

## Darwin Initiative Main Project Annual Report

**Important note:** To be completed with reference to the Reporting Guidance Notes for Project Leaders:

*it is expected that this report will be no more than 10 pages in length, excluding annexes*

**Submission Deadline: 30<sup>th</sup> April 2017**

### Darwin Project Information

Project Reference	22-008
Project Title	Diversifying Indonesian fisheries to protect elasmobranchs and alleviate poverty
Host Country/ies	Indonesia
Contract Holder Institution	Wildlife Conservation Society – Indonesia Program
Partner institutions	Ministry of Marine Affairs and Fisheries (MMAF), Indonesian National Police – Criminal Investigation Division, Imperial College London
Darwin Grant Value	£272,599
Start/end dates of project	Apr 2015 – Mar 2018
Reporting period (e.g., Apr 2015 – Mar 2016) and number (e.g., Annual Report 1, 2, 3)	Apr 2016 – Mar 2017, Annual Report 2
Project Leader name	Hollie Booth and Ken Kassem
Project website/blog/Twitter	<a href="http://indonesia.wcs.org">http://indonesia.wcs.org</a>
Report author(s) and date	Hollie Booth, Dwi Adhiasto, Sofi Mardiah, Giyanto, Efin Muttaqin, David Kuntel, Peni Lestari, Ken Kassem, Tom Clements. Finalised May 3rd 2016.

### 1. Project rationale

Indonesia is the world's largest shark fishery, and recognised as a global priority for the conservation of sharks and rays, including several threatened species recently listed on CITES Appendix II. National political support for conservation action is high, and hunting and trade of mantas and whale sharks was declared illegal under national bans in 2014. However, despite these policy achievements, implementation has been poor because regulations are inadequate and enforcement capacity is limited: at project inception, there had been no successful prosecutions of traders of illegal shark or ray products.

The project adopts an integrated approach to ensure a substantial reduction in shark and ray (elasmobranch) fishing in Indonesia by strengthening enforcement and transitioning livelihoods. We will target sites in two provinces (West Nusa Tenggara and East Nusa Tenggara), focusing on Tanjung Luar and Lamakera, which are collectively responsible for c.75% of Indonesia's total manta catch (see map). These sites were selected based upon research conducted by

WCS in 2012-14, which included monitoring of shark and ray landings, gaining the trust of local fishers, and understanding their fishing practices. We will focus on threatened, CITES-listed species, which during the project planning phase included scalloped hammerheads (*Sphyrna lewini*; Endangered), oceanic whitetips (*Carcharhinus longimanus*; Vulnerable), and giant and reef manta rays (*Manta* spp.; Vulnerable), and has now extended to include thresher sharks (*Alopias* spp.), silky sharks (*Carcharhinus falciformis*) and mobula rays (*Mobula* spp.) following new species listings at CITES CoP 17.

Over 10 years, WCS has established the “Wildlife Crimes Unit” (WCU), a highly innovative and effective partnership with law enforcement agencies (Ministry of Marine Affairs and Fisheries, MMAF; Ministry of Environment and Forestry, MoEF; Indonesian National Police, INP; Quarantine, Ministry of Agriculture; Attorney General Office; Supreme Court; and Customs), which is responsible for the majority of enforcement actions against illegal wildlife trade in Indonesia. Building on this partnership, the project will: (1) strengthen regulations governing the protection of elasmobranch species, through providing information and supporting the ongoing MMAF review process; (2) enhance local government and community understanding of the regulations through local awareness campaigns; and (3) support government law enforcement agencies to undertake at least 10 test cases against major elasmobranch traders through the WCU. The project will only target major trade networks with the objective of restricting the trade, and hence the demand for shark/rays across Indonesia.



Effective implementation of the law will have significant implications for the livelihoods of local fishers, hence appropriate mitigation measures need to be developed. Previous WCS research has shown that elasmobranch fishing in Indonesia is highly specialized, conducted by a very limited number of poor fishers using far-ranging boats, who land their catches at specific ports. Over 80% of profits are captured by a small number of traders who control the export market. With escalating costs (due to removal of fuel subsidies) and declining catches, elasmobranch fishers are interested to transition to more sustainable fisheries, if appropriate support is provided. The project will undertake participatory planning with each interested household,

identifying opportunities and barriers, and providing targeted assistance, such as training, equipment and access to capital to successfully navigate the transition.

## **2. Project partnerships**

The project is led by the Wildlife Conservation Society (WCS) Indonesia Program. WCS has been working to protect biodiversity in Indonesia since 1965, and has had a permanent office in the country since 1995, under an MoU with the Ministry of Environment and Forestry (MoEF) and a technical agreement with the Ministry of Marine Affairs and Fisheries (MMAF).

The enforcement component of the project is implemented through the Wildlife Crime Unit (WCU), which is a program of WCS Indonesia. Initiated in 2003, the WCU is an innovative partnership designed to combat illegal wildlife trade in Indonesia including: MoEF; MMAF; Indonesian National Police (INP); Attorney General; Quarantine; Supreme Court; Customs; anti-corruption agencies (Financial Transaction Reports and Analysis Centre, PPATK); and civil society and media organisations. To date, over 380 cases involving 512 suspects have been prosecuted by law enforcement agencies based upon information from the WCU, including the 10 largest wildlife crime cases in Indonesia. On behalf of the WCU, WCS has technical agreements with several law enforcement agencies in Indonesia, including Attorney General Office (AGO), 4 province police offices, and the Indonesian Police Education Centre (LEMDIKPOL). WCU also developed a wildlife trafficking curriculum with the Supreme Court and LEMDIKPOL for environment judges and police trainings (conducted on an annual basis). The project builds upon this established partnership. For example, for some enforcement actions the WCU is working with POLAIR (the marine police, part of the INP). WCS has signed an agreement with POLAIR for this work in May 2016. The strength of the WCU's partnerships with these agencies is evidenced by the 17 arrests of illegal traders of protected marine species conducted over the first year of the project and 15 arrests during this reporting period (see below). The WCU plans all operations jointly with the law enforcement agencies, and action is only taken if the relevant agency is supportive. The WCU also has a network of more than 100 journalists, who are notified when wildlife crime arrests are made and cases are in progress. This serves two purposes: to publicise the achievements of Indonesian law enforcement agencies, and to put wildlife crime cases in the public eye to increase transparency and reduce the chance of corruption.

The policy component is implemented based upon the wishes and direction of MMAF, the Ministry responsible for oversight of marine resources, including regulation of shark and ray species. WCS is unable to have a formal MoU with MMAF, because as an international organisation WCS can only have one MoU in Indonesia under national law. However, WCS has developed a separate technical agreement (called a PKS) with three Directorate-Generals of MMAF, including the DG responsible for regulating fishing, trade and protection of marine species. This DG has specifically invited WCS to help to develop the regulatory framework for sharks and rays, and this is evidenced by their request for WCS to second a technical policy expert (David Kuntel) to work within the Ministry. This secondment continues, and MMAF continue to approach WCS for specific technical support to build their capacity, gather data and implement CITES.

For the component with shark and ray fishers, WCS has initiated a new set of partnerships with several groups that are working with shark fisher communities. These include the Panglima Laot; a group of organisations working to support manta fishers in Lamakera, led by Misool Baseftin, ReefCheck Indonesia and the Manta Trust; and Yayasan Masyarakat dan Perikanan Indonesia (Society and Fisheries Indonesia, MDPI), working on value-added sustainable fisheries. The different organisations meet regularly to exchange experiences and lessons learned, and develop joint approaches, both formally and informally.

In Year 2, a new partnership has been developed with Oxford University and the newly established [Oxford Martin Program on Illegal Wildlife Trade](#), which is being led by Professor EJ Milner-Gulland (project partner), who has recently moved from Imperial College London to Oxford. The Oxford Martin Program on Illegal Wildlife Trade provides access to a range of international experts, academics and practitioners working on understanding and influencing trade in wildlife.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

**Output 1: Regulations for CITES-listed sharks and mantas have been developed or revised to ensure enhanced legal protection for at least four species**

**Activity 1.1 Assessment of existing government regulations and development of a strategy to strengthen regulations for CITES-listed sharks and rays.**

[Completed in year 1]

**Activity 1.2 Hold meetings to align MMAF's, MoEF's, and LIPI (Scientific Authority) policies on the protection of marine species and implementation of CITES for marine species.**

With funding from the Darwin Initiative and co-funding from USAID-BIJAK a WCS Marine Policy Officer continued to be based within MMAF in the Directorate of Conservation and Marine Biodiversity to provide on-going technical support regarding marine species protection and management in Indonesia and facilitate coordination and communication between MMAF, MoEF and LIPI. Through this relationship, WCS has facilitated and participated in several meetings, workshops and focus group discussions during the reporting period, which brought together MMAF and LIPI to align actions for enhancing legal protection of CITES-listed sharks and rays (See Activity 1.3 for details on events).

In addition, WCS is involved in assessing and advising on the CITES management authority for aquatic species, through joint discussion and meetings with MoEF and MMAF (See Activity 1.3). As follow up from series of internal meetings, MMAF prepared a draft of the official document for the delegation of authority for management of aquatic species from MoEF to MMAF (titled, *Berita Acara Serah Terima*), which must be signed by both ministers to officially transfer authority. In parallel, LIPI has prepared a draft protected species list which divides aquatic and terrestrial species, and will be submitted to both ministries should management authority for aquatic species be transferred.

**Activity 1.3 Hold meetings to strengthen policies and establish the protection status of CITES-listed Indonesian sharks and rays**

Several meetings and workshops were held during the reporting period to strengthen the policy framework for regulating exploitation and trade of elasmobranchs, and thus facilitate protection and sustainable management. These events focused on: the establishment of a Ministerial Decree on Limited Protection of All Sharks Species in Indonesian Waters Territory (see Activity 1.4), the revision of MMAF Ministerial Regulation No.4/2010 regarding procedures of fish utilization and fish genetic resources (see Activity 1.5), the designation of MMAF as the CITES management authority for aquatic species (as outlined in Activity 1.2), and species-specific policies to support implementation of CITES.

Events included:

- One community focus group discussion in Tanjung Luar, West Nusa Tenggara (May 11th 2016);
- Four public consultations for shark regulations conducted in
  - Mataram, West Nusa Tenggara (May 12, 2016),
  - Denpasar, Bali (May 21st, 2016),
  - Meulaboh, Aceh (June 29th, 2016) and
  - Blang Pidie, Aceh (June 30th, 2016);
- One coordination meeting conducted in Bandung, West Java (October 11th-12th, 2016);
- A workshop on non-detriment findings for CITES appendix II sharks and rays conducted in Serang, Banten (March 29<sup>th</sup>-30<sup>th</sup>, 2017) (N.B. this workshop was predominantly funded by USAID BIJAK and partners from Manta Trust, however the Darwin Initiative covered staff time for workshop organisation and WCS staff involved), and;
- Three public consultations to inform the development of a new ministerial decree regarding the protection and management of Mobula rays in
  - Sorong, West Papua (March 2, 2017),
  - Tanjung Luar, West Nusa Tenggara (March 9<sup>th</sup>, 2017) and
  - Banda Aceh, Aceh (March 16<sup>th</sup>, 2017).

The meetings aimed to a) gather and disseminate information and inputs from relevant stakeholders and user groups, from across the country, regarding options for developing national policies to regulate the use of elasmobranchs; b) gain support from various stakeholders and user groups for the establishment of elasmobranch regulations; c) use the information to develop recommendations to government on elasmobranch policy development, which can support shark and ray conservation, while also being practically implementable and mitigating negative socio-economic impacts on shark fishing communities; and d) establish a process for introducing and implementing new policies. At these events The Darwin Initiative was acknowledged as a funder where appropriate.

Information on meeting participants is detailed below:

- Community focus group discussion in Tanjung Luar (May 11th 2016): 30 people attended, including representatives from MMAF, LIPI, WWF-Indonesia, Technical Implementation Unit of MMAF, local government of East Lombok, and shark fishers, processors and traders from Tanjung Luar.

- Public consultation in Mataram (May 12, 2016): 40 people attended, including representatives from MMAF, LIPI, WWF-Indonesia, Technical Implementation Unit of MMAF, government officials of West Nusa Tenggara and East Lombok, Indonesian National Police in West Nusa Tenggara, quarantine officials, Tanjung Luar landing port officials, Indonesian Navy, Local universities, local NGOs, and representatives of shark fishing groups in Tanjung Luar and Gili Maringkik.
- Public consultation in Denpasar, Bali (May 21st, 2016): 30 people participated, including representatives from MMAF officials, WWF-Indonesia, the Association of Tuna Longline Fishers, Technical Implementation Unit of MMAF and LIPI.
- Public consultation in Meulaboh, Aceh (June 29th, 2016): 36 people participated including representatives from MMAF, WWF-Indonesia, Technical Implementation Unit of MMAF, LIPI, government officials of Aceh Barat Regency, government officials of Aceh Province, and shark fishers.
- Public consultation in Blang Pidie, Aceh (June 30th, 2016): 39 people participated, including MMAF officials, WWF-Indonesia, Technical Implementation Unit of MMAF, LIPI, government officials of Aceh Barat Daya Regency, government officials of Aceh Province and shark fishers.
- Coordination meeting in Bandung, West Java (October 11th-12th, 2016): 28 people participated, including government officials from several directorate generals within MMAF as well as the Legal Bureau, LIPI, and WWF-Indonesia.
- CITES NDF workshop in Serang, Banten (March 29<sup>th</sup> – 30<sup>th</sup>, 2017): 37 people participated, including government officials from several directorate generals within MMAF, as well as LIPI, WWF, CI and Manta Trust/The Mobula Project. Technical support was provided by resource persons from James Cook University, who have been involved in conducting shark NDFs in Australia.
- Mobula (Devil rays) protection status meetings in Jakarta (January 5<sup>th</sup> 2017 & January 31<sup>st</sup> 2017): For the first meeting on January 5<sup>th</sup> 26 people participated from several directorates within MMAF as well as NGO partners WWF, CI and Manta Trust/The Mobula Project. A follow-on meeting was then held on January 31<sup>st</sup> with 17 participants from MMAF, WWF and CI
- Public consultation in Sorong West Papua (March 2<sup>nd</sup>, 2017): 28 people participated from national and local government (MMAF and BPSPL), local fisher communities, processors and traders, and NGOs.
- Public consultation in Tanjung Luar, West Nusa Tenggara (March 9<sup>th</sup> 2017): 30 people participated from national and local government (MMAF and BPSPL), local fisher communities, processors and traders, and NGOs.
- Public consultation in Banda Aceh, Aceh (March 16<sup>th</sup> 2017): 30 people participated from national and local government (MMAF and BPSPL), local fisher communities, processors and traders, and NGOs.
- Technical meeting to assess the readiness of MMAF to take on CITES Management Authority for aquatic species in Bogor, West Java (March 1<sup>st</sup> 2017): 9 people attended from MMAF and WCS.

