

Illegal Wildlife Trade (IWT) Challenge Fund Annual Report

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

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

Submission Deadline: 30th April 2022

IWT Challenge Fund Project Information

Project reference	IWT057
Project title	Building capacity to reduce illegal trade of shark products in Indonesia.
Country/ies	Indonesia
Lead partner	Cefas
Project partner(s)	Ministry of Marine Affairs and Fisheries (MMAF), Rekam Nusantara Foundation, University of Salford
IWTFCF grant value	£ 353,832
Start/end dates of project	01/07/2018 – 31/03/2023
Reporting period (e.g. April 2021-Mar 2022) and number (e.g. Annual Report 1, 2, 3)	April 2021 – March 2022: Annual Report 4
Project Leader name	Joanna Murray
Project website/blog/social media	Blog - https://marinescience.blog.gov.uk/ Social media – @Joanna M Murray @cefasGovUK @dhika_fishery
Report author(s) and date	Joanna Murray, Yudi Herdiana, Efin Muttaqin, Andhika Prasetyo 30 April 2022

1. Project summary

Indonesia is the world’s largest shark fishing nation and the third largest trader in shark and ray (elasmobranch) products (e.g. fins). It is also a country with a fishing industry dominated by small vessels and where people have a high dependency on fisheries products to support livelihoods and food security. As such, it is a global priority for elasmobranch management and conservation. With the up-listing of several species of elasmobranch to CITES Appendix II at COP16 and 17, it has become increasingly difficult for Indonesian authorities to identify and monitor CITES-listed species in trade and ensure that use is sustainable. Unless capacity for species-specific monitoring improves, there is a risk that unregulated trade could threaten CITES-listed elasmobranchs with local extinction.

The Ministry of Marine Affairs and Fisheries (MMAF) have acknowledged that the greatest challenge for product traceability and CITES implementation is species identification, especially where partially-processed products (e.g. fins, meat, gills) make it difficult to determine source and legality. Through advanced training programs and improved customs procedures, this project is working to increase the capacity of monitoring and enforcement agencies to identify CITES-listed elasmobranchs in trade. This in turn will strengthen law enforcement by increasing the detection probability and prosecution rate of IWT, therefore deterring the unregulated targeting and trade of protected species.

The project is being implemented throughout Indonesia, with coordinating government staff based in Jakarta, and technical verification teams at six regional government (Marine and Coastal Resources Management Units, BPSPL) offices (Denpasar, Makassar, Padang, Pontianak, Serang and Sorong; Figure 1.)

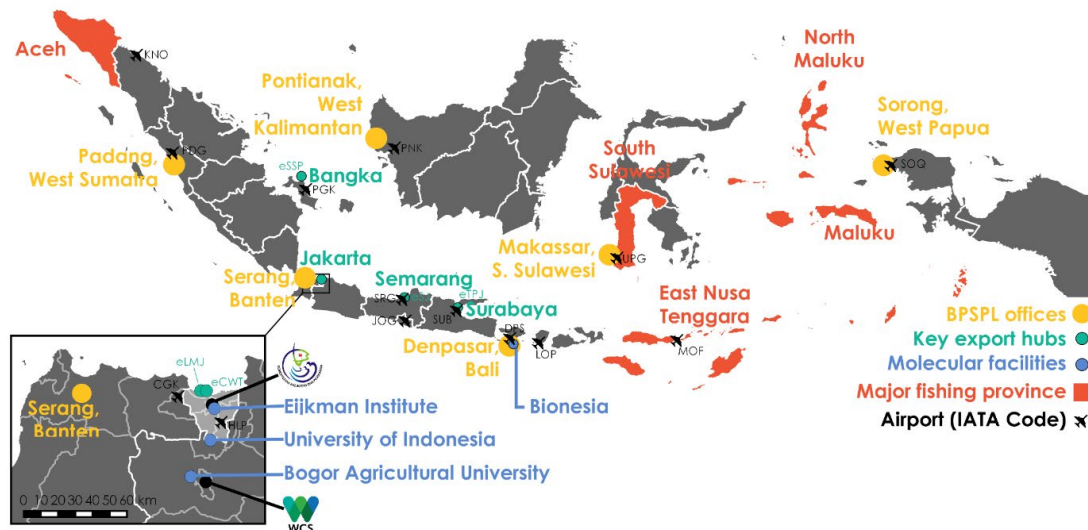


Figure 1. Location of project implementation areas including the coordinating MMAF office in Jakarta and six regional BPSPL offices (Denpasar, Makassar, Padang, Pontianak, Serang and Sorong) throughout Indonesia (figure taken from desk-based study, activity 1.1).

2. Project partnerships

In 2015, a UK-Indonesia Government to Government Maritime MoU was initiated and one area of collaboration was the desire to ‘cooperate in sustainable management of marine fisheries resources’. This IWT Challenge Fund project developed between MMAF and Cefas through their implementing arrangement under that MoU. MMAF introduced the Wildlife Conservation Society (WCS) as a partner prior to project design due to their ongoing collaboration (since 2003) to combat illegal wildlife trade. Professor Stefano Mariani at the University of Salford was identified as an academic partner with world-leading expertise in conservation genetics. Nominated leads from all partner organisations were actively involved in the design of the project during the application stage, communicating regularly including through a project WhatsApp group. They have shown a personal investment and dedication to ensuring the project is a success and have been instrumental in conducting engagement activities. A formal Collaboration Agreement between all partners was drawn up in the six months following the award of funding and signed in December 2018.

Due to the COVID-19 pandemic, the implementation of our project’s activities has been delayed which has extended the project’s completion date (until March 2023). At the original end date (March 2021), WCS were no longer able to continue the project partnership. Rekam Nusantara Foundation, a national NGO, who have a track record of working with MMAF on shark and ray trade issues were well-placed to assume the role provided previously by WCS and a formal change to the project team was agreed through the Change Request process (in March 2021). A revised collaboration agreement was also drawn up and signed between Cefas, MMAF, Rekam and the university of Salford for the remainder of the project.

Government departments/agencies: Representatives from government departments attended the Project Inception Workshop (year 1) including; Marine and Coastal Resources Management Units (BPSPL), Directorate General (DG) of Marine Spatial Management (DJPRL), DG of Marine and Fisheries Resource Surveillance (PSDKP), DG of Customs, Ministry of Finance, Fish Quarantine Inspection Agency, Marine Research Centre Fisheries Research Centre; and research centres and NGOs including; Oceanography Research Centre, and the Indonesian Institute of Sciences (P2O LIPI). Customs officers from Batam, Soekarno-Hatta, and Tanjung Priok Customs and Excise Offices attended a WCS-lead training workshop, and the National Training Centre was involved in the development of the training modules for the training team, both in Year 2.

NGO's: Conservation International (year 1 – Project Inception Workshop), WWF Indonesia (year 3 – Zoom bycatch workshop).

