, DNA analysis of the seized ivory available to the end of 2020 will have been completed*

*3.3* By December 2021, mapping completed to examine patterns of seized ivory geographic origins over time.
*3.4* The results from component 3 of the project will be incorporated into the projects final report by January 2022 and presented at a seminar by the end of the project (2022).
**ALL COMPLETED** – see **Forensic DNA Analysis Report** and **Synthesis Report.**

The objective of this component of the research was to conduct a temporal assessment of the likely geographic provenance from which seized elephant ivory product in Malawi has originated. Progress on Output 3 was initially delayed by COVID-19 travel restrictions meaning that TRACE staff were unable to travel to Malawi. However, mitigation plans were put in place for DNPW and LWT staff to take the DNA samples from the ivory stockpile. TRACE identified the samples to be taken from the stockpile inventory (submitted as part of the Yr 2 report) and provided written guidance on sampling methods, which were further explained through online training for DNPW and LWT staff. CITES permits were organised for export from Malawi and import to the UK for analysis by Prof Rob Ogden, TRACE Forensics.

A total of 230 raw ivory pieces were selected spanning a 35-year period from 1985 to 2020. Wherever possible, equal numbers of samples were taken across the years, however some years had little ivory recorded. Of the 230 samples, 197 resulted in successful DNA extractions and 134 generated DNA sequences of usable quality (a standard attrition rate). DNA sequencing data was analysed to identify the haplotype and the open access online ivory mapping tool, Loxodonta Localizer, was used to locate the geographic provenance of each haplotype.

Of the 134 samples, 103 samples were matched to a specific previously observed haplotype (i.e., one featured on the Loxodonta Localizer database), and 21 samples were observed to display new (previously unrecorded) or ambiguous haplotypes. In the case of the new/ambiguous haplotypes, the closest known haplotype was recorded.

**The main findings are as below:**
- **90% of Malawian samples display one of two broadly-distributed savannah elephant haplotypes.** Despite the potential to identify geographical origins of Malawian ivory seizures over time, the primary finding of this report was disappointing since 90% of samples displayed one of two common haplotypes, LL062 and LL066 haplotypes which have been observed across multiple countries, across the savannah elephant range. As the team behind *Loxondonta Localizer* acknowledge, beyond the 'precision-based' haplotypes that comprise 62% of their database, there are broader haplotypes with much wider distribution that offer little utility in establishing provenance of ivory seizures.
- **Ivory from East and Central African elephant populations is evident in Malawian flows.** A small number of samples displayed the LL098 haplotype, which has been observed in Uganda elephant populations and the LL116 haplotype which is associated with Eritrean elephant populations.
- A small quantity of ivory also displayed two new haplotypes, the closest known haplotypes to which have been observed in **forest elephant populations in CAR and Cameroon.**
- The presence of haplotypes correlating with distant elephant populations – such as Uganda, Eritrea, CAR and Cameroon – support the understanding that Malawi plays a significant transit role for organised criminal networks trafficking ivory from across the continent.
- **A high-profile arrest can disrupt an entire supply chain** – intel corroborates the presence of Uganda product flows, but also that these flows were disrupted by a large-volume seizure and high-profile arrests and prosecution in 2013, no ivory samples displayed that particular haplotype *after* 2013. Assuming none of the unsampled ivory in the stockpile (or no un-intercepted ivory) displays this haplotype, this supports the deterrent impact analysis of the arrest and seizure data in the context of the Lin-Zhang case; i.e., the deterrent value of enforcement is optimised when it is targeted at high status offenders, and arrests at this level have a significant disruption impact on illicit supply networks.
- **Around 15% of seizures sampled originated outside of Malawi**; however the proportion of ivory sourced outside of Malawian populations is actually likely to be much higher, recognising the limitations

in the resolution of the DNA evidence. The combination of population data, relative carcass rates and intelligence of regional trade routes provide compelling arguments that a significant proportion of Malawian ivory seizures could be attributable to elephant populations present in Tanzania, Mozambique and Zambia. methodology, and the importance of triangulating with other evidence becomes highly evident.

