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**REPORT TO WCPFC ON PROGRESS OF THE PROJECT SUSTAINABLE MANAGEMENT
OF TUNA FISHERIES AND BIODIVERSITY CONSERVATION IN THE ABNJ**

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Report to WCPFC on Progress of the Project Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the ABNJ

Rome, November 2017



1. Background

The Project “Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction” also referred to as the *Common Oceans ABNJ Tuna Project*, is one of the four projects funded by the Global Environment Facility (GEF) under the umbrella of the [Common Oceans Program](#), which brings together governments, regional management bodies, civil society, the private sector, academia and industry to work towards ensuring the sustainable use and conservation of ABNJ biodiversity and ecosystem services.

The five-year project started in 2014 and is supported by a 30 million USD GEF grant in addition to partners co-financing. It is the largest of the Common Oceans projects, with FAO as the implementing agency and working with a wide range of partners, including the five tuna RFMOs, encompassing 90 different countries as members of the various organizations, sub-regional organizations, environmental community and private sector.

The main guiding principles of the Project, discussed and agreed with partners at the Inception Workshop, held in March 2014, include:

1. Extending the global benefits of the Project to as many members and tuna RFMOs as possible. As this is a global project, we need to ensure that the direct benefits or the lessons learned in one region extend to as many tuna RFMOs as possible
2. Promote the cooperation and exchange of experiences between t-RFMOs. There are few opportunities to share the results of experiences in one RFMO with the other RFMOs
3. Facilitate the implementation of existing initiatives. The Project has no intention to impose anything on the partners, it is simply to assist in, and accelerate existing initiatives that were decided and agreed by the members of RFMOs.
4. Recognition of the need to support developing coastal States in the tuna RFMOs to become more effective members.

1 Sustainable management

Support to t-RFMO's adoption of harvest strategies.

Support science-management dialogues.

Support preparation of EAF plans at RFMO level

2 Reduce IUU fishing

Capacity building through a **global certification program** for MCS officers.

Compliance improvement in eligible t-RFMO members.

Port State measures template legislation

Pilot trials in **electronic monitoring** on board vessels

Best practices in MCS and market controls

3 Reduce impacts on biodiversity

Integrated **shark management** plans across the Pacific.

Global Bycatch Management and Information Portal.

Trials for **mortality reduction of seabirds** in longliners.

Trials for **bycatch reduction in purse seiners**.

Fill data gaps on gillnet fisheries in Northern Indian Ocean

Figure 1. Structure of the Common Oceans ABNJ Tuna Project

The Project is structured around a hierarchy of three components, each composed of outcomes that will contribute towards the objective of the component, and each outcome being the result of a number of outputs. The basic structure of the project is shown in Figure 1 above.

The emphasis on sharing experiences between t-RFMO processes links the Project to the spirit of the Kobe process, in serving as a forum for cooperation in the scientific and technical communities of the t-RFMOs, therefore learning from the collective experience and improving the effectiveness of the various processes.

Starting in the second half of 2016, the Project went through its Mid-Term Evaluation. The Report and the annexes are available [here](#).

Regular news on the project and the Common Oceans ABNJ Program can be accessed [here](#) and by subscribing to the [programmatic newsletter](#).

