



### IWT Challenge Fund Project Information

Project reference	IWT013
Project title	African Wildlife Forensics Network – capacity and coordination for law enforcement
Country(ies)	Angola, Botswana, Congo, Gabon, Malawi, Namibia, Zambia, Zimbabwe
Contract holder institution	United Nations Office on Drugs and Crime (UNODC)
Partner institution(s)	TRACE Wildlife Forensics Network (TRACE), Botswana Ministry of Environment, Wildlife and Tourism (MEWT), Gabon - Agence Nationale des Parcs Nationaux (ANPN), Netherlands Forensic Institute (NFI), Royal Zoological Society of Scotland (RZSS)
Total IWT grant value	£248,500
Start/end dates of project	June 2015 – June 2017
Project leader's name	Jorge Rios, Chief of UNODC Global Programme for Combating Wildlife and Forest Crime
Report author(s) and date	Drafted by UNODC, TRACE. Opportunity to review provided to partners. Dated: July 2017.

## 1. Project Summary

The scale of poaching and the illegal wildlife trade (IWT) is having a significant effect on the sustainability of elephant, rhino and lion populations, leading to concern over the long-term survival of these species. An observed trend in IWT towards species divergence also now threatens African pangolins.

The scale of IWT means that it not only poses an immediate risk to wildlife but to people and their livelihoods as well. It fuels conflict and corruption, deepens poverty and inequality, and undermines prospects for sustainable development. Organised criminality brings violence and instability, disproportionately affecting the poorest communities, as governments reprioritise policies and funding to fight these crimes. As wildlife populations decrease, so does revenue from tourism. IWT deprives developing economies and low income communities of vital revenue.

There is now an abundance of high level statements and commitments recognising the need for forensic evidence and wildlife forensic capacity building, including in the report of the UN Secretary General on IWT, President Obama's statement of US-response, multiple CITES decisions, international strategies, and ICCWC Toolkit Report analyses, including those of Botswana, Congo and Gabon. There is also considerable evidence on the ground of the need for forensic evidence in response to increasing penalties and sentencing requirements for wildlife offences. We are witnessing a domino-like review of national wildlife acts deemed to be too weak. The resulting revisions are increasing penalties for wildlife offences, and therefore the requirement for stronger evidence has also increased. Wildlife forensic evidence has gone from a 'nice to have' to a situation whereby you cannot convict without it.

Enforcement authorities struggle to identify traded wildlife, severely restricting prosecution success. Investigations stop at the point of seizure due to lack of evidence. Forensic analysis can confirm the species, age and origin of samples, however countries have varying levels of forensic capacity, often lacking the necessary expertise. It is evident that improved forensic

evidence will lead to a higher rate of conviction. Furthermore, awareness of forensic techniques in wildlife investigations should deter would-be offenders (ICWC Toolkit).

The species of focus (elephant, rhinoceros, pangolin, lion) were selected according to the level of IWT activity affecting them and the opportunity for wildlife forensics to significantly enhance law enforcement relating to those species in the focal countries. The primary threat to each species is illegal international trade, rather than local bush meat hunting, and key evidence required to assist in combating this activity includes the definitive identification of animals parts to species level (tusks, bones, horn, scales, skins, blood) and demonstrating linkages between poaching scenes, traded products and suspects; both of which are delivered through the application of DNA forensics. Enhanced law enforcement benefits species in two ways: first, by removing established poachers/traders and disrupting IWT syndicates, and second, by elevating the risk of prosecution and thereby deterring the involvement of would-be criminals throughout the supply chain.

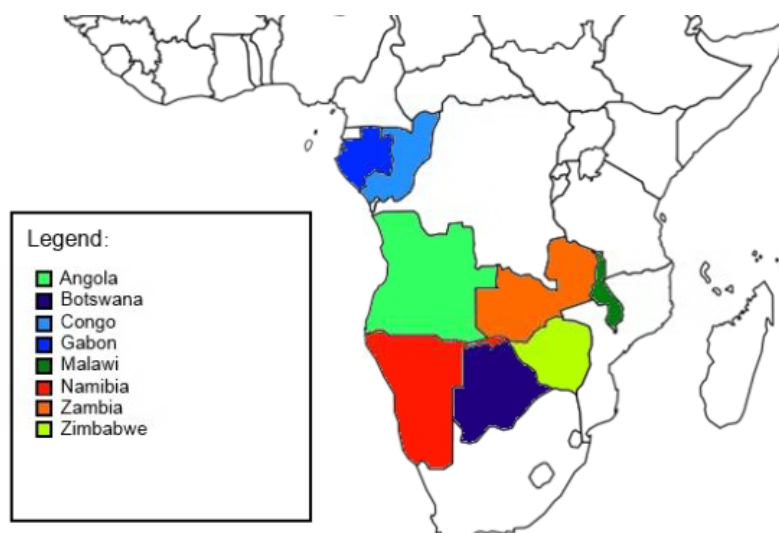
While certain tests, such as individualisation of rhinoceros, or origin analysis of ivory relate to specific species, it should be noted that the vast majority of wildlife DNA forensic infrastructure and capacity is not species-specific, therefore forensic applications can respond and adapt to enforcement needs and species targets as they change over time.

This project achieved its aims to conduct wildlife forensics needs assessments, provide wildlife forensic capacity building through the provision of training and infrastructure, and develop national and regional level plans for further development of capacity and coordination of wildlife forensic services through the establishment of a wildlife forensic network. The project has increased capacity and access to utilise forensic tools to fight wildlife crime.

The primary beneficiaries of this project are the law enforcement communities in project countries. The law enforcement communities have benefitted from increased capacity to tackle wildlife crime through the application of forensic science. Through this project, law enforcement communities have gained from strengthened wildlife forensic capacity, which will ultimately increase criminal conviction rates and decrease poaching and trafficking of wildlife.

The wider beneficiaries of this project are the entire populations of the target countries including rural communities where poaching is most prevalent. If wildlife crime is not investigated or not successfully prosecuted due to insufficient evidence, criminals will continue to engage in poaching and wildlife trafficking. This affects local communities through increasing crime and creating social instability, while decreasing opportunities for sustainable use of wildlife (e.g. tourism) and disrupting natural ecosystem services. By improving capacity to tackle wildlife crime, the project has contributed to creating a platform for sustainable economic growth, rather than the unsustainable and destructive removal of collective natural resources. Strengthening the criminal justice system in areas affected by IWT has far-reaching positive impacts, including for the poorest communities of the lower income countries covered by this programme.

The project was implemented in eight African countries as illustrated in the map below.



## **2. Project Partnerships**

Project IWT013 was led by the United Nations Office on Drugs and Crime (UNODC) in partnership with a range of national and specialist institutions. TRACE Wildlife Forensics Network (TRACE) was the main technical partner on the project; other important stakeholders were the wildlife and forensic agencies and institutions in each of the project countries. Strong partnership with counterparts in host countries of Botswana and Gabon were present from the outset, while partnerships in other project countries were fostered over the course of the project.

Partnerships between national authorities and the Project Team (UNODC and TRACE) were strengthened not only through national in-country visits but through the workshops held in Botswana (May 2016) and Edinburgh (June 2017) and meetings at the CITES COP17 (September 2016). The regional workshops reinforced the partnerships between countries and commitment of the African partner countries to support this project to develop wildlife forensic capacity at national and regional levels. Attendance of the Project Team at the seventeenth session of the Conference of the Parties to CITES, held in Johannesburg, South Africa from 24 September to 4 October 2016 also provided a valuable opportunity to meet with project partners, the majority of whom were present at the conference.

### **TRACE Wildlife Forensics Network (TRACE)**

TRACE employed a wildlife forensic scientist, Dr Stephanie Pietsch, based in Africa, to work full time on the project over two years. The post was supervised by Dr Rob Ogden (TRACE director), who was actively involved in all project planning and decision making. TRACE has provided technical forensic expertise throughout, including in the design and implementation of the needs analysis in project countries. The expertise and knowledge of TRACE personnel and their valuable partnership has been central to the success of this project. The strength of the partnership lies in having a Project Coordinator on the ground in project countries, in addition to availability and commitment to the project by TRACE directors.

### **Botswana - Ministry of Environment, Wildlife and Tourism (MEWT)**

Botswana Department of Wildlife and National Parks (under MEWT) was a responsive and engaged project partner. Cyril Taolo, as focal point for activities, ensured that the project coordinator was hosted in Gaborone for a period of 18 months. Letters of introduction to relevant stakeholders in neighbouring countries were provided by the Department of Wildlife and National Parks (DWNP). DWNP provided planning and logistical support for the organisation of a regional workshop held in Gaborone in May 2016. DWNP also facilitated partnership between UNODC and TRACE and relevant national stakeholders including the Botswana Forensic Science Service. UNODC, TRACE and Botswana project partners will maintain a relationship after project completion through the African Wildlife Forensics Network.

### **Gabon - Agence Nationale des Parcs Nationaux (ANPN)**

The project coordinator was hosted by ANPN in Libreville for 3 months as agreed in the project plan. There were some challenges regarding a lack of common understanding of expected outcomes and specific activities as well as the roles of the project partners in the process. These issues were worked out and successful efforts were made to improve communication and address concerns to ensure that plans for project activities and capacity building in this region were not be affected. By the end of the project, a strong partnership had been formed and all partners were happy with the outcomes. It is expected that partners will continue to work together beyond project closure, both at a national level and through the African Wildlife Forensics Network. IWT funds were used to co-finance two positions within ANPN, to support the work of the project and to develop laboratory capacity in Gabon.

### **Netherlands Forensic Institute (NFI)**

The Project Team maintained regular communication with NFI focal point, Irene Kuiper. NFI were kept informed and involved in the project plans, in particular in relation to Botswana. NFI delivered forensic training to Botswanan wildlife rangers, investigators, and lab technicians and participated in the AWFN workshops in May 2016 and June 2017. Regular communication and coordination with NFI facilitated improved outcomes in Botswana, with the Project Team building upon trainings delivered by NFI. NFI will be involved in the African Wildlife Forensics Network beyond project closure.

## **Royal Zoological Society of Scotland (RZSS)**

RZSS met all expectations in line with what was agreed in project plan, namely the provision of expertise in the form of Dr. Rob Ogden's salaried time to work on the project.

## **Malawi: Department of National Parks and Wildlife**

The Malawi Department of National Parks and Wildlife was an interested and enthusiastic project partner, which led Malawi to join the project after its commencement. The Department facilitated dialogue with the national labs and the Inter-agency Committee on Combating Wildlife Crime and encouraged collaboration with other organisations working in the country, namely UK RSPCA and UK Border Force. UNODC, TRACE and Malawi project partners will maintain a relationship after project completion both at a national level and through the African Wildlife Forensics Network.