- **The generalised provenance of the haplotype approach lacks utility in determining the effectiveness of deterrent strategies in Malawian-based efforts to combat wildlife crime**. While there are pros and cons in different DNA analysis methodologies, the respective costs, limitations, and benefits of each technique and platform should be understood, and preferably utilised in concert for a more comprehensive understanding where only broadly-distributed haplotypes are present. The TRACE report acknowledges the challenges of interpreting analysis where specific haplotypes cover a large area, and recommend that further data on haplotype frequencies, to establish both the presence and absences of specific haplotypes, would help to increase the proportion of haplotypes which can accurately pinpoint the geographic-specific origin of the ivory sample.

*Assumptions for Output 3:*
*- The DNA reference collection for elephants (ivory) has sufficient resolution to map the source locations accurately; however, the reference collections for both pangolins and rhino have lower resolutions. If this remains unresolved during the project, the work will focus primarily on ivory – with the potential that the rhino and pangolin samples may be analysed at a later date.*
**This assumption partly held.** As above, the haplotypes generated were for broad geographic areas, so pin-pointing samples to country-level was not possible, but some interesting results were reported. The issue on reference collections for rhinos/pangolins was not resolved within the timespan on this project, hence only ivory samples were analysed.

*- This work also assumes that CITES permits to ship specimens to DNA laboratories (if required) will be granted through the life of project (and at present this does not appear to be a barrier).*
**This assumption held.** As above, CITES permits were granted and the samples exported to UK.

*- This work also assumes that post COVID-19 that flights available from UK to Malawi and Uganda to Malawi (to move the mobile lab equipment) before the end of 2020 and full access granted to inspect the seized ivory samples within the stockpile.*
**This assumption held.** Travel restrictions initially delayed the sampling, but this was mitigated and full access was granted to sample the stockpile.

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**Output 4: Results of the project disseminated to improve knowledge, learning and practice.**
**Indicators:**
*4.1 The framework to improve deterrence of IWT is presented to the Government of Malawi and an official endorsement of the framework achieved by the end of the Project (2022).*
**COMPLETED.** (See **Synthesis Report** which showed that the strategy currently in place to target high-level offenders is having a deterrent impact. Findings of the primary analysis was presented to the IACCWC. The Synthesis Report was shared with DNPW – see letter in Annex 6).

*4.2 Biannual dissemination of updates and results to trusted peer-group in region (Zimbabwe, Zambia and Tanzania) via sharing of an executive summary of progress via email and remote meeting platform. This is for the purpose of awareness raising and peer-peer learning.*
**COMPLETED.** (Updates provided as per YR2AR; final results shared through regular partner calls. Synthesis Report was shared with PAMS (Tanzania) and THF (Zimbabwe) e.g. see email response from PAMS in Annex 7.

*4.3 By the end of project (2022) the final report is shared with the Malawi Government and three other NGOs working with Government CIWT units in the region (PAMS, Wildlife Crime Prevention, Tikki Hywood Foundation). The feedback received on potential suitability of use will be logged and included in final project report.*
**COMPLETED.** As above.


*Assumption for Output 4:*
*- This assumes, of course, that the results will be worthy of dissemination and replication.*
**This assumption held.** We are very pleased that the outputs provide substantial evidence of the deterrent impact of law enforcement actions in Malawi to combat wildlife crime, using an innovative mixed-methods approach which could be replicated in other countries.

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## 3.2   Outcome
**Outcome: Organisations involved in combatting the IWT in Malawi will utilise the findings of the project to improve their future deterrent law enforcement strategies**
The project achieved its Outcome.


**Indicators:**
*0.1 By the end of the project (2022), a trend analysis will show if/how new national legislation, arrests and other interventions have deterred wildlife trafficking/trade. The analysis will account for different types of wildlife crimes and different social-economic status (SES) and roles offenders have within trafficking networks. This analysis can be used to develop new law enforcement strategies for combating the IWT.*
This was achieved through the production of the **Measuring Deterrence Report, Offenders Study and Synthesis Reports** as detailed under Section 3.1.


*0.2 A 'Deterrence Assessment' will be produced which can be used to inform new law enforcement strategies for combatting the IWT. This will be developed on the basis of analyses which examine whether offenders' motivations for committing wildlife trafficking/trade offences and their perceptions of risk and deterrence are associated with certain demographic variables (e.g. socioeconomic status - SES) (this will be achieved by the end of the project in 2022).*
This was achieved through the **Offenders Study, Measuring Deterrence Report and the Synthesis Report.** The Synthesis Report outlined the deterrent impact of the **current** strategy of targeting high-level wildlife criminals as evidenced by Malawi's law enforcement agencies success in convicting 20 major traffickers since 2016, the most notorious of which was the conviction of 11 members of the Lin-Zhang syndicate. A new strategy is therefore not necessary. However, further dissemination of the results of this project will be used to reinforce the importance of this framework with our law enforcement partners, with the triple bonus of ensuring high-level syndicates are disrupted, a ripple effect from which causes a reduction in lower-level ivory trade, which is a cost-effective method to protect the same number of elephants as investigating many hundreds of low-level offenders.