2. Summary of main activities with Project support involving WCPFC since WCPFC13

- A [capacity building workshop on the role of management strategy evaluation in the development of harvest strategies](#) organized by WWF targeting WCPFC members took place in Bali, Indonesia from August 01-02, 2017
- The Project supported 24 participants to the WCPFC's [Intersessional Meeting to progress the draft Bridging CMM on Tropical Tuna](#), a Commission Special Session that took place on August 22-24, 2017, in Honolulu, Hawaii, USA
- A [Joint Meeting of tuna RFMOs on the Implementation of the Ecosystem Approach to Fisheries Management](#) originating from an initiative of ICCAT was organized and supported by the Project from 12-14 December 2016 in FAO Headquarters in Rome. This meeting brought together scientific experts from the five tuna RFMOs (including the WCPFC Science Manager) to initiate a dialogue on the topic.
- The International MCS Network organized the [Inception meeting of the Tuna Compliance Network](#) in Vigo and Madrid from 27-31 March 2017. For the first time, officers responsible for compliance from the five t-RFMOs (including WCPFC), and other MCS experts (e.g. from FFA) had an opportunity to meet.
- FFA started the third round of its MCS course with Project support. 20 students from Cook Islands, Fiji, FSM, Kiribati, Nauru, Samoa, Tonga and Tuvalu were registered at USP and enrolled in the four online courses for the accredited MCS study programme.
- Electronic monitoring systems have been deployed on 30 Fijian longline vessels as of October 2017. Provisional EMS data include the analysis of about 107 fishing trips, or alternatively 1,195 days at sea, consisting of 888 sets and a total of 2.5 million hooks set. [On the 22nd of September 2017, the Memorandum of Understanding between the Ministry of Fisheries and the Fiji Fishing Industry Association was signed.](#)
- FFA continued its work on an MCS system that integrates information coming from multiple data sources and that is used to create intelligence reports.
- WCPFC, together with SPC and representatives from 21 countries and organizations, completed an analysis of [largest compilation to date of Pacific sea turtle-longline fishery interactions](#)

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- WCPFC and SPC convened an [Expert Workshop on Shark Post-Release Mortality Tagging](#) (New Zealand, 24-27 January 2017) which produced a survey design that is now being implemented. As of 30 June 2017, 21 shortfin mako sharks have been tagged with the support of the New Zealand observer programme.
 - The first of four Project supported shark stock status assessments, for [Pacific-wide bigeye thresher shark](#), was completed in September 2016 and [contributed to CITES COP17](#). Together with the [second assessment, for Southern Hemisphere Porbeagle shark](#), it was presented during WCPFC SC13. The third assessment for Pacific-wide Silky Shark is underway and a fourth one, on whale sharks, will be initiated soon.
 - [WCPFC launched the new Bycatch Management Information System \(BMIS\) web portal](#) available here <https://www.bmis-bycatch.org/>. The new enhanced BMIS with an engaging, user-friendly interface, allows searching of over 1000 curated references by species group, fishing gear or mitigation technique, and provides pointers to species identification and safe release guides.

3. Global Project Progress

The following sections describe in more detail the activities that the Project has been carrying out in all regions, grouped by each of the components of the Project.

Component 1: Promotion of Sustainable Management (including Rights-Based Management) of Tuna Fisheries, in Accordance with an Ecosystem Approach

This component includes a number of activities that would facilitate the incorporation into the management framework of the tuna RFMOs of principles that have been identified as important elements in sustainable management, such as the precautionary approach, and an ecosystem approach to fisheries.

Implementation of the precautionary approach, and adoption of harvest strategies

This is probably the most transformational of all activities under the Project, bringing a new level of cooperation and dialogue between science and management. These activities aim to change the way science is used in the decision making process, but rely on the managers to lead the process.

However, managers are often not familiar with Management Strategy Evaluation and Management Procedures/Harvest Strategies, which is why capacity building as well as better dialogue between managers and scientists are needed. This is following a two-pronged approach with:

- Capacity building workshops led by WWF for officials from t-RFMO member countries are helping to increase the familiarity and confidence with the process of Management Strategy Evaluation. Workshops held so far include:
 - Indian Ocean: Two workshops in Sri Lanka in [2014 and 2017](#)
 - Western Pacific Ocean: one workshop in [Bali, Indonesia in August 2017](#)
 - Eastern Pacific Ocean: one workshop in [Panama in 2015](#)
 - Atlantic Ocean: One workshop [in Accra, Ghana in 2016](#)

- Support to the science-management dialogues and to the scientific processes in the tuna RFMOs that had not yet adopted a harvest strategy (led by FAO). Support was provided for meetings or meeting participants in WCPFC (MOW4, 2015), and [IOTC](#) (various activities since 2014). In the WCPFC context, the Project is in contact with the Pacific Community (SPC) to collaborate and support, through coordination of the Project activities, the development of the WCPFC plan for development harvest strategies. Any future work will continue to be in close coordination with SPC and WCPFC. The Project also provided support for 24 participants to the WCPFC's *Intersessional Meeting to progress the draft Bridging CMM on Tropical Tuna*, a Commission Special Session that took place on August 22-24, 2017, in Honolulu, Hawaii, USA, with the objective to advance a draft measure to provide interim arrangements until harvest strategies are adopted.

