COMMON OCEANS

Report on Training in Scientific Methods for At-sea Research Given to South Korea's National Fisheries Observers

for component 3.2.1 of the

Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the ABNJ

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Observer Training Report

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Introduction

The Korean pelagic longline fleet in the southern Indian Ocean targets southern bluefin, big-eye, and albacore tunas, and much of the effort overlaps with the ranges of threatened seabird species. The longline industries and National Fisheries Research Development Institute (NFRDI) in Korea have been actively investigating effectiveness of seabird bycatch mitigation measures, in collaboration with BirdLife South Africa (BLSA) and BirdLife International since 2012. In 2013 NFRDI and BirdLife International conducted an at-sea trial on a vessel of Sajo Industries. With the positive results from 2013, Korean government conducted additional experiments in 2014 with Lumo leads©, provided by BirdLife International with funding from the David and Lucille Packard Foundation. A positive outcome from the experimental tests to date confirms the need to undertake more trails to achieve a larger sample size. Prior to at-sea trials of 2015, a 5-day intensive observer training was developed and delivered by BirdLife South Africa, to further develop the capacity of fisheries observers to understand at-sea research protocols and to improve seabird identification skills.

Participants

Two Korean observers were invited to the observer training in Cape Town. Mr Gi Chul Choi has 8 years of experience as an observer, and he participated in the 2013 trial with BirdLife International and also undertook independent trials in 2014. Mr Jaegu Jung has been working as an observer for 2 years.

Observer Training Programme

The observer training programme was developed and delivered as the followings:

Day 1: Monday 9 March – Marine Ecosystems & Seabird Biology
09:00 Introduction to Observer Training Programme
09:10 Ecosystem Approach to Fisheries (EAF): A broad-scale perspective (Mrs B. Maree)
10:30 Tea break
11:00 Overview of tuna industries and brief history of bycatch and its mitigation (Dr Y. Kim)
12:30 Lunch
13:30 Seabird biology and identification (Ms C. Madden)

Day 2: Tuesday 10 March – Experimental Design and Data Management
09:00 Scientific study design, sample sizes and approaches to undertaking experimental work during production fishing (theory and case studies) (Dr R. Wanless)
10:30 Tea break
11:00 Best practice data recording and management for seabird research (Mr B. Lebepe)
12:30 Lunch
13:30 Practical: Hout Bay Harbour Visit (Mr B. Lebepe, Ms C. Madden & Dr Y. Kim)

Day 3: Thursday 12 March – Best Practice Recommendations and Mitigation Measures
09:00 Seabird bycatch in tuna longline fisheries – problems and solutions (Dr R. Wanless)
10:30 Tea break
11:00 Turtle bycatch best practice (Mrs A. Angel)
12:30 Lunch
13:30 IOTC observer programme and compliance (Dr Y. Kim)

Day 4: Wednesday 11 March – Pelagic Sea Trip, at sea-training
06:00 Hotel pick-up
06:45 Pelagic sea trip training – seabird identification (Dr R. Wanless, Mrs B. Maree & Dr Y. Kim)

Day 5: Friday 13 March – Bird-scaring Line Practical Training Session
09:00 Building a Best Practice-designed Bird-scaring Line (Mr B. Lebepe, Mrs B. Maree & Dr Y. Kim)
12:30 Lunch
13:30 Post training evaluation and discussion (Dr Y. Kim)

Outcomes

Ecosystem Approach to Fisheries

The concept of sustainable development, ecosystem, habitat and food web was introduced and definition was Ecosystem Approach to Fisheries (EAF) was given. The observers understood the need of EAF to manage our activities and harvesting of resources sustainably to protect the marine environment and ecosystem as a whole.

Overview of tuna industries and brief history of bycatch and its mitigation

World catches of major tuna species by oceans, species, fishing gear were shown to give an overview of tuna industries. Prior to 1988, when the problem of seabird bycatch first became widely known, avoiding seabird bycatch was something certain fishing masters did to maximise profits; not much was known about possible impact on seabird conservation. Current mitigation measures are effective if used appropriately, but more trials are required to adapt implementation of Best Practice measures to suite different fleets.

Seabird biology and identification

This section covered biological aspect of seabirds and differences between fish biology and seabird biology. Training was provided in key features to use when identifying seabirds at sea and how to identify dead seabirds. This included a video on how to handle and release birds onboard and principles of how to count seabird abundance.

Scientific study (theory and case studies)

The observers learnt how to design scientific study including collecting adequate sample sizes and approaches to undertaking experimental work during production fishing. This session used practical examples from the observers' experiences to reinforce the training.

Best practice data recording and management for seabird research

The observers learnt how to collect, store and share data effectively. The current data sheets that are used by ATF observers were shared. The observers noted that date, vessel name, trawl or set number, GPS coordinates, species and ring number should be recorded for dead seabird data.

Practical: Hout Bay Harbour Visit

The observers visited Hout Bay Harbour and met crews of a South African tuna longline vessel, Seawin Sapphire. The ATF team walked through experimental protocols and practical considerations were explained while reinforcing lessons from the previous sessions.

Seabird bycatch in tuna longline fisheries – problems and solutions

Detailed descriptions of three Best Practice seabird bycatch mitigation measures (bird-scaring lines, night setting and line weighting) were given. The observers noticed that none of the current measures is perfect and two measures should always be uses in combination.

Turtle bycatch best practice

Six turtle species that are frequently found in the Indian Ocean were introduced and observers learnt how to identify them. Observers learnt how to handle and release turtles. Some photos taken by the observers that could not be identified previously were identified during the session.