*0.3 It will be determined whether particular disruptive/deterrent strategies are connected to shifts in the geographical location from which product originates (i.e., whether shifts in the locations in which animals are killed are associated with certain disruptive/deterrent strategies). The findings from an analysis on the connections between deterrent strategies and origins of IWT products will be used to develop new displacement law enforcement strategies to tackle IWT in Malawi by project end (2022) (Baseline c. 2015 data).*
As detailed in Section 3.1/Output 3, this was not possible due to the lack of geographic resolution of the DNA analysis. However, some interesting results were obtained which point to a change in ivory sourcing/trade routes following the large-scale seizure of ivory in 2013.

*0.4 A guiding framework for measuring the deterrent and displacement effects of anti-trafficking interventions will be developed for use by the LWT and regional partners. This framework can be used to develop new law enforcement strategies for combating IWT by the end of the project (2022).*

As above, five reports were produced for this research project. Despite challenges mainly related to travel and access to prisoners due to COVID, all outputs were completed. The Synthesis Report provides a detailed list of recommendations which will be further considered. The results are overall a huge endorsement of the work of law enforcement agencies in Malawi, and LWT as a significant technical and financial partner, showing as they do an overall sizable reduction in ivory trafficking, which can be linked to the landmark arrest and conviction of the Lin-Zhang syndicate.

The prosecution of the Lin-Zhang syndicate was at times high risk, complex and required careful navigation due to the clear effect of corruption. It is rewarding to recognise therefore that not only did the conviction result in this notorious syndicate being disrupted, but that the ripple effect on those trading in smaller volumes of ivory through Lilongwe in particular, has had a lasting effect. The strong recommendation from this project is therefore that targeting the high-level, high-status offenders is the most cost-effective strategy to reduce ivory trafficking and ultimately to save more elephants. Conversely, we also note the recommendations to ensure that perceived injustice is not exacerbated by giving overly harsh sentences to lower-level offenders at park-level, particularly those targeting non-Listed Species (elephants/rhinos/pangolins).

## 3.3     Monitoring of assumptions

**The assumptions for the Outcome held.** The research noted a decline in ivory trade over time (0.1), and linked this to the deterrent effect created by the arrest of high-level, high-status members of an organised crime syndicate in Lilongwe. As stated in the assumption, the project did not specifically test the changes in the socio-economic status of offenders over time, but the research did reveal interesting results showing that ivory and pangolin traders are in the main not subsistence-level poachers/traders and are from a higher socio-economic bracket than the average Malawian, as opposed to park-level offenders which were clearly fishing/poaching for subsistence. (The data on park-level offences was removed for the main analysis because of this).

Indicator 0.3 – DNA analysis was not able to specify origin to country-level, but exhaustion of ivory supply in Malawi due to declining elephant populations would not have been an issue since data was available to show that elephant populations are gradually increasing in Malawi.

As reported under 3.1, the results of the project were presented to the IACCWC, the Synthesis Report was shared with DNPW as the main partner and Secretariat to IACCWC and a letter of support from DNPW is included in Annex 6.

## 3.4     Impact: achievement of positive impact on illegal wildlife trade and poverty alleviation

**Impact: A reduction in wildlife crime in Malawi once/if agencies implement the deterrent strategies demonstrated by this project.**

As noted in the **Measuring Deterrence** and **Synthesis Reports**, ivory trafficking has declined by 50% in Malawi between 2018 and 2020. A central finding of these reports, as noted in detail in the Outputs section, is that Malawi law enforcement agencies and their partners should focus on higher-level offenders to ensure the greatest deterrent impact in combating wildlife crime, as the most cost-effective way to protect more elephants. This is already a central tenet of Malawi's strategy, exemplified by the conviction of over 20 major traffickers since 2015, in addition to the 11 members of the Lin-Zhang syndicate. The merits of this approach therefore need to be reinforced with all agencies, and appropriate technical and financial support provided to secure convictions in these complex cases.