**Activity 1.4 Facilitate the development of species regulations and policies by MMAF, which identify management actions or changes to trade regulations (e.g. size restrictions).**

Through WCS's Marine Policy Officer, and on-going partnership with MMAF, WCS continued to assess the legal framework for protecting elasmobranchs and provide technical advice to MMAF for the establishment of new regulations. To assist the policy planning process, WCS prepared a review paper entitled "Synopsis: Policy recommendations for the inclusion of marine species in CITES Appendix II", which was submitted to the Directorate of Conservation and Marine Biodiversity and MMAF in August 2016 to act as a policy reference framework.

WCS also supported the preparation of two government technical reports entitled: "Policy Analysis: The Needs of Regulation to Establish Limited Protection Status for Sharks" and "Policy Analysis: Legal Draft of Ministerial Regulation on Export Prohibition of *Mobula* spp. from Indonesia to Overseas", which were used as the technical basis for regulatory reform (see below and Activity 1.5).

In December 2016, Ministerial Regulation No. 35/2013 on the procedures to determine the status of protected fish was officially amended by Ministerial Regulation No. 49/2016. In the amendment, there are new articles relating to limited protection of species based on life cycle stages, including provisions for egg, larvae, juvenile and mature for fish species, and considerations for critical life cycle stages, protecting genetic material of germ cells, and maintaining availability of brood stock and quality of offspring. This outlines the procedures and criteria to determine the protection status of all fish, and therefore acts as a foundation for MMAF to issue the decree on the Limited Protection of All Sharks Species in Indonesian waters (see below).

On March 8th, 2017, a Ministerial Decree on Limited Protection of All Sharks Species in Indonesian waters territory (112 species) was signed by the Minister of Marine Affairs and Fisheries. Provisions in the Ministerial Decree are:

Limited protection on:

1. Life cycle stages
  - a. Prohibition to catch juvenile sharks
  - b. Prohibition to catch pregnant sharks
2. Distribution zones
  - a. Prohibition to catch sharks in all marine protected areas (all zones)

The regulation has not yet been officially launched as it is awaiting numbering and official legalization by the MMAF legal bureau and the Ministry of Law and Human Rights, respectively. Once the decree is legalised as state gazette the regulation will be launched. The regulation represents a huge step forward for shark conservation in Indonesia, as it bans catching of all shark species (112 species) anywhere within Indonesia's network of 165 marine protected areas, which cover over 18 million hectares.

**Activity 1.5 Facilitate changes in the protection status of CITES-listed species, through changes to the national protected species list (PP.7/1999), Ministerial Decrees, or changes to regulations under the fisheries law.**

In addition to regulations covering all shark species (as outlined under Activity 1.4), WCS supported species-specific policy development for CITES-listed species. In August 2016, a proposed revision of Law No. 5/1990, regarding the categorisation of protected species in Indonesia, was presented to Parliament. If accepted, this revision will provide a legal basis for automatic updates to the protected species list following changes to CITES, as they occur. As an interim measure, a proposed revision of the current protected species list (Government Regulation (GR) No. 7/1999) has been developed, which will be submitted by LIPI (as the scientific authority) to MoEF (as the management authority), and which will incorporate existing CITES-listed sharks.

In December 2016, MMAF issued a one-year extension for protection of the CITES-listed oceanic whitetip shark and hammerhead sharks through Ministerial Regulation No. 48/2016, which prohibits export of these species (but not necessarily capture or domestic trade) until December 2017.

In the lead up to CITES CoP 17 (Sept/Oct 2016), WCS facilitated species-specific assessments with a particular focus on *Carcharhinus falciformis* (Silky shark) and *Alopias* spp. (Thresher sharks), and the development of a policy brief on *Mobula* spp. to support the proposal to include *Mobula* rays in CITES appendix II. Following on from CITES CoP 17, to prepare the government for when the new elasmobranch CITES listings come in to force (April 4<sup>th</sup> 2017 for *Mobula* rays and October 4<sup>th</sup> 2017 silky shark and thresher sharks), and for potentially releasing the export bans on hammerheads and oceanic whitetips at the end of 2017 to supporting sustainable trade, WCS and partners convened a workshop on Non-Detriment Findings (NDFs) for CITES Appendix II sharks and rays in March 2017. The workshop was organised at the specific request of MMAF, to provide training in developing NDF documents to assist in the process of assessing the sustainability of exploitation and trade of CITES-listed shark and ray species, and support the establishment of regulations for the species concerned. The workshop built capacity for conducting the NDF process, by providing practical guidance from experts who have already conducted NDFs for sharks in other countries, and brought together existing data from institutions across Indonesia, with a particular focus on hammerheads and *Mobula* rays as case study examples. During the workshop, the Indonesian government officially agreed to adopt the Mundy-Taylor et al., (2014) NDF framework as a standardised tool for species trade sustainability assessment in producing NDFs for CITES listed species. Two government scientific reports have been drafted – one for hammerheads and one for *Mobula*s – as part of the workshop process, and a follow-up meeting was planned for April to discuss the outcomes of the workshop and next steps for the government.

Revisions to MMAF Ministerial Regulation No.4/2010 are also being drafted, regarding procedures of fish utilization and fish genetic resources to better support CITES implementation for aquatic species. The regulation is being revised to cover utilisation and distribution of protected fish and/or CITES listed species, including specific clauses and articles relating to breeding, exploitation of natural populations, and trade.

**Output 2: Local government officials, traders and fishers have sufficient awareness and training in the new regulations and the applied management actions required to adequately manage shark and manta fisheries.**



**Activity 2.1 Create awareness-raising materials and distribute regulations on CITES-listed shark and ray species in landing areas for sharks and rays. Identify key persons including traditional leaders, village chiefs, and local MMAF officers as frontline leaders to disseminate the materials to fishers, fisheries middlemen, and exporters**

During the reporting period, one focus group discussion and seven public consultations were held in several locations in Aceh, West Nusa Tenggara and West Papua (see Activity 1.3) to communicate information on regulations and CITES-listed shark and ray species to key stakeholders, and to engage relevant user groups in discussions regarding future policy development. These events brought together a variety of stakeholders including shark fishers, processors and traders; village-level government officials; MMAF; Coastal and Marine Resources Management Offices; provincial and district-level law enforcement agencies (including police and quarantine); provincial and district-level fisheries departments, research institutions (e.g. LIPI, Mataram University) and NGOs, including WCS and WWF.

In May 2016, WCS, together with Indonesia Nature Film Society (INFIS), WWF Indonesia, and Greenpeace Indonesia collaboratively organised a public discussion and movie screening called “Ocean and Us” (<http://inaturefilms.org/launching-documentary-film-ocean-and-us/>). This event was held in Jakarta, with more than 150 people participating. News related to this event appeared in Kompas (the largest Indonesian print newspaper) on May 31st, highlighting the weakness of shark protection in Indonesia (<http://print.kompas.com/baca/sains/lingkungan/2016/05/31/Perlindungan-Hiu-Masih-Lemah>).

On April 27<sup>th</sup> 2016 a joint team from WCS, MMAF, the Islamic Council Indonesia (MUI), the marine police, and East Flores Fisheries Agency conducted a manta ray protection socialisation event in Lamakera, East Solor, NTT. Lamakera is a hotspot for illegal manta ray hunting, and the event brought together people from across the community - including fishers, middlemen, traders, traditional leaders and village chiefs – to raise awareness on the protected status of manta rays. The socialisation event built on local institutions to promote protection of manta rays through the medium of religion, and the role of the MUI in guiding the Islamic community in Indonesia. 90% of people in Lamakera are Muslim, and therefore follow guidance and practices (fatwas) given by the MUI. In 2013 the MUI established a fatwa stating that killing or using protected animal products is haram (forbidden). The event aimed to reinforce this fatwa and the community’s responsibility for stewardship of natural resources. Approximately 1,000 villagers packed the meeting hall, with talks given by religious leaders and government officials, and various awareness materials distributed including posters, leaflets, and stickers (See Annex 4 for photographs of events).

**Activity 2.2 Initiate regular joint meetings, workshops and training with MMAF local agencies, police, customs agencies to develop and implement regulations on CITES-listed shark and ray species; and Activity 2.3 Train fisheries middlemen and exporters to improve their knowledge on implementing regulations for CITES-listed shark and ray species**

With co-financing from DEFRA IWT, WCS and the Attorney General Taskforce office developed a joint, in-house, advanced law enforcement training program for prosecutors, called “In House Training to Increase Prosecutors Capacity in Handling Wildlife Crime Cases”, which

aims to build prosecutors' capacity to deal with wildlife crime cases while also raising awareness among prosecutors of the state of wildlife crime in Indonesia. Through this program senior law enforcement officials, wildlife experts, judges, and counter-wildlife crime practitioners from NGOs across the country are being brought together to provide enforcement training to public prosecutors. The new program will be integrated into existing institutional training, and build capacity within our partners to continue delivering this training program in the long-term, beyond the scope of this project. The first training was carried out in Makassar (South Sulawesi) on August 8-11, 2016, involving 30 prosecutors from Sulawesi, Maluku, Bali, East Nusa Tenggara (which includes Lamakera) and West Nusa Tenggara (which includes Tanjung Luar) provinces. To date, 4 in house trainings have been carried out, involving 20 provinces and 131 state prosecutors from across Indonesia.

In early 2016, WCS and the Supreme Court also developed a wildlife trafficking module to be integrated in to the yearly training program for environmental judges. The module will be fully operational in April 2017 and the WCU serves as a trainer for delivering this module. WCS also signed a technical agreement with the Indonesian National Police (LEMDIKPOL) to develop a wildlife trafficking curriculum.

In East Flores Regency, NTT, which is a hotspot for illegal manta ray exploitation and trade, the WCU have been conducting regular joint meetings – both formally and informally - with regency, district and sub-district level law enforcement officers from the police and MMAF in order to raise the profile of marine wildlife crimes, build buy-in and capacity for implementing elasmobranch regulations within relevant agencies, and develop an integrated team for effectively conducting marine patrols in illegal activity hotspots. On 7–9 November 2016, the WCU also provided training for community monitoring groups (known in Indonesia as 'Pokmaswas') in East Flores Regency. The *Pokmaswas* are groups of local volunteers who conduct basic marine monitoring and provide information to law enforcement agencies on illegal fishing activities. The training focused on building capacity for monitoring and surveillance, and thus improve the *Pokmaswas*' ability to contribute effectively to protecting their marine resources. In February 2017 the WCU also conducted a socialisation event in Adonara, NTT, which is a hotspot for local trade of protected marine species. The event brought together a range of stakeholders - local government agencies, fishers and traders – to improve knowledge and awareness of fishing and protected species regulations, including prohibitions against certain fishing techniques, such as trawling, blast fishing and poisons, and endangered species regulations such as protection of turtles, dolphins, manta rays and whale sharks. This work was supported with co-financing from the Paul G. Allen Family Foundation.

Through on-going informal meetings the WCU continue to build collaborations with district and provincial law enforcement agencies across Indonesia, to build understanding of and support for protected species regulations.

#### **Activity 2.4 Assess the impact of awareness-raising campaigns and training events.**

Baseline Knowledge, Attitude, Practice (KAP) surveys were not conducted in Year 1 of the project to assess this, as initially planned. Instead, indicators of knowledge and behaviour were covered in the household socioeconomic survey, which will be re-surveyed in Year 3, and used

alongside other indicators of behavioural change such as landings, fishing behaviour, trade, trading prices and arrests, to assess changes in attitudes and practices as a result of the project.

**Activity 2.5 Publish and disseminate law enforcement achievements, to promote the importance of abiding by shark and ray regulations among the wider community, and to create a deterrence effect. Emphasis will be placed on Indonesian websites, newspapers, TV or radio and social media, as well as regional and international press.**

The law enforcement achievements of Indonesia's Wildlife Crime Unit received significant media attention during the reporting period, with all cases leading to the prosecution of traders being communicated through a range of national and international media outlets, including websites, newspapers, television, radio and social media. During the report period, 161 articles relating to conservation of threatened and protected elasmobranchs were published by the international and national media, including The Guardian, The Daily Mail, Kompas, Mongabay, the BBC and National Geographic. The major whale shark bust (see Activity 3.2) received particularly significant attention, including an Instagram post by Leonardo DiCaprio about our work, which received more than 250,000 likes (<https://www.instagram.com/p/BHKwFtjDsWY/?taken-by=leonardodicaprio>).

Example articles:

- Indonesian press:
  - NTT one: <http://www.nttone.com/polda-ntt-amankan-25-set-sisik-penyu-ilegal/>
  - Metro TV News, Jakarta: <http://news.metrotvnews.com/peristiwa/ZkeJr5ZK-hiu-paus-dipelihara-secara-ilegal-dalam-keramba-di-maluku>
  - Tribunnews: <http://www.tribunnews.com/regional/2016/04/07/satwa-dilindungi-jadi-bahan-kosmetik-untuk-dijual-hingga-asia-timur>
  - BBC Indonesia: [http://www.bbc.com/indonesia/vert\\_earth/2015/06/150529\\_vert\\_earth\\_hiupari](http://www.bbc.com/indonesia/vert_earth/2015/06/150529_vert_earth_hiupari)
  - Kompas: <http://regional.kompas.com/read/2017/03/12/19122671/berau.larang.perburuan.semua.jenis.hiu.dan.pari>
  - Mongabay: <http://www.mongabay.co.id/2017/03/21/pemerintah-larang-ekspor-pari-mobula-dan-turunannya-kenapa/>
  
- International press:
  - The Guardian: <https://www.theguardian.com/environment/gallery/2016/jun/06/rescued-whale-sharks-released-back-into-the-ocean-in-pictures>
  - National Geographic: <http://news.nationalgeographic.com/2016/06/investigation-whale-sharks-trafficking/>

During the reporting period, the WCU also gave three presentations related to sharks and rays protection at three international conferences, including: CITES CoP 17 in Johannesburg (September 2016); IUCN World Conservation Congress in Hawaii (September 2016); and the Hanoi Conference on Illegal Wildlife Trade (November 2017). The conference audiences spanned civil society, academia, NGOs, and government/policy, and the WCU shared

information on techniques used, and achievements and lessons learned in Indonesia from investing and arresting suspects, assisting legal cases and conducting marine patrols. The Darwin Initiative was acknowledged as a funder.