Industry: Trade stakeholders through visits to processing and exporter facilities for focus group discussion (year 1) and to undertake field training during the 'Train the trainer' workshop in January 2020 (year 2). Association of Tuna Longline Indonesia and the Marine Stewardship Council, Indonesia to attend the Zoom bycatch workshop (year 3)

International research specialists: Project updates to international academics and specialists in the field using corkboard updates (Supp info 1); provision of training at the 'train the trainer' workshop by world experts (Dr Debra Abercrombie and Dr Rima Jabado) in CITES implementation training; Skype calls and email exchange with world experts in DNA analysis of sharks and shark products through the projects PhD studentship network.

3. Project progress

3.1 Progress in carrying out project Activities

Planned activities for this year (April 2021 to March 2022) have largely focused on achieving Output 2 through delivery of the advanced training programme to remaining BPSPL staff, Output 4 with the reorganisation of the Indonesian delegation visit to the UK and planning of the core stakeholder workshop, and the nearing completion of the PhD studentship investigating DNA-based methods for species identification of shark products.

Following the five-day ['train the trainer' workshop](#) (Activity 2.5, Measurable Indicator 0.2) in January 2020 (Supp Info 5 -9), the project experienced delays in the further roll-out of the advanced training programme to verification staff in regional BPSPL offices (Activity 2.10, Measurable Indicator 2.2) due to national lock-downs and social distancing limitations. Preparations for the roll-out was re-established in August 2021 during two online meetings (August 16th and 30th) between DG-PRL (MMAF), Rekam, and representatives from BPPSL/LPSPL where training preparation, training materials, and the production of a short 15 minute "trunk ID" training video were discussed. Considering on-going restrictions, the decision was made for the first workshop in the series to be conducted using a hybrid approach where the trainers met in person, but all participants joined the workshop remotely via Zoom.

On 6th and 7th October 2021, the technical team, original trainers (from Activity 2.5) and workshop facilitators met in person in Jakarta to deliver an identification training, designed for MMAF officers whose work is related to the identification of sharks and rays, especially verifiers at each BPSPL/LPSPL, fisheries surveillance officers, fish quarantine officers, and fishery extension officers. There were 62 participants in total, 40 male participants (64.52%) and 22 female participants (35.48%).

The two-day workshop focused on an advanced module within the Shark and Ray Identification National Training programme titled "Identification of Wedgefish and Giant Guitarfish and Identification of Shark Carcasses". This advanced module consists of three teaching modules: (1) Laws and Regulations for the Conservation of Shark and Ray Species; (2) Identification of Pari Kekeh and Pari Kikir; and (3) Shark Carcass Identification (full details of the module content can be found in Supp Info 15). The content was delivered using theoretical presentations, visual identification exercises, quizzes, and icebreakers, and pre/post training tests. Division of the breakout rooms for the ID exercises considered the composition of the facilitators and

participants ensuring those with more experience of carcass identification were present in each session.

The workshop ran smoothly but as we expected, remote training in visual identification of shark products was not deemed to be as productive as it would have been in-person by participants of the training.

Budi Raharjo, trainer, LPSPL Serang said:

“Training on identification of sharks and rays, especially for carcass products, is very interesting, and of course very useful, especially for verifier officers in carrying out their main duties and functions related to the utilization of shark and ray products. The explanation of stages in the identification of shark carcasses makes it very easy for verifiers to distinguish whether the species is included in the CITES appendix or not, and is very easy to apply in the field.”

However, the online training system became an obstacle for participants, especially for those who did not have basic in shark and ray identification. Participants had difficulty in recognizing the key identification because they only saw photos without directly seeing and touching the actual specimens. It will be easier for the participants to accept the training materials if the training is performed offline. And if it has to be done online, it is necessary to add videos or pictures that clearly show its key identification.”

The second workshop in the series involved a smaller number of participants and was conducted on October 21st, 2021, in Tegal fishing port. The objective of the training was to train Tegal fishing port staff in the identification of wedgefish and giant guitarfish which are landed in Tegal fishing port. A total 10 staff of fishing port have attended (9 Male and 1 female).

The third workshop in the series which took place in Bali from the 14th and 15th December 2021, was conducted in person with 36 participants abiding by covid protocols, due to the challenges of a hybrid approach faced in workshop one of the series. The two-day training event was divided into two parts: classroom training on identification methodology on the first day, and identification practice on the second day. The training was a great success due to the full support from the MMAF Directorate of Conservation, BPSPL Denpasar, and a shark exporting company in Bali who provided facilities and shark and ray specimens for practical identification training. Although this training was designed for verifiers of the BPSPL Denpasar, we also involved representatives from other related institutions and agencies in Bali; the MMAF research and training centre office in Bali, the BKIPM (quarantine agency) of Denpasar, the MMAF Tuna Research Centre of Denpasar, the PSDKP (MMAF surveillance agency) of Benoa, and the Pengembangan Fishing Port Authority. We also had two trainees from the shark exporting company on board. The training was delivered by four trainers from the Elasmobranch Trade Training Team are: Mr. Budi Rahardjo and Mrs. Nurmila Anwar from LPSPL Serang, Mr. Endratno from MMAF, and Ms. Benaya Simeon from WCS. Participants' understanding and identification skills have improved because of the opportunity to directly identify shark and ray specimens, with higher average scores in post-training tests compared to results from the previous virtual training. Some even received a perfect post-test score!

A total of 103 individuals have received shark and ray identification training over the last year, delivered by the training team (Measurable Indicators 2.2, 2.4), including staff from a major fishing port. Whilst our project focuses on building capacity of trade authorities, we recognise the need to improve identification skills across the supply chain and in response, we have begun to conduct training at the point of landing. A blog documenting the recent training and the implications of Covid-19 on our project was published in March 2022 and can be found [here](#). In 2022, we will conduct a third training session for stakeholders in Central Java, one of the hotspots of shark and ray fisheries in Indonesia.



Figure 2. Photographs from the hybrid workshop in Jakarta, October 2021 (a-d) and in-person training workshops in Bali December 2021 (e-h).

Access to data on monthly recommendation letter/permit issuance from B/LPSP and MMAF regarding wildlife trade/export has been established to enable monitoring of the implementation of the CITES mechanism (Activity 2.8). Furthermore, by analyzing the data, we can compare the percentage of rejected recommendation letter/permit request against the number of issued permit (Measurable Indicator 2.3). Further data analysis method and output will be discussed with MMAF and Cefas during the knowledge-exchange workshop in June 2022.

Rekam is still in discussion regarding the potential continuation of investigation work that was led by WCS, since a new program under the Rekam Foundation has recently been developed; the NRCU (Natural Resource Crime Unit). The most recent enforcement work was conducted in early 2021, as WCS continued to support law enforcement agencies in gathering information regarding the illegal trade in elasmobranch products in East Nusa Tenggara, West Nusa Tenggara, and

North Sulawesi (Activity 3.2). The intelligence data was collected by observers who collected information from 12 Facebook groups and 19 individual accounts that advertised protected marine species.