All Malawi law enforcement agencies were advised of these findings through a presentation by LWT in March 2022. Subsequently, the Synthesis Report was warmly welcomed by DNPW (Annex 6) with a commitment to implement the findings. Further, a joint journal publication by several of the leading partners on this project is in prep, alongside plans for several separate briefings for law enforcement agencies/practitioners and it is hoped these will provide useful insights and guidance for other countries wanting to determine the most effective deterrents for wildlife crime.

## 4. Project support to the IWT Challenge Fund Objectives and commitments under the London Declarations and Kasane Statement

The aim of this project was to understand and examine the differential impacts of disruption and deterrents to wildlife crime in Malawi and how these could support more effective law enforcement strategies in the future.

As noted in the independent review of our Yr2AR, the main focus of this project covers IWT Challenge Fund objectives 2 and 3, through improving capability to implement existing legislative instruments. It also particularly addresses the London Declaration clause: "Strengthen the legal framework and facilitate law enforcement to combat the illegal wildlife trade and assist prosecution and the imposition of penalties that are an effective deterrent".

Our project results clearly demonstrate the success of current law enforcement interventions to secure high-level wildlife crime convictions, which appear to be having a ripple effect leading to an overall decline in ivory trafficking. However, the reverse is currently true for the pangolin trade in Malawi, which has increased considerably during the period of the research. The lessons learnt and recommendations from this research will now be applied to drive a decline in pangolin trafficking, noting the differences the research has highlighted between pangolin and ivory traders (e.g., a significantly lower perception of risk amongst pangolin traffickers).

By providing guidance on the most effective deterrents, long-term the project will contribute to the reduction of wildlife crime and, by extension, it will have a direct and positive impact on those people who would otherwise have become involved in wildlife crime. As such, the project will have an indirect but long-term impact on developing sustainable livelihoods and economic development.

The analysis and findings of the research also reflect upon the dangers of using unjustly severe deterrence approaches against lower-level wildlife offenders, the recommendations with which the **Synthesis Report** closes include a range of opportunities to optimise both formal and informal controls, in the areas of research and analysis, education and awareness, enforcement and justice, and international community support. These areas are arguably already well-established: Malawi has spent seven years building a strong toolbox for successfully tackling the illicit flows of IWT which have previously seen Malawi declared as the primary transit country for IWT in southern Africa. However, as evidenced by the outputs of this project, there are specific and varied opportunities which can be used to amplify the deterrent impact of enforcement strategies and avoid unintended social harms. In addition to re-confirming the strategy of targeting high-level offenders, we will also take the recommendations on alternatives to punitive law enforcement actions for lower-level offenders and discuss such options with the Government of Malawi and partners.

## 5. Impact on species in focus

As stated in the independent review of the Y1AR, "This project is not focusing on a specific species per se. It is rather focusing on generating evidence and then using that evidence to influence changes to enforcement/deterrent approaches for wildlife trafficking crimes – it is using analysis of seized elephant tusks to help with identifying locations of the crimes to link to the survey of police and prison data".

As referenced in section 3.4, the project will, long-term, impact all species that are being traded by ensuring that the deterrents that are being put into place are effective. As per the project's impact statement - a reduction in wildlife crime in Malawi will only occur once/if agencies implement the deterrent strategies demonstrated by this project i.e., beyond the end of project. LWT has started the work in reinforcing this strategy through sharing the results with DNPW and the IACCWC and will continue to monitor this post-project through our own organisation's result framework and MEL system. This includes maintaining the Wildlife Crime Information System (database of all wildlife crimes in Malawi) and supporting all our existing law enforcement projects in Malawi for the long-term (as determined by our organisation's mission and strategic plan).

We plan to utilise the results and recommendations in this research to better target law enforcement actions and awareness raising on pangolin trafficking, with the aim of driving a significant reduction in this trade over the next two years, to match the impressive declines seen in ivory trafficking in Malawi over the period of this study.

## 6.        Project support to poverty alleviation

This project doesn't contribute to poverty alleviation directly but does contribute to several SDGs namely:

Goal 15 Life on land – once law enforcement becomes more deterrent, then the project will contribute to preserving life on land, protecting, and promoting the conservation of terrestrial ecosystems, and stopping biodiversity loss.
Goal 16 Peace, justice, and strong institutions - through promotion of the rule of law, and ensuring that Malawi has transparent, effective, and accountable justice institutions that tackle wildlife crime
Goal 17 Means of implementation and partnerships - by enhancing the cooperation and collaboration of the partnerships on which combatting wildlife crime is so dependent.