## **Namibia: National Forensic Science Institute of Namibia and the Directorate of Regional Services and Parks Management**

UNODC and TRACE fostered good relations with the National Forensic Science Institute (NFSI) of Namibia (through its Director, Dr Paul Ludik) and the Namibian Directorate of Regional Services and Parks Management. Namibia has detailed plans to develop a new national forensic lab by 2019 with capacity to conduct human and wildlife forensic analysis and so did not require capacity building support from the Project Team. Instead, the Project Team outlined interim measures for the development of forensic capacity and offered assistance to national counterparts as the lab develops. Although the NFSI will not be in a position to offer any form of service until 2019 at the earliest, the institute director indicated that the NFSI would be happy to consider a regional role in future. UNODC, TRACE and Namibia project partners will maintain a relationship after project completion with regard to capacity building both at a national level and through the African Wildlife Forensics Network.

## **Zambia: Zambia Department of National Parks and Wildlife; Zambia Police Service; Central Veterinary Lab; Central Veterinary Research Institute**

The Zambian national authorities were interested and enthusiastic project partners. The Department of National Parks and Wildlife facilitated dialogue with the national labs and the police. Working together, the national authorities have begun to implement recommendations made in the project assessment report. UNODC, TRACE and Zambia project partners will maintain a relationship after project completion both at a national level and through the African Wildlife Forensics Network.

## **Angola: National Directorate of Biodiversity**

Since October 2015, the project coordinator, UNODC and project partners at DWNP in Botswana tried repeatedly to liaise with high-level contacts in Angola to organize an assessment visit to the country. However, all attempts to contact relevant national stakeholders in Angola failed. The National Directorate of Biodiversity sent a representative to the first regional workshop in May 2016, however, subsequent attempts at engagement remained unsuccessful.

## **Republic of Congo: Ministry of Forestry, Economy and Sustainable Development**

While the Ministry kindly facilitated the in-country assessment as part of the ICCWC Wildlife and Forest Crime Analytic Toolkit mission in July 2015, follow up was challenging. Changes in government and an overall lack of capacity contributed to a lack of successful engagement in Congo. This experience is not unique to the current project; UNODC has yet to be able to arrange presentation of the Toolkit report to national stakeholders, following a number of cancelled attempts to schedule presentation over a period of 18 months.

## **Zimbabwe: Ministry of Environment, Water and Climate; Parks and Wildlife Management Authority; Victoria Falls Wildlife Trust**

Considerable efforts were made to establish working relationships within the Zimbabwe government, including a number of high-level contacts being made at the relevant ministry. This eventually resulted in a representative being sent to the regional workshop in May 2016, with encouraging signs of engagement with the project. However despite repeated attempts,

following on from this event, relevant government stakeholders were either not responsive or did not stay in contact and efforts to liaise with contacts in Zimbabwe to organize an official assessment visit to the country were unsuccessful. A good relationship was formed with NGO Victoria Falls Wildlife Trust and the project coordinator visited and assessed their laboratory capacity and needs. The Trust has embarked on a process of developing its own wildlife forensic capacity to support Zimbabwean wildlife law enforcement and has been involved in early meetings of the African Wildlife Forensics Network. During her visit to Victoria Falls, the project coordinator also interviewed officers from the following regional government departments in Victoria Falls: the President's Office, KAZA Office Zimbabwe and the Zimbabwe Parks and Wildlife Management Authority. At a later stage, the government officials admitted that they had no clearance from their Ministry to share information on the national wildlife crime situation and their law enforcement capacity. All government interview partners requested that their names not appear in any official assessment report for Zimbabwe. At time of writing, the Victoria Falls Wildlife Trust, although not a formally government-mandated organisation, appears to offer the best opportunity for developing wildlife forensics capacity in Zimbabwe.

Key project partners were provided the opportunity to review this final report and provide input. For more detailed information on national engagement with project partners, please see attached national assessment reports (Annex 3).

### 3. Project Achievements

In subsequent sections, achievements with regard to outputs and outcomes are presented and assessed against project indicators. As part of the overall monitoring and evaluation process the Project Team also conducted an end of project survey covering multiple outputs and outcome indicators from the perspective of project partners. The results of the post project survey serve to inform the Project Team and DEFRA about the impact of the project on the ground. The results will also help to improve future forensic training events and activities beyond this project. Overall, feedback from participating countries was very positive, with increased wildlife forensic law enforcement and laboratory capacity reported by respondents, as well as enhanced inter-agency cooperation and positive responses to all trainings provided. Details of the findings can be found in the post-project survey summary report included as Annex 4.

Section 3.1 presents a narrative of what was achieved under the project with related indicators, outputs and means of verification referenced throughout.

#### 3.1 Outputs

**Table 1. Achievement of project outputs**

OUTPUTS		RESULTS: outputs achieved? (full, partial or not)
1	A detailed forensic needs assessment for each of the eight target countries	Full
2	A coordinated evidence-based forensic capacity building plan at regional and national levels	Full
3	Novel capacity for the inclusion of wildlife forensic evidence in IWT law enforcement, from field to courtroom	Full
4	A regional network of wildlife forensic expertise for comprising field officers, forensic scientists, prosecutors and judiciary	Full

At the outset, a standardised, country-by-country **situation analysis template** was created including the development of stakeholder questionnaires (Indicator 1.1 achieved; analysis questionnaires and report template attached in Annex 3).

In July 2015, the project coordinator was stationed in Libreville, Gabon for a period of three months in order to undertake assessments in central and west African target countries, namely, Gabon, CAR, Congo and Mali. Operating from project partner (ANPN) facilities in Libreville, the project coordinator explored the needs and capacities relating to wildlife crime investigations in Gabon and Congo. Attempts to engage with CAR and Mali were unsuccessful, or project activities deemed a security risk (FCO advice), and so alternate project countries were selected (change request submitted and approved, see section for further details).

The project coordinator subsequently relocated to Gaborone, Botswana to conduct further in-country assessments in southern African target countries, namely in Angola, Botswana, Malawi, Namibia, Zambia and Zimbabwe. In total, **eight national wildlife forensics needs assessments** were completed (Output 1), with two assessment reports considered less comprehensive than others, due to the level of engagement from national project partners (Indicator 1.2 achieved; reports attached as Annex 3).

The assessment process involved in-country visits; interviews with relevant law enforcement officials, scientific authorities and institutions, NGOs and diplomatic missions; law enforcement and laboratory questionnaires; site visits; literature review. The assessment reports provide expert advice on the current situation and proposed future options for capacity building. The content of the assessments were shared with relevant agencies; project partners were involved

in the drafting process and given an opportunity to review and provide inputs prior to finalization (Indicator 1.3 achieved). These assessments then formed the basis of the project activities including the design of **national capacity building plans** (Output 2), informing the relevant competent authorities regarding investment in equipment, systems and collaboration.

In May 2016, following the drafting of the assessment report, the project team held an in-depth planning session with representatives of **Gabon**. A plan for forensic capacity building was proposed, integrating both wildlife and human forensic elements, as desired by ANPN. Details of this plan are included as part of the Gabon assessment report in Annex 3 and the Gabon Strategic Plan for Wildlife Forensics included as Annex 5 (Indicator 2.2).

In order to begin implementation of the capacity building plan, the Project Team travelled to Libreville in December 2016. In partnership with the lab manager and in line with the findings of the assessment report, priority needs for training and equipment to support wildlife law enforcement using forensics were identified. Laboratory training in forensic process was provided to five scientists, including one woman (Indicator 3.2). Laboratory equipment was procured by the Project Team and installed in the laboratory in early 2017 (Equipment report included as Annex 6; Indicator 3.3). National partners requested that the Project Team identify investigative and judicial needs for wildlife forensic evidence. This visit also allowed for further in-depth strategic planning to develop forensic capacity for wildlife law enforcement in Gabon. The Project Team worked with national counterparts to design a higher-level 5-year strategy, which was presented to the ANPN director. This strategy has subsequently informed the implementation of GEF and African Development Fund projects (2017-21). Project partners ANPN intend to use GEF and ADF funding to develop wildlife forensic capacity in line with the IWT project output and plan for establishment of a DNA forensics lab in Gabon. Further details can be found in the mission and equipment reports included in Annexes 3 and 6 (Indicators 2.2, 3.2, 3.3).

The Project Team met with **Malawi** project partners including the Director of National Parks at CITES COP17 in September 2016 to discuss the findings of the assessment report. The Project Team subsequently presented these findings to the Malawi Inter-Agency Committee on Combating Wildlife Crime in Lilongwe (December 2016) and gathered further information to evaluate their lab requirements (mission report included as Annex 7; Indicator 1.3).

In line with the recommendations made in the assessment report, project partners in Malawi have approved a capacity building plan to develop a satellite unit at the Central Veterinary Lab, capable of receiving evidence from crime scenes, submitting evidence to core laboratories and delivering analytical results to national investigations (Indicator 2.2). Equipment was procured for collection and storage of evidence under the current project (provision of secure freezer storage and reference materials for the toxicology laboratory at the Central Veterinary Lab) as per the assessment report recommendations (equipment report included as Annex 6; Indicator 3.3).

In an effort to coordinate and align capacity building efforts, the Project Team partnered with the RSPCA and UK Border Force to deliver capacity building training in Malawi (also under IWT Challenge funding). In October 2016, UK Border Force delivered training to border post personnel; the Project Team provided advice on content for the forensic component. Additionally, as recommended in the assessment report, forensic awareness training for prosecutors and judges was provided within a training workshop organized by RSPCA and STOP IVORY in April 2017 (mission report included as Annex 7; Indicators 3.1, 3.4).

Following completion of the **Zambia** wildlife forensics needs assessment, and the subsequent participation of the Zambian Department of National Parks and Wildlife (DNPW) at the AWFN workshop in Gaborone, Botswana, in May 2016, the Project Team had discussions with the Director of DNPW and the DNPW Acting Head of Intelligence and Investigations during CITES COP17. The interactions were very positive, with both Zambian officials expressing their desire for wildlife DNA forensic services to support national wildlife law enforcement.

The Project Team were subsequently invited to Zambia to discuss the findings of the assessment report and the development of national wildlife forensic capacity in more detail. A

series of meetings were held with relevant stakeholders for the development and application of wildlife DNA forensic services within Zambia. A proposed operational pathway was agreed upon, which requires close cooperation between the DNPW and the national vet lab (CVRI).