On March 27th, 2021, LPSPL Serang collaborated with quarantine and marine surveillance agencies to seize 374.5 kg of illegal shark products. The products consisted of 5 protected and CITES-listed species (including silky sharks, hammerheads, wedgfish, giant guitarfish, and protected freshwater rays), which were being delivered from Natuna-Kepulauan Riau Province to Jakarta through Tanjung Priok Harbour. This case is currently in progress (Measurable Indicator 3.2). Furthermore, on May 2nd, 2021, BPSPL Denpasar seized one sawfish rostrum from a restaurant in Bali. The response unit of BPSPL Denpasar, with coordination with the PSDKP-MMAF then followed-up reports and seized the rostrum from the owner. There is no legal process for this case, but the seller was issued a warning letter.

Since January 2022, work to reschedule the Indonesian delegation visit to the UK (Activity 4.1) has been underway whilst also organizing and hosting an additional online workshop designed to begin the science-policy discussion. For the online workshop titled “Developing and implementing evidence-based policies on the mitigation of bycatch”, which will be jointly hosted by Cefas and Rekam on the 5th of April, we have invited over 30 participants from various agencies under MMAF including DG of Capture Fisheries, DG of Marine Spatial Planning, staffs of technical implementing units (BPSPL), Pole and line association Indonesia, International pole and line foundation, Tuna longline association, Marine Stewardship Council Indonesia, and NGOs. This three-hour workshop will focus around three presentations; “Catch data collection and minimizing unwanted bycatch – a UK perspective” by Dr Thomas Catchpole; “Overview of elasmobranch bycatch policy and management in Indonesia” by Dr. Fery Sutyawan as representative of Director of Fish Resources Management, and “New interdisciplinary research to inform shark/bycatch management in Indonesia” by Dr Hollie Booth, University of Oxford (See Supp Info 16 for full agenda).

Current plans will see 12 representatives from Indonesia come to the UK as we were able to obtain international flights for additional members through match funding, we acquired during the IWTCF funded project. The delegation will spend the week of the 20th of June 2022 in the UK, starting with science presentations and workshops at Cefas, Lowestoft, a visit to the CITES team at UK Border Force at Heathrow and field trip to an aquatics facility to shadow a UK compliance visit check, and finally science to policy presentations and discussion at Defra, London (See Supp Info 13 for full itinerary) (Measurable Indicator 4.2). The project team are currently ensuring all travel requirements are met and bookings are made ahead of the visit. A meeting was held on April 22nd 2022 to discuss the preparations required by the participants for the visit including; (i) the requirement to use the official passport for MMAF participants (as safety measure for international travel), (ii) additional cost that might appear for visa application process.

A one-day conference with core stakeholders (Activity 4.4) focused on lessons learned of the capacity building program and knowledge sharing will be conducted on April 1st 2022 in Jakarta (Supp info 17 for conference ToR). The objective of the workshop is to disseminate: (i) the progress and achievements of capacity building program (collaboration between Cefas, MMAF, and Rekam), (ii) progress and achievements on the national shark and ray policy, and (iii) trade control system especially for shark and ray species listed on CITES Appendix II. Three keynote speakers will attend the event: Mr Sarminto Hadi as the Deputy Director for Marine Protected Area and Aquatic Resources Utilization, Directorate of Conservation and Marine Biodiversity (CITES contact person of Indonesian especially for Pisces), Mrs. Lilly Aprillia Pregiwati as the Head of the Marine and Fisheries Training and Extension Centre (Puslatluh KP), Mr. Syarif Iwan Al-Kadrie as the Head of PSPL Serang (Technical unit), and Mr. Jumadi as the representative from the MMAF’s Quarantine Agency.

In this event, Mr. Sarminto Hadi will present the progress and current status of national policy on the utilization of CITES Appendix II species of shark and ray in Indonesia, after MMAF were officially appointed as the Management Authority for picces. Mr. Jumadi will present the role of MMAF’s quarantine agency in issuing health certificates for the shark and ray trade in Indonesia as part of trade control mechanisms. Mr. Syarif Iwan Al-Kadrie will present the role of PSPL and the current state of monitoring of the shark and ray trade in Indonesia. Lastly, Mrs. Lilly Pregiwati will present against progress and future plans for improving the training program for shark and

ray identification in Indonesia. In 2022, the Marine and Fisheries Training and Extension Centre were allocated budget to continue the development of the national standard of competency for shark and ray identification and asked NGOs (including Rekam) to collaborate.

During the last year, the projects PhD student Andhika Prasetyo has published his first chapter in [Marine Policy](#), presented his research at a number of national and international conferences and completed all laboratory analysis including:

- Processed more than 500 tissue samples for the market assessment using high throughput barcoding;
- Developed a reference signature for lab-in-the-field that requires 3.5 hours to identify specific species using a universal marker and qPCR machine;
- Developed a novel approach to monitoring trade using shark dust and a metabarcoding method.

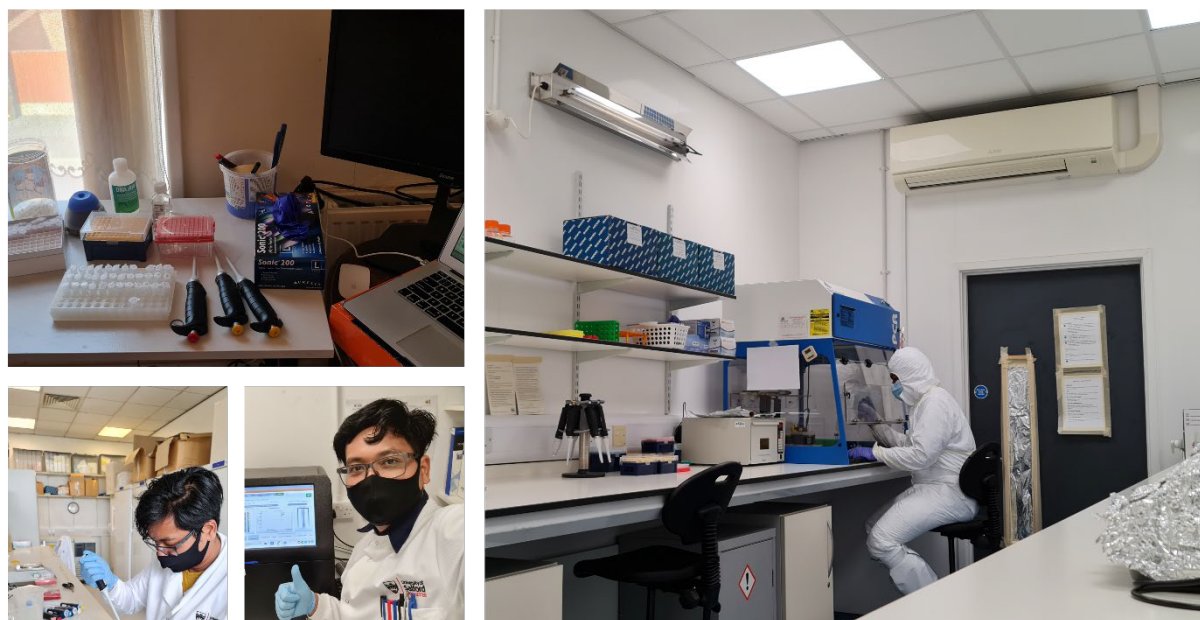


Figure 3. [redacted] lab work from DNA dilutions at home to preparing primers in the eDNA laboratory following strict protocols.