**Output 3: A new “Marine Wildlife Crimes Unit” (marine WCU) has been established and is focusing on high-profile prosecutions of major manta/shark traders.**

**Activity 3.1 Create informant network to monitor shark and ray trafficking in key areas. Produce an assessment of the current trade networks.**

Supported with co-financing from the Paul G. Allen Family Foundation, the marine WCU informant network continues to operate in key shark and ray landing and trading sites throughout the country, and expand further in to new strategic locations based on up-to-date intelligence. The marine WCU now operates in more than 30 sites across 14 provinces: Banten, West Java, Central Java, Yogyakarta, East Java, DKI Jakarta, Bali, NTT, NTB, South Sulawesi, South East Sulawesi, North Sulawesi, Papua and Maluku, with a particular focus on major landing sites (e.g. Lamakera, NTT) and international trade hubs including Jakarta, Cilacap, Indramayu, Pangandaran, Surabaya, Bali, Lombok, and Sidoarjo.

An overview of the trade network has been developed through compilation and analysis of intelligence data using IBM i2 software, and the assessment of the trade network continues as further information is collected through intelligence and investigations. We are now working on using innovative network analysis techniques to estimate the size of the total illegal network, based on the data we have.

**Activity 3.2 Provide technical assistance and information for law enforcement officers in intelligence, surveillance, apprehension and processing of evidence.**

The WCU continued to provide technical assistance to Indonesia’s law enforcement agencies (including MMAF, the marine police, and the police) in marine wildlife crime investigations and operations. During the reporting period, the WCU, in collaboration with Indonesian law enforcement agencies, conducted 15 sting operations. A total of 23 suspects were arrested during the operations. To date, 16 suspects were successfully sentenced and received administrative sanctions – including prison time and fines. Four suspects are still being processed through the legal system, and three suspects continue to be investigated by the marine police. Those apprehended include bomb fishers; manta fishers; traders of manta ray products; traders of critically endangered Largetooth Sawfish; and a company involved in illegally obtaining and trading two live whale sharks. The whale shark case was the result of a particularly sophisticated 18-month investigation, supported by the WCU, which resulted in the confiscation and release of two illegally-caught whale sharks, and the arrest of the company owner in May 2016. MMAF won the pre-trial against the whale shark suspect in August 2016, and the MMAF Civil Investigator is continuing investigations and finalisation of legal documentation. MMAF also continues to pursue a second company owner also thought to be involved in the case.

Evidence was successfully seized in all cases, and has been or is currently being processed for use in legal cases (see further information under Activity 3.3).

**Activity 3.3 Assist the law enforcement officers to complete legal documents for each trafficking case, and maintain strong communications with prosecutors and judges to**

**ensure that all cases are processed and adjudicated promptly and in accordance with law.**

Of the suspects apprehended between April 2016 and March 2017 (as outlined in Activity 3.2), sixteen illegal traders received prison sentences and fines, and administrative sanctions during the reporting period, which is indicative of efficient documentation, communications, processing and adjudication. Four illegal fishers also received warning letters, with other legal cases continuing to progress. During all cases the WCU regularly updates the Attorney General Office (AGO) on the progress of the prosecutors handling the cases, to make sure the AGO is fully aware, can monitor prosecutors' performance and ensure all cases are handled appropriately.

Through detailed knowledge of Indonesia's legal system, the WCU policy and legal team also support law enforcement agencies to implement a multi-law approach for handling shark and ray wildlife crimes, to levy maximal sanctions against suspects. For example, in August 2016 an individual was arrested by customs officers in Surabaya attempting to transport 35 sacks of hammerhead shark fins out of the country. By advising use of the Customs Act rather than MMAF Ministerial Regulations, the WCU succeeded in assisting the case into the court. It was the first wildlife crime case in Indonesia to be handled by customs using the Customs Act, and the suspect was sentenced to two years in prison and US\$38,000 in fines. If the case had been handled by MMAF alone, the punishment under MMAF Ministerial Regulations alone would have been less severe.

The "*In House Training to Increase Prosecutors Capacity in Handling Wildlife Crime Cases*" as developed by WCS and the Attorney General Taskforce (See Activity 2.2) also contributed to building prosecutors' capacity to deal with wildlife crime cases efficiently and effectively. To date, around 20% of trained prosecutors handled wildlife trafficking cases in eastern and western Indonesia, including marine cases.

**Activity 3.4 Support MMAF and the Attorney General's Office to develop a tracking database, to record information on marine species crime cases, action taken by Indonesian law enforcement agencies, and the results (arrests, prosecutions, fines, etc.).**

The WCU continues to maintain a comprehensive database of all marine wildlife crime cases including dates, locations, crime type, suspects, species, sentences and fines. WCU updates and records any post-arrest information, including legal document preparation process, the progress of civil investigator and prosecutor consultation, and the trial. Intelligence data continues to be collected from multiple sources, including WCU field officers and government agencies; collated and analysed using IBM i2 software; and used to support enforcement operations. This year, the WCU also expanded their sources for intelligence collection, with the WCU's Cybercrime Specialist and i2 Intelligence Officers working with MMAF, Customs, and INP to download and analyse information from suspects' cell phones.

These comprehensive databases, coupled with the WCU's analytical capabilities, have now evolved into a national wildlife trafficking Operations Room operating from the WCU's headquarters. Supported by i2 intelligence officers, and cybercrime and GIS specialists, the Operations Room acts as a national hub for receiving and analysing intelligence reports regarding wildlife crime, and disseminating the reports to WCU field agents and Indonesian law enforcement agencies. Various law enforcement agencies, including INP, Customs,

Quarantine, and PPAK, regularly access and use the WCU's intelligence database, with WCU intelligence officers helping to estimate the scale of criminal networks, identify the role and level of specific individuals within the network, and define targets for operations. For example, in May 2016 the WCU presented the sharks and rays criminal network to MMAF, with on-going follow-up meetings to discuss arrest targets and next steps.

**Activity 3.5 Produce an assessment of how trade networks have changed after three years of enforcement.**

[Activity to be carried out in Year 3]

**Output 4: At least 100 manta/shark fishers have transitioned to alternative sustainable fisheries or other livelihood practices, and support structures are in place to help other manta/shark fishers to make the transition.**

**Activity 4.1 Produce an assessment report on the opportunities for manta/shark fishers to transition to sustainable fishing and other livelihoods.**

During the reporting period the socioeconomic assessment of fishers in Tanjung Luar was finalised, and a report produced detailing findings and recommendations. The results indicate that while shark fishers in Tanjung Luar acknowledge that their catch is declining and becoming less profitable, and would therefore welcome alternatives that are feasible, adapted to existing capacities and institutions, and have market appeal, their *ability to transition*, and their *ability to generate increased income* from a livelihood transition is limited. More specifically:

1. Shark fishers only make up a small proportion of the fisher population in Tanjung Luar (5%) and earn a slightly higher average income than non-shark fishers, and are also generally wealthier. Income for boat owners and investors is significantly higher in the shark industry than for other fisheries, and the boat owners and investors are few.
2. In many cases, a strong patron-client relationship exists between fishers and owners/investors. The relationships tend to be based on family ties or debt-dependency, and create power asymmetries and a cycle of dependency
3. Shark fishers tend to be younger and are more likely to be migrants
4. Shark fishers have limited capacity and aspirations to leave shark fishing, or the fishing industry in general: When asked how they would adapt if their catch declined by more than 50%, 81% of shark fishers in Tanjung Luar reported that they would 'fish as usual'. 48% of shark fishers reported that they have no interest in other industries, while the majority of the remaining shark fishers (27%) reported that they were only interested in other forms of fishing or fish trading. Their primary constraints for adaptation were reported as lack of skills and lack of capital.
5. There are currently few disincentives for reducing shark exploitation at the fisher level, as most regulations for shark protection primarily focus on international trade and on a small number of species. The majority of target species remain unprotected, and there is a sufficient domestic market to drive continued exploitation of species protected by export bans alone. What is more, species-specific regulations are difficult to implement at the fisher level, since fishing gears are largely non-selective, and fishermen do not (and largely cannot) exhibit species preferences per se. Therefore, species-specific trade or exploitation bans alone are unlikely to reduce mortality of threatened and protected species.

6. We are yet to identify any feasible marine-based alternatives to shark fishing that are both financially and environmentally sustainable: the stock statuses for other fisheries in the region are classified as overfished (yellow fin tuna and squid) or uncertain due to a lack of information. It is therefore inappropriate to increase the capacity of other fisheries until there is improved knowledge on other fisheries and/or some form of management is in place or under development. At the same time, the shark industry in Tanjung Luar remains more profitable than non-shark fisheries, particularly at the level of the boat owners.

These findings indicate that a) power and profit is concentrated in the hands of a small number of boat owners and investors, who have little incentive to leave the trade b) the labour market for shark fishing crew is competitive and economically attractive, such that even if some shark fishers exit the fishery and transition to an alternative, the industry is likely to continue to operate due to high profits for investors and high substitutability of labour c) there are few alternatives to shark fishing that are both environmentally sustainable, feasible, and economically and socially attractive to shark fishers. In summary, creating viable livelihoods diversification strategies for shark fishers in Tanjung Luar that are adapted to existing capacities, have market appeal, and reflect people's aspirations is challenging.

In November 2016 research findings from the socioeconomic assessment were presented at an international workshop in Hanoi entitled 'International Wildlife Trade - Beyond Enforcement', which aimed to explore how best to engage indigenous peoples and local communities living close to wildlife or illegal wildlife trade routes in order to better combat the illegal wildlife trade. The Darwin Initiative/UK AID was acknowledged as a funder at this event, and is explicitly acknowledged as a funder in the final report, with the logo appearing alongside WCS's logo.

Since other forms of fishing or fish trading were identified as the most desirable livelihood diversification options during the socioeconomic assessment, WCS initiated a collaboration with [Yayasan Masyarakat dan Perikanan Indonesia](#) (Society and Fisheries Indonesia, MDPI) in September 2016 to further explore value-added fisheries diversification opportunities. MDPI are an Indonesian foundation focusing on empowering fishing communities to achieve sustainability by harnessing market-driven incentives. MDPI primarily supports the development of value-added, responsibly-sourced supply chains, and connects small-scale fisheries to these supply chains to support economic development, social stability and ecological sustainability in coastal communities. MDPI currently operates in 22 sites across six provinces in Indonesia (including West Nusa Tenggara) implementing fisheries improvement programs, creating access to sustainable and fair trade markets, and improving monitoring and traceability. With co-financing from the Paul G. Allen Family Foundation, WCS commissioned MDPI to conduct rapid assessments of the potential for sustainable alternatives fisheries for Tanjung Luar, and, to support the work of Misool Foundation, Lamakera. Two reports were produced with conclusions and lessons learned, and practical recommendations.

In Tanjung Luar, the main findings were:

1. Shark fishermen are unlikely to diversify to tuna fisheries since the barriers to entry are

too high - it would require significant investment in capital equipment (e.g. new boats) and training. Tuna is also classified as overfished in the region according to the Indian Ocean Tuna Commission.

2. The squid fishery is currently not economically appealing as an diversification option, as the number of squid fishermen has increased in recent years, and fishers have noticed a recent price drop.
3. The option of pursuing market certifications for the shark fishery would be difficult, given catches of some CITES Appendix II species. The amount of work required to bring the fishery to the required standard may not be worth the returns, in the opinion of the fishermen, given that there is no guaranteed price premium for them upon achieving certification.
4. Fair Trade USA have been approached on the possibility of engaging a shark fishery in the certification process, however, the standard is still deemed too young to engage in a potentially high risk and high interest fishery such as shark. Also, Fair Trade works on the premise that the market will pay a premium for the product which comes from a fishery which has been audited to comply with a set of standards which aim for social and environmental improvement. At present, it seems unlikely that the current buyers of shark products from the Tanjung Luar fishery are interested in sustainability, or would be willing to pay a premium.

Possible recommendations included:

1. **Quality Improvement** of shark catch through better availability of ice and storage facilities, potentially resulting in a better price in the auction.
2. **Capacity building** for financial management and establishing cooperative associations.
3. **Understanding opportunities for squid** by improving the quality, handling and processing of the squid already caught in Tanjung Luar, which could enable access to Indonesia's squid export market, increase the value from the squid fishery, and create livelihood opportunities in processing rather than in increasing fishing.
4. **Investigating potential for aquaculture development** in the locality, assessing types of infrastructure available and types of aquaculture that may be suitable
5. **Running a Fisheries Improvement Project or Fair Trade project for squid/tuna**, although this would require considerable investments with no guaranteed price premium

In Lamakera, the main findings were:

1. Most fishers in Lamakera are opportunistic, taking multiple gears with them on a given trip - this means the fishers are open to new approaches, gears and methods, and allows potential for exploring other fisheries and new supply chains of high value species
2. The status of some species caught in Lamakera is either overfished or unknown. For fisheries where stock status is not known, it is important that adequate data is collected to be able to make informed decisions on fishery exploitation levels and fisheries management, to ensure that any interventions don't have unintended consequences for



other fisheries.

3. Lamakera fishers have adequate skills for handline fishing, but do not have skills for pole and line tuna fishing. The traditional vessels in Lamakera are also adequate for handline fishing but are less suited to pole and line fishing, which requires a holding tank for live bait.
4. The supply chain is relatively open – fishers are largely free to sell products to any buyer they please, since most fishers own their own vessels
5. There is minimal/no handling or quality control by the fishers, meaning they receive a low price for their catch
6. Fishers specifically requested capacity building and training (e.g. fishing techniques, handling, organisational skills)
7. All stakeholders expressed interest in programs such as Fair Trade or Marine Stewardship Council certification, which would be possible for fish stocks in two of the Fisheries Management Areas in the region.

Possible recommendations included:

1. **Quality improvement** through ice-making facilities, providing holds or cooling boxes on the vessels and/or handling training
2. **Develop the potential of the local demersal fishery** as a diversification option
3. **Investigate the aquaculture potential** for the locality, which could support the regions strong pole and line fishery
4. **Invest in infrastructure** including electricity and water supply
5. **Run a Fisheries Improvement Project or Fair Trade project** for tuna

Further details can be found in MDPI's assessment reports (available on request). The conclusions and recommendations of these assessments are being used to inform Activity 4.2.