Over the course of two in-country visits the Project Team and project partners were able to: develop a higher-level strategy for forensics supporting wildlife law enforcement in Zambia (Indicator 2.2); start capacity building for wildlife DNA forensic analysis at the two relevant laboratories (Indicators 3.2); conduct forensic awareness training for prosecutors and investigators at DNPW (Indicator 3.1); and provide an outlook and future plans for the implementation of wildlife forensic capacity in Zambia (Indicator 2.2). Further information can be found in the mission report included in Annex 7.

Infrastructure has since been provided to lab personnel in line with the recommendations of the report and the discussions with project partners (Equipment report included as Annex 6; Indicator 3.3).

In **Botswana**, the Project Team partnered with the Netherlands Forensic Institute (NFI) and national counterparts to build wildlife forensics capacity. NFI were actively engaged in capacity building work prior to the start of the current project. Coordination and cooperation with NFI meant that the Project Team could build on the actions already taken.

The Project Team participated in an NFI-led training for lab analysts at the joint Botswana Police Forensic Science Service (BPS-FSS) / Department of Wildlife and National Parks (DWNP) forensic laboratory, from 31 October – 4 November, 2016. This training provided an opportunity for the Project Team to meet with NFI and national counterparts to agree upon next steps for wildlife forensic capacity building in Botswana. The project team subsequently delivered laboratory training in April 2017 (mission report included in Annex 7; Indicator 3.2). The laboratory training focussed on key features of the forensic laboratory process, particularly on DNA analysis and sequencing for forensic species identification. The training components were in close consultation with NFI and tailored to the specific forensic training needs of DWNP and BPS-FSS. The laboratory training provided tangible support to assist Botswana in establishing laboratory capacity and a working operational pathway for conducting wildlife DNA forensic analysis for species identification. Given the status of laboratory readiness observed during the training mission, the wildlife forensics team of DWNP and BPS-FSS should be in a position to conduct wildlife DNA forensics casework in the very near future. Additionally, equipment was provided to the lab under the current project (equipment report included as Annex 6; Indicator 3.3).

Alongside laboratory development, training in wildlife forensic process was also delivered to a group of prosecutors from across Botswana (April 2017), who were involved in a UNODC project to develop guidance on implementation of a new national wildlife act. This provided the opportunity link together key actors in wildlife forensics and wildlife crime prosecutions, as well as introducing the legal profession to the forensic services now available for wildlife law enforcement.

At the outset of this project, it was expected that **Botswana** would provide wildlife forensic services at a regional level, however, challenges arose from ministerial level political difficulties between MEWT (housing the DWNP) and the Ministry of Security (housing BPS-FSS) regarding wildlife forensic service provision and this hampered the speed of progress at national and regional levels. While national capacity is now in place, a regional role has yet to be agreed.

The wildlife forensic assessment report for **Namibia** was completed and shared with project partners (Indicators 1.2 and 1.3). Namibia has detailed plans to develop a new national forensic lab by 2019 with capacity to conduct human and wildlife forensic analysis. In terms of resource implications, the national budget is already in place and no additional budget is required. Instead, the Project Team outlined interim measures for the development of forensic capacity and offered assistance to national counterparts as the lab develops. The Project Team also explored the possibility of sharing of services on a regional basis in the future and the mentoring of southern African lab personnel.



The national wildlife forensics assessment report for **ROC** was drafted in English and French and shared with national counterparts (Indicators 1.2 and 1.3). Given the lack of law enforcement and forensic capacity in ROC, the assessment largely focused on international service options and considerations and on ROC's potential role as a satellite unit, which would use the regional forensics services of a core DNA forensics laboratory in Gabon or Kenya. Based on the findings of the assessment report, in light of the current level of capacity and circumstances in ROC, it was not deemed necessary to provide wildlife forensics training or equipment under the current project.

Assessment reports were drafted for **Angola** and **Zimbabwe** (Indicator 1.2), however, these reports are not as detailed or comprehensive as the others, given a lack of engagement by national project partners (described in section two above). The reports were shared with project partners (Indicator 1.3), however, despite multiple follow up efforts, no additional input was provided nor national capacity building plans developed. The Project Team had to conclude that Angola and Zimbabwe are not in a position to develop forensic capacity for wildlife law enforcement in the near future.

A **regional planning workshop** was held from 17-19 May 2016 in Gaborone, Botswana with representatives from 7 project countries (Indicators 2.1, 4.1; workshop report attached in Annex 8). This workshop brought together senior representatives from national agencies as well as key regional experts in the fields of wildlife law enforcement and forensic science, to discuss how wildlife forensic services could be developed on a regional basis. A series of presentations and discussions throughout the workshop generated a wealth of information relating to wildlife forensic science, regional wildlife law enforcement efforts, national needs and possible models for establishing cross-border forensic services.

Based on the information presented and the expertise within the workshop, participants identified a range of issues that would need to be addressed across areas of enforcement, science and prosecution, to implement a network of wildlife forensic service provision. On the final day of the workshop, participants focused on identifying solutions to each of the issues identified across the enforcement, science and prosecution categories. Based on these discussions, the project team distilled the next steps required to increase the implementation of wildlife forensic analysis more broadly within Africa (Indicator 2.2). For more information please find full report of the workshop attached in Annex 8.

With regards to the success of the workshop:

- 100% of respondents agreed or strongly agreed that the workshop increased their knowledge and skills in wildlife forensics.
- 100% of respondents found the information presented to be relevant and useful.
- 100% of respondents agreed or strongly agreed that the workshop was well organized.

A workshop evaluation report is attached in Annex 8.

Based on needs identified in the national assessment reports, trainings were organised to build capacity for the inclusion of wildlife forensic evidence in IWT law enforcement, from field to courtroom (Output 3). The project invested in specific points in the wildlife crime chain that can have an impact i.e. in the laboratory. For this to be effective, it was necessary to increase awareness on other ends of the chain (crime scene and court room) so that the evidence is admissible and can be used to strengthen investigations and support prosecutions. The project engaged in hierarchical training of investigators, prosecutors and judges to maximise the number of people given a low level of awareness, whereas in the laboratory, a high level of awareness is required for a smaller number of trainees, since they will be putting the training into practice.

A series of trainings were conducted in project countries, exceeding all indicator targets (Indicators 3.1, 3.2, 3.4). In total, the Project Team directly trained 100 law enforcement officials and members of the judiciary including investigators, prosecutors and judges from across the project countries (Indicators 3.1 and 3.4). Training was provided to 22 laboratory technicians in Botswana, Gabon and Zambia (Indicator 3.2). Positive feedback was received from all countries on the wildlife forensics training sessions reporting that the trainings fulfilled expectations, were tailored to each agency's needs and provided trainees with sufficient course

and reference material (post project survey report included as Annex 4). Details of the trainings are presented in Tables 2 and 3. Further details are compiled as an excel file and in mission reports included as Annex 7.

**Table 2. Output 3 Indicator Results**

Indicator	Trainees	Baseline	Target	Achieved
3.1	Number of law enforcement officials trained	0	60	64
3.2	Number of forensic technicians trained	0	4	22
3.3	Number of countries receiving equipment/forensic infrastructure	0	4	4
3.4	Number of judiciary trained	0	10	36

**Table 3. Details of trainings delivered under IWT013**

Location	Date	Training	Indicator	Number trained
Namibia	1-5 August 2016	Wildlife forensics awareness raising delivered as part of regional workshop for prosecutors and judges	3.1, 3.4	30
Botswana	31 October - 4 November 2016	Wildlife forensics laboratory training for technicians	3.2	6
Gabon	12-16 December 2016	Wildlife forensics laboratory training for technicians	3.2	5
Zambia	6-8 February 2017	Wildlife forensics laboratory training for technicians	3.2	11
Zambia	9 February 2017	Wildlife forensics awareness raising for investigators and prosecutors	3.1	21
Botswana	24-27 April 2017	Follow up wildlife forensics laboratory training for technicians	3.2	6
Botswana	28 April 2017	Wildlife forensics awareness raising for prosecutors	3.1	20
Malawi	19-21 April 2017	Wildlife forensics awareness raising for judges	3.4	30

### Equipment provision

Over the course of the project, it became evident that some countries were not at the stage where providing equipment (Indicator 3.3.) would be appropriate, namely, Angola, Republic of Congo, Namibia, and Zimbabwe. Namibia does not require equipment since plans for the construction of a new fully-equipped lab are underway, whereas in Congo, providing infrastructure at this stage would be premature since the law enforcement capacity required for forensic infrastructure is too weak at present. Angola and Zimbabwe were insufficiently engaged on the project to justify equipment provision.

Instead of providing equipment to all project countries as outlined in the original logframe, the Project Team requested (via Change Request Form) to use the available funds for equipment and forensic infrastructure in the four project countries where equipment was most needed and would be utilized. As such, equipment and infrastructure were provided to labs in Botswana, Gabon, Malawi and Zambia (Indicator 3.3) based on the findings of the national needs assessments. In Botswana, equipment was purchased to improve existing forensic analysis processes and help improve data analysis capacity. In Gabon, equipment was purchased to support dedicated forensic analysis processes, allowing separation from standard research equipment. In Malawi, equipment was purchased for the collection and storage of wildlife DNA evidence and ongoing capacity to undertake toxicological testing. The development of capacity in Zambia included requirements for both sample receipt/storage and laboratory analysis at the Central Veterinary Research Institute. Accordingly, equipment was purchased to support both storage and analysis. Full report of equipment provision included as Annex 6.

## **Network development**

The project has provided an organisational framework for identified project partners to continue coordinating through a network, linking people together and ensuring they understand their respective roles and what they can do for each other (Output 4).

In follow up to the regional workshop held in Botswana in May 2016, discussions were held to bring together a forensic practitioner committee to examine options, plans and ways forward for the creation of an active African Wildlife Forensics Network (AWFN). This led to the proposal that the network should be established as part of the wider Roadmap and formally launched at the 2017 forensic practitioner workshop held in Edinburgh in 2017.