An important aim of the research was to understand what drives people to commit wildlife crime in order to assess the relative importance and effectiveness of law enforcement (and other) strategies.

We have achieved the Outcome of producing an informative set of research outputs which have been shared with and endorsed by the Malawi Government. We are therefore confident that in the long-term, this research will be used to guide law enforcement agencies (and civil society partners including LWT) to focus limited resources on high-level criminals to most effectively combat IWT. In doing so, the project indirectly contributes to ending poverty by helping to reduce the number of people who would otherwise be involved in wildlife crime.

As noted in the Offender Study, many of the prisoners interviewed were more educated and in a higher socio-economic bracket than the general population in Malawi (25% owned a motorcycle and kept smallholding animals such as chickens, ducks, pigs or goats compared to an average 6.7% owning a motor vehicle or motorcycle nationwide).  It is therefore clear that at least some of the offenders are very well-off by local standards, and do not choose to resort to criminal activity out of a subsistence need but instead are driven by profit and status. There were also useful insights into prisoners' views on deterrents; nearly 81% (ivory/horn) and just over 90% (pangolin) offenders named prison as the most effective deterrent and 91.2% of all prisoners claimed prison had changed their perception of risk of them committing wildlife crimes in the future. This suggests recidivism would be low among ex-prisoners, demonstrating successful *specific* deterrence, which would be interesting to examine in any future offender studies.

The current law enforcement strategies, which are considered more appropriate to deter those acting out of 'greed' rather than 'need' would therefore be deemed appropriate for this group. However, bearing in mind the low baseline for income in Malawi, deterring these offenders from wildlife crime, with the risk of further custodial sentences, will benefit their wider families as the majority of offenders were men and head of households.

Interestingly, when asked what the most effective deterrent was for others, to dissuade them from committing wildlife crime, 64% of ivory/horn offenders and 71% of pangolin traders suggested that educating people about the consequences of wildlife crime would be best. The Synthesis report includes a recommendation on considering working with ex-offenders in the delivery of education programmes. This will be actively considered by LWT and partners as a potential means of rehabilitated offenders gaining an income by delivering experience led community awareness campaigns that might have more impact that the standard community awareness campaign.

The Offender Study disaggregated the park-level offences (subsistence hunting and fishing) from the offences against Listed Species. The former group of offenders are of a considerably lower socio-economic group, and the Synthesis Report makes recommendations for alternative prevention strategies focused on this group and emphasises the need to ensure perceived injustices through harsh penalties for subsistence level poaching do not negatively affect the overall wildlife crime prevention initiatives. This point has been highlighted to the Director of National Parks and Wildlife. LWT is also proactively highlighting to the Judiciary sentences – both low and high – which fall outside of the Sentencing Guidelines to facilitate remedial action through the courts if harsh penalties are handed down for particularly vulnerable groups.

The reduction in wildlife crime in Malawi that will be the (indirect) result of the project will lead to livelihood opportunities (that are not related to wildlife crime) for people living in the vicinity of protected areas, such as those related to tourism and development projects.

## 7. Consideration of gender equality issues

This project was not directly working to address gender inequality however we planned to analyse differentiated gender impacts of deterrents and risk perceptions. The Offender Study only interviewed three female offenders, which is reflective of the generally low number of women convicted for wildlife crime in Malawi. The Synthesis Report noted some useful insights from the wider prison interviews on the role of women in IWT and recommendations for further research in this area.

As outlined in the Offender Study and Synthesis Report, this research, as well as other studies, observes that the way women engage in wildlife offending is often determined by socially defined gender roles and livelihood activities. For example, prisoners outlined how Malawian-based pangolin offenders engage women in northern Mozambique to look for pangolins whilst they collect firewood. The Synthesis Report included cases published from LWT's court monitoring activities from 2018-2020 showing just five female offender convictions, two of whom are Asian foreign nationals; four out of five offences feature Listed Species (rhino, pangolin, and elephant). From what little data is available on the role of women in wildlife crime in Malawi, there is a picture emerging of female offenders from lower socioeconomic groups whose crimes reflect socially defined domestic roles, such as firewood collecting forestry offenders, and more organised, more empowered senior syndicate actors, possibly even fitting the 'queenpin' model, often of Asian origin.