The Project is also supporting the collaboration between t-RFMOs and their memberships in particular in relation to Management Strategy Evaluation and the development of harvest strategies. In this context, the project supported the first meeting of the *Joint Management Strategy Evaluation Technical Working Group*, which was created during the Third Joint Meeting of Tuna RFMOs in 2011. The meeting, organized by ICCAT with support of the Tuna Project, took place in Madrid from 01-03 November 2016.

Support to implementation of the Ecosystem Approach to Fisheries

The Project is promoting and supporting the preparation of long-term plans for operationalizing the Ecosystem Approach to Fisheries (EAF) in each of the t-RFMOs, encouraging consideration of the impacts of fishing activities on the environment. In this context, a [Joint Meeting of tuna RFMOs on the Implementation of the Ecosystem Approach to Fisheries Management](#) originating from an initiative of ICCAT was organized and supported by the Project from 12-14 December 2016 in FAO Headquarters in Rome. This meeting brought together scientific experts from the five tuna RFMOs (including the WCPFC Science Manager) to initiate a dialogue on the topic, harmonize some concepts and agree on a strategy to bring the issue of operationalizing the Ecosystem Approach to the attention of the RFMO member States.

A second Joint Meeting is being scheduled for the first quarter of 2018 to further develop possible operationalization plans. In the context of the EAF, the Project supported 38 participants (11 female) during the [Joint t-RFMO FAD Working Group meeting](#) organized by ICCAT, which took place in Madrid from 19-21 April 2017. Representatives from ICCAT, IOTC and IATTC States, and the organizations' FAD Working Group Chairs, attended the meeting which aimed at promoting discussions on tropical tuna FAD fishing.

Component 2 – Reducing IUU fishing and improving compliance

Addressing IUU fishing is supported through a number of strategies. To a large extent, these are based on empowering officials from t-RFMO member countries through capacity building of enforcement and compliance officers by establishing, for the first time in the world, a certification-based training program.

MCS best Practices

Draft chapters of Global Best practices for MCS in tuna fisheries addressing seven different thematic areas have been developed and been reviewed by the members of the Tuna Compliance Network (TCN), which includes the compliance officers of the five tuna RFMO Secretariats. As a starting point, the thematic areas are the following:

1. Vessel Monitoring Systems (VMS);
2. Observer programs for tuna purse seine fleet;
3. Electronic Monitoring;
4. Transshipment of fisheries products;
5. Illegal, Unreported and Unregulated (IUU) vessel listing;
6. RFMO Authorized vessels lists; and
7. RFMO Compliance Processes.

The focus is on best practices in compliance with tuna RFMO obligations and CMMs. This is being coordinated with other FAO initiatives on reviewing and updating existing publications on MCS, which place emphasis on coastal, flag and port state obligations. The Tuna Compliance Network is expected to play a key role in the further development of these 'Best Practices', which will eventually be presented to the tuna RFMOs for their endorsement.

Tuna Compliance Network

The Project is partnering with the [International MCS Network](#) to create a 'sub-network' focused on exchange of information on MCS issues associated with tuna fisheries.

The International MCS Network organized the [Inception meeting of the Tuna Compliance Network](#) in Vigo and Madrid from 27-31 March 2017. For the first time, officers responsible for compliance from the five t-RFMOs (including WCPFC), and other MCS experts (e.g. from FFA) had an opportunity to meet. Participating officers valued very positively the opportunity of having met each other in person, learning from each other. A second meeting is planned to be held in the first quarter of 2018, hosted by FFA in Honiara.

MCS Certification course

Capacity building activities are planned through a global certification-based course to be conducted in the areas of the various t-RFMOs. A certification course of 6-8 weeks would become the seed for more academic programmes and would offer young officials a career path in areas not covered so far by formal training.