At the same time, WCS is also looking at other, more holistic, options for incentivising sustainability and reducing poverty in Tanjung Luar, including the development of community-led institutions for sustainable shark fishing and better overall management of the fish market (See Activities 4.2 and 4.3), as well as investments in infrastructure and generally improving the condition of the fish landing site and market.

#### **Activity 4.2 Implement targeted livelihood assistance and incentive programs to transition households to alternative sustainable fishing or non-fishing practices, providing long-term livelihood security.**

Although planned for Year 2 of the project, delivering this activity has proven challenging since our research and scoping has indicated that some of our initial project assumptions were incorrect for the Tanjung Luar shark fishery (see Activity 4.1 and Section 3.4; Outcome assumptions 4 and 5). As such, we have not been able to transition shark fishing households in Tanjung Luar to alternative livelihoods this year. Nonetheless, we have begun developing community institutions through which we hope to channel concepts of, and incentives for, long-term sustainability (See Activity 4.3). We will also put a greater focus on understanding the role of women in the fishery, and engaging women in making decisions about investments in

community development and incentive mechanisms. While alternatives to shark fishing *per se* may be challenging in Tanjung Luar, embedding long-term sustainability in to shark fishing practices and improving the overall condition and well-being of the fishing community remains achievable. Further, addressing some of the broader community development issues in Tanjung Luar - such as health, sanitation, infrastructure and participation in decision-making – will not only contribute significantly to poverty alleviation, but also be an important pre-requisite for improving the overall condition, value and long-term sustainability of the fishery.

We also plan to build on our collaboration with MDPI to gather more information on the other fisheries in Tanjung Luar - particularly tuna and squid – and try to add value to those fisheries through quality improvement measures, in order make the profit margins more competitive with those of shark fishing.

Our project partner in Lamakera, Misool Foundation, are working on preliminary steps for implementing MDPI's recommendations, including providing subsidised ice facilities for fishers complying to fisheries regulations. (N.B. WCS is supporting this work through a sub-grant from the Global Partnership on Sharks and Rays, and coordinating closely with Misool Foundation through regular joint meetings, and providing informal technical support on strategic planning and socioeconomic and livelihood issues).

**Activity 4.3 Put in place long-term sustainability mechanisms, by embedding interventions in customary fisher institutions and other mechanisms (e.g. microfinance) to enable continuing support after the end of the project.**

A WCS community officer continued to be based in Tanjung Luar to build relationships and trust with the fishing community, and develop and in-depth understanding of local institutions and practices. We have noted that there are no existing institutions or mechanisms for community decision-making regarding the shark fishery in Tanjung Luar, and feel this is an essential pre-requisite for introducing and implementing sustainability and ensuring participation and fairness. To address this, informal discussions have been on-going since January 2017 with fishers, boat owners and buyers to deliver updates on sharks and rays regulations and landings data, and begin group discussions about fisheries issues and concepts of sustainability. Through this informal process, we hope to initiate the development of a shark fishery management association, which will include fishers, boat owners, traders and investors, to serve as a forum for discussion and decision-making regarding management of the shark fishery, an institution through which incentive programs can be developed and implemented, and ultimately lead to a vision for a sustainable shark management in Tanjung Luar. Formal meetings for developing this group will begin in May 2017.

Considering improving sustainability and community well-being more broadly, we have also begun informal discussions with stakeholders involved in managing and using the Tanjung Luar landing site, processing facilities and fish market in general. The fish market is in a poor condition, and many people, including women and children, use and work in the fish market every day. What is more, the poor condition results in lost value for the different species landed and processed there, since the landing site is unhygienic and there are no facilities or practices for maintaining quality. There is currently a lack of investment in the fish market, and no

institutions or mechanisms in place for the community to participate in making decisions about fish market management. We intend to start a dialogue about the condition and management of Tanjung Luar fish market, involving all stakeholders and users, to develop a community-led institution for better managing the fish market going forwards. We will focus particular efforts on better engaging and empowering women in making decisions about the management of the fish market, and community development investments. We anticipate that investments in the fish market, and in broader community development, could improve the overall well-being of the community, add value to the fishery, and act as a mechanism for channelling incentives for sustainable practices.

We began scoping work in Aceh to collect information on fisher behaviour and trade chains, and build relationships with relevant communities and institutions, including the Panglima Laot. We conducted scoping in 4 districts in Aceh Province: Aceh Besar, Banda Aceh, Aceh Jaya and Aceh Barat. A total of 6 ports were recorded as shark and rays landing sites and information was collected on the fisheries and any customary practices (e.g. boat size, crew size, trip length, gears), trade (e.g. buyers, products) and the roles of different stakeholders and institutions within the trade chain. This preliminary information will help to strategically focus future interventions.

#### **4.4 Information exchange and learning events to spread awareness about the project approach and encourage other manta/shark fishers to also begin to transition to other livelihoods.**

[Activity to be carried out in Year 3]

#### **Output 5. The conservation and social outcomes of the project are evaluated.**

##### **Activity 5.1 Conduct monthly shark and manta fisheries catch surveys at target sites.**

WCS continued daily recording of elasmobranch landings in Tanjung Luar using our team of trained enumerators, and continued to collate this data in a comprehensive landings database. Data on the catch is collected, including species, size, maturity, gender, along with additional information on fishing behaviour which includes type of boat, fishing grounds and gears used. To improve the efficiency and reliability of data collection and collation we have established a system for collecting data via a mobile phone app, which builds on a similar successful initiative for snapper and grouper fisheries monitoring in Sumbawa. This information feeds directly in to a newly-developed website, which summarises data by species, gear and year (<http://www.data-ikan.org/hiu/>) and makes data readily available for management.

Since January 2017 WCS re-established daily shark and ray landing surveys in two sites in Aceh: Lampulo in Banda Aceh and Meulaboh in Aceh Barat. Fishing data and biological data are recorded, including fishing ground, fishing trip, operational costs, species, length, maturity and sex.

Through a data sharing agreement with Misool Foundation, who have been running a manta ray research and conservation project in Lamakera since 2014, WCS is also able to access and use data on manta ray landings and trade in this site for monitoring and evaluation.

**Activity 5.2 Undertake surveys, analyse and assess changes in shark and ray catch landings, prices and demand in response to changes in stakeholder knowledge and capacity, law enforcement and awareness raising activities**

WCS continued to gather data on gross revenue from all shark fishing trips in Tanjung Luar, and monitor the price of shark and ray products in local markets every month. The WCU also continued to gather data on trading prices for illegal elasmobranch products during investigations and operations.

From April-September 2016 an MSc student from Imperial College London conducted a research project entitled “Evaluating the impact of wildlife policy: the case of illegal manta ray catch and trade in Indonesia”. The study presents: a) the first framework for monitoring illegal manta ray catch and trade in a source country; b) a preliminary assessment of the impact of Indonesia’s manta ray regulation on fishing effort and onward trade in two case study sites (including Tanjung Luar); c) recommendations for further monitoring and implementation of the regulation, and for evaluating the impacts of wildlife trade regulations in the future. The study involved a mixed methods approach, using interview and survey data, landings data, trade data and law enforcement and intelligence data. We will use the framework and recommendations to conduct on-going monitoring and future impact analysis as implementation of the manta ray regulation continues, and plan to publish a peer-reviewed article once more longitudinal data has been collected and analysed. The results of this research were presented at Imperial College London and at a seminar with The Manta Trust in Labuan Bajo, Indonesia, with the Darwin Initiative acknowledged as a funder.

**Activity 5.3 Design socio-economic surveys to examine fisher behaviour, attitudes, social norms around fishing and other livelihoods, and household well-being and occupational status, in partnership with Imperial College.**

[Activity completed in Year 1]

**Activity 5.4 Conduct socioeconomic surveys of fisher behaviour and household well-being and occupational status in years 1 and 3, for intervention and control households.**

[Activity to be carried out in Years 1 and 3]

**Activity 5.5 Analyse and assess changes in fisher behaviour and household well-being and occupational status in response to the livelihoods transition intervention.**

[Activity to be carried out in Years 1 and 3]

**Activity 5.6 At least one peer-reviewed paper produced in partnership with Imperial, by Indonesian scientists undertaking visiting research fellowships at Imperial.**

[Activity to be carried out in Year 3. N.B. collaboration has now changed to University of Oxford as per 2016 Half Year Report]

**3.2 Progress towards project Outputs**

Output 1:	Regulations for CITES-listed sharks and mantas have been developed or revised to ensure enhanced legal protection for at least four species			
	Baseline	Change recorded by 2017	Source of evidence	Comments
Indicator 1.1. Reports on CITES policy and	None	[Report produced in Year 1]	Report produced in Year 1	Complete in Year 1

regulatory framework				
Indicator 1.2. Government-Civil Society meetings on CITES	None	4 meetings, 1 focus group, 7 public consultations	Meeting sign-in sheets, photographs	
Indicator 1.3 Government scientific papers	1 – for manta rays	2 Policy Analysis technical reports produced	Reports	

Output 2:	Local government officials, traders and fishers have sufficient awareness and training in the new regulations and the applied management actions required to adequately manage shark and manta fisheries.			
	Baseline	Change recorded by 2017	Source of evidence	Comments
Indicator 2.1 Training modules produced and being used	None	3 training modules produced and being used: 1. <i>'In House Training to Increase Prosecutors Capacity in Handling Wildlife Crime Cases'</i> developed with the Attorney General Taskforce office 2. Wildlife crime syllabus for environmental judges, developed by Supreme Court and WCU. 3. Capacity building for NDFs for CITES Appendix II Sharks and Rays	Workshop sign-in sheets, photographs	
Indicator 2.2 Trainings being conducted at landing sites		10 trainings conducted through public consultations, FGDs and socialisation events in Tanjung Luar, Aceh and Adonara	Event sign-in sheets, photographs	
Indicator 2.3 Number of		163 government officers from	Event sign-in sheets,	

government officers trained		Customs, MMAF, prosecutors, Police trained in two training workshops	photographs	
Indicator 2.4 Number of press articles		161 press articles in local and international media	Online articles	

Output 3:	A new "Marine Wildlife Crime Unit" has been established and is focusing on high-profile prosecutions of major manta/shark traders.			
	Baseline	Change recorded by 2017	Source of evidence	Comments
Indicator 3.1 Marine WCU established	No marine WCU	[Marine WCU established in Year 1 and continues to be operational]	[Marine WCU established in Year 1]	Complete in Year 1
Indicator 3.2 Investigations into traders of CITES-listed shark and rays species	None	15 arrests for illegal elasmobranch fishing and trading, involved 23 suspects, 16 suspects were sentenced	Wildlife Crime database and legal documentation	
Indicator 3.3 Wildlife Crimes Database established	None	[Database established in Year 1 and continues to be operational, with an Operations Room now established at WCU head quarters]	[Database established in Year 1 and continues to be operational]	Complete in Year 1

Output 4:	At least 100 manta/shark fishers have transitioned to alternative sustainable fisheries or other livelihood practices, and support structures are in place to help other manta/shark fishers to make the transition.			
	Baseline	Change recorded by 2017.	Source of evidence	Comments
Indicator 4.1 Assessment report on shark fishers' livelihoods	None	Assessment of 527 households completed in Year 1. Report finalised in Year 2, with further assessment of sustainable fisheries options.	Livelihood report and sustainable fisheries reports	
Indicator 4.2 Livelihood transitioning programs	None	None		Livelihood transitioning programs not yet

				functioning, but we expect progress over the coming year as community institutions develop.
Indicator 4.3 Customary fisher institutions are empowered	None	Shark fisher institutions under development in Tanjung Luar		

Output 5:	The conservation and social outcomes of the project are evaluated.			
	Baseline	Change recorded by 2017	Source of evidence	Comments
Indicator 5.1 Shark and ray fisheries catch monitoring program established	None	[Monitoring program established in Year 1 and continues to be operational]	Landings databases and monthly reports from data collectors	
Indicator 5.2 Assessment of fisher attitudes and behaviours	None	[Assessment of households completed in Year 1 and to be reassessed in Year 3]	Livelihood report	
Indicator 5.3 Peer reviewed paper	None	None		Two papers in progress
Indicator 5.4 Information exchange and lessons learned events	None	None		Lessons learned events planned for Year 3

### 3.3 Progress towards the project Outcome

Outcome:	Enhanced law enforcement and fisher transition to more sustainable livelihoods causes a 50% reduction in catches of threatened elasmobranch species at major Indonesian ports whilst increasing fisher incomes by >25%.			Comments (if necessary)
	Baseline	Change by 2017	Source of evidence	
Indicator O.1 Number of new or revised government regulations on CITES shark and ray species	Two – for mantas and whale sharks	Three new/revised regulations signed, three other revisions in progress	Signed regulations	Outcome already achieved
Indicator O.2 Knowledge of	5%	unknown		Will be assessed in Year 3 through

shark and ray regulations				socioeconomic survey
Indicator O.3 Prosecutions of traders of CITES-listed sharks and rays	None	16 successful prosecutions, and 4 warnings	Wildlife Crime database and legal documentation	Outcome already achieved
Indicator O.4 Transition of shark and ray fishers	None	None		Full livelihood transitions may not be achieved due to unmet assumptions regarding viable alternatives (see section 3.4), but other options for incentivising sustainability and reducing poverty will be developed in year 3.
Indicator O.5 Landings of CITES-listed shark and ray species at key sites	924 landings in 2013 of CITES-listed sharks and rays in Aceh and Nusa Tenggara Barat (or 731 in 2014 in Nusa Tenggara Barat only).	130 recorded manta ray landings in Lamakera in 2016-2017 vs. estimated 250 in 2015-16 = decline of 48%  0 recorded manta ray landings in Tanjung Luar in 2016-2017 vs. 8 recorded in 2015-16 = decline of 100%	Landings databases for Tanjung Luar and Lamakera	The baseline for the indicator has changed since project inception as there are now additional CITES-listed species since CoP 17 in November 2016. Manta rays have been chosen as the indicator species, since they were CITES-listed prior to the project, have been banned under domestic measures and have been a particular focus of enforcement measures under this project.