Andhika is now in the final stage of his studentship and has three results chapters to publish: Sharkdust: A novel approach to monitor the illegal trade of shark and ray products; Lab-in-the-field: Reducing illegal trade of shark and ray products in Indonesia; and Shark for sale: Rapid market assessment on the trade of shark and ray in Indonesia. Andhika has also delivered presentations at multiple conferences over the last year including; 3rd Indonesia Shark and Ray Symposium (April 2021), SPARC Conference (June 2021 – won the People choice award); World Fisheries Conference, (September 2021) and the Marine Biological Association Conference (April 2022).

3.2 Progress towards project Outputs

Output 1. *A comprehensive understanding of the political and operational landscape of elasmobranch trade has been documented, including the identification of all key stakeholders, their resources and unification of commitments to reducing illegal trade.*

The project inception workshop brought together 47 key trade stakeholders (BPSPL verification staff, customs, quarantine, and surveillance), to discuss, for the first time, the political and operational challenges they face in effectively managing Indonesia's shark and ray product trade. This generated some discussion on how we define the legal and illegal aspects of the trade, how there are gaps in current trade regulations and poor communication regarding the existing ones among the technical ministries, and how there are currently no designated export points which makes international export difficult to manage. The current institutional setting for the management of shark and ray trade in Indonesia was also discussed. The Ministry of

Environment and Forestry is the single Management Authority for CITES in Indonesia. However, in practice it is the MMAF and Technical Implementing Units that are managing the trade, especially in relation to in-country distribution and specimen identification. Stakeholders discussed the issue of a Minister Decree No. 61/2018 that sets out the regulation for all aquatic species (protected and listed in CITES) utilisation, including for trade, submitted by MMAF. With representatives in attendance from across Indonesia's trade management we were able to map trade structure and governance from the point of capture through to export (Measurable Indicator 1.1, 1.2).

Regional focus groups were incredibly useful for building a comprehensive understanding of region-specific challenges and the practical interventions which local BPSPL offices have developed to improve shark and ray trade management. One example of this is the development of in-house resources, such as a web-based application for generating and storing the required documentation for export called the Letter of Recommendation. Two BPSPLs are currently using a bespoke online system, one office is in the testing stages of implementing an online system, and three offices are using a paper-based system. Other developments include visual species identification guides, posters and leaflets to educate traders and exporters and databases for storing information derived from the Letter of Recommendation process. Documentations and consolidation of these localised resources in the consultation document highlights the opportunity this project has for streamlining processes across Indonesia through improved sharing of knowledge and resources (Measurable Indicator 1.3).

Building on the stakeholder mapping exercise undertaken during the Project Inception workshop, the first published chapter of the projects PhD student Andhika's research investigated the [elasmobranch trade flows](#) in and out of Indonesia in an attempt to examine patterns and drivers of the current trade and to explore some of the issues raised during early discussions in the project. The paper identified substantial discrepancies between reported landings and declared exports, and between Indonesian exports in elasmobranch fin and meat products and the corresponding figures reported by importing countries. The paper highlighted the need to improve data transparency to support trade regulations and governance actions, by improving inspection measures, and conserving elasmobranch populations without neglecting the socio-economic dimension of this complex system.

The comprehensive understanding of the operational landscape gained from successfully achieving Output 1 and Measurable Indicator 0.1 of the project Outcome, has shaped the design of the Elasmobranch Trade Training Team (Activity 2.3). The training team now has representation from the verification staff at each BPSPL on the team, along with customs, quarantine, surveillance and chaired by MMAF. This is to ensure that we maximise the knowledge sharing and improve coordination of all BPSPL offices.

Output 2. *Improved capacity of MMAF to deliver advanced, on-going training to effectively identify and monitor the trade of CITES-protected elasmobranch species, thereby increasing the detection rates of attempted illegal trades.*

For MMAF to deliver advanced and on-going training, it is important that the Elasmobranch Trade Training Team has the correct representation from staff currently involved in the product inspection process and who are best placed to disseminate the training they receive across Indonesia. The information generated in Output 1 provided the information to ensure this happens.

A comprehensive 40-hour training programme has been developed (includes 8 modules, see Supp info 18-25). Twenty participants, who form the elasmobranch trade training team (with representation from MMAF and the six regional offices), have been trained by national and international experts during a five-day 'train the trainers' event (Measurable Indicator 2.1). The training programme was developed in collaboration with the national training centre to ensure the programme has the required backing, standardisation and certification for its longevity and success in delivering increased capacity to effectively identify and monitor the trade of CITES-protected elasmobranch species. Pre/post training assessments demonstrated a twenty percent improvement in knowledge of trainers following the training workshop (66% correct answers in pre-test, 86% correct answers in post-test) and teaching style was assessed as each participant was required to prepare and deliver a presentation of module content at the end of the workshop.

After Covid-related delays to the roll out of the training programme by the national training team (Measurable Indicator 2.2, 2.3, 2.4), training recommenced towards the end of 2021 when Covid-19 related restrictions eased. Workshops focused on advanced modules related to the “Identification of Wedgefish and Giant Guitarfish and Identification of Shark Carcasses” and were delivered online and in person. Three teaching modules: (1) Laws and Regulations for the Conservation of Shark and Ray Species; (2) Identification of Pari Kekeh and Pari Kikir; and (3) Shark Carcass Identification were delivered to 96 participants of MMAF officers including verifiers at each BPSPL/LPSPL, fisheries surveillance officers, fish quarantine officers, and fishery extension officers (Supp info 15). Pre-and post-training tests were carried out to assess the effectiveness of the training programme (Table 1).

Table 1. Summary of trunk ID and wedgefish and giant guitarfish identification training including pre-post-test average scores.

Training	Delivery method	No. participants	Gender	Pre-Test Score	Post-Test Score
Jakarta October 2021	Hybrid – participants online	62	22 F, 40 M	53	89
Tegal fishing port October 2021	In-person	9	1 F, 8 M	31	98
Bali December 2021	In-person	32	14 F, 18 M	55	87

Output 3. *Improved capacity for law enforcement agencies to effectively respond to incidences of illegal trade using evidence-based approaches creates stronger disincentives for illegal trade of elasmobranch products.*

To improve capacity of law enforcement agencies to respond to incidences of illegal trade, WCS worked closely to support Customs, BPSPL, PSDKP and other law enforcement through capacity building on shark and ray identification, technical assistance on investigating the illegal trade cases and on-site collaboration marine patrol with law enforcement agency (Indonesia National Police, PSDKP) in a high-risk manta hunting area (Lamakera East Florest – East Nusa Tenggara). This positive effort encouraged and strengthened capacity in law enforcement.