The Project supported FFA, a partner of the Project, and the University of the South Pacific to carry out the second regional MCS training from 5-30 October 2015. In total, 16 fisheries MCS and/or surveillance officers from eight FFA Member countries were trained. In 2016, FFA started the third round of its MCS course with Project support. 20 students from Cook Islands, Fiji, FSM, Kiribati, Nauru, Samoa, Tonga and Tuvalu were registered at USP and enrolled in the four online courses for the accredited MCS study programme – Certificate IV in Fisheries Enforcement and Compliance.

During the 2017 Project Steering Committee (PSC), FFA presented a proposal to expand the current course with additional global elements and to adapt it to other regions of the world. The PSC recommended to extend the FFA online course to the other t-RFMOs with the inclusion of regional elements that could be provided through the Tuna Compliance Network.

Port State measures legislative template

The FAO Port States Measures Agreement is one of the major international instruments to combat Illegal Unreported and Unregulated (IUU) fishing. The original plan to develop individual legislation for ten countries in the Indian Ocean was replaced by the development of a legislative template framework. The template has been completed taking a global and comprehensive approach, including: working from the FAO Agreement and the IOTC Resolution; ensuring applicability to different legal systems, including through use of annotations; covering core/supporting legislation; providing a framework for supporting procedures; and identifying the roles of RFMOs. The template was launched during the 32nd Session of COFI (11-15 July 2016) during a celebration dedicated to the entry into force of the Port State Measures Agreement. The template is available online [here](#). Translations into [French](#) and [Spanish](#) have been completed in 2017.

Consolidated List of Authorized Vessels

This activity was successfully completed in its core functionality, and the latest version of the Consolidated List of Authorized Vessels is now available on the [tuna-org.org website](http://tuna-org.org)¹. While the CLAV has been developed by the five t-RFMOs starting in 2009, in order to merge their lists of authorized vessels, it is now updated daily through an automatized process that directly links the t-RFMOs authorized vessels databases to the CLAV database.

In addition, the Project is also providing expertise to analyse the data contained in the CLAV and identify some data inconsistencies, including possible duplicate records. These issues are reported to the t-RFMOs for further investigation and correction by the reporting member States.

As of September 2017, the identification and removal of duplicate records in the CLAV data resulted in a reduction of the total number of authorized records to 20,122, dropping from 24,915 in March 2015. Since March 2015, all five t-RFMOs have improved overall performance in terms of completion of the ten basic attributes reported to the CLAV. The IMO number, being the attribute with the lowest level of completion, showed an improvement from 15 % in March 2015 to 58 % in May 2017 (a near fourfold improvement) for listed vessels of length 24 meters and over.

Pilot trials of electronic monitoring systems (EMS) on longline vessels in Fiji and purse seiner vessel in Ghana

The pilot programs in Fiji and Ghana provide an opportunity for both countries to test the use of EMS as an MCS tool to better assess compliance of fishing fleets as well as to collect observer data. Both pilots

¹ <http://tuna-org.org/GlobalTVR.htm>

are implemented thanks to the participation of the private sector and should evolve in business models that would allow a sustainable use of the EMS in the long term.

In Fiji, the official launching of the pilot project for a 3-year period was on 21 January 2016 with a Letter of Agreement [LOA] between FAO and the Ministry of Fisheries and Forests in Fiji, now the Ministry of Fisheries. The goal is to deploy EMS equipment on 50 Fiji longline vessels during the project period. Four batches of equipment, a total of 40 EMS sets for installation, were sent to Fiji since the beginning of the project, and 30 of these sets have been deployed on vessels as of October 2017. A further 10 sets are expected to become operational until the end of 2017. Training has been provided to land-based observers, which took place in November 2015 and October 2016, in the use of the review hardware and software to analyse the video footage collected by the EMS.

During the project, provisional EMS data include the analysis of about 107 fishing trips, or alternatively 1,195 days at sea, consisting of 888 sets and a total of 2.5 million hooks set. Since the inception of the pilot project, various compliance issues have been identified and the Fisheries Department has taken every effort to inform the relevant industry stakeholders with the clear result that there has been a marked reduction in such events occurring.