### 3.4 Monitoring of assumptions

#### Outcome Assumptions

**Assumption 1:** The project assumes that the government is willing to strengthen and implement shark and manta fisheries regulations. WCS has been a key partner supporting MMAF and the CITES Scientific Authority (the Indonesian Institute of Science; LIPI) with the development of national assessments of the scientific case for introducing regulation, including evaluation of the costs and benefits of protection (e.g. the value of the trade versus the potential benefits from marine tourism). This led to the MMAF decision to protect whale sharks and mantas in 2013 and 2014 respectively. Similar legal routes will be used to introduce regulations for other species, such as CITES-listed sharks.



Comments: This assumption is broadly true, and MMAF has shown its continued willingness to develop and implement shark and ray regulations throughout 2017, as shown by the policy outcomes of this project. However, the formal transfer of management authority for aquatic species from MoEF to MMAF remains challenging, predominately due to differences in authority and capacity between MMAF and MoEF, which are impeding the process. Delays in transfer of authority prevent the passage of some additional regulations, such as the revised protected species list, however it is essential that MMAF is fully prepared for the transfer, and has sufficient capacity for taking on management authority, before it takes place. Further, developing and implementing additional regulations may become more challenging going forwards, as the government recognises the potential negative socioeconomic impacts on shark fishing communities, particularly for the elasmobranch species recently added to CITES Appendix II at CoP 17, which contribute up to one third of total catch in Tanjung Luar. The government may be reluctant to introduce more, strict species-based regulations until a clear plan for supporting affected shark fishing communities throughout the country can be developed.

**Assumption 2:** Local Government officials and fisheries agencies must be willing to engage in awareness-raising about new manta/shark regulations and support prosecutions. Local government's primary concern is not to penalize against poor fishers, hence the developed of improved livelihoods for manta/shark fishers is critical in order to secure their support.

Comments: This assumption remains broadly true. Some local government officials are, understandably, reluctant to support law enforcement against fishers within their communities, but are willing to support socialisation and awareness-raising activities.

**Assumption 3:** Government law enforcement agencies (Indonesian National Police, Attorney General) must also be interested in undertaking prosecutions of manta/shark traders under the revised regulations, and doing so in a fair and uncorrupt manner.

Comments: This assumption remains broadly true, as evidenced by the prosecutions completed during the reporting period, and the increases in sentences and fines levied over the project period. However wildlife crime is still not considered a major priority by some law enforcement officers and agencies, and the fines and sentences for marine wildlife crimes are not always consistent or proportionate.

**Assumption 4:** Fishers must be willing and able to transition to other fisheries or non-fishing livelihoods, and able to generate increased incomes from these livelihood transitions if provided with appropriate support.

Comments: Results from social surveys and assessment reports on opportunities for fishers to transition to sustainable livelihoods (See Activity 4.1) indicate that various aspects of this assumption are currently not true. In particular, the *ability of fishers to transition*, and their *ability to generate increased income* from a transition is limited, because a) power and profit is concentrated in the hands of a small number of boat owners and investors, who have little incentive to leave the trade b) the labour market for shark fishing crew is competitive and economically attractive, such that even if some shark fishers exit the fishery and transition to an

alternative, the industry is likely to continue to operate due to high profits for investors and high substitutability of labour c) there are few alternatives to shark fishing that are both environmentally sustainable, feasible, and economically and socially attractive to shark fishers.

To adapt to this challenge, we are continuing to explore market-driven opportunities for fisheries diversification through our partnership with MDPI, particularly since the market context is dynamic and new opportunities may become available as markets shift in response to new policies. At the same time, we are developing more holistic options for incentivising sustainability and reducing poverty, including develop community-led institutions for sustainable shark fishing and better overall management of the fish market (See Activities 4.2 and 4.3).

**Assumption 5:** Fisher communities and customary fisher institutions are receptive to embracing new laws on sharks and rays so long as mitigation measures are in place to ensure there are no adverse livelihood impacts.

Comments: this remains broadly true, but with some caveats and complexities. Shark fishers in Tanjung Luar are aware that their catch is declining, and would welcome measures to better manage their fishery and income stability, as evidenced by recent support from fishing groups in Tanjung Luar. However there is a limited long-term thinking and little understanding of sustainability, and since mitigation measures are proving difficult to implement, shark fisher communities are largely concerned about the adverse impact increasing elasmobranch regulations will have on their livelihoods, and do not necessarily see any benefits to the new laws. There has also been resistance to accepting new manta ray laws in Lamakera, due to strong local cultural and economic drivers of manta ray exploitation. In summary, receptivity to embracing new laws is largely place and context-dependent – gaining local support and developing appropriate mitigation measures will require approaches that are tailored to each community's needs and interests.

### **Output Assumptions**

**Assumption 1** (Output 1): WCS's support and advice on how to develop regulations for CITES-listed shark and ray species is sought and welcomed by MMAF and the other relevant government ministries.

Comments: this remains true, as evidenced by MMAF's willingness to have a WCS staff member seconded to their office to support them, and their continued request for specific technical support (e.g. providing management-relevant data, conducting applied research, building capacity for conducting NDFs etc.)

**Assumption 2** (Output 2): Local government officials, traders and fishers actively engage with and are able to learn from training and awareness-raising events.

Comments: this remains broadly true, evidenced by the high attendance at socialisation and awareness-raising events in Year 2.

**Assumption 3** (Output 2): There is sufficient interest by Indonesian, regional and international

news agencies and media companies to promote the work the Indonesian government is doing to protect manta rays and introduce domestic regulations for CITES-listed shark species.

Comments: this is still true, evidenced by the large number of media articles generated in Year 2.

**Assumption 4** (Output 3): Sufficient information can be obtained on the extent of the trade in mantas and CITES-listed sharks in Indonesia, and identity of the traders, to enable enforcement actions.

Comments: this is still true, evidenced by the intelligence collected and collated in i2, and 15 arrests in Year 2.

**Assumption 5** (Output 3): Traders in CITES-listed shark and rays stop trading protected species and focus on other fish species.

Comments: Data collected to date indicates that this assumption is true for some traders - many traders are choosing not to carry protected species, and the price of manta ray gill plates has declined - but the continued existence of an illegal trade network suggests that a small 'hard core' of traders will be likely to continue trading in protected species (see [Booth et al. 2016](#)). It is worth noting that it is increasingly difficult to get reliable information on trade in protected species, particularly manta rays, due to the sensitivity of the issue. Further, since Indonesia is a large, archipelagic country, such that implementing monitoring and enforcement uniformly throughout the country is challenging, displacement of effort to locations that receive limited monitoring and enforcement is likely. Further, for species that are currently protected by international trade bans alone, there remains a considerable domestic market for shark products which may continue to drive local exploitation and trade, and anecdotal evidence of stockpiling of fins by exporters.

**Assumption 6** (Output 4): The alternative livelihood opportunities that have been identified can be followed through into actual livelihood transitions that are poverty alleviating, risk reducing and sustainable, and that encourage further uptake by other fishers.

Comments: This assumption currently does not appear to be true for fishers in Tanjung Luar, particularly regarding achieving poverty alleviation, since shark fishing is more profitable than other industries (see comments on outcome assumption 4). However, as new international regulations from CITES CoP 17 come in to force, this may reduce the profitability of the shark industry, making other options more economically attractive, and necessitating the implementation of measures to mitigate the negative socio-economic consequences.

**Assumption 7** (Output 5): Sufficient capacity exists within the project team to design appropriate scientific monitoring programs to measure the effectiveness and impact of the project interventions.

Comments: this is true, evidenced by the support from Imperial College London, and now Oxford University (where the project advisor, Professor EJ Milner-Gulland, is now based).

Additional capacity for measuring the effectiveness and impact of the project interventions has also been added to the team in Year 2, with the hiring of Hollie Booth as a Sharks and Rays Advisor, who previously completed her MSc at Imperial College London, with supervision from Professor Milner-Gulland, on assessing the effectiveness of Indonesia's ministerial decree to protect manta rays.

Assumption 8 (Output 5): Ongoing information can be collected on shark and ray catches, prices and sales, and the behaviour of shark and ray fishers.

Comments: this assumption is partially true. Some data can be collected in certain locations, data collection is becoming increasingly challenging as awareness of regulations grows and exploitation and trade of elasmobranchs becomes an increasingly sensitive issue. Collecting reliable data on manta ray catches, prices and sales is now particularly challenging since the behaviour is illegal and fishers and traders fear enforcement. Species-specific data collection is also challenging for sharks and rays that have already been processed for trade and consumption. Species show high morphological similarity such that accurate ID of fins, gills and meat of protected species is difficult without genetic testing, which remains time consuming and expensive, and for which Indonesia has limited in-country capacity.

### **3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation**

**Biodiversity Conservation Impact:** The project has had a significant impact on the illegal trade of CITES-listed elasmobranchs and other protected marine species. Together with the two regulating Ministries, MoEF and MMAF, the project has initiated a process to develop a comprehensive framework to manage the use of elasmobranchs, and other protected marine species, for the first time in Indonesia, with considerable regulatory reform achieved during the reporting period. On the ground, the project continues to work with law enforcement agencies to implement this framework, with successful arrests and prosecutions of illegal traders, and declines in landings at major landing sites.

**Poverty Alleviation Impact:** The project had not yet made a direct impact on poverty alleviation. We will report on the final impact of this component at the end of Year 3.

## **4. Contribution to the Global Goals for Sustainable Development (SDGs)**

The project contributes towards SDG 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development. It specifically supports Target 14.4, which is to effectively regulate harvesting and end overfishing and illegal, unreported and unregulated fishing, through regulating the fishing and trade of CITES-listed shark and ray species. This is evidenced through the on-going arrests and successful prosecutions of traders of protected marine species. During Year 3, we anticipate the socioeconomic component of the project will also support progress towards Target 14.b, by improving access for artisanal fishers to marine resources and markets.

## **5. Project support to the Conventions, Treaties or Agreements**

The project is supporting the Government of Indonesia to develop domestic measures for implementing CITES regulations for shark and ray species, including: three species of hammerhead shark, two species of manta rays, oceanic whitetips, silky sharks, and all species of thresher shark and mobula ray present in Indonesian waters. This support includes: facilitating meetings and public consultations to develop new regulations for CITES-listed species, collecting and analysing scientific data to inform regulations, and building the in-house capacity of the government to implement CITES through, for example, providing training in the NDF process for the CITES scientific and management authorities and providing training in species identification for law enforcement agencies. The arrests conducted so far since the inception of this project represent the first time any enforcement has been undertaken against the trade of any CITES-listed marine species in Indonesia, and the NDFs currently being developed for mobula rays and scalloped hammerhead are some of the first NDFs to be undertaken for marine species in Indonesia. These are of high importance given that Indonesia is the world's largest shark and ray fishery and lies at the heart of the Coral Triangle.

The project is assisting Indonesia to fulfil its obligations under the CBD, in particular Strategic Goals A, B, C and E, by:

1. Raising awareness of the importance of biodiversity and conservation measures (Aichi Target 1), through the trainings and awareness-raising sessions with government officials, private sector and local communities and fisher groups.
2. Contributing towards ensuring the sustainable management of fisheries (Target 6), through developing and strengthening regulations for over-fished shark and ray species, supporting enforcement of these regulations, and facilitating livelihood diversification
3. Conservation of globally threatened species (Target 12), focusing on threatened elasmobranchs that have been targeted by the enforcement component of this project and are the subject of new MMAF regulations.
4. Gathering and synthesising data on shark and ray fisheries in Indonesia (Target 19) and bringing this Knowledge to bear on policy and practice.
5. Overall, the project is contributing towards improving the protected area networks for biodiversity and ecosystem conservation (Target 11), particularly through supporting the development on the new regulation on the utilisation of all shark and ray species, which declares all of Indonesia's MPAs shark sanctuaries, and via the actions of the marine WCU to target illegal traders, which indirectly helps to improve the effectiveness of those new marine protected areas.

WCS interacts regularly with CITES and CBD focal points through our policy advisor based within the Ministry and regular joint meetings and workshops.

## **6. Project support to poverty alleviation**

The project is designed to provide direct and indirect benefits to marginalised fishing communities, improving shark and ray fishers' economic situation in the short term whilst putting in place structures that will create conditions for longer-term financial security through more sustainable fisheries and tourism.

Direct poverty alleviation impacts have been difficult to achieve in Tanjung Luar due to the high profitability of shark and ray fishing. However, by building institutions for sustainable shark and ray fishing, and by investing in improving the overall conditions of the Tanjung Luar fish market in year 3, we hope we will support long-term resilience of the shark fishing community; improve social connectivity and participation of the community in decision-making; improve the daily working conditions of shark fishers, sellers and traders; and improve handling and quality of fish products to add economic value to the trade chain at the fisher level.

Through our partnership with Misool Foundation WCS continued to provide technical support and share lessons learned for their livelihoods diversification program for manta ray fishers in Lamakera.

Even though the livelihoods component has yet to start, the project is still providing indirect benefits to poverty alleviation by protecting valuable marine resources, which provide a source of long-term sustainable income. In particular, the tourism industry forms a significant component of Indonesia's economy, and the government intends to grow this sector considerably over the next decade, providing employment opportunities and income for people across Indonesia, and attracting international investment. Marine tourism focussed around charismatic marine megafuna is central to efforts to conserve marine biodiversity in Indonesia, and throughout the Coral Triangle, and provide income and employment to coastal communities. Indirectly, the new regulations to protect shark and ray species developed during this project, particularly the protection of manta rays and the banning of shark fishing in all Indonesia's MPAs, will help to protect hugely valuable tourism resources that generate millions of dollars in revenue and considerable employment opportunities now and in the future. For example, in Nusa Tenggara (which includes Komodo), marine tourism is calculated to generate US\$113-229 million annually, against only \$13 million for the entire Indonesian shark fishery, and marine tourism is being promoted as the only viable alternative to large-scale fisheries exploitation. Through improving protection of charismatic marine species, the project is enhancing the viability of overall conservation efforts and income and employment opportunities through the burgeoning marine tourism sector.

## **7. Project support to gender equality issues**

WCS is committed to gender equality and this is evidenced by the composition of our management and project teams. For example, the Director of WCS Indonesia, Dr. Noviar Andayani, is female; as is the project leader and Sharks and Rays Advisor for SE Asia, Hollie Booth; the team leader for the livelihoods component, Peni Lestari; and, the team leader for the policy component, Sofi Mardiah. The applied research component is also being advised by Professor EJ Milner-Gulland (Oxford University). This helps to improve the participation of women in science, and will help with career development for the Indonesian female scientists who will be publishing international standard peer-reviewed papers through our collaboration with Professor Milner-Gulland/Oxford University

Meetings, trainings and awareness-raising events also promote participation of and leadership by women throughout the stakeholder groups we work with, from local communities to government and academia. For example, at our recent NDF capacity building workshop, 11 out

of 33 participants were women, and the workshop was organised and led by a female team.