There were two training sessions on shark and ray identification during 2019. Training identification through a technical guide was given to 41 participants from BPSPL, LIPI, quarantine agency and MMAF. Participants were trained in visual identification on shark and ray fins, manta gill plates and other derivative product such as cartilage and skin. Increasing capacity for Customs staff was carried out with a total of 37 Customs staff from 12 harbours and airports that have a key role in the international trade hub (Measurable Indicator 3.1). The training was focussed on regulation surrounding surveillance and law enforcement of illegal wildlife trade, identification of derivative products of wildlife, *modus operandi* and the pattern of smuggling from catch until exit port.

In 2021, there have been two cases of illegal trade in CITES-listed shark and ray species that have been investigated. LPSPL Serang collaborated with quarantine and marine surveillance agencies to seize 374.5 kg of illegal shark products which were being delivered from Natuna-Kepulauan Riau Province to Jakarta through Tanjung Priok Harbour. The products consisted of 5 protected and CITES-listed species including silky sharks, hammerheads, wedgefish, giant guitarfish, and protected freshwater rays. The case is still going through the judicial process and is incomplete. BPSPL Denpasar were involved in an incident involving a sawfish rostrum at a restaurant in Bali. The response unit of BPSPL Denpasar, with coordination with the PSDKP-MMAF followed-up reports and seized the rostrum from the owner. No further legal action will be taken. Throughout the project, there have been 5 cases of illegal trade that have effectively being brought to judicial trial (Measurable Indicator 3.2).

Output 4. *MMAF have increased capacity to utilise their improved scientific evidence from the implementation of the step-wise detection methods to better inform national policies on elasmobranch trade management and CITES compliance.*

This output can progress as planned now that Covid-19 related travel restrictions allow. In June 2022, a delegation of project partners and collaborators from Indonesia will visit the UK for a weeklong knowledge-exchange visit with a programme of presentations, workshops and field visits focused on implementing science-based policies (Measurable Indicator 4.2, 4.3).

3.3 Progress towards the project Outcome

Our project is progressing well towards achieving its intended outcome; *“Indonesia has capacity to effectively trace, monitor and control trade in sharks and rays to support CITES legislation and provide a risk-based approach to legal and sustainable resource use”*. In the first two years of the project, we achieved all planned, and some additional activities in relation to three out of four of our projects’ outputs. These activities have in turn delivered against the measurable indicators of our project outcome.

In November 2018, 47 key trade stakeholders attended the project inception workshop in Jakarta where we mapped shark trade stakeholders and identified current trade monitoring processes. Regional focus groups were then undertaken to understand local level challenges (Measurable Indicator 0.1). In addition, Andhika’s Marine Policy paper documenting elasmobranch trade flows in and out of Indonesia communicates these complexities to the scientific community.

During the first two years of the project, we also trained 20 (rather than the planned 15) “trainers” from MMAF in elasmobranch identification techniques and have documented significant increases in the accurate identification of products in pre and post training tests (Measurable Indicator 0.2). In addition, we have worked closely with the National Training Centre to ensure that the 8-module training programme meets the standards required to be a nationally recognised course. In 2022, the Marine and Fisheries Training and Extension Centre were allocated budget to continue the development of the national standard of competency for shark and ray identification and Rekam will continue to collaborate on this task.

Since project inception in 2018 there have been six cases of illegal trade which have been investigated, four of which have resulted in sentencing, one still in process and one seizure but no further legal process. In 2018, an individual was found to have committed forgery of a Letter of Recommendation from BPSPL Serang, receiving 1.5 years in prison. In 2019, there were three cases in total; two cases of illegal trade of fins from protected species resulting in a one-month prison sentence and a fine of IDR 20 million, and five months in prison and a fine of IDR 5.0 million; one case of illegal trade in a sawfish rostrum where the individual received a two-year prison sentence and a fine of IDR 5.0 million. There were two cases in 2021; illegal trade in shark products of protected and CITES-listed species which is still going through the judicial process, and a seizure of sawfish rostrum from a restaurant where there will be no further legal action. To date, half (5 out of 10) the number of cases planned to be brought to trial during the project have been (Measurable Indicator 0.3).

In this final year of the project, we are focusing on science-policy implications of the work we have done to date, a large part of which will take place during an intensive weeklong knowledge exchange visit to the UK in June 2022 where we will bring together the overall recommendations from the project and discuss improvements to current policies to support the implementation of those recommendations (Measurable Indicator 0.4).

3.4 Monitoring of assumptions

Assumption 1: *Maintain strong partner engagement and staff changes do not prevent continuation of progress.*

We have maintained strong partner engagement throughout the project even with a formal change to the project partnership in 2021 when WCS was replaced by Rekam. The success of this handover to a new partner was the strength of the collaboration between MMAF and both WCS Indonesia staff and Rekam, in addition to clear agreement on which elements of the work

would become the responsibility of Rekam (detailed in a new collaboration agreement between Cefas, MMAF, Rekam and Salford University). As we were two thirds of the way through our project when the Covid-19 pandemic occurred, we had already established strong working relationships and communication between all partners during face-to-face working in the first two years which could be more easily maintained during the restrictions.

Assumption 2: Maintain strong engagement from government staff receiving training.

As well as strong partner engagement, we have maintained excellent engagement from government staff with 103 individuals trained between October 2021 and March 2022. Both the training team and staff receiving training are highly engaged, evidenced by the increase in post test scores following their training workshops.

Assumption 3: The work from this project generates sufficient media interest locally, nationally and internationally so that the progress of this work can be communicated throughout.

Communication of our project is integral to all activities we undertake, and we are fortunate to have some excellent science communicators in the project team. In 2021, there were 16 national media articles in Indonesia on illegal shark trade, utilisation, and conservation (Supp info 12), and in the last reporting year, there have been two new blogs to the [Marine Science Blog](#) series. We gain international interest in our project primarily through the blog series and social media platforms where we Tweet about all elements of the project from training workshops to lab analysis, to presentation of scientific conferences (Figure 4).