At the Edinburgh 2017 meeting there was unanimous agreement to establish the African Wildlife Forensics Network, a network of scientists, linked together through scientific (informal) channels, to ensure that information regarding techniques, standards and challenges can be effectively shared and discussed at a regional level. Perhaps the greatest benefit was seen as creating an overall sense of a regional wildlife forensics community, as national capacity is often composed of just one or two scientists working in effective isolation. The network is expected to provide scientific support and a common regional voice on the development and utilisation of wildlife forensics that will be very useful at a national level. At a practical level, the need for the group to have regular contact, with face-to-face meetings where possible (at least once per year), was discussed, along with the associated resource implications. Under the current project, a group of wildlife forensic scientists has been brought together twice, however the AWFN will need to have wider geographic representation (e.g. inclusion of South Africa and Kenya) and funding under the 2015-2017 IWT Challenge Fund has now finished. A number of opportunities to bring members of the group together were proposed, including bi-lateral scientific collaborations between national laboratories (e.g. South Africa and Zambia – see email included as Annex 9) and attendance at broader international forensic science meetings. Ideally, funding would be identified to support dedicated annual AWFN meetings; such funding is now being sought through external partner grant applications. In the meantime, it was agreed that greater regional wildlife forensic exchanges, inspired by meetings such as this, would begin to naturally develop the functions of the AWFN.

The group present at the Edinburgh meeting launched the network (Indicator 4.1) and endorsed a broader strategy for the future of wildlife forensics in Africa beyond the current project, based on expanded collaboration between emerging range state laboratories and international partner organisations providing technical expertise (see Roadmap included as Annex 10).

To facilitate communication and disseminate common wildlife forensic resources, a shared access online folder was created and populated with information and protocol documents about wildlife forensics, in addition to expert contact lists and links to other relevant networks. A mailing list for the African Wildlife Forensics Network has been set up and communication initiated. These communication links and common information resources will facilitate collaboration of wildlife forensic stakeholders (Indicator 4.3). SWGWILD Standards and Guidelines were adopted by the network and disseminated via the shared access folder (Indicator 4.2). In addition to written protocols, standardized software has been supplied to laboratories with associated training to ensure that all countries analysing DNA sequence data follow the same technical approach (Indicator 4.2; equipment report included as Annex 6).

## 3.2 Outcome

**Table 4. Outcome Indicator Results**

Indicator	Baseline	Target	Result	Outcome achieved?
1 IWT investigations utilise forensic analysis	0	10	4*	Partial
2 Wildlife forensic needs assessment reports	0	8	8	Full
3 Roadmap	0	1	1	Full
4 Increase in prosecutions and convictions (by 2018)	N/A	N/A	N/A	N/A
5 Increased community confidence in protection from poaching	Increase reported in some countries			Partial

\* Based on use of South Africa as a regional network partner

The intended project Outcome was as follows: an effective, cooperative network of wildlife forensic capacity is developed to help investigate IWT and support enforcement of CITES regulations for endangered species including elephant, rhinoceros, lion and pangolin. A country-by-country evaluation of forensic needs and current resources is used to produce a coordinated plan for regional capacity. The results provide a forensic framework delivering increased law enforcement success, leading to the disruption of established organised criminal activities in low income countries.

This outcome has been partially achieved to date and, with time, we expect it to be fully achieved based on the outputs of the project.

An effective, cooperative, continuing network of wildlife forensic capacity has been developed, in the form of the African Wildlife Forensics Network, launched in Edinburgh in 2017. Although not a specific Outcome indicator, the creation of a community of wildlife forensic scientists communicating and collaborating to achieve regional capacity and support IWT law enforcement is an excellent indication of achieving the project Outcome.

### *National needs assessments (Outcome Indicator 2)*

A series of eight national capacity evaluations and needs assessments has been completed and delivered in the form of individual reports (Outcome Indicator 2; reports included as Annex 3; see Section 3.1 for further details). This process was far more than a simple paper exercise, as it encouraged national partners to consider not only what their capacity and needs were in relation to forensics, but also how their national institutions could be coordinated to address the priority areas identified for development. The reports therefore fed into the development of national plans for wildlife forensic development.

### *Regional Roadmap and National Plans (Outcome Indicator 3)*

The national reports outline the practical steps required to develop and deliver priority actions. For the two primary partner countries, Botswana and Gabon, the findings of these reports have now been included as the basis of national plans currently enacted for delivering wildlife forensic capacity (see example of Gabon strategic planning document included as Annex 5). National plans for Zambia and Namibia are also in place. For Zambia, a tri-partite MOU describing the operational plan for delivering wildlife DNA forensics is in preparation and a number of test cases have been processed using the procedures established through the project (see Zambia update included as Annex 9). For Namibia, existing plans for the construction of a new forensics facility (scheduled for completion in Q1 2019) now include planning for wildlife DNA forensics capacity based on the work of this project.

These national plans, taken together with the outputs of the 2016 Regional Workshop in Botswana have provided the basis for the development of a Roadmap for wildlife forensic development in southern and central west Africa, that should be applicable continent-wide (Indicator 3). The Roadmap (Annex 10) has been shared with project partners and approved in principle as an appropriate framework for developing regional capacity by forensic scientists at the Edinburgh launch of the African Wildlife Forensics Network in June 2017.

*IWT Investigations and Increases in Prosecutions and Convictions (Outcome Indicators 1 & 4)*

Converting the needs assessments, planning activities and network development into active casework investigations has taken longer than planned, due primarily to the speed of progress in the two lead partner countries, Botswana and Gabon.

Despite a pre-project country mission, Botswana did not build wildlife forensic capacity to support IWT investigations to the extent or speed that the Project Team had initially envisaged. At the outset of the project, the Project Team had understood that a lab in Botswana would be up and running by project inception (June 2015). When UNODC, TRACE and NFI initially completed the pre-project assessment in Botswana in August 2014, NFI had a viable plan to return the following month to 'clear the backlog' of wildlife cases in the lab and enable the start of forensic services. However, nine months later, when our project began, the back log had not yet been cleared and the lab was still not up and running. Today, at the closure of the project, the lab has only just become operational, and has yet to begin clearing the casework backlog. This has been a frustrating process, however progress has been achieved, training effectively delivered and an emerging cohort of Botswana wildlife forensics scientist has now been identified and engaged on an international scale. The Project Team expects casework to be initiated and in some cases completed within the next six months.

For Gabon, large scale forensic capacity building was dependent on accessing international funds secured from the African Development Fund and World Bank (GEF 6). Agreed funding took longer than expected to be received and consequently implementation of the programme of capacity building devised and agreed through this project was possible until January 2017. As with Botswana, although live casework has yet to commence in Gabon, the activities and training provided under this project have delivered new skills and expertise to the laboratories where forensic casework will be performed in the near future.

With regard to Indicator 1, three countries have begun to utilise wildlife forensic evidence in national investigations during the project. Botswana, Namibia and Zambia have all sent samples to South African wildlife forensic laboratories for analysis and received analytical results back for use in prosecutions (three rhino horn cases; one bushmeat case; investigation reports unavailable due to confidentiality). South Africa was not a partner country on the current project but is a member of the African Wildlife Forensics Network, making it a point of interpretation as to whether Indicator 1 has been partially met or not. Either way, although this Indicator has not been entirely achieved, based current situation in Botswana, Gabon and Zambia, we have every confidence that it will be met within 12 months of project end.

With regard to outcome indicator 4, it proved impossible to set a baseline because in no country is this information recorded, hence no meaningful target could be derived. The delivery of indicator 4 was not expected until one year after project end and there are plans to measure this indicator as part of follow up monitoring and evaluation by UNODC, via updates from the African Wildlife Forensics Network. The outcome of investigations prosecuted in Botswana, Gabon and Zambia using wildlife forensic evidence from South Africa, was successful conviction in all cases. Combined with the latest news from Zambia that their newly established wildlife forensic capacity has resulted in a conviction for meat species fraud (not strictly an IWT case – see Annex 9), the Project is extremely confident that the number of prosecutions and convictions will increase as a result of the current project.

Finally, law enforcement community confidence is evidenced to have increased in some countries as a result of the project (Indicator 5; summary report of surveys included as Annex 4). At this stage, while investigations are still for the most part being initiated, it is arguably too early to measure a change in confidence in relation to the impact of forensic science on wildlife law enforcement. However, all of the individuals who have received training have provided very positive feedback in terms of the project meeting an identifiable need and contributing towards their increasing ability to fight the IWT. Because of this, the Project Team intends to initiate another phase of interviews of the same law enforcement community representatives in one year's time and gauge enforcement perceptions and morale to enable comparison at pre-

project, project close, and at end 2018, when the law enforcement process has had time to follow through to the completion of prosecutions, as per indicator 4.

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

Project Impact agreed in application form: a reduction in international wildlife trafficking in source and transit countries, and the disruption of organised wildlife crime affecting low income communities, throughout Africa.

Enforcement authorities struggle to identify traded wildlife, severely restricting prosecution success in cases where establishing the species, geographic origin or individual involved are critical points to prove. As a result, investigations stop at the point of seizure due to lack of evidence and information that could contribute to a broader understanding of organised illegal trade networks is lost. At project close, the Project Team have conducted stakeholder identification, situation analysis and needs assessments in eight African countries (Output Indicators 1.1, 1.2, 1.3). Understanding the situation is the first and essential step required to designing effective and sustainable solutions to tackle IWT. The Project Team then used this evidence base to design capacity building plans (Output 2) and through the establishment of a wildlife forensic network (Output 4), provided the coordination and training to utilise forensic tools to fight wildlife crime.

As part of an effective law enforcement framework, this new capacity is fully expected to contribute to the disruption of organised wildlife crime affecting low income communities in Africa. For example, one week prior to the submission of this project report, three Chinese nationals were arrested following a seizure of suspected rhino horn in Zambia, on the Mozambique border. Zambia, an OECD low income country, has until now had no forensic capacity to analyse seized wildlife products, provide evidence to support prosecutions or inform wider investigations. Until the implementation of this project, this lack of capacity has led to cases either not being brought before the courts or lost due to insufficient evidence. Today, following the capacity building activities planned and implemented within the African Wildlife Forensics Network project, Zambian authorities are able to seize the evidence and transfer it securely for forensic testing to determine the species of origin and support a prosecution within Zambia (see Zambia email communication included as Annex 9). Furthermore, through the contacts developed under the project, any confirmed rhinoceros horn samples can be sent for additional testing in South Africa to investigate the individual origin for the horns (poached carcasses) that will inform the international law enforcement community regarding linkages between the suspects and their known history in Zambia, with broader criminal activities in southern Africa. Such case examples demonstrate the type of impact this project will have, with repeated casework success gradually contributing to both direct (conviction) and indirect (deterrent) disruption of organised wildlife crime. Not only will this tackle impunity, but reducing the incentives for local people to become involved in national organised wildlife crime will contribute to the security and economic sustainability of low income communities.

#### **4. Monitoring of assumptions**

UNODC monitored risks and assumptions throughout the course of the project. On a number of occasions there were changes in assumptions, which required intervention including some changes to the project plan.