In the fishing communities in which we work women play an important role in the shark and ray trade chain, often involved in processing and selling products in landing sites and local markets. In Tanjung Luar we are working towards developing a fish market management committee, which will involve all users and stakeholders, including female processors and traders, thus giving them a voice in making decisions about management and condition of the fish market, which will ultimately affect their household income and the well-being of their families. We will also be looking in to options for targeting women for livelihood-focused interventions, including providing training for product quality improvement.

## **8. Monitoring and evaluation**

This project is implemented jointly by three WCS Indonesia project teams – the policy team (Output 1), the Wildlife Crime Unit (Outputs 2, 3 and 5) and the marine team (Outputs 2, 4 and 5). All three teams use their own specific M&E plans, which are consolidated into the results reported here. In April-October 2016, an MSc student from Imperial College London worked to consolidate different types of monitoring data available for manta ray exploitation and trade in to a monitoring framework and assess the suitability and usefulness of the data (see [Booth et al. 2016](#)). Although there are a number of challenges associated with collecting some of the monitoring data, particularly for protected species, the availability of multiple sources of data from various levels of the trade chain (e.g. landings data, price data, trade data) collected through various methods (e.g. overt and covert) enables triangulation of evidence.

There have been no significant changes to the M&E plan. In Year 3 we will continue to collect landings data, trade data and intelligence and enforcement data, as well as do follow-on socioeconomic surveys. Trends in the data will be analysed, along with the inferential weight of each data source as an indicator of project impact. One minor change is that we will no longer use KAP surveys to measure the impact of awareness-raising campaigns, as baseline surveys were not implemented in Year 1, but robust indicators of knowledge and behaviour were covered in the household socioeconomic survey, and will be re-surveyed in Year 3.

## **9. Lessons learnt**

Building on momentum from Year 1 the project has continued to have major successes in policy development, law enforcement and data collection. Key lessons from these successes include:

- **Partnerships:** The significant achievements made in policy, investigative, and judicial processes throughout this project can be attributed to the strong partnerships WCS has with government agencies and civil society organisations. This enabled us to design a project which aligned closely with their existing needs and interests, which secured commitment and momentum from the beginning, and allowed us to jointly conduct policy-relevant activities and provide support for law enforcement. WCS has continuously facilitated and led discussions and meetings with government agencies, which have instigated critical policy processes for regulatory reform for sharks and rays. For law enforcement efforts, WCS has successfully linked WCU intelligence and modus operandi

on Indonesian shark and ray trade with relevant government law enforcement agencies, and built national and global awareness of marine wildlife crime through close collaboration with journalists and media groups. To achieve policy changes, we learned that intensive communication with partners, with a combination of formal and informal approaches, is critical to maintain interest and momentum, and embedding a full-time WCS staff member within the Ministry was instrumental in achieving this. Ultimately, these success would not have been possible without the government's commitment and willingness to change, and ensuring relevant individuals and agencies receive appropriate recognition for their actions has been critical in maintaining motivation and momentum. We will continue to develop and cultivate these partnerships in the final year of the project.

- **Adaptation:** Adaptation is pivotal to circumventing unforeseen risks and barriers to success, and responding to new opportunities. Throughout the project WCS has adapted through the identification and building of new partnerships, using a range of approaches for regulatory reform (e.g. using Ministerial Decrees as a short-term solution for species protection since reforming Law No.5/1990 is a more lengthy process), understanding and capitalizing on other parts of the legal system to more successfully prosecute wildlife crimes, and building new partnerships and opportunities for livelihood diversification. We will continue to critically assess our activities in the final year of the project, and seek new opportunities.
- **Trust:** Securing the trust of communities is crucial for collecting data, particularly data on sensitive issues. The community in Tanjung Luar have been very open to our fisheries monitoring efforts, and this is largely thanks to the team's on-going work to engage the community both formally and informally on a daily basis, and create a two-way dialogue by providing them with information on their fishery and communicating information on regulations so that they can see the value in our presence. We will continue to embed ourselves within the fishing communities in which we work, in order to build relationships and trust.
- **A long-term approach:** Despite these achievements, challenges remain. For example, regulatory loopholes still exist and marine wildlife crime cases have not yet resulted in maximal fines and sentences. We also need to focus on building long-term institutional capacity for tackling wildlife crime. Further, there is not necessarily an ultimate goal or end point for sharks and rays regulatory reform – the ecological, political, and socioeconomic context for conservation is highly dynamic and long-term support is required to advise on continuous adaptation to change. For example, during the lifetime of this project CITES CoP17 resulted in the listing of 13 new shark and ray species on CITES Appendix II, which represents a huge step forward for elasmobranch conservation, but also a significant challenge for implementation. During years 1 and 2 of this project, WCS successfully supported regulatory reform for all species listed on CITES appendices at that time, but additional efforts are now required to support the government to adapt to achieve its international obligations in this new policy context. This also highlights the importance of ensuring that regulatory reform is robust to change. For example, a revision of Law no 5/1990 to formally link the categorization of Indonesia's protected species to the CITES appendices will enable automatic updating of the list in



the future, and circumvent the need for lengthy processes of reactive regulatory reform every time new species are CITES-listed. This is particularly important in the context of the export ban on whitetips and hammerheads: the original ministerial regulation has now been extended twice, requiring a new decision every time. The implementation and impact of this regulation needs to be assessed, and a longer-term approach and legal framework developed, to secure the protection of these species in to the future. Similarly, affecting behaviour change and embedding sustainable practices within shark fishing communities requires a long-term approach. Given the profitability of shark and ray fishing, and that is it still, to a large extent, completely legal in Indonesia, establishing institutions and incentives for livelihood diversification and long-term sustainability required significant investment.

- **Data:** In Indonesia there is a paucity of policy-relevant data from across the country to inform the regulation of sharks and ray exploitation and trade and to assist the government in meeting its obligations under CITES (e.g. conducting non-detriment findings). MMAF recognizes that it is challenging to develop regulations on exploitation and trade of sharks and rays without better information (e.g., on distribution and population size, resource use status, traceability, etc.) and has developed a program of research needs for species protection and management going forward. The overall lesson learned is that sharks and rays are a relatively new area of interest, and the capacity for research and monitoring in Indonesia is limited. More efforts are required to conduct applied research on sharks and rays throughout Indonesia, and build capacity within MMAF, MoEF, LIPI, and Indonesian research institutions to develop and implement policy-relevant monitoring systems, particularly for traceability and the collection of species-specific information in support of CITES NDFs. This will be crucial for informing appropriate and nuanced regulations, plans, and management in the future. We will continue to conduct robust data collection, and share this data with government agencies in order to inform policy and practice.

Identifying and implementing appropriate livelihood-focused interventions has been the biggest challenge this year (See Outcome Assumption 4). The lesson learned is that overexploitation of sharks and rays in Indonesia is a complex, multifaceted issue, which is driven by local social and economic drivers and national and global market forces. Addressing these drivers, and identifying economically and environmentally sustainable alternatives, requires dramatic changes in the attitudes and motivations of multiple user groups – from fishers, to traders, to local and international consumers. We will continue to explore locally-relevant options for livelihood diversification in Tanjung Luar, and options for addressing broader community development issues, particularly through engaging and empowering women, while also thinking about the bigger-picture of the shark and ray trade and opportunities for intervention in other aspects of the trade chain.

Data collection is also becoming increasingly challenging for some species. In particular, following the initiation of enforcement actions against manta ray traders the behaviour and identity of illegal traders has significantly changed, so that gathering information on the extent of trade of protected or CITES-listed species has become much harder. For example,

currently no mantas are being landed openly at Tanjung Luar, however this does not necessarily mean that the entire trade has been eliminated. The WCU will continue to covertly information about underground trade and we will triangulate multiple data sources in order to build a more comprehensive picture on the effectiveness of our work.

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

[Responded to through a note in the half year report]

#### **11. Other comments on progress not covered elsewhere**

N/A

#### **12. Sustainability and legacy**

The project continued to support the Indonesian government to establish long-term management capacity for analysing, regulating and controlling trade of CITES-listed marine species, in order to meet their CITES obligations. Government interest is high, reflected in on-going direct requests to WCS for support and capacity building. For example, the NDF capacity building workshop was conducted at the specific request of the government, along with requests to contribute data in support of the process. Further evidence of increased interest and capacity is reflected in the signing of collaboration agreements with various provincial and district law enforcement agencies for support from the WCU, on-going arrests and prosecutions of illegal traders.

At the community level, we are continuing to build on and develop local institutions through which to embed sustainable concepts and practices. In Tanjung Luar fisher communities frequently turn to WCS for information relating to shark and ray fishing regulations, and for facilitating their relationship and communication with the government, which reflects their interest in this project.

#### **13. Darwin identity**

The contribution of the Darwin Initiative has been widely recognised in formal government meetings, focus groups and public consultations, as a contribution from the UK Government. The UK Embassy in Jakarta also continued to be supportive. Within the WCS program, the Darwin Initiative funding is recognised as a distinct project with a clear identity, which is focused on increasing the sustainability of shark and rays fisheries.

Where appropriate Darwin logos are used on communications materials and presentations, and the UK government's contribution is noted, however much of WCS's press releases on sharks and rays focus on congratulating the government for their achievements. WCS is therefore careful not to overly credit ourselves or our donors in publicity for policy and wildlife crime achievements, since we are aiming to congratulate and motivate government and officials for taking action.

#### 14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2016 – 31 March 2017)

Project spend (indicative) since last annual report	2016/17 Grant (£)	2016/17 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs			0%	
Consultancy costs			1%	
Overhead Costs			2%	
Travel and subsistence			1%	
Operating Costs			0%	
Capital items			4%	
Others			0%	
<b>TOTAL</b>			<b>0%</b>	

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2016-2017

Project summary	Measurable Indicators	Progress and Achievements April 2016 - March 2017	Actions required/planned for next period
<p><b>Impact</b></p> <p>Globally threatened elasmobranch populations in Indonesia are protected by simultaneously reducing trade through improved law enforcement, and diversifying livelihoods, demonstrating a replicable, scalable model for other highly threatened fisheries.</p>		<p>The project has had a major impact on regulation and trade of CITES-listed shark and ray species. The project has continued to work with MoEF and MMAF to achieve regulatory reform for shark and ray species and on the ground continues to successfully investigate, arrest and prosecute illegal exploitation and trade. Landings of CITES-listed species at key landing sites are declining, providing evidence of the project's impact.</p>	
<p><b>Outcome</b></p> <p>Enhanced law enforcement and fisher transition to more sustainable livelihoods causes a 50% reduction in catches of threatened elasmobranch species at major Indonesian ports whilst increasing fisher incomes by &gt;25%.</p>	<p>1. By 2018, at least two new or revised government regulations have been approved that enhance the protected status of CITES-listed shark or ray species, against a baseline of one regulation approved up until 2014.</p> <p>2. By 2018, surveys indicate that 50% of local government officials and manta/shark fishers understand regulations regarding CITES-listed manta/shark species, against a baseline of 5% in 2014, reflecting improved enforcement capacity and knowledge of shark and ray conservation measures.</p>	<p>Three new/revised Ministerial Regulations (MR):</p> <ul style="list-style-type: none"> <li>- MR 48/2016 on export of oceanic whitetips and hammerheads</li> <li>- MR 49/2016 on status of protected fish</li> <li>- MR on limited protected of all shark species (not yet numbered at time of writing)</li> </ul> <p>62 government law enforcement officers were trained and approximately 1,500 fishers and local stakeholders participated in workshops, public consultations, focus group discussions and socialisation events.</p>	<p>Revision of Law 5/1990 and protected species list Government Regulation (GR) 7/1999 is ongoing. A regulation on the protection status of mobula rays is in progress.</p> <p>Trainings and awareness-raising events will continue.</p>

	<p>3. By 2018, government law enforcement agencies have successfully prosecuted 10 cases against major exporters or middlemen dealing in CITES-listed shark or ray species, from a baseline of 0 cases as of 2014.</p> <p>4. By 2018, at least 100 specialised shark and manta fishers have transitioned to alternative sustainable fishing or non-fishing practices, that increase incomes by &gt;25% and offer long-term livelihood security.</p> <p>5. By 2018, landings of CITES-listed shark and ray species at key sites in Aceh and West Nusa Tenggara provinces (which together comprise 20% of Indonesia's total catch) have been reduced by at least 50%, against a baseline of 924 in 2013 (or 731 in 2014 in Nusa Tenggara Barat only).</p>	<p>15 arrests involving 23 suspects completed, with 16 successful prosecutions and administrative sanctions.</p> <p>None</p> <p>130 recorded manta ray landings in Lamakera in 2016-2017 vs. estimated 250 in 2015-16 = decline of 48%</p> <p>0 recorded manta ray landings in Tanjung Luar in 2016-2017 vs. 8 recorded in 2015-16 = decline of 100%</p>	<p>The WCU will continue to investigate and facilitate prosecution of illegal traders of marine protected species.</p> <p>Efforts to provide incentives for sustainability and alleviate poverty will continue in Year 2. Indicator may not be achieved.</p> <p>Continued monitoring in Year 3, with comparison of newly CITES-listed species in 2016 vs. 2017.</p>
<p><b>Output 1.</b> Regulations for CITES-listed sharks and mantas have been developed or revised to ensure enhanced legal protection for at least four species</p>	<p>1.1 In year 1, MMAF and WCS produce a report in consultation with other key government agencies, which identifies policy and regulatory gaps, options to introduce regulation of trade in CITES-listed sharks and rays and increase the level of species protection.</p> <p>1.2 During the life of the project, at least 5 government-civil society meetings are held with the support of WCS to review the status of CITES-listed sharks and rays and identify mechanisms to regulate the trade and enhance the overall level of protection.</p>	<p>Report produced in Year 1.</p> <p>1 focus group and 7 public consultations completed with government and civil society on shark and ray regulatory reforms in relevant fishing communities.</p>	