## 8. Sustainability and legacy

The project is relatively well known among different actors – both within Malawi and across the region. In all circumstances, it is referred to as DEFRA-funded "IWT064" (the IWT Challenge Fund's project number). The IWT Challenge Fund is well recognised by the Malawian Government – and especially the Department of National Parks and Wildlife (DNPW) - through this and previous IWTCF supported projects.

As outlined above, LWT is a Malawi-based organisation and as such we have a long-term presence in the country. LWT works closely with multiple Malawi government agencies, particularly DNPW and MPS to combat wildlife crime through our on-going Wildlife Justice Programme (WJP), which has been active for seven years. The WJP is a central component of LWT's Strategic Plan and we will continue to engage with and support our government partners beyond this project. As also noted above, LWT maintains strong

regional partnerships, particularly with PAMS and THF, both of which have received, and provided positive feedback on, the Synthesis Report.

We will continue to engage with DNPW and the IACCWC to discuss in detail the recommendations from this research, and the potential to work together to implement new activities and research where appropriate. Other donors in Malawi (notably GIZ, which supported the project with co-funding and USAID) are also keen to review the research outputs. The Synthesis Report (which includes the UKAID logo and acknowledgements to the IWTCF) will be shared with a select group of donors on a confidential basis. The presentation to the IACCWC also referenced IWTCF with the UKAID logo. The in-prep papers and briefings from this project will include an acknowledgement to the IWTCF and will be shared with Defra in due course. The exit strategy therefore remains valid.

## 9. Lessons learnt

The design of the Deterrence project was not only ambitious, it was implemented during some of the most challenging times of recent history. Inevitably, significant lessons were learned:

- Measuring crime is inherently challenging; measuring crimes which did not happen as a result of deterrence strategies and evaluating the relative effectiveness of these is even more challenging;
- Self-reported offender surveys suffer from data validity issues yet provide unique insights and understanding into why crime happens and how to prevent it: longitudinal surveys and repeated studies can offer greater potential to improve validity over time;
- Concepts around wildlife crime are easily misunderstood: future methodologies should take care to define explanations of key concepts for respondents, and provide examples for illustration;
- Gaps in official data hamper analysis, with limitations in sole reliance on indicators such as arrest and seizure data. Where there are gaps, validity issues, or unexpected outcomes in the quantitative data, these can be most effectively triangulated using qualitative insights, media coverage, human intelligence analysis (i.e., suspect behaviour) and the wider literature
- Data trends must be contextualised against real world events; timelines and mixed methods approaches are optimal for improved interpretation (as per the Synthesis report);
- Wildlife offenders are not a homogenous group, disaggregating data is essential and law enforcement should avoid unintended social harms in harsh enforcement of vulnerable groups;
- Intelligence data is highly effective in establishing a deterrent impact by providing insight as to suspect behaviour not visible in official crime statistics or seizure information. However, it is problematic as a data source, with very little available, challenges with secure access in real time, as well as the need for a dedicated technical resource.
- Forensic DNA data can provide insight as to the geographic provenance of ivory flows (as well as age and species) but also has limitations. Ideally, different types of DNA analysis can be used together to provide a more precision-based mapping of ivory provenance;
- Gender tropes and norms in wildlife crime research may contribute to gender blindness in policy and enforcement and can undermine the impact of deterrence on female would-be offenders.

In addition to the above, the challenges to this project were mainly around the COVID-19 restrictions as below. Despite causing some delays, we managed to catch up on all activities and complete all outputs within the project lifespan. Administratively all went well and technically we were pleased to work with such a skilled group of partners, which brought a deep and varied array of skills to this research.

## 9.1 Monitoring and evaluation

As noted in the independent review of our YR2AR, assumptions monitoring was ongoing throughout the project and as detailed in section 3, the assumptions mainly held. The logical framework was updated (and accepted by LTS in 2020) to provide a more defined hierarchy of the results, with revised project indicators and milestones.

We included an independent, external review as part of this project, which was carried out by Welton Phalira of Big Pot Consulting. The evaluation adopted the Organisation for Economic Co-operation and Development-Development Assistance Committee (OECD-DAC) Evaluation criteria of (a) Relevance and quality of design, (b) Coherence, (c) Efficiency, (d) Effectiveness, (e) Impact; and (f) Sustainability. The project scored 'highly satisfactory' or 'satisfactory' across all criteria and was given a rating of 'likely' in terms of sustainability. The evaluation report is included as Annex 5.