##### **Outcome assumptions**

1. High level political commitment to work with UNODC:

There were issues with high level political commitment to engage with the project in CAR and Mali. In response to lack of engagement from national counterparts in CAR and security issues in Mali, the Project Team requested (by Change Request Form) to amend the list of project countries to include two additional countries that had expressed interest in engaging with the project and building national wildlife forensic capacity, namely Malawi and Namibia.

2. Provision of high quality and timely technical advice:

No change in assumptions.

3. Effective donor coordination and sufficient resources:

No change in assumptions.

##### **Output assumptions**

1. Forensic analysts and law enforcement officers are willing to cooperate and communicate with counterparts in other countries:

No change in assumptions – largely positive feedback from individuals engaged during in-country assessment missions.

2. Trainees are willing to put into practice the techniques taught:

No change in assumptions - trainees were interested and eager to put learning into practice.

3. Sufficient high level support exists to investigate and prosecute IWT offenders:

In the opening phase of the project, the Project Team witnessed a strong desire by partners for the project to go ahead. However, the Project Team came up against significant inertia at a middle management level, slowing progress to the point where nothing was happening in some countries, and progress was generally slow throughout the region.

It was difficult to understand whether this was down to lack of time, stability, resources, interest, understanding or all of the above. In response, the Project Team moved the project in the direction where progress could be made, rather than where strategically it might have been best. Finding ways around this 'brick wall' meant changing some of the objectives of the project. For example, at the outset of this project, it was expected that Botswana would provide wildlife forensics services at a regional level, however, challenges arose from ministerial level political difficulties between MEWT and the Ministry of Security regarding wildlife forensic service provision and this hampered success at a national and regional level. The regional role that was initially agreed in discussions with Botswana was then retracted to some extent based on progress.

In Gabon and Zimbabwe the political context led to delays in project implementation, although this was temporary in Gabon. Progress and engagement with Angola and Zimbabwe have been especially slow. The Project Team monitored attempts to engage these national stakeholders, eventually concluding that efforts would be better placed elsewhere.

## **5. Project support to the IWT Challenge Fund Objectives and commitments under the London Declaration and Kasane Statement**

This project contributed to the strengthening of law enforcement and the role of the criminal justice system (IWT Challenge Fund Objective 2). Evaluating national and regional needs and strategically investing in DNA forensic capacity, through equipment and training, benefits enforcement actors along the entire criminal chain; from the crime scene to the court room – from park rangers to the judiciary. Front line officers, prosecutors, judges and lab analysts participated in training and regional workshops, benefitting their national law enforcement institutions, as well as developing personal skills and boosting the morale of law enforcement officers. Through the activities of this project, these agencies are more prepared to conduct higher level investigations on illegal wildlife trade.

## **6. Impact on species in focus**

The poaching of elephants, lions, rhinoceros and pangolin is threatening the long term survival of these species. The project has built national wildlife forensic capacity and/or access to such capacity, to improve enforcement authorities' ability to identify traded wildlife, and ensure that investigations do not stop at the point of seizure due to lack of evidence.

Through the establishment of a wildlife forensic network, this project provided the coordination and training to utilise forensic tools to fight wildlife crime. The improvement of law enforcement capacity to tackle IWT will increase protection of these species.

**Elephants:** Capacity building in Gabon has focused on this country's primary area of IWT concern: the poaching and export of ivory from forest elephants. Both the dedicated laboratory training (see training report included in Annex 7) and broader forensic strategy development in Gabon (Annex 5) was primarily focused on combatting the rise in elephant killings through the use of enhanced forensic investigation techniques. The broader African Wildlife Forensics Network is also now facilitating the dissemination and uptake of a new elephant ivory geographic provenance test, *Loxodonta Localizer*, which following the Edinburgh meeting in June 2017 is set to be implemented in Gabon, Botswana and Zambia.

**Lions:** Lion poaching is a growing issue in southern Africa; of the project target countries it is particularly problematic in Zambia and Zimbabwe. Proving the species origin of processed lion products (meat and bones) is not possible without laboratory testing and this issue has led to the failure of investigations in Zambia (and likely in Zimbabwe). The African Wildlife Forensics Network project has delivered capacity for species identification of lion in Zambia (Activity Indicator 3.2), supporting national investigations and creating capacity for potential regional forensic services from Zambia to Zimbabwe and other neighbouring lion range states (e.g. Malawi).

**Rhinoceros:** DNA species identification of rhinoceros horn to both establish rhinoceros origin and differentiate black and white rhinos is now possible in Botswana and Zambia as a result of the project (Activity Indicator 3.2). Improved anti-poaching and law enforcement in South Africa has seen the illegal poaching and trade in rhinoceros increasingly spreading into neighbouring countries. The expansion of wildlife forensic techniques throughout the region will address the issue of softer enforcement regimes being exploited in low income countries, maintaining regional pressure on rhinoceros poachers.

**Pangolin:** Identifying the geographic origin of pangolins traded from Africa to SE Asia has become an increasingly urgent requirement throughout the project. The key wildlife forensic laboratory working on this issue is at the National Zoological Gardens in South Africa. To develop large scale regional mapping of pangolin seizures, the South African lab requires reference samples from around the eight target countries in this project. To support local law enforcement, species identification of pangolin meat is required. Through the African Wildlife Forensics Network, this project has supported the collection of and provision of reference pangolin samples to the South African lab from project partners, and the reciprocal provision of lab training in pangolin DNA analysis by South Africa to the project partners (for example see Annex 9 for evidence of Zambia-South Africa collaboration).



## 7. Project support to poverty alleviation

The primary beneficiaries of this project are the law enforcement communities in project countries. The law enforcement communities have benefitted from increased capacity to tackle wildlife crime through the application of forensic science (Outcome Indicator 0.5). Through this project, law enforcement communities have gained from strengthened wildlife forensic capacity, which will ultimately increase criminal conviction rates and decrease poaching and trafficking of wildlife.

The wider beneficiaries of this project are the entire populations of the target countries including rural communities where poaching is most prevalent. If wildlife crime is not investigated or not successfully prosecuted due to insufficient evidence, criminals will continue to engage in poaching and wildlife trafficking. This affects local communities through increasing crime and creating social instability, while decreasing opportunities for sustainable use of wildlife (e.g. tourism) and disrupting natural ecosystem services. By improving capacity to tackle wildlife crime, the project has contributed to creating a platform for sustainable economic growth, rather than the unsustainable and destructive removal of collective natural resources. Strengthening the criminal justice system in areas affected by IWT has far-reaching positive impacts, particularly for the poorest communities of the lower income countries covered by this programme.

## 8. Consideration of gender equality issues

The need to promote gender equality is recognised as a pressing issue in Sub-Saharan Africa. Although the project did not focus on supporting women, the Project Team promoted gender equality throughout its activities and took into account gender mainstreaming aspects wherever applicable. This included ensuring, to the maximum extent possible, proportional gender representation among participants and resource persons in the course of the project implementation. For example, the Project Team strove to ensure proportional gender representation at all workshops and trainings.

Although there tends to be a huge bias towards the employment of men in armed anti-poaching law enforcement activities, the Project Team were committed to ensure that training was provided to women and indirect gender equality impacts were achieved in line with Indicators 3.1, 3.2, and 3.4 as illustrated in Table 4 below.

**Table 4. Details of trainings delivered under IWT013, including sex-disaggregated data**

Indicator	Trainees	Baseline	Target	Achieved	Target (Women)	Achieved (Women)
3.1	Number of law enforcement officials trained	0	60	64	5	20
3.2	Number of forensic scientists trained	0	4	22	1	4
3.4	Number of judiciary trained	0	10	36	2	10

## 9. Lessons learnt

A full-time Project Coordinator was recruited to manage the implementation of the project on the ground and has been instrumental in carrying out activities in the manner and time planned.

**Key recommendation:** base a member of the Project Team in-country.

The Project Team made every effort to engage with relevant stakeholders and partners to avoid duplication and improve coordination of efforts to tackle IWT. Increased project success was seen in countries where collaboration with more partners was possible, for example, in Malawi, where the Project Team partnered with UK RSPCA and UK Border Force to provide more training and reach more beneficiaries.

**Key recommendation:** coordinate and partner with other organisations whenever possible.

The project workshops in Botswana and Edinburgh were very successful, increasing interest in the project, building relationships between stakeholders, leading to further coordination,

synergies and opportunities for collaboration. The Edinburgh workshop was organised to coincide with the Society for Wildlife Forensic Science biennial meeting, which meant that workshop attendees could also benefit hugely from training sessions as well as opportunities for interaction and networking with leading wildlife forensic scientists and laboratory analysts from other countries and regions.

**Key recommendations:** the value of face to face interaction should not be underestimated; maximise efficiency by planning project meetings to coincide with other larger events and thus reduce costs.

The project hinged on engagement from counterparts in project countries. One of the main challenges in the implementation of the project was lack of responsiveness to communication from the Project Team. In some cases, after sufficient attempts to make contact through various different avenues were made, the Project Team evaluated the circumstances and decided whether or not to make further efforts to engage. A lack of responsiveness was taken to indicate lack of interest and buy-in to the project; forcing engagement was not likely to be successful. As such, the Project Team adapted the plan and used the opportunity to engage other partners through amending list of project target countries. This flexibility contributed to the success of the project.

**Key recommendation:** ongoing monitoring and flexibility are essential for project success.

## 9.1 Monitoring and evaluation

The project was monitored and evaluated by UNODC in line with the UN reporting system; information gathering and indicator monitoring formed part of the day-to-day management of the project. UNODC coordinated the activities of partners and employed an adaptive management approach to navigate through inevitable practical and political challenges. UNODC maintained very regular contact with project partners, arranging conference calls with individual or multiple partners, as required. Regular progress updates were provided informally by phone and email and implementing partners provide formal quarterly technical and financial reports. The M&E system was practical and allowed for smooth management and communication over the course of the project.

In terms of project design, the project start date was initially estimated at 1st April 2015, however, due to contractual negotiations between UNODC and DEFRA, this start date was delayed to June 2015. As such, the project experienced some delays against the agreed baseline timetable, however, these delays did not affect the ability of the Project Team to achieve all activities by project close, the date of which was extended to 15 June 2017.

The timeframe for certain training activities were amended upon review by UNODC; the initial timeframe was ill-conceived since it would not have been appropriate to deliver the training until after the national assessments were conducted and agreed upon. The Project Team postponed these activities and they were completion by project close.