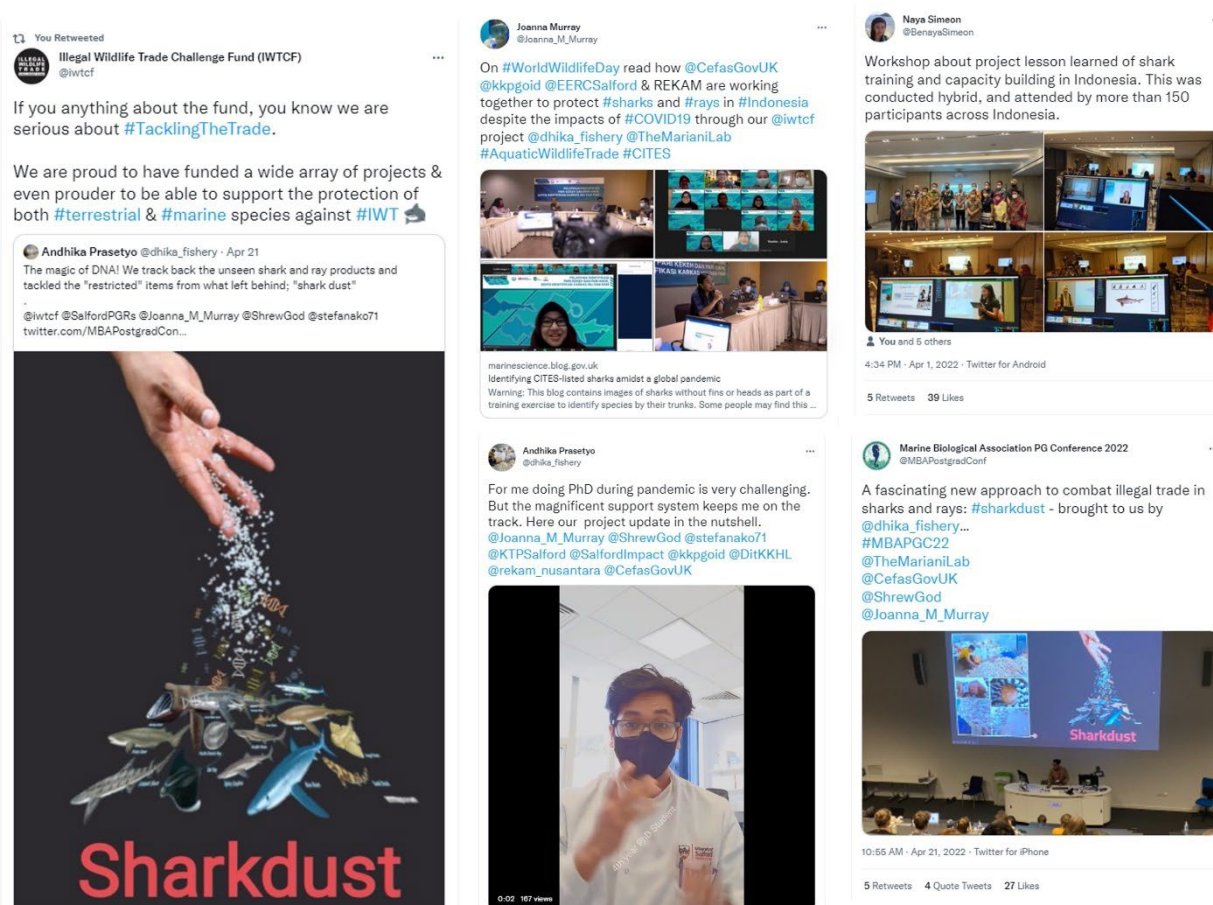


Figure 4. Examples of international communication about project activities using Twitter.

Assumption 4: The implementation of the improved customs procedure will increase the capacity for BPSPL officers to investigate suspected IWT and increase the accuracy/confidence in detecting CITIES listed species.

Our system of pre and post training tests have enabled us to quantify the increase in verification staff's capacity to correctly identify CITES-listed shark and ray species from products in trade. During the final year of the project, access to multiple years of data on monthly recommendation letter/permit issuance and rejection from B/LPSPL and MMAF will then allow us to assess trends

in the number of shipment rejections/seizures following training and the increase in species ID capacity.

Assumption 5: *Government and law enforcement agencies support the implementation of the proposed custom procedure and agree with the benefits that this will offer in the long-term and*

Assumption 6: *MMAF are in the position to dedicate time and resources to the continued managing of the IWT detection program. This team can continually monitor the trade, engage with stakeholders to ensure awareness of processes, and are able to provide educational training in schools and/or local communities.*

The dedication of the Indonesian government for the implementation of capacity building and on-going training of shark and ray trade management staff has exceeded what we set out to achieve when designing the project. One example of the dedication of resources and time is the design of an 8-module training programme which has been developed alongside the national training centre to ensure it meets national standards. Additional support for continued working with the national training centre was awarded in 2022. Further outreach on the outputs of our project will continue into the final year.

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

Strengthened monitoring and enforcement of elasmobranch trade decreases illegal wildlife trade, reduces exploitation of threatened species, and promotes sustainable management of fisheries, safeguarding biodiversity and livelihoods through improved legal frameworks.

This funding has had direct impact on the trade of protected shark and ray products through the work of WCS and their collaborations with the WCU and enforcement agencies. The establishment of a large collaborative effort within Indonesia to tackle illegal marine wildlife trade has been made possible through this project, with proven results. During the first two years of the project, six illegal trade of marine product cases have been brought to prosecution as a direct result of information from the WCS (Section 3.1 and Supp info 11).

Improved management of shark fisheries and trade at the national-level, and successful implementation of existing shark/ray regulations (e.g. protection of manta rays and whale sharks) will help to better protect livelihoods and food security for small-scale fishers, who are highly dependent on marine resources for their well-being. It is hoped that the increase in publicity of illegal trade in marine species, like the case of the manta gills (section 3.2, Output 3), will support and raise public awareness about the strengthening of management systems and illegal trade detection. However, the benefits of this will be difficult to measure within the lifetime of this project and will not have yet been realised.

4. Thematic focus

Our project focuses on strengthening the law enforcement of shark and ray trade regulations through the dissemination of these regulations to various stakeholders, and through the development of training programs in identifying protected shark and ray species. However, we recognise that successful efforts to suppress the illegal trade in sharks and rays must also be supported by private sector. Therefore, our project is supporting the development of a national competency standard for shark and ray identification (Supp info 18-25), so that the training can also be provided to business actors and the fishing community in the future. The project's dissemination of the regulations on the shark and ray trade has also encouraged an increasing number of traders in Indonesia to correctly apply for a shark and ray products trade license to MMAF.

While our project is designed to increase the capacity and awareness of law enforcement authorities (PSPL, PSDKP, Quarantine Agency, and Customs) in preventing the illegal trade of shark and ray products in Indonesia, the knowledge and tools which have been made available, support the effective implementation of the legal frameworks which are currently in place. The impact of this capacity building can be seen from the two cases of arrests for the illegal trade in

sharks and rays in 2021. The first case is the arrest of an illegal trader found with products of hammerhead, silky shark, wedgefish, giant guitarfish, and freshwater ray in Jakarta, and the second case was the confiscation of an illegal sawfish rostrum in Denpasar. Awareness among traders of such arrests for illegal trade (communicated through national news stories) and a record of prison sentences for these wildlife trade crimes is likely to act as a deterrent to other potential illegal traders.

5. Impact on species in focus

Training designed to improve the identification of species in focus was undertaken at the end of year two through the ‘train the trainers’ event (Supp info 5) and further roll-out of the training programme resumed in October 2022 following easing of Covid restrictions in Indonesia. Post-test scores from species identification modules of the trainers found a 20% improvement in species identification following the training, with 86% of species identified correctly (Supp info 8), with similar increases in post test scores of participants who were trained by those trainers between October and December 2022 (Table 1).