## 9.2    Actions taken in response to annual report reviews

All feedback from independent reviewers of the Yr 1 and Yr 2 annual reports was appreciated, and all recommendations were implemented, as specifically referenced under Section 3.

## 10.    IWT Challenge Fund Identity

The project is distinctly branded as a Defra-funded IWT Challenge Fund and is relatively well known among different actors – both within Malawi and across the region. The IWT Challenge Fund is well recognised by the Malawian Government – and especially the Department of National Parks and Wildlife (DNPW) - through this and previous IWTCF supported projects.

The Synthesis Report includes the UKAID logo and acknowledgements to the IWTCF and will be shared with a select group of donors on a confidential basis, further raising the profile of IWTCF's work in Malawi to other donors. The presentation to the IACCWC also referenced IWTCF with the UKAID logo. The in-prep papers/briefings from this project will include an acknowledgement to the IWTCF and will be shared with Defra in due course.

## 11.    Impact of COVID-19 on project delivery

The main COVID-19 related impacts were delays caused to the Offender Study due to COVID-19 restrictions in place at various times throughout the project period. Initially visits to the prisons were not possible, but LWT later agreed protocols with the Malawi Prison Service in order to safely interview the prisoners. This challenge was therefore overcome, and a good sample size of interviewees was obtained, albeit a little later than scheduled.

Secondly, visits by TRACE to Malawi to collect the ivory samples were cancelled several times due to the international travel restrictions. We eventually agreed Plan B, for TRACE to provide written protocols for ivory sampling and to provide online training for DNPW and LWT staff in order for them to take the samples. TRACE additionally was available to answer queries as the sampling progressed. This worked very well and was actually a good lesson learnt that in-country sampling is feasible and a more cost-effective method. DNA analysis was therefore delayed in terms of the initial implementation plan but was completed in time for results to be assimilated in the other reports and presented to Malawi government partners.

Maintaining basic organisational activities was challenging during this period - as for all organisations internationally - with LWT and government staff working at home etc. However, fortunately Malawi did not suffer the sustained waves of COVID-19 experienced in other countries, so all project outputs were completed to the standards planned, just with slight delays.

## 12. Finance and administration

### 12.1 Project expenditure

| Project spend (indicative) since last annual report | 2021/22 Grant (£) | 2021/22 Total actual IWT Costs (£) | Variance % | Comments (please explain significant variances) |
|---|---|---|---|---|
| Staff costs (see below) | ■ | ■ | ■ | N/A |
| Consultancy costs | ■ | ■ | ■ | N/A |
| Overhead Costs | ■ | ■ | | ■ ring-fenced for audit |
| Travel and subsistence | ■ | ■ | ■ | N/A |
| Operating Costs | ■ | ■ | ■ | Conferences and meetings occurred remotely |
| Capital items (see below) | ■ | ■ | ■ | Small increase in software costs |
| Others (see below) | ■ | ■ | ■ | N/A |
| TOTAL | ■ | ■ | ■ | |

| Staff employed (Name and position) | Cost (£) |
|---|---|
| Jonny Vaughan - Project Lead | ■ |
| Donna Banks - Project Manager | ■ |
| Kate Moore - Communications Manager | ■ |
| Samantha Nampuntha - Communications Assistant | ■ |
| Rob Ogden – (Consultant, TRACE Forensics) | ■ |
| Andrew Lemieux (Consultant – NSCR) | ■ |
| Michelle Newberry (Consultant, UoS) | ■ |
| Yamikani Makwecha (Consultant, enumerator) | ■ |
| Vincent Chinjovu (Consultant, enumerator) | ■ |
| TOTAL | ■ |

| Capital items – description | Capital items – cost (£) |
|---|---|
| Software | ■ |
| TOTAL | ■ |

| Other items – description | Other items – cost (£) |
|---|---|
| DNA sample storage, processing and outsourcing | ■ |
| TOTAL | ■ |

### 12.2 Additional funds or in-kind contributions secured

| Source of funding for project lifetime | Total (£) |
|---|---|
| GIZ (specific to this project) | ████ |
| Grants from several donors supported LWT's wider Wildlife Justice Programme during this project (e.g. USINL, Wildcat, GIZ) | ████ |
| **TOTAL** | ████ |

### 12.3 Additional funds or in-kind contributions secured

| Source of funding for additional work after project lifetime | Total (£) |
|---|---|
| Grants from several donors support LWT's wider Wildlife Justice Programme (including USINL, GIZ, Wildcat) on average £1.3 million annually. | ████ |
| **TOTAL** | ████ |

### 12.4 Value for Money

This project was designed to test the validity and impact of current law enforcement strategies for combating wildlife crime, specifically in Malawi's socio-economic context. Given the extremely constrained capacity and finances of Malawi's criminal justice system, this research therefore has the potential to make a major contribution towards targeting limited resources where they will make the most impact, thereby supporting a more sustainable wildlife crime response at a national level.