[On the 22nd of September 2017, the Memorandum of Understanding between the Ministry of Fisheries and the Fiji Fishing Industry Association was signed](#), specifying a collaboration agreement, facilitation of pilot project implementation, and the sharing of data in the context of combatting IUU fishing. Complementary activities that are taking place is a review of the legal framework in Fiji, including provisions linked to EMS data and its use as an MCS tool, as well as the integration of EMS data in the regional observer database TUBS. The launching of a Business Case Study is expected to take place in early 2018, contributing to the use of EMS as a cost-effective tool in MCS.

A similar pilot project is taking place in Ghana, but with a focus on the tuna purse seine fishery, where 12 of the 14 active vessels in the Ghana purse seine fleet have been equipped with EMS. Training has been provided to land-based observers and around 116 trips have been reviewed. The Business Case Study for use of EMS data in Ghana is currently being developed, as well as a review of the legal framework.

A small pilot project on two purse seiners has been completed in Seychelles as a collaboration between OPAGAC, the Seychelles Fishing Authority and the University of Alicante, to test the accuracy of catch and bycatch estimates through EMS, where the data was compared to onboard observer as well as oversampling data. OPAGAC summarized lessons learnt [here](#). Following the completion of the pilot, [OPAGAC is calling for the compulsory introduction of EMS by the Seychelles](#).

Integrated MCS system in FFA

Assessing the risk of IUU fishing associated with certain operations and vessels provides an opportunity to use limited enforcement assets in a more efficient and cost-effective way in combatting IUU. To do this, FFA has created an MCS system that integrates information coming from multiple data sources and that is used to create intelligence reports by a dedicated unit. The Project is supporting a Data Analyst working on this system, and will assist in disseminating the lessons learned to other regions.

As of June 2017, through the Regional Surveillance Picture, FFA produced over 740 observer incident reports since project start from sub-regional and regional trips accessed online from SPC/FFA Dorado online reports and forwarded to 10 members. Nine targets of interest are currently under investigation with five members and two members have settled cases with three vessels previously flagged to them and advised FFA to reassess compliance index for these vessels.

In this context, FFA also trained 42 MCS Officers (3 females) in the MCS data analysis work during FFA/QUAD operations, Regional MCS Data Analysis training and in-country coaching and mentoring programs.

Design options for the development of tuna catch documentation schemes

Catch Documentation Schemes are considered a valuable tool in the MCS toolbox, and for a number of years several instances have been implemented as part of RFMO regulations or other traceability schemes developed by main markets to ascertain the provenance of fish products entered into a market. To be successful in preventing IUU tuna products from entering into the supply chains, CDS should fulfill a number of requirements.

The Project has completed an analysis of the main global tuna supply chains to identify possible weaknesses that would allow entry of IUU products into the markets. Based on this, [*Design options for the development of tuna catch documentation schemes*](#) authored by Gilles Hosch were developed and [published](#). This work integrates with similar work that FAO has been mandated to develop for all fisheries in the world.

Support to improve compliance

Although the original plan was limited to support participation of national officials into technical and scientific meetings, the implementation has been extended to focus on innovative ways of [supporting members of t-RFMOs](#) to improve their compliance performance. For example, the close work of the Secretariat of IOTC with its membership in what is termed Compliance Support Mission offers an example of a way to improve, not only the compliance of the member in question, but to empower members with information that enhances their level of participation as well. The lessons learned from these type of initiatives are being shared across t-RFMOs and it could be further extended through mechanisms such as the IMCS network and the Tuna Compliance Network..

Currently, the Project is supporting the Development of the IOTC electronic monitoring and reporting information system (e-Maris) and the development of an online reporting platform for ICCAT CPCs (FORS) which should improve timely reporting, quality of the data in and facilitate ICCAT data reporting and compliance assessment.