	<p>1.3 By end of year 3, at least three government scientific papers (Naskah Akademik) have been produced Indonesian Institute of Science (LIPI, the CITES Scientific Authority) with input from WCS, the project partners and other NGOs, setting out the scientific case for trade regulation or enhanced protection measures for CITES-listed sharks and rays.</p>	<p>2 new government scientific papers produced entitled “Policy Analysis: The Needs of Regulation to Establish Limited Protection Status for Sharks” and “Policy Analysis: Legal Draft of Ministerial Regulation on Export Prohibition of <i>Mobula</i> spp. from Indonesia to Overseas”</p>
<p>Activity 1.1 Examine the effectiveness of existing government regulations to protect shark and ray species, identify the gaps of government regulations to implement shark and ray protection, specifically the constraints of government regulations to create strong law enforcement efforts and deterrent effects, and set up a strategy to increase the profile of shark and ray species protection through revision of government regulations.</p>		<p>Completed in year 1.</p>
<p>Activity 1.2 Hold meetings to align MMAF’s, MoEF’s, and LIPI (Scientific Authority) policies on the protection of marine species and implementation of CITES for marine species.</p>		<p>4 formal coordination meetings on shark and ray regulatory reform conducted with MMAF, MoEF, LIPI and other NGOs.</p>
<p>Activity 1.3 Hold meetings to strengthen policies and establish the protection status of CITES-listed Indonesian sharks and rays.</p>		<p>WCS is involved in the process to transfer the CITIES authority for aquatic species management to from MoEF to MMAF. Joint discussion and meetings have been on-going with a draft of the official document (titled, Berita Acara Serah Terima) for the delegation of authority for management of aquatic species from MoEF to MMAF, and a list of protected aquatic species that MMAF will then manage prepared.</p>
<p>Activity 1.4 Facilitate the development of species regulations and policies by MMAF, which identify management actions or changes to trade regulations (e.g. size restrictions).</p>		<p>Development of two new/revised regulations on management actions and trade restrictions:</p> <ul style="list-style-type: none"> <li>- MR 49/2016 on status of protected fish</li> <li>- MR on limited protected of all shark species (not yet numbered at time of writing)</li> </ul>
<p>Activity 1.5 Facilitate changes in the protection status of CITES-listed species, through changes to the national protected species list (PP.7/1999), Ministerial Decrees, or changes to regulations under the fisheries law.</p>		<p>Export ban on oceanic whitetips and hammerheads extended (MR 48/2016). Revisions to Law No. 5/1990 relating to the national protected species are still on-going, and a ministerial regulation on the protection status of mobula rays is in progress.</p>

<p><b>Output 2.</b> Local government officials, traders and fishers have sufficient awareness and training in the new regulations governing shark and ray conservation and the applied management actions required to adequately manage shark and manta fisheries.</p>	<p>2.1 By end of year 1, training modules have been designed and produced by WCS and MMAF, and are being used for training programmes with government officials, village leaders, fisher institutions and fishers on CITES-listed manta/shark species and enforcement of trade or protection regulations.</p> <p>2.2 Fisheries management agencies, community fisher institutions, fishers and traders at &gt;5 key shark and ray landing sites are trained and updated annually by WCS and MMAF on knowledge and enforcement of regulations regarding CITES-listed manta/shark species.</p> <p>2.3 By end of year 3, 50 personnel from Indonesian law enforcement agencies are trained on knowledge and enforcement of regulations regarding CITES-listed manta/shark species.</p> <p>2.4 By end of year 3 there have been &gt;250 news articles in Indonesian and international press based upon at least 10 individual incidences (arrests or prosecutions, press releases or events), against a baseline of one event in the period leading up to July 2014 (that event was the announcement of the MMAF Ministerial decree protecting mantas in February 2014).</p>	<p>Development of three new training resources for government officials:</p> <ul style="list-style-type: none"> <li>- <i>'In House Training to Increase Prosecutors Capacity in Handling Wildlife Crime Cases'</i></li> <li>- Capacity building materials for conducting NDFs for CITES Appendix II Sharks and Rays</li> <li>- Wildlife trafficking modules for Supreme Court environmental judges</li> </ul> <p>Training and updates on regulations for CITES-listed species conducted in Lamakera, NTT; Adonora, NTT, Tanjung Luar, NTB; Meulaboh, Aceh; Bandah Aceh, Aceh and Sorong, West Papua through focus group discussions, public consultations and socialisation events.</p> <p>131 prosecutors from 20 provinces, including Sulawesi, Maluku, Bali, East Nusa Tenggara and West Nusa Tenggara were trained in handling wildlife crime cases, including enforcement of regulations regarding CITES-listed elasmobranchs.</p> <p>161 media articles in Indonesian and international press.</p>
<p>Activity 2.1 Create awareness-raising materials and distribute regulations on CITES-listed shark and ray species in landing areas for sharks and rays. Identify key persons including traditional leaders, village chiefs, and local MMAF officers as frontline leaders to disseminate the materials to fishers, fisheries middlemen, and exporters.</p>		<p>One focus group discussion, seven public consultations and two socialisation events were held in several locations in Aceh, West Nusa Tenggara, East Nusa Tenggara and West Papua to communicate information on regulations and CITES-listed shark and ray species to key stakeholders, including fishers, traders, middlemen and local government agencies. Informal meetings with relevant local</p>

Activity 2.2 Initiate regular joint meetings, workshops and training with MMAF local agencies, police, customs agencies to develop and implement regulations on CITES-listed shark and ray species.		law enforcement agencies were conducted throughout.
Activity 2.3 Train fisheries middlemen and exporters to improve their knowledge on implementing regulations for CITES-listed shark and ray species.		Baseline KAP surveys were not conducted in Year 1, so this activity is no-longer relevant, however we will re-assess attitudes and practice of fishers and traders in Tanjung Luar through the Year 3 socioeconomic survey, and use direct behavioural indicators, such as fishing behaviour, trading behaviour, and arrests to assess practice.
Activity 2.4 Assess the impact of awareness-raising campaigns and training events using robust Knowledge, Attitude, and Practice surveys.		161 media articles on marine species protection, the majority in the Indonesian press. These articles promote regulations as well as promoting government achievements to protect sharks and rays.  This will be continued in Year 3.
<p><b>Output 3.</b> A new “Marine Wildlife Crime Unit”, comprising representatives of the Indonesian National Police, Attorney General and Ministry of Marine Affairs and Fisheries, has been established and is focusing on high-profile prosecutions of major manta/shark traders.</p>	<p>3.1 By end of year 1, a Marine “Wildlife Crime Unit”, facilitated by WCS in partnership with MMAF, Indonesian National Police and other law enforcement agencies, is operational and achieving arrests and prosecutions of major manta/shark traders.</p> <p>3.2 By end of year 3, at least 30 investigations into traders or trade routes of CITES-listed sharks and rays species have been undertaken by the marine WCU.</p> <p>3.3 By end of year 1, a marine “Wildlife Crimes” tracking database is established by WCS in partnership with MMAF, which is cataloguing cases of trafficking of CITES-listed or protected marine species, especially sharks and rays, and recording actions taken (arrests, prosecutions, fines, etc.).</p>	<p>Marine WCU established in Year 1.</p> <p>A total of 15 marine cases were handled by WCU during the reporting period involving 23 suspects.</p> <p>i2 database installed in Year 1.</p>
Activity 3.1 Create informant network to monitor shark and ray trafficking in key areas, specifically in Java, Aceh, Bali, West and East Nusa Tenggara. Investigate key middlemen and exporters at hotspot locations for trade and export at Cilacap, Indramayu, Surabaya, Bali, Lombok, and Sidoarjo. Produce an assessment of the		The informant network established in Year 1 continues to operate and expand, and is now actively gathering intelligence on exploitation and trade of protected elasmobranchs in more than 30 locations across 14 provinces, including: Banten (Binuangun), West Java (Pangandaran), Central Java (Cilacap), Yogyakarta,



current trade networks.	East Java (Jember, Sidoarjo, Surabaya, Banyuwangi), DKI Jakarta, Bali (Tanjung Benoa, Negara), East Nust Tenggara (Kupang, Solor, Adonara), West Nusa Tenggara (Lombok), South Sulawesi, North Sulawesi, Papua, Maluku and Aceh.
Activity 3.2 Provide technical assistance and information for law enforcement officers (Police, MMAF civil service investigators, Customs, Quarantine) in intelligence, surveillance, apprehension and processing of evidence.	The WCU continued to support law enforcement officers with intelligence, arrests and processing of evidence, as shown by the 15 marine cases in the reporting period.
Activity 3.3 Assist the Police, MMAF civil service investigators, Customs, and Quarantine officers to complete legal documents for each trafficking case, and maintain strong communications with prosecutors and judges to ensure that all cases are processed and adjudicated promptly and in accordance with law.	The WCU continued to support processing of marine cases, as shown by the 16 successful prosecutions within the reporting period.
Activity 3.4 Support MMAF and the Attorney General's Office to develop a tracking database, to record information on marine species crime cases, action taken by Indonesian law enforcement agencies, and the results (arrests, prosecutions, fines, etc.).	The WCU continued to collate intelligence data in i2 and track all shark and ray cases in a law enforcement database.
Activity 3.5 In the last year of the project, produce an assessment of how trade networks have changed after three years of enforcement.	A monitoring framework for assessing changes in manta ray exploitation and trade was developed, and we are building collaborations with Oxford University and the University of Canterbury (DICE) to use innovative methods for estimating the size of, and detecting changes in, illegal trade networks.
<p><b>Output 4.</b> At least 100 manta/shark fishers have transitioned to alternative sustainable fisheries or other livelihood practices, and support structures are in place to encourage other interested fishers to make the transition.</p>	<p>4.1 An assessment report on opportunities for shark and ray fishers to transition to sustainable fisheries, mariculture enterprises and other livelihoods is produced by WCS, MMAF and Imperial College in year 1, based upon updating existing research and consultations with local fishers, fisher institutions and other stakeholders.</p> <p>4.2 Two livelihood-transitioning programs are developed with local fishing communities by WCS, MMAF and customary fisher institutions in year 2, which provide new opportunities in sustainable fisheries, mariculture enterprises and other livelihood practices.</p> <p>4.3 Customary fisher institutions are empowered and have the capacity to continue supporting fishers to transition from manta/shark fisheries to other</p>

	livelihood strategies by year 3.	
Activity 4.1 Produce an assessment report on the opportunities for manta/shark fishers to transition to sustainable fishing and other livelihoods, based upon the focus groups and research conducted by WCS in 2014, and additional research and consultations in year 1 of the project.		Household surveys conducted and socioeconomic report complete. Rapid assessment of options for sustainable fisheries also completed for Tanjung Luar and Lamakera.
Activity 4.2 Implement targeted livelihood assistance and incentive programs to transition households to alternative sustainable fishing or non-fishing practices, providing long-term livelihood security.		Options to be further explored in Year 3.
Activity 4.3 Put in place long-term sustainability mechanisms, by embedding interventions in customary fisher institutions and other mechanisms (e.g. microfinance) to enable continuing support after the end of the project.		Options to be further explored in Year 3.
Activity 4.4 Information exchange and learning events to spread awareness about the project approach and encourage other manta/shark fishers to also begin to transition to other livelihoods.		Continued communicating and sharing of lessons learned between WCS and other NGOs working on sharks and rays, and sustainable fisheries. Information exchange between fishers to be conducted in Year 3.
<b>Output 5.</b> The conservation and social outcomes of the project are evaluated, based on ongoing monitoring of shark and ray landings and change in the wellbeing and behaviour of fishers.	<p>5.1 By the end of quarter 1 of year 1, a fully functioning shark and ray fisheries catch monitoring program is established by WCS, MMAF and Imperial College, collecting monthly data on landings of CITES-listed sharks and rays, catch and product prices and fishing activities, and providing quarterly reports. Thereafter reports are produced and made available by WCS on a quarterly basis throughout the life of the project.</p> <p>5.2 Assessment of fisher attitudes and behaviours, social norms around manta/shark fishing, and change in livelihoods and poverty. Surveys in year 1 and resurvey in year 3 of intervention and control households to determine the impact of the livelihood interventions, conducted by WCS and Imperial College.</p> <p>5.3 By end of Year 3, a peer-reviewed paper is produced by WCS and Imperial documenting the results of the</p>	<p>Shark and ray landings monitoring continues in Tanjung Luar and has been re-established in Aceh. WCS also has access to landings data in Lamakera through our partnership with Misool Foundation.</p> <p>Assessment of 527 households completed in Year 1.</p> <p>Two papers in progress</p>

	<p>project.</p> <p>5.4 By end of Year 3, at least 5 information exchange and lessons learned events have been held with customary fisher institutions or other organisations so that other groups can learn about the project approach and promote livelihood transitions in other sites.</p>	<p>Several meetings between organisations working on sharks and rays fisher transitions and sustainable fisheries were held throughout the project period, including 2 meetings with MDPI and 3 meetings with Misool Foundation</p> <p>Information exchange and lessons learned events between fisher groups will be conducted in Year 3.</p>
<p>Activity 5.1 Conduct monthly shark and manta fisheries catch surveys at target sites. The program will build upon and be consistent with baseline data collected by WCS and others during 2012-2014.</p>		<p>Shark and ray landings monitoring continues in Tanjung Luar and was re-established in Aceh.</p> <p>Data collection in Lamakera continues through our partnership with Misool Foundation.</p>
<p>Activity 5.2 Undertake surveys, analyse and assess changes in shark and ray catch landings, prices and demand in response to changes in stakeholder knowledge and capacity, law enforcement and awareness raising activities.</p>		<p>Landings and price data continues to be collected at key sites, and a qualitative and quantitative assessment of changes in manta ray exploitation and trade was conducted in October 2016 (See <a href="#">Booth et al. 2016</a>). Changes will continue to be assessed throughout Y3.</p>
<p>Activity 5.3 Design socio-economic surveys to examine fisher behaviour, attitudes, social norms around fishing and other livelihoods, and household well-being and occupational status, in partnership with Imperial College. These surveys will expand upon the existing baseline data collected by WCS in 2014, to be able to provide consistent information on trends. Identify both intervention and control households.</p>		<p>Survey designed in Year 1.</p>
<p>Activity 5.4 Conduct socioeconomic surveys of fisher behaviour and household well-being and occupational status in years 1 and 3, for intervention and control households.</p>		<p>Baseline survey conducted in Year 1, follow-on survey planned for Year 3.</p>
<p>Activity 5.5 Analyse and assess changes in fisher behaviour and household well-being and occupational status in response to the livelihoods transition intervention.</p>		<p>Planned for Year 3.</p>
<p>Activity 5.6 At least one peer-reviewed paper produced in partnership with Imperial, by Indonesian scientists undertaking visiting research fellowships at Imperial.</p>		<p>Manuscripts in progress.</p>