The project used several different strategies to ensure value for money while guaranteeing effective attainment of results:

1) LWT's rules of procurement are specifically designed to optimise value for money. All activities were included in the relevant Annual Work Plan, which was discussed and approved by the project team to ensure that proposed actions were relevant and necessary. Cost-effectiveness was taken into account across all activities, whilst ensuring that the quality of the outputs was not compromised.

2) Expenses were all accounted for according to LWT rules and in line with the DEFRA/IWT policies.

3) LWT has been working closely with all the relevant stakeholders within Malawi for over seven years through the Wildlife Justice Programme, this therefore reduced the risk of duplication of efforts. The progress was periodically reported to the IACCWC to ensure complementarity of ongoing IWT work in Malawi.

4) The feasibility of all activities was carefully analysed – thus, supporting the principle of value for money.

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

I agree for the IWT Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

LWT and its partners, through the project 'Determining the deterrent effect of combatting wildlife crime' used a mixed-methods approach to assess whether law enforcement deterrents currently in place in Malawi are having a measurable impact on wildlife crime. Running from 2019-2022, the Deterrence Project conducted analysis on ivory arrests and seizures, interviewed convicted wildlife offenders, and carried out forensic DNA analysis of ivory stockpiles. The aim was to provide guidance to the law enforcement agencies in Malawi and beyond, on whether and how illicit supply chains for wildlife products respond to enforcement controls and deterrence strategies, and if such interventions are successful in discouraging wildlife crime in the longer term. These analyses were grounded in the context of key events including

major international policy changes and the implementation in Malawi of programmes such as public-private prosecution and court monitoring. The impact of the highly significant event of enforcement success against the Lin-Zhang syndicate, including high profile arrests in 2019, was also central to the analysis.

The study confirmed significant evidence of deterrence impacts occurring in Malawi. By arresting and punishing (imprisoning) Listed Species (i.e. elephants/rhinos/pangolins) wildlife offenders, a *specific* deterrent impact is achieved, as evidenced through the prisoner interviews. By disaggregating responses between ivory/rhino horn and pangolin offenders, it becomes apparent that a *general* deterrent effect will be easier to achieve when awareness of the value of a particular species and the risk of sanctions improves. Risks of specific deterrence are also evident, such as perceived injustice related to sentencing inconsistencies. These are amplified when enforcement is targeted against lower-level offenders, which can be counter-productive to deterrence in the longer term. Further analysis of arrest and seizure data also establishes that the *general* deterrence is most impactful when enforcement activities are trained against high-status offenders. This is clearly seen in the sharp and sudden reduction in arrests and seizures in Lilongwe district in 2019, after the arrest and prosecution of multiple members of the Lin-Zhang network. This created a powerful *general* deterrent effect because arrest operations and prosecution were 'punishing the unpunishable', thus strongly reinforcing the dimensions of deterrence which depend upon certainty and severity.

This research emphasised the importance of understanding different typologies of offender groups as key to strengthening the impact of deterrence, as enforcement-based approaches may be counter-productive and harmful if used to unjustly punish lower-level offenders and exponentially effective if they succeed in punishing high-level offenders.

# Checklist for submission

|  | Check |
|---|---|
| **Is the report less than 10MB?** If so, please email to IWT-Fund@ltsi.co.uk putting the project number in the subject line. | Y |
| **Is your report more than 10MB?** If so, please discuss with IWT-Fund@ltsi.co.uk about the best way to deliver the report, putting the project number in the subject line. | N |
| If you are submitting photos for publicity purposes, **do these meet the outlined requirements (see section 13)?** | N/A |
| **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. | Y |
| **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. | N |
| Have you involved your partners in preparation of the report and named the main contributors | Y |
| Have you completed the Project Expenditure table fully? | Y |
| Do not include claim forms or other communications with this report. |  |