Molecular identification methods being developed through the PhD programme is yielding incredibly exciting results which have the potential to be highly impactful in monitoring and managing trade in the CITES-listed shark and ray species in focus into the future. ‘Sharkdust’ samples, in addition to tissue samples, were collected from product processing plants across Java to generate sequences using DNA metabarcoding. Over 71% of sequences generated from those samples belonged to CITES-listed species i.e. hammerhead sharks (*Sphyrna* sp.), silky shark (*Carcharhinus falciformis*), oceanic white-tip shark (*C. longimanus*) and the recently CITES-listed giant guitarfish (*Glaucostegus typus*). In addition, shark products which were opportunistically collected across Java island from landing sites, markets, small collectors, and exporter warehouses (N = 562 samples), revealed 69 different species of shark and ray. About 41% of the total sample were CITES-listed species. The ‘sharkdust’ approach is likely to become a powerful and cost-effective monitoring tool wherever marine wildlife is traded.

6. Project support to poverty reduction

While our project is focused on strengthening law enforcement and ensuring effective legal frameworks and not directly on alleviating poverty, it will provide the Indonesian Government with the tools needed to manage marine resources in line with international commitments of CITES-legislation. This in turn will provide additional support towards improving Indonesia’s sustainability objectives, including advice on stock assessments, quotas and applicability of non-detriment findings in the future, promoting sustainable elasmobranch fisheries, therefore safeguarding biodiversity and livelihoods.

Furthermore, economic benefits can be yielded by the presence of a healthy marine ecosystem in Indonesia (often signified by the presence of sharks and rays as ‘top predators’), both directly and indirectly. Indirectly, the loss of key predators from the ecosystem due to overfishing will have knock-on consequences down the food chain as fishing effort is displaced to smaller fish species which are often relied upon for artisanal fisheries income and food. Direct benefits can be realised by having good numbers of top predators and threatened shark and ray species through the increase in ecotourism through scuba diving.

7. Consideration of gender equality issues

The Cefas, MMAF and WCS teams working on this project are of mixed genders, and throughout the project we have been successful in ensuring that the stakeholders we have engaged with have been represented by both men and women (Table 1). During the design of our project, we anticipated that we might see fewer women attend the centralised workshop in Jakarta due to family commitments restricting travel. To mitigate this, the regional focus groups provided another platform for the project to engage with these staff members more locally, and indeed we did see increased attendance by women. At three of the six regional focus groups we had higher numbers of women attend.

Table 2. Composition of genders at engagement activities during year 1, 2 and 3.

Activity	Female	Male
Project Inception workshop	16	31
Focus group – Satker Jakarta	10	6
Focus group - Denpasar BPSPL	3	8
Focus group - Makassar BPSPL	7	6
Focus group - Pontianak BPSPL	1	3
Focus group - Loka Sorong	7	9
Focus group - Satker Medan	4	2
Custom officer wildlife trade workshop (WCS)	1	36
Module evaluation workshop November 2019	19	22
'Train the trainer' workshop January 2020	8	12
ID training with BPSPL Pontianak	17	19
Advanced module training (hybrid workshop) in Jakarta	22	40
Advanced module training (in person workshop) in Tegal fishing port	1	8
Advanced module training (in person workshop) in Bali	14	18

In 2019, Cefas established an Equality Diversity and Inclusivity (EDI) Steering Group and gender equality was the first 'protected' characteristic defined in the EDI handbook for staff. Cefas' commitment to gender equality has been exemplified by applying to the Athena SWAN Charter. This recognised accreditation scheme advances EDI providing representation, progression and success for all, although was originally established in 2005 to encourage and recognise commitment to advancing the careers of women in science, technology, engineering, maths and medicine. Cefas submitted their application in November 2020 and were awarded accreditation in April 2021. The action plan will be a living document, and we will continue to monitor the impact of the actions and adjust course if necessary. As it stands, there are 47 actions in total, covering topics from recruitment to participation in committees and wellbeing initiatives. Implementation of the action plan is ongoing.

Cefas has reinforced our commitment to race equality by signing the 'Race at Work Charter'. In signing the charter, we have joined Defra and many other government organisations in committing to make race equality a priority. This is an important step towards achieving our objective to be an inclusive anti-racist organisation that provides equal opportunities for all and reflects the diversity of the UK.

8. Monitoring and evaluation

Cefas follows ISO9001 project management structure. As part of this commitment, we have implemented fortnightly project management and budgeting meetings between project lead and Cefas PM and have regular partner communication via email, WhatsApp and Teams. This ensures that monitoring of activities and associated expenditure is tracked closely throughout the project, and ensures we receive partner claims and receipted expenditure in a timely manner. Attendance records, workshop minutes and visit reports, photographs and media engagement (see Supp info) are generated by all partners and shared via email and have successfully been used to monitor and evaluate activities undertaken.

9. Lessons learnt

A change to our project partnership from WCS to Rekam in March 2021 was one of the more significant changes to our project during its lifetime. We communicated this change to LTS as soon as we were aware and began working with both WCS and Rekam to agree the elements which could be handed over. This agreement was then formalised within a new collaboration

agreement between Cefas, MMAF, Rekam and the University of Salford. Despite the potential disruption to the project a change in partner could cause, the communication and handover between WCS and Rekam staff was exemplary, resulting in negligible changes to the project plan and implementation. Having project collaboration agreements in place is something we recommend to other projects to have clear agreement on roles and responsibilities in delivering the project.

Since the outbreak of Covid-19, we have had two delays to our project agreed by LTS on the basis that we hoped to implement the roll out of training in person rather than using online platforms. This year, we did trial online species identification training but feedback from participants supported our original concerns that for visual training of this type, it is important to have the products in your hands to see and feel. We are now able to conduct our activities in person and are reassured that the delays to the project will result in a stronger project outcome.

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

We received two actions in the review of our previous annual report and address them specifically here:

1. What is the level of knowledge within fishers/traders of the legality of species to trade?

Although we have not conducted a perception survey to fishers and traders as part of this project, the in-country project team have witnessed an increase in the perception and compliance of shark and ray business actors in Indonesia to the existing regulation. This can be seen from the increasing number of traders who apply catch permits for CITES Appendix II species to MMAF (more than 100 permits have been issued by MMAF to date). This may also be an effect from the strengthened policy and regulation on the use of CITES Appendix II species in Indonesia. MMAF has been actively conducting intensive socialization, assistance, and training related to the implementation of Ministerial Regulation No. 61/2018 concerning the use of protected fish and CITES listed species.

Please measure progress by reporting against indicators more in the body of the report.

Through this annual report we have made sure that we report against the Measurable Indicators set out in our logical framework in addition to activities undertaken.

11. Other comments on progress not covered elsewhere

N.A

12. Sustainability and legacy

A project communication strategy was designed to promote the profile and gain public interest in the project. This includes the creation of a project blog series (<https://marinescience.blog.gov.uk/>), the use of Twitter to generate interest during key activities and to promote the blog, and discussion with the Defra IWT communication team on promoting the project going forwards. The project also gained profile when it was announced alongside UK commitments at the Our Oceans global summit in October 2018.