Component 3 – Reducing ecosystem impacts of tuna fishing

The third component addresses the ecosystem impacts of tuna fisheries. The Common Oceans ABNJ Tuna Project is supporting the collaboration between the WCPFC and IATTC to develop integrated and consistent management for sharks in both sides of the Pacific. The Project is also supporting the development and dissemination of mitigation techniques for by-catch of small tuna and sharks in purse-

seiners and incidental seabird mortality in long-line fleets, including the development of a global portal to access information on the success of various techniques. The Project is also working towards filling data gaps in the gillnet fisheries from the northern part of the Indian Ocean, as the characteristics of these fisheries and their levels of bycatch are largely unknown. A more detailed update on the Common Oceans ABNJ Tuna Project's Shark and Bycatch Components prepared for WCPFC SC13 can be found [here](#).

Shark Data Improvement, Assessment and Management

This work is divided in two different, closely related elements: shark data improvement and shark assessment and management.

The objective of the first element (Shark Data Improvement) is to develop a practical and consistent approach to monitoring the status of sharks caught by ABNJ tuna fisheries. It focuses on identifying the data deficiencies which inhibit management and proposes strategies to obtain more data through field studies and better information return from fisheries. Baseline data inventories have been completed by both IATTC and WCPFC (the latter's is global) in 2016.

One shark data improvement initiative each has been adopted by WCPFC ([improvements to Minimum Data Standards and Fields for bycatch](#)) and IATTC ([minimum data standards and reporting requirements for longline observer programmes](#)); [one data improvement activity proposed by the project has been adopted by some IATTC](#) coastal states (adoption of a MS Access database designed by IATTC staff for shark fishery data collection), and one harmonization initiative has been endorsed by [WCPFC](#) and [IOTC](#) subsidiary bodies and is currently being used (BDEP). Recommendations for improving shark data collection along with the data collection work done so far under the project were critical in the approval of [IATTC Resolution C-16-06](#) on Conservation Measures for Shark Species, with Emphasis on the Silky Shark. On the basis of an ABNJ Tuna Project proposal the WCPFC adopted [safe release guidelines for encircled animals \(including whale sharks\)](#) in December 2015. In December 2016, WCPFC adopted a plan to [produce a new shark CMM for 2018 and designated manta and mobulid rays as key species](#). ABNJ Tuna Project products also assist the WCPFC as it struggles with as yet unresolved issues on [shark finning](#) and [shark management](#)

The objective of the second element (Shark Assessment and Management) is to identify risks and priorities for shark conservation through assessment, using new data generated under the first element and improved tools developed under this element as appropriate. It is evaluating the existing management framework and developing measures to strengthen shark management by t-RFMOs.

The first of four Project supported shark stock status assessments, for [Pacific-wide bigeye thresher shark](#), was completed in September 2016 and [contributed to CITES COP17](#). Together with the [second assessment, for Southern Hemisphere Porbeagle shark](#), it was presented during WCPFC SC13. The third assessment for Pacific-wide Silky Shark is underway and a fourth one, on whale sharks, will be initiated soon.

Development of a global Bycatch Management Information System (BMIS) and workshops for joint analysis of mitigation effectiveness

This work involves collating, catalysing and disseminating new information that will direct effective management to mitigate impacts on bycatch species including sharks, seabirds, sea turtles and

cetaceans. This will help reduce technical uncertainties across a range of stakeholders, allowing t-RFMO discussions to focus on management issues such as cost and feasibility.

In May 2017, [WCPFC launched the new Bycatch Management Information System \(BMIS\) web portal](https://www.bmis-bycatch.org/) available here <https://www.bmis-bycatch.org/>. The new enhanced BMIS with an engaging, user-friendly interface, allows searching of over 1000 curated references by species group, fishing gear or mitigation technique, and provides pointers to species identification and safe release guides.

Two workshops for Joint Analysis of Sea Turtle Mitigation Effectiveness took place in Honolulu, Hawaii, US in from Feb 16-19 February 2016 and from 3-8 November 2016. The first workshop with participants from 14 countries from all three oceans compiled a dataset which may be the world's largest compilation to date for longline fisheries and sea turtle interactions involving over 2,300 turtles caught by 31 fleets between 1989-2015. The second workshop revisited and agreed all of the building block models with the new data and completed an integrated analysis of mitigation scenarios. The [final report](#) was submitted to the WCPFC Scientific Committee in August 2017.