In the original application, the Project Team had outlined plans to provide equipment/forensic infrastructure to all project countries (output indicator 3.3). However, having engaged with partners, it became clear that some countries were not at the stage where providing equipment would be appropriate, namely, Angola, Republic of Congo, Namibia, and Zimbabwe. For example, Namibia does not require equipment since plans for the construction of a new fully-equipped lab are underway, and in Congo, providing infrastructure at this stage would have been premature since the law enforcement capacity required for forensic infrastructure is too weak at present. The Project Team would rather use the available funds for equipment and forensic infrastructure in the other countries, where they are most needed and would be utilized. A Change Request Form was submitted in this regard.

In the original application, outcome indicator 5 was 'pre- and post-project surveys of local community perceptions'. While increased enforcement could indeed reduce the pressures on vulnerable communities, the Project Team believed it was more relevant to assess the perceptions of the law enforcement communities directly involved in this project. As such, the Project Team amended outcome indicator 5 to 'pre- and post-project surveys of local law enforcement community perceptions' (via Change Request Form).

A number of additional changes were made to the log frame, via Change Request Forms, as outlined in Section 4 above.

As part of the overall monitoring and evaluation process the Project Team also conducted an end of project survey covering multiple outputs and outcome indicators from the perspective of project partners. The results of the post project survey serve to inform the Project Team and DEFRA about the impact of the project on the ground. The results will also help to improve future forensic training events and activities beyond this project. Overall, feedback from participating countries was very positive, with increased wildlife forensic law enforcement and laboratory capacity reported by respondents, as well as enhanced inter-agency cooperation and positive responses to all trainings provided. Details of the findings can be found in the post-project survey summary report included as Annex 4.

During the project period, there were no external evaluations of the project, however, it is expected that the project will be reviewed by an external evaluator by end 2018, as part of an overall review of the implementation of UNODC's Global Programme for Combating Wildlife and Forest Crime.

## **9.2 Actions taken in response to annual report reviews**

The Project Team took the opportunity to respond in detail to the review of the Annual Report 2015/16. There were comments made throughout the report by the reviewer, which were considered by the Project Team to be neither fair nor constructive. For example, comments questioned the premise and need for the project in general, and suggested making impact-level changes. Overall, the reviewer was criticising the project design, rather than assessing our work against the project objectives. Given that the project design had already been agreed by DEFRA and was now over one year in to implementation, some of the issues raised were difficult to address at that stage. The full response to the review of Annual Report 2015/16 is attached as Annex 11.

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

## **11. Sustainability and legacy**

Operating from host country facilities in Botswana and Gabon, the Project Team undertook a series of missions to engage with and evaluate the needs of stakeholder agencies (wildlife, police, customs, judiciary) in each target country. These assessment missions provided ample opportunity to promote the work of the project with multiple stakeholders and high level personnel in project countries. The assessment process was conducted in partnership with the government and relevant agencies that have ownership of the process and its outputs, including the opportunity to review and revise the reports before finalization. The resulting assessment reports provide a valuable resource and baseline for capacity building beyond the end of the project cycle, not only for national agencies but for international organisations such as those of the International Consortium on Combating Wildlife Crime<sup>1</sup> (ICWC), with whom these reports have been shared.

The Project Team were committed to supporting and enhancing existing country systems rather than creating parallel structures. For example, in Botswana, the Project Team has promoted the development of a sustainable, integrated strategy for wildlife forensic service provision aligned with the priorities of both Botswana Police Service and DWNP. The project built capacity within existing institutions, rather than create or build institutions itself. While many national project partners expressed a desire for the development of a new national wildlife forensics facility, the Project Team worked with partners to explore more practical and cost effective options within existing facilities, for example developing capacity within the national

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<sup>1</sup> ICWC partner organisations: CITES Secretariat, INTERPOL, UNODC, World Bank and World Customs Organisation.

veterinary or university labs as in the case of Malawi and Zambia respectively. Similarly in Gabon, the partners at the national parks agency expressed their desire to build a new lab but the Project Team encouraged dialogue between ANPN and the gendarmerie to utilise an existing building and develop plans for a shared forensics facility.

The training and infrastructure provided to national labs as part of the project will continue to be of benefit long after project end.

Significant efforts were made to ensure that the project is as integrated as possible with other projects and IWT stakeholders. For example, representatives from key regional networks such as KAZA, SADC and WEN-SA attended the regional workshop in Botswana, in addition to representatives from multiple organizations and donors that are active in the region. These networks will now be connected with the African Wildlife Forensics Network and will add to the sustainability and legacy of the network. The Network is also linked to its counterpart in Southeast Asia, the ASEAN Wildlife Forensics Network and national representatives from Gabon, Botswana, Namibia and Zambia are now members of the Society for Wildlife Forensic Science.

In terms of finance, countries are investing internally with regard to wildlife forensic capacity. Over the course of the project, the Project Team made significant efforts to access funding from the European Commission, independent donors, and the German government regarding extending the project work. Funding from the EC is likely to be forthcoming and further funding from the 2017 UK IWT Challenge Fund will be sought. UNODC has integrated follow up and support to the African Wildlife Forensics Network into the work plan for implementation of the ICCWC Strategic Programme 2016-2020. It is hoped that fundraising efforts on behalf of ICCWC will allow for further support to the network in future.

The Network, through its platform for communication and shared access, compounded by the personal connections fostered between enforcement and laboratory personnel will endure beyond project close, irrespective of funding. Incorporation of the Network as a key component of the African wildlife forensics Roadmap will increase its chances of ongoing funding and also ensure the legacy of the project as an element of the ongoing wildlife development process in Africa.

## **12. IWT Challenge Fund Identity**

IWT Challenge Fund and UK Government sponsorship had been publicised at every opportunity, including in initial contact with counterparts, in assessment reports, in invitations to attend workshops and in all project meetings. The DEFRA logo has been used on all relevant documentation including presentations, agendas and reports. UK support has been acknowledged at international conferences and meetings including, inter alia, at CITES Standing Committee, Wildlife Forensics Symposium in South Africa, ICCWC Senior Expert Group meetings, and the 26<sup>th</sup> session of the Commission on Crime Prevention and Criminal Justice. The British High Commissioner attended and delivered opening remarks at the regional workshop in Botswana in May 2016; she was thanked in person for the contribution made by the UK Government to the project.

The Project Team attended the seventeenth session of the Conference of the Parties to CITES (CITES COP17), held in Johannesburg, South Africa from 24 September to 4 October. UNODC and TRACE organised a side event in the margins of the CITES COP17 to update the Parties and broader stakeholders on the development of wildlife forensic applications to support trade control, intelligence and enforcement activities relating to CITES. The session covered multiple aspects of wildlife forensic science, from high-level international coordination to laboratory analysis, and from the direct support of prosecutions through to the delivery of regulatory tests. Expert speakers were drawn from throughout the international CITES community, representing a range of taxonomic and enforcement issues, and included a presentation on the capacity building work being undertaken through this project. Over 100 people attended the side event, including multiple project partners and project country representatives. Feedback received was extremely positive. Thanks were expressed to the UK Government for funding the important work of the project as part of the IWT Challenge Fund.

At an international level, the project and the IWT Challenge Fund have been promoted at numerous international meetings over the past two years, including:

Society for Wildlife Forensic Science	Missoula, USA(2015); Edinburgh,UK(2017)
Interpol Forensic Science Meeting	Lyon, France (2016)
Interpol Wildlife Forensics Working Group	Johannesburg, South Africa (2016)
CITES CoP17 – Wildlife Forensics side event	Johannesburg, South Africa (2016)
3 <sup>rd</sup> International IWT Meeting (UK-Vietnam)	Hanoi, Vietnam (2016)
Russian Federal Forensic Science Meeting	Moscow, Russia (2017)
European Forensic Science Network	Prague, Czech Republic (2016)
Japanese Forensic Science Meeting	Okayama, Japan (2015)

### **13. OPTIONAL: Outstanding achievements of your project during the (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.

The African Wildlife Forensics Network project was an initiative of the UK Illegal Wildlife Trade Challenge Fund, which ran for two years from 1<sup>st</sup> June 2015 to 31<sup>st</sup> May 2017. The project was led by the United Nations Office on Drugs and Crime (UNODC) with TRACE Wildlife Forensics Network (TRACE) as the primary technical partner.

Implemented in eight African countries, the project achieved its aims to conduct wildlife forensics needs assessments, deliver wildlife forensic capacity building through the provision of training and infrastructure, and develop national and regional level plans for further development of capacity and coordination of wildlife forensic services through the establishment of a wildlife forensic network. The project has increased capacity and access to utilise forensic tools to fight wildlife crime.

One highlight of the project has been the significant progress seen in Zambia. Recent changes to the national Wildlife Act have markedly increased penalties for wildlife crime, resulting in fewer guilty pleas and a greater requirement for robust evidence to support prosecutions. Following completion of the Zambia wildlife forensics needs assessment, and the subsequent participation of the Zambian Department of National Parks and Wildlife (DNPW) at the AWFN workshop in Gaborone, Botswana, in May 2016, the Project Team worked with DNPW to plan how forensic science could best support national wildlife law enforcement.

Zambia was originally identified as country likely to benefit from shared access to regional wildlife DNA forensic services in other countries, rather than establishing its own laboratory capacity. However, following a series of meetings in Lusaka with the DNPW, Central Veterinary Research Laboratory and the University of Zambia, it became clear that the right combination of local ambition, commitment, scientific skills and willingness to collaborate was in place to develop a national wildlife forensic solution.

In the space of just nine months, Zambia has prepared a high-level strategy for delivering wildlife DNA forensic services involving operational coordination across three national institutions; established laboratory capacity for wildlife DNA species identification; conducted forensic awareness training for prosecutors and investigators; and begun running test cases through the entire forensic process. This represents an exceptional level of progress for any country, and has set the stage to transform wildlife crime investigations across the country.

The two leading figures in this development, Dr David Squarre of the Department for National Parks and Wildlife and Dr Herman Chambaro of the Central Veterinary Research Institute, were recently funded to present at the Society for Wildlife Forensic Science meeting in Edinburgh, UK and discuss their work. UNODC and TRACE are looking forward to continuing our collaboration all of their Zambian colleagues over the coming years.



Dr. David Squarre presents to the international wildlife forensic science community at SWFS 2017, Edinburgh UK.