Our exit strategy has been strengthened now the project is running. We are confident that we now understand who needs to be represented on the Elasmobranch Trade Training Team to ensure its long-term success and we are in the process of integrating the team within the current government structure to ensure it has institutional backing. Furthermore, the Minister Decree No. 61/2018, which is critical for the implementation and continuation of project outputs has been issued. The decree has been translated into English during year one of the project to allow all project partners to ensure we are working alongside this piece of legislation.

Andhika, the PhD student, was a member of staff within the MMAF. This meant that Andhika already had an excellent knowledge base on the current shark and ray trade in Indonesia, and importantly, on completion of his PhD plans to return to Indonesia and his position in MMAF to share the knowledge and expertise he develops.

This project has attracted additional UK government funding to support interventions which were identified during the first year of this project but were not included in the project plan. This work has led to the development of additional resources for Indonesia – translation of existing ID guides into Bahasa, as well as the development of a trunk identification guide which is part of a [three volume series](#) of shark and ray identification guides coordinated by WCS and officially launched during the CITES Standing Committee (March 7th 2022) .

13. IWT Challenge Fund identity

We have ensured that the UK Government funding logo has been used in project presentations, meeting invites and on workshop banners throughout the project (e.g. Figure 2). The UK Governments funding contribution to the production of the trunk identification guides and acknowledgement to the IWTCF project in the identification of needing a trunk ID guide is also written within the introductory text of the guide (Figure 5). As such, the IWTCF identity will be widely associated with these international resources. We have included the @iwctf tag in select Tweets since its initiation in July 2021 (Figure 4).

species level due to the large volumes of animals landed and the difficulties in identifying processed carcasses. Furthermore, a significant number of CITES listed species, specifically silky sharks (*Carcharhinus falciformis*), hammerheads (*Sphyrna* spp.), threshers (family Alopiidae), makos (*Isurus* spp.), wedgefishes (family Rhinidae), and giant guitarfishes (family Glaucostegidae), are harvested annually. These CITES listed species are believed to account for as much as 30% of products being exported that are likely leaving the country undetected.

To identify and address challenges of detecting illicit trade in protected or CITES listed sharks and rays, MMAF has been working with the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and the University of Salford (United Kingdom) on a project funded by the Illegal Wildlife Trade Challenge Fund. Across Indonesia, key personnel responsible for visually inspecting shipments containing products being transported across provinces and exported into international markets (including the detection of trade in protected or CITES listed species) have indicated a high degree of confidence in the visual identification of fins from CITES listed species due to access to available field guides and hands on training. However, they have underscored that identifying processed (headless and/or finless) shark and ray carcasses as a significant challenge in implementing trade controls.

Figure 5. Extract from page 7 of the trunk identification guide with acknowledgement of the IWTCF project in the inception of the guide.

14. Impact of COVID-19 on project delivery

Progress of our project activities essentially paused during the peak of the pandemic when national and international lock downs were in place. Prior to the outbreak, our project was at the point of entering the final year of activities which all focus on training workshops, knowledge-exchange visits, and stakeholder meetings. We were reluctant to adapt these in-person activities to online platforms given the complexities of time zone differences, language barriers which can be exacerbated online, and the practical challenge of identifying physical products such as shark fins virtually. There were also challenges with undertaking project activities in country for our partners who needed to minimise their staffs Covid contact potential. MMAF for example innovated and began undertaking inspections using video calls where they had no option to inspect in person (see our blog [“Identifying CITES-listed sharks amidst a global pandemic”](#) for more information on how trade was impacted by Covid and how project partners innovated to overcome the challenges).

In October 2021 we held a hybrid species identification training workshop where all participants joined via Zoom while the trainers and technical staff were together in person. We received testimonies from participants reiterating the value of in-person training when identifying products such as fins which you need to hold and see (see section 3.1), further supporting our decision to delay project activities until we could conduct them in person.

With eased international travel restrictions our Indonesian partners will travel to the UK in June 2022. Despite being able to conduct the visit in-person as planned, we must assure the health and safety of project staff who will attend. We have spent additional time ensuring consideration to travel requirements for transiting to and from Indonesia, especially with regards testing and quarantine are met. We have also had the added complication of new variants which have added extra booking costs and staff resources due to multiple rescheduling of the UK visit. Covid

continues to have impacts on our project but with the current national and international restrictions and infection rates, we are confident we can complete our project this year without further delay.

15. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.

If you have answered yes, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

Cefas has a safeguarding policy (Supp info 14) in place, to which Cefas project staff read and acknowledge their agreement. This policy includes details on our commitment to safeguarding against bullying, harassment and sexual exploitation and abuse; details of how safeguarding issues are raised and how they were dealt with, including investigation and disciplinary procedures to use when allegations and complaints are made; our whistle-blowing policy and expectations of behaviours and standards. The policy has been included within this report and thus disseminated to project partners. Through Cefas' project management framework (Section 8) a project risk register is in place and regularly updated where any safeguarding concerns can be captured.

16. Project expenditure

Table 1: Project expenditure during the reporting period (April 2021-March 2022)

Project spend (indicative) since last Annual Report	2021/22 Grant (£)	2021/22 Total actual IWT Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	██████████	██████████	██████	
Consultancy costs				
Overhead Costs	██████████	██████████	██████	
Travel and subsistence	██████████	██████████	██████	Extra air fare purchased for workshop that was moved to FY 22/23.
Operating Costs	██████████	██████████	██████	
Capital items (see below)				
Others (see below)	██████████	██████████	██████	
TOTAL	██████████	██████████	██████████	

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

I agree for the IWTCF Secretariat to publish the content of this section.

During the second year of the project, additional UK government funding was obtained to support the development of the first shark trunk visual identification guide for CITES-listed species by two shark identification experts. To increase international uptake and use of the trunk guide, we joined a global collaboration with governments, non-governmental organizations, and other partner and funding organizations (including the CITES Secretariat, the United Nations Food and Agriculture Organization (FAO), the European Union, the Pew Charitable Trusts, and Shark Conservation Fund) to include the guide in a three-volume series that covers whole animals, shark trunks and dried products such as shark fins and devil ray gill plates. The guides were [officially launched](#) on the 7th of March 2022 to align with CITES Standing Committee and were discussed at the meeting (Figure 6). These guides simplify the training process for customs officials by covering all CITES listed species, and the major products in trade, in one set of guides which are freely and widely available.



Figure 6. Dr Rima Jabado, author of the three-volume guide series formally launching them at a side event at CITES Standing Committee 2022.

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	YES
Is the report less than 10MB? If so, please email to IWT-Fund@itsi.co.uk putting the project number in the subject line.	YES
Is your report more than 10MB? If so, please discuss with IWT-Fund@itsi.co.uk about the best way to deliver the report, putting the project number in the subject line.	YES
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	YES
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	YES
Have you involved your partners in preparation of the report and named the main contributors	YES
Have you completed the Project Expenditure table fully?	YES
Do not include claim forms or other communications with this report.	