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

N.B. Format of logframe as presented in the application form different to 2017 template

Activity	No of Months	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1													
1.1 Assessment of existing government regulations and development of a strategy to strengthen regulations for CITES-listed sharks and rays.	12	X	X	X	X								
1.2 Hold meetings to align MMAF's, MoEF's, and LIPI (Scientific Authority) policies on the protection of marine species and implementation of CITES for marine species.	16	X	X	X	X	X	X	X	X				
1.3 Hold meetings to strengthen policies and establish the protection status of CITES-listed Indonesian sharks and rays.	16	X	X	X	X	X	X	X	X	X	X		
1.4 Facilitate the development of species regulations and policies by MMAF, which identify management actions or changes to trade regulations (e.g. size restrictions).	18	X	X	X	X	X	X	X	X	X	X	X	X
1.5 Facilitate changes in the protection status of CITES-listed species, through changes to the national protected species list (PP.7/1999), Ministerial Decrees, or changes to regulations under the fisheries law.	18	X	X	X	X	X	X	X	X	X	X	X	X
Output 2													
2.1 Create awareness-raising materials and distribute regulations on CITES-listed shark and ray species in landing areas for sharks and rays.	10	X	X	X	X	X	X	X	X	X	X		
2.2 Initiate regular joint meetings, workshops and training with MMAF local agencies, police, customs agencies to develop and implement regulations on CITES-listed shark and ray species.	11		X	X	X	X	X	X	X	X	X	X	X
2.3 Train fisheries middlemen and exporters to improve their knowledge on implementing regulations for CITES-listed shark and ray species.	6		X		X		X		X		X	X	
2.4 Assess the impact of awareness-raising campaigns and training events using robust <i>Knowledge, Attitude, and Practice</i> surveys.	12	X	X				X	X				X	X
2.5 Publish and disseminate law enforcement achievements.	9		X	X	X	X	X	X	X		X		X

Output 3														
3.1	Create informant network to monitor shark and ray trafficking in key areas. Produce an assessment of the current trade networks.	36	X	X	X	X	X	X	X	X	X	X	X	X
3.2	Provide technical assistance and information for law enforcement officers in intelligence, surveillance, apprehension and processing of evidence.	24	X	X	X	X		X	X		X		X	
3.3	Assist the law enforcement officers to complete legal documents for each trafficking case, and maintain strong communications with prosecutors and judges to ensure that all cases are processed and adjudicated promptly and in accordance with law.	12		X	X	X	X	X	X	X		X		X
3.4	Support MMAF and the Attorney General's Office to develop a tracking database, to record information on marine species crime cases, action taken by Indonesian law enforcement agencies, and the results (arrests, prosecutions, fines, etc.).	8	X	X	X	X	X	X	X	X				
3.5	Produce an assessment of how trade networks have changed after three years of enforcement.	6									X	X	X	X
Output 4														
4.1	Produce an assessment report on the opportunities for manta/shark fishers to transition to sustainable fishing and other livelihoods.	12	X	X	X	X								
4.2	Implement targeted livelihood assistance and incentive programs to transition households to alternative sustainable fishing or non-fishing practices, providing long-term livelihood security.	21					X	X	X	X	X	X	X	
4.3	Put in place long-term sustainability mechanisms, by embedding interventions in customary fisher institutions and other mechanisms (e.g. microfinance) to enable continuing support after the end of the project.	12					X	X	X	X				
4.4	Information exchange and learning events to spread awareness about the project approach and encourage other manta/shark fishers to also begin to transition to other livelihoods.	8									X	X	X	X
Output 5														
5.1	Conduct monthly shark and manta fisheries catch surveys at target sites.	36	X	X	X	X	X	X	X	X	X	X	X	X
5.2	Undertake surveys, analyse and assess changes in shark and ray catch landings, prices and demand in response to changes in stakeholder knowledge and capacity, law enforcement and	7		X	X	X			X	X		X	X	X

	awareness raising activities.												
5.3	Design socio-economic surveys to examine fisher behaviour, attitudes, social norms around fishing and other livelihoods, and household well-being and occupational status, in partnership with Imperial College.	3	X										
5.4	Conduct socioeconomic surveys of fisher behaviour and household well-being and occupational status in years 1 and 3, for intervention and control households.	12		X	X					X	X		
5.5	Analyse and assess changes in fisher behaviour and household well-being and occupational status in response to the livelihoods transition intervention.	10			X	X					X	X	X
5.6	At least one peer-reviewed paper produced in partnership with Imperial, by Indonesian scientists undertaking visiting research fellowships at Imperial.	9									X	X	X

## Annex 3: Standard Measures

**Table 1 Project Standard Output Measures**

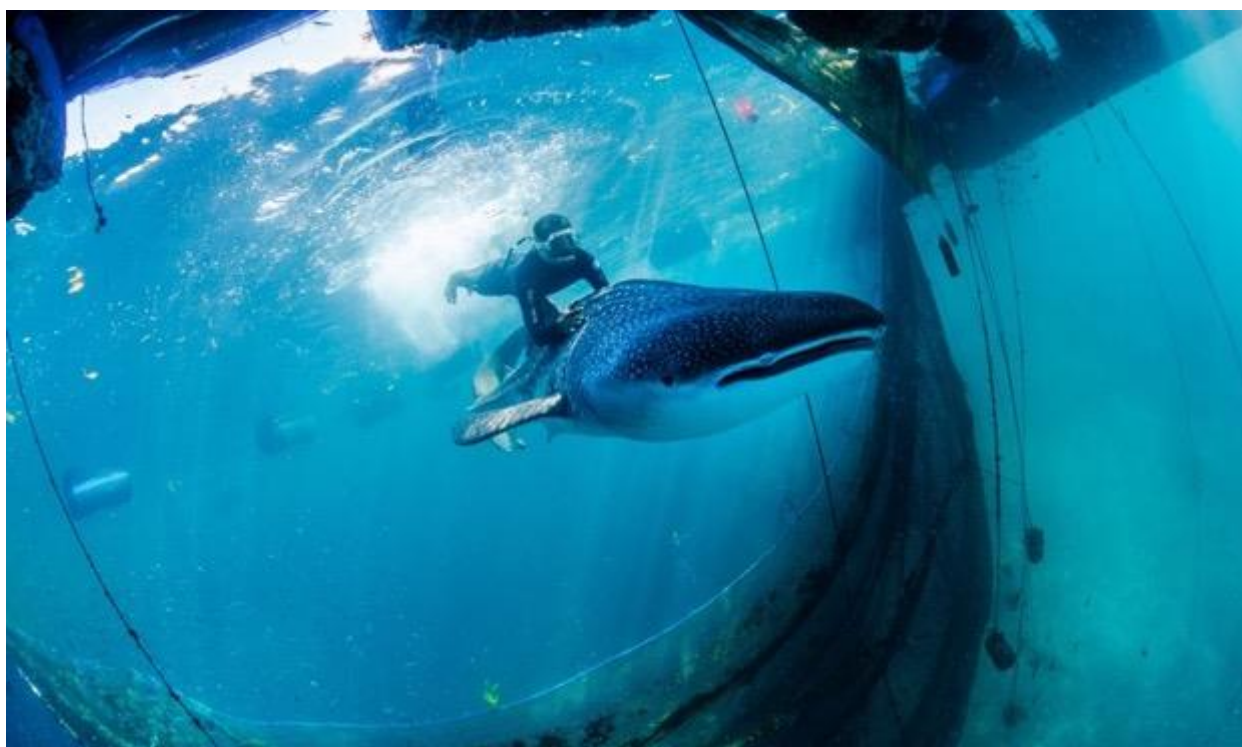
Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
Established codes								
6A	Number of People trained	Male, Female	Indonesian	38	162		200	
6B	Training weeks			2	1		3	
7	Number of training materials produced			1	3		4	
11A	Number of papers published in peer-reviewed journals	Male, Female	British, Indonesian, Australian, USA	1				
12A	Number of computer databases			1 (i2)				
14A	Number of conferences/workshops organised			8	13		21	
14B	Number of conferences/workshops attended			25	3			
23	Funding raised			£154,527	£558,892			

**Table 2 Publications**

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

**Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)**

**Selected photographs**



*Release of a captive whale shark destined for trade to China in May 2016. Photo © Paul Hilton / WCS.*



*The police sort through recovered manta ray gills in Surabaya. Photo © Paul Hilton / WCS.*





*MMAF confiscate manta ray gill plates as evidence for illegal trader trial. Photo © Paul Hilton/WCS.*



*WCS enumerators gather data on shark landings in Tanjung Luar, February 2017. Photo © Hollie Booth/WCS.*



*WCS enumerators conduct scoping of shark and ray fisheries with fishers in Aceh. Photo © WCS.*



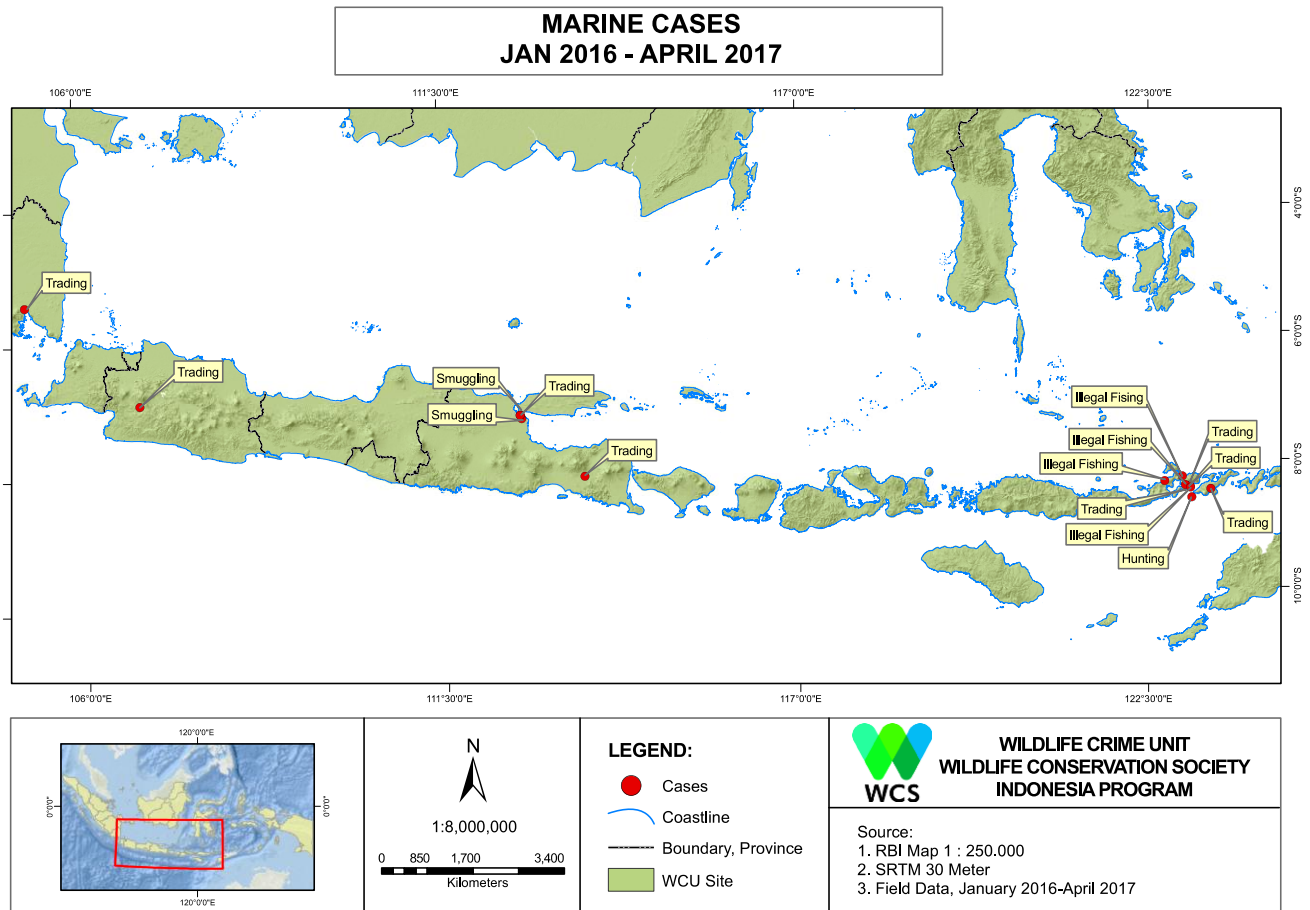
*Socialisation event in Lamakera, April 2016. Photo © WCS.*



*CITES NDF capacity building workshop for sharks and rays, March 2017. Photo © WCS.*



*The first In House Training to Increase Prosecutors Capacity in Handling Wildlife Crime Cases, August 2016. Photo © WCS.*



Map of all WCS marine wildlife crime cases, Jan 2016-April 2017.

### Selected links

- A brief online summary of MDPI's fishery assessment in Lamakera: <http://mdpi.or.id/fishery-assessment-in-lamakera-solor-island/> (full reports for Tanjung Luar and Lamakera available on request)
- Evaluating the impact of wildlife trade policy: the case of illegal manta ray exploitation and trade in Indonesia: [http://www.iccs.org.uk/sites/www.iccs.org.uk/files/inline-files/Booth\\_Hollie\\_ConSci\\_2016.compressed.pdf](http://www.iccs.org.uk/sites/www.iccs.org.uk/files/inline-files/Booth_Hollie_ConSci_2016.compressed.pdf)
- Online database for shark and ray landings data in Tanjung Luar: <http://www.data-ikan.org/hiu/>

### List of reports (available on request)

- Synopsis: Policy recommendations for the inclusion of marine species in CITES Appendix II
- Policy Analysis: The Needs of Regulation to Establish Limited Protection Status for Sharks (in Bahasa Indonesia only)
- Policy Analysis: Legal Draft of Ministerial Regulation on Export Prohibition of *Mobula* spp. from Indonesia to Overseas (in Bahasa Indonesia only)
- Socio-economic study of shark fishers in Tanjung Luar, East Lombok, West Nusa Tenggara (full report in Bahasa Indonesia only, Executive Summary available in English)
- Lamakera Fishery Assessment: A Rapid Assessment on the Potential for Sustainably Focused Program Development in Lamakera, Nusa Tenggara Timor
- Tanjung Luar Fishery Assessment: A Rapid Assessment on the Potential for Sustainable Alternatives to the Shark Fishery of Tanjung Luar, Nusa Tenggara Barat

## Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.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:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.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.	