## 14. Finance and administration

### 14.1 Project expenditure

Project spend (indicative)	2014/15 Grant (£)	2014/15 actual IWT Costs (£)	2015/16 Grant (£)	2015/16 actual IWT Costs (£)	2016/17 Grant (£)	2016/17 actual IWT Costs (£)*	Total Original Grant (£)	Total actual Costs (£)	Comments (please explain significant variances)
Staff costs (see below)									
Consultancy costs									
Overhead Costs									
Travel and subsistence									
Operating Costs									
Capital items (see below)									
Others (see below)									
<b>TOTAL</b>									

\*Interim financial information provided for 2016/17 IWT Costs. Figures to be finalised and certified financial reports provided 6 months after closure of UNODC financial year.

<b>Staff employed (Name and position)</b>	<b>Cost (£)</b>
Jorge Rios, Project Leader (in-kind)	
Sinead Brophy, Project Support (in-kind)	
Stephanie Pietsch, Project Coordinator	
Rob Ogden, TRACE Director	
Cyril Taolo, Host Country Partner	
Kathryn Jeffrey, Host Country Partner	
Ross McEwing, Forensic Expert	
Forensic technician, Gabon	
Laboratory expert, Gabon	
<b>TOTAL</b>	

<b>Capital items – description</b> <i>Please detail what items were purchased with fund money, and where these will remain once the project finishes</i>	<b>Capital items – cost (£)</b>
<p>Laboratory freezer (-20 C) to remain in Malawi</p> <p>Cool boxes for evidence transfer to remain in Malawi</p> <p>Reagents for toxicological analysis (TLC analysis) to remain in Malawi</p> <p>Software: Geneious (3 licences) to remain in Zambia</p> <p>Laboratory freezer (-20 C) to remain in Zambia</p> <p>Laboratory microwave to remain in Zambia</p> <p>Gel electrophoresis system to remain in Zambia</p> <p>Laboratory label printer &amp; cartridges to remain in Gabon</p> <p>Laboratory micropipettes (set of 4) to remain in Gabon</p> <p>Laboratory centrifuge to remain in Gabon</p> <p>Software: Geneious (2 licences) to remain in Botswana</p> <p>Laboratory micropipettes (set of 5) to remain in Botswana</p> <p>Vortex mixer to remain in Botswana</p>	
<b>TOTAL</b>	

<b>Other items – description</b> <i>Please provide a detailed breakdown for any single item over £1000</i>	<b>Other items – cost (£)</b>
<p>Laboratory freezer (-20 C) to remain in Malawi</p> <p>Reagents for toxicological analysis (TLC analysis) to remain in Malawi</p> <p>Software: Geneious (3 licences) to remain in Zambia</p>	



Laboratory freezer (-20 C) to remain in Zambia For further details see equipment report included as Annex 6.	
<b>TOTAL</b>	

## 14.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
RZSS	
The Ministry of Economic Affairs of the Netherlands	
The Government of Botswana (in-kind)	
The Government of Gabon (in-kind)	
UNODC (actual and in-kind including due disbursement)	
<b>TOTAL</b>	

Source of funding for additional work after project lifetime	Total (£)
<b>TOTAL</b>	

## 14.3 Value for Money

The Project Team always sought to procure the best quality items at the lowest price. For example, the Project Team negotiated a 50% discount with the manufacturer of the laboratory software licences as a contribution to the project. The laboratory infrastructure procured will be of use far beyond project close.

When arranging project meetings, the Project Team endeavoured to align with other larger conferences, to maximise impact while minimising costs incurred to the project. For example, arranging a wildlife forensics event at the CITES COP, enabled the Project Team to publicise the project to a large audience, while incurring none of the travel/attendance costs. It also provided the Project Team with an opportunity to meet with many high level national representatives of project countries already attending the COP at no cost to the project. Similarly, costs for the second project workshop in Edinburgh were minimized by arranging in the margins of the Society for Wildlife Forensic Science conference.

At a national level, the Project Team often partnered with other organisations to ‘piggy back’ on workshops and trainings, delivering wildlife forensic modules as part of broader programme. Again, this provided excellent value for money and increased the number of project beneficiaries.

## Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Impact:</b> A reduction in international wildlife trafficking in source and transit countries, and the disruption of organised wildlife crime affecting low income communities, throughout Africa.			
<b>Outcome:</b> An effective, cooperative network of wildlife forensic capacity is developed to help investigate IWT and support enforcement of CITES regulations for endangered species including elephant, rhinoceros, lion and pangolin. A country-by-country evaluation of forensic needs and current resources is used to produce a coordinated plan for regional capacity within. The results provide a forensic framework delivering increased law enforcement success, leading to the disruption of established organised criminal activities in low income countries.	<p>0.1 IWT investigations utilise DNA forensic services provided by regional network partners (baseline = zero cases, target = 10 by 2017)</p> <p>0.2 Wildlife forensic needs assessment reports completed and presented to each target country by 2016 (baseline = zero, target = 8 by 2016)</p> <p>0.3 By 2016, a roadmap is developed, agreed and initiated outlining regional and country-by-country plans for the application of DNA forensics to IWT enforcement.</p> <p>0.4 Number of prosecutions and convictions for IWT offences increases in low income target countries by 2018 (baseline and target derived from project)</p> <p>0.5 Increased IWT law enforcement capacity improves law enforcement community confidence in protection from poaching (baseline and target derived from project).</p>	<p>0.1 Investigation reports</p> <p>0.2 Assessment reports</p> <p>0.3 Roadmap document and evidence of activity</p> <p>0.4 Post project monitoring by UNODC</p> <p>0.5 Pre- and post-project surveys of local law enforcement community perceptions</p>	<p>High level political commitment to work with UNODC</p> <p>Provision of high quality and timely technical advice</p> <p>Effective donor coordination and sufficient resources <input type="checkbox"/></p>
<b>Output 1:</b> A detailed forensic needs assessment for each of the eight target countries	<p>1.1 One standardised situation analysis document developed in 2015</p> <p>1.2 Number of countries undertaking needs assessments in 2015, 2016, 2017 (baseline = zero, target = 8)</p> <p>1.3 Number of assessment reports presented to countries in 2015, 2016, 2017 (baseline = zero, target = 8)</p>	Forensic assessment reports	<p>Forensic analysts and law enforcement officers are willing to cooperate and communicate with counterparts in other countries</p> <p>Trainees are willing to put into practice the techniques taught</p> <p>Sufficient high level support exists to investigate and prosecute IWT offenders</p>
<b>Output 2:</b> A coordinated evidence-based forensic	2.1 One regional planning workshop held between 2015 and 2016 (baseline = zero, target = 1)	2.1 Workshop report	Forensic analysts and law enforcement officers are willing to cooperate and

Project summary	Measurable Indicators	Means of verification	Important Assumptions
capacity building plan at regional and national levels	2.2 Roadmap developed outlining regional and country-by-country plans	2.2 Forensic capacity building plan <input type="checkbox"/>	<p>communicate with counterparts in other countries</p> <p>Trainees are willing to put into practice the techniques taught</p> <p>Sufficient high level support exists to investigate and prosecute IWT offenders</p>
<b>Output 3:</b> Novel capacity for the inclusion of wildlife forensic evidence in IWT law enforcement, from field to courtroom	<p>3.1 Number of law enforcement officials trained in 2015, 2016, 2017 (baseline = zero, target = 60, including at least 5 women)*</p> <p>3.2 Number of forensic technicians trained in 2015, 2016, 2017 (baseline = zero, target = 4, including at least 1 woman)</p> <p>3.3 Number of countries receiving equipment/forensic infrastructure in 2015, 2016, 2017 (baseline = zero, target = 4)</p> <p>3.4 Number of judiciary trained in 2015, 2016, 2017 (baseline = zero, target = 10, including at least 2 women)</p>	<p>3.1 Trainee register</p> <p>3.2 Trainee register</p> <p>3.3 Installation reports</p> <p>3.4 Trainee register <input type="checkbox"/></p>	<p>Forensic analysts and law enforcement officers are willing to cooperate and communicate with counterparts in other countries</p> <p>Trainees are willing to put into practice the techniques taught</p> <p>Sufficient high level support exists to investigate and prosecute IWT offenders</p>
<b>Output 4:</b> A regional network of wildlife forensic expertise for comprising field officers, forensic scientists, prosecutors and judiciary	<p>4.1 Number of regional (inter-agency cross-border) network meetings held in 2015, 2016 (baseline = zero, target = 2)</p> <p>4.2 New regional enforcement procedures (forensic protocols and agreements) produced</p> <p>4.3 Shared access folder created including communication links and common information resources</p>	<p>4.1 Meeting report</p> <p>4.2 Documented protocols</p> <p>4.3 Dropbox folder <input type="checkbox"/></p>	<p>Forensic analysts and law enforcement officers are willing to cooperate and communicate with counterparts in other countries</p> <p>Trainees are willing to put into practice the techniques taught</p> <p>Sufficient high level support exists to investigate and prosecute IWT offenders</p>
<p><b>Activities</b> (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.1 Creation of a standardised, country by country situation analysis template.</p> <p>1.2 Research conducted in each country into which specific wildlife law enforcement issues require forensic evidence, the current capacity and resources for producing forensic evidence and the ability for that evidence to be accepted within the legal system.</p> <p>1.3 Needs assessment reports prepared, issued and discussed with each country</p> <p>2.1 Inter-agency and international workshops held in Botswana and Gabon to develop a coordinated plan for delivering wildlife forensic support to project partner countries.</p> <p>2.2 Development of an agreed roadmap for developing required wildlife forensic capacity in focal regions (incorporating needs assessments)</p> <p>3.1 Provision of specialist training in collection and transfer of evidence to identified target countries</p> <p>3.2 Provision of specialist training in wildlife DNA forensic methods to Botswana and Gabon</p>			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
3.3 Provision of equipment and protocols for appropriate storage of forensic evidence to identified target countries 3.4 Training workshop to educate the judiciary in wildlife forensic issues 4.1 Regional workshops held to increase cooperation and establish networks among wildlife law enforcers, forensic scientists and judiciary 4.2 Development of regional (bilateral & multilateral) agreements on shared access to wildlife forensic capacity 4.3 The creation of shared documents, communication links and common information resources to facilitate collaboration of wildlife forensic stakeholders			