The final pair of workshops on mitigation is proposed to focus on post-release mortality of sharks. The first of these, an [Expert Workshop on Shark Post-Release Mortality Tagging](#) convened by WCPFC and SPC in New Zealand from 24-27 January 2017, produced a survey design that is now being implemented. As of 30 June 2017, 21 shortfin mako sharks have been tagged with the support of the New Zealand observer programme.

Longline sea trials in the Atlantic and Indian Oceans demonstrate the effectiveness of seabird mitigation measures by two different fleets

BirdLife International is carrying out various outreach activities to refine and facilitate the understanding of techniques to reduce the incidental mortality of birds during longline operations, as well as collecting information that could lead to assessing the extent of the application of the mitigation techniques in the field.

Activities have included:

- [National awareness workshops](#), for government officials, fisheries observers and industry reps started in October 2016. So far, workshops were held targeting Namibia, Indonesia, China (in collaboration with ACAP and WCPFC), Seychelles, South Africa, and Mozambique.
- Where there is a need to support fleets to become compliant with RFMO resolutions, the Project supports observer training workshops – these are intensive 5-day training for observers including conducting scientific research to enable mitigation trials to be conducted by national observers onboard, during production fishing. Observer training workshops have been conducted for Korea and Namibia so far.
- At sea trial demonstrations of sliding “lumo leads” on Korean longline vessels (8 trips in total since 2014).
- Port-based outreach targeting high seas fleets from Cape Town with the aim to raise awareness and build capacity amongst crews on matters related to seabird bycatch and the use of mitigation measures started in 2016. To date, 39 vessel visits have been carried out so far. Since October 2017, one Port-based outreach expert is based in Fiji, providing the same service to the longline fleet operating from Suva.

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- [Two regional seabird bycatch pre-assessment workshops](#) in South Africa (23-28 February 2017) and Vietnam (2-7 April 2017) with the aim to enhance collective understanding of the options available and challenges in analyzing seabird bycatch data, and collaborative steps to take in future to get a handle on global seabird bycatch estimates. A collaborative data preparation workshop is planned from February 20-24, 2018 in Peru, and a global assessment is likely to be in February 2019.

Purse seine sea trials in one ocean basin demonstrate the effectiveness of small tuna/shark mitigation measures and results disseminated to other ocean regions

This output, implemented by ISSF, includes research cruises in the Western Central Pacific, Atlantic and Indian Ocean, aiming to reduce bycatch in large industrial purse-seiners, followed by skipper workshops, and a final workshop to communicate results to all t-RFMOs.

Since mid-2015, in excess of 294 sea days have been expended in support of testing purse seine bycatch mitigation approaches. Since 2015, 26 Skipper's Workshops with 1,186 participants were conducted under the project involving dialogue on best practices for mitigating bycatch impacts of the global purse seine fleet. The best practices identified and tested are incorporated into a curriculum used in Skippers Training Workshops and these materials are available for [free public access](#). A summary of outcomes to date can be found at: <http://iss-foundation.org/knowledge-tools/technical-and-meeting-reports/download-info/issf-2017-03-issf-skippers-workshops-round-6/>

Filling bycatch and catch data gaps in the northern Indian Ocean tuna-directed gillnet fisheries

This output is led by WWF in close collaboration with IOTC and is mainly aimed at obtaining estimates of catch by species (include bycatch species) in the gillnet fisheries of the northern Indian Ocean. Bycatch data and catch data gaps have been identified, and results of the analysis of the initial data were shared with the IOTC Working Party. As of June 2017, through WWF Pakistan, 75 crew observers have been selected, trained and deputed on-board Pakistani tuna gillnet vessels to collect data and digital record through cameras. Coverage is now at 15% based on number of vessels covered. Data on catches and bycatch collected on Pakistani tuna gillnet vessels were reviewed during a full day meeting with the IOTC Secretariat on 19 May 2017 in the WWF-Pakistan Office.