## Annex 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements
<p><b>Impact</b> A reduction in international wildlife trafficking in source and transit countries, and the disruption of organised wildlife crime affecting low income communities, throughout Africa.</p>		<p>At project close, the Project Team have conducted stakeholder identification, situation analysis and needs assessments in eight African countries (Output Indicators 1.1, 1.2, 1.3). Understanding the situation is the first and essential step required to designing effective and sustainable solutions to tackle IWT. The Project Team then used this evidence base to design capacity building plans (Output 2) and through the establishment of a wildlife forensic network (Output 4), provided the coordination and training to utilise forensic tools to fight wildlife crime.</p> <p>As part of an effective law enforcement framework, this new capacity is fully expected to contribute to the disruption of organised wildlife crime affecting low income communities in Africa. Further information and a case study is presented in Section 3.3.</p>
<p><b>Outcome</b> An effective, cooperative network of wildlife forensic capacity is developed to help investigate IWT and support enforcement of CITES regulations for endangered species including elephant, rhinoceros, lion and pangolin. A country-by-country evaluation of forensic needs and current resources is used to produce a coordinated plan for regional capacity within. The results provide a forensic framework delivering increased law enforcement success, leading to the disruption of established organised criminal activities in low income countries.</p>	<p>0.1 IWT investigations utilise DNA forensic services provided by regional network partners (baseline = zero cases, target = 10 by 2017)</p> <p>0.2 Wildlife forensic needs assessment reports completed and presented to each target country by 2016 (baseline = zero, target = 8 by 2016)</p> <p>0.3 By 2016, a roadmap is developed, agreed and initiated outlining regional and country-by-country plans for the application of DNA forensics to IWT enforcement.</p> <p>0.4 Number of prosecutions and convictions for IWT offences increases in low income target countries by 2018 (baseline and target derived from project)</p> <p>0.5 Increased IWT law enforcement capacity improves law enforcement community confidence in protection from poaching (baseline and target</p>	<p>Indicator 0.1: Target = 10; Achieved = 4</p> <p>Indicator 0.2: Target = 8; Achieved = 8</p> <p>Indicator 0.3: Target = 1; Achieved = 1</p> <p>Indicator 0.4: Target = N/A; Achieved = N/A</p> <p>Indicator 0.5: Target = N/A; Achieved = Yes</p> <p>This outcome has been partially achieved to date and, with time, is expected to be fully achieved based on the outputs of the project.</p> <p>An effective, cooperative, continuing network of wildlife forensic capacity has been developed, in the form of the African Wildlife Forensics Network, launched in Edinburgh in 2017. 8 completed national assessments, taken together with the outputs of the 2016 Regional Workshop in Botswana provided the basis for the development of a Roadmap for wildlife forensic development in southern and central west Africa that should be applicable continent-wide.</p> <p>Converting the needs assessments, planning activities and network development into active casework investigations has taken longer than planned, due primarily to the speed of progress in the two lead partner countries. Nevertheless, three countries have begun to utilise wildlife forensic evidence in national investigations during the project. Botswana, Namibia and Zambia have all sent samples to South African wildlife forensic laboratories for analysis and received analytical results back for use in prosecutions (three rhino horn cases; one</p>

	derived from project).	<p>bushmeat case; investigation reports unavailable due to confidentiality). The outcome of these investigations was successful conviction in all cases. Combined with the latest news from Zambia that their newly established wildlife forensic capacity has resulted in a conviction for meat species fraud, the Project is extremely confident that the number of prosecutions and convictions will increase as a result of the current project.</p> <p>Finally, law enforcement community confidence is evidenced to have increased in some countries as a result of the project (Indicator 5; summary report of surveys included as Annex 4). At this stage, while investigations are still for the most part being initiated, it is arguably too early to measure a change in confidence in relation to the impact of forensic science on wildlife law enforcement. However, all of the individuals who have received training have provided very positive feedback in terms of the project meeting an identifiable need and contributing towards their increasing ability to fight the IWT.</p>
<b>Output 1:</b> A detailed forensic needs assessment for each of the eight target countries	<p>1.1 One standardised situation analysis document developed in 2015</p> <p>1.2 Number of countries undertaking needs assessments in 2015, 2016, 2017 (baseline = zero, target = 8)</p> <p>1.3 Number of assessment reports presented to countries in 2015, 2016, 2017 (baseline = zero, target = 8)</p>	<p>Output 1 achieved; appropriate indicators.</p> <p>One standardised situation analysis document was developed in 2015 (Indicator 1.1). Eight country needs assessments were completed and presented to countries (Indicator 1.2 and 1.3).</p> <p>Indicator 1.1: Target = 1; Achieved = 1</p> <p>Indicator 1.2: Target = 8; Achieved = 8</p> <p>Indicator 1.3: Target = 8; Achieved = 8</p> <p>Evidence provided in section 3.2 of report and Annex 3.</p>
Activity 1.1 Creation of a standardised, country by country situation analysis template		Situation analysis template and questionnaires created (included in Annex 3).
Activity 1.2 Research conducted in each country into which specific wildlife law enforcement issues require forensic evidence, the current capacity and resources for producing forensic evidence and the ability for that evidence to be accepted within the legal system.		Research conducted in eight countries including interviews, site visits and literature review.
Activity 1.3 Needs assessment reports prepared, issued and discussed with each country		Eight needs assessment reports prepared and shared with project country partners.
<b>Output 2:</b> A coordinated evidence-based forensic capacity building plan at regional and national levels	<p>2.1 One regional planning workshop held between 2015 and 2016 (baseline = zero, target = 1)</p> <p>2.2 Roadmap developed outlining regional and country-by-country plans</p>	<p>Output 2 achieved; appropriate indicators, although timeframe was not realistic as explained in section 3.1 above. One regional planning workshop was held in May 2016 and a further workshop was held in June 2017. A roadmap was developed and discussed with project partners outlining regional and country-by-country plans.</p> <p>Indicator 2.1: Target = 1; Achieved = 2</p>

		Indicator 2.2: Target = 1; Achieved = 1 Evidence provided in section 3.2 of report and Annex 3.
Activity 2.1 Inter-agency and international workshops held in Botswana and Gabon to develop a coordinated plan for delivering wildlife forensic support to project partner countries.		One inter-agency and international workshop was held from 17-19 May 2016 in Gaborone, Botswana with representatives from 7 project countries. One further inter-agency and international workshop was held on 9 June 2017 in Edinburgh, Scotland. Project partners agreed that it was more efficient and beneficial to hold this workshop in the margins of the Society for Wildlife Forensic Science meeting, rather than traveling separately to Gabon.
Activity 2.2 Development of an agreed roadmap for developing required wildlife forensic capacity in focal regions (incorporating needs assessments)		A roadmap was developed and agreed upon at the Edinburgh workshop. This roadmap incorporated national needs assessments and addressed regional plans for capacity building.
<b>Output 3:</b> Novel capacity for the inclusion of wildlife forensic evidence in IWT law enforcement, from field to courtroom	<p>3.1 Number of law enforcement officials trained in 2015, 2016, 2017 (baseline = zero, target = 60, including at least 5 women)*</p> <p>3.2 Number of forensic technicians trained in 2015, 2016, 2017 (baseline = zero, target = 4, including at least 1 woman)</p> <p>3.3 Number of countries receiving equipment/forensic infrastructure in 2015, 2016, 2017 (baseline = zero, target = 4)</p> <p>3.4 Number of judiciary trained in 2015, 2016, 2017 (baseline = zero, target = 10, including at least 2 women)</p>	<p>Output 3 achieved; indicators appropriate; exceeded all targets.</p> <p>Indicator 3.1: Target = 60; Achieved = 64</p> <p>Indicator 3.2: Target = 4; Achieved = 22</p> <p>Indicator 3.3: Target = 4; Achieved = 4</p> <p>Indicator 3.4: Target = 4; Achieved = 36</p>
Activity 3.1 Provision of specialist training in collection and transfer of evidence to identified target countries		<p>Botswana: 20 prosecutors</p> <p>Namibia: 20 prosecutors</p> <p>Zambia: 9 prosecutors, 8 investigators = 17</p> <p>Zambia: 6 CVRI scientists, 2 DNPW, 3 University = 11 scientists (evidence collection etc.)</p>
Activity 3.2 Provision of specialist training in wildlife DNA forensic methods to Botswana and Gabon		<p>Botswana: 6 scientists (inc. 2 women)</p> <p>Gabon: 3 scientists (inc. 1 woman)</p> <p>Zambia: 6 CVRI scientists, 3 University scientists = 9 scientists (inc. 2 women)</p>



Activity 3.3 Provision of equipment and protocols for appropriate storage of forensic evidence to identified target countries	Malawi, Zambia, Botswana, Gabon
Activity 3.4 Training workshop to educate the judiciary in wildlife forensic issues	Namibia, Malawi
<b>Output 4:</b> A regional network of wildlife forensic expertise for comprising field officers, forensic scientists, prosecutors and judiciary	<p>4.1 Number of regional (inter-agency cross-border) network meetings held in 2015, 2016 (baseline = zero, target = 2)</p> <p>4.2 New regional enforcement procedures (forensic protocols and agreements) produced</p> <p>4.3 Shared access folder created including communication links and common information resources</p> <p>Output 4 achieved; indicators appropriate.  Indicator 4.1: Target = 2; Achieved = 2  Indicator 4.2: Target = Procedures; Achieved = Yes  Indicator 4.3: Target = 1; Achieved = 1</p>
Activity 4.1 Regional workshops held to increase cooperation and establish networks among wildlife law enforcers, forensic scientists and judiciary	Two regional workshops were held to increase cooperation and establish the African Wildlife Forensics Network. (Gaborone and Edinburgh; May 2016 and June 2017 respectively).
Activity 4.2 Development of regional (bilateral & multilateral) agreements on shared access to wildlife forensic capacity	At the regional workshop in Gaborone (May 2016) the opportunities and challenges in developing formal legal regional agreements were discussed at length and routes toward enabling such agreements were mapped out (see Roadmap document). Although the original expectation of Botswana fulfilling a regional service role has not yet materialised (see earlier sections), informal bilateral relationships have been established through the African Wildlife Forensics Network and we expect these to develop over time.
Activity 4.3 The creation of shared documents, communication links and common information resources to facilitate collaboration of wildlife forensic stakeholders	Shared documents, communication links and common information resources established as part of the running of the African Wildlife Forensics Network.

## Annex 3 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

### Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:IWT-Fund@itsi.co.uk">IWT-Fund@itsi.co.uk</a> putting the project number in the subject line.	✓
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:IWT-Fund@itsi.co.uk">IWT-Fund@itsi.co.uk</a> about the best way to deliver the report, putting the project number in the subject line.	✓
<b>Have you included means of verification?</b> You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	✓
<b>Do you have hard copies of material you want to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number.	✓
Have you involved your partners in preparation of the report and named the main contributors	✓
Have you completed the Project Expenditure table fully?	✓
Do not include claim forms or other communications with this report.	