IOTC observer programme and compliance

How to record and report data were explained and how observer data are supporting National Reporting to RFMOs and improving the sustainable and ecosystem-based management approaches for tuna fishing on the high seas were discussed.

Pelagic sea trip training – seabird identification

The observers went on a pelagic sea trip with Albatross Task Force team for seabird identification. Observers got the opportunity to identify seabirds commonly encountered around fishing vessel and commonly found as bycatch, including Black-browed, Shy, Atlantic Yellow-nosed and Indian Yellow-nosed albatrosses, Cory's and Great shearwaters, and Spectacled and White-chinned petrels. A trawl vessel using a bird-scaring line (BSL) was encountered, providing a great opportunity to see first-hand how these devices act to scare seabirds away from fishing gear.

Building a Best Practice-designed Bird Scaring Line

The observers went to Ocean View Association for Persons with Disabilities where BSLs are built. The principal of BSL was already introduced as a part of the training, and this session was to show how to build a Best Practice-designed BSL. Observers are enabled to monitor whether the BSL used in Korean longliners are effective and they should be able to fix if BSL was broken or malfunctioned. In addition, Korean observers came up with an idea that potentially save costs and time for building.

Monitoring and Evaluation of the observer training

On the last day of the training, evaluation forms were given to observers. The copy of questionnaires can be found Appendix A.

Q1. Both observers answered that the materials were presented very clearly.

Q2. Both observers answered that the harbour visit was very helpful.

Q3. One observer answered that he liked the detailed explanations on key features to look when identifying seabirds, brief history of seabird bycatch mitigation and IOTC compliance. The other answered that he liked the pelagic sea trip, harbour visit, building BSLs and

lecturing on seabird identification, identification of dead seabirds, the reason why we need to protect seabirds. He also liked that he could understand why we need to conduct at-sea trials and how to conduct the trials.

Q4. Both observers answered what they liked least about the training were the accommodations.

Q5. One observer thought the training was very unique and the other answered that the training was slightly unique compared to other observer training they have participated so far.

Q6. – Q7. Both observers rated their seabird identification skills before the training as "good" and after the training as "expert".

Q8 – Q11. Both observers thought time for discussion was enough and total training length was about right. They rated the training as "very good" and they answered that they were very interested in participating in such trainings in the future.

Q12. At the future training, they would like to learn about seabird bycatch issue in other fishing industries such as trawls, demersal longlines and purse seiners, and seabird identification in other oceans.

Q13. Both observers thought that observer training should be offered once a year.

Q14. Both observers commented that all BirdLife staff was very passionate and easy to approach so they could discuss without any hesitation. They also thought that Korean interpretation was very helpful and, for the future training, they suggested that interpretation should be always provided for non-English speakers. They also would like to get all educational materials translated into their native languages in advance rather than after the training.

Future directions

BirdLife South Africa (BLSA) will continue the collaboration work with NFRDI in Korea to collect sufficient data to test statistically the impacts of weighting branchlines. A memorandum of agreement to cooperative sea trials between representatives of the industries, NFRDI and BLSA is being developed. The participants of this training will conduct observations on the use of line weighting in the coming months, onboard Korean tuna longliners where 100% of branchlines have been fitted with 45-g Lumo Leads.

The research data will be jointly written up as a scientific report, including experimental research and observations with 100% use of weighted branchlines. A progress report will be submitted to the Indian Ocean Tuna Commission's 11th Working Party on Ecosystem and Bycatch meeting, 7-11 September 2015. In addition, the results will be presented to 2nd World Seabird Conference, 26-30 October, 2015. A scientific paper will also be published in an international scientific journal if there is consensus on the content of the proposed

paper, and once the at-sea trials (expected to commence in July 2015) have been completed.

Providing training and technical workshop to crews and observers are key steps in assisting fleets implementing seabird bycatch mitigation measures. Two observer training sessions have been provided in Korea by BirdLife South Africa, but those were focused on lectures and discussions. This training in SA was unique in terms of providing practical sessions on a longline vessel, a sea trip to identify living birds, and practical demonstrations of building BSLs. As both observers comments, providing interpretation and translation is important for effective training. All training materials will be translated and provided not only to the observers but also to NFRDI so that they could be used in Korea.

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Appendix A.

2015 BirdLife Post-observer training Questionnaires

Name :

1. How clearly did the organisers present materials?
   1) Very clearly
   2) Moderately clearly
   3) Not at all clearly

2. How helpful was the harbour visit?
   1) Very helpful
   2) Somewhat helpful
   3) Not helpful

3. What did you like most about the training?

4. What did you like least about the training?

5. How unique was the training compared to other observer training you participated?
   1) Very unique
   2) slightly unique
   3) Not at all unique

6. How would you rate your seabird identification skills BEFORE training?
   (1 = bad, 2 = good, 3 = expert)

7. How would you rate your seabird identification skills AFTER training?
   (1 = bad, 2 = good, 3 = expert)

8. Did the organisers allow enough time for discussion?
   1) Too short
   2) Good
   3) Too long

9. How was the total training length?
   1) Too long
   2) About right
   3) Too short

10. Overall, how would you rate the training?
    1) Very good

2) Good
3) Okay
4) Bad
5) Very bad

11. Would you be interested to participate in such trainings in the future?
    1) Very interested
    2) Somewhat interested
    3) Not at all interested (Please give a reason:_____)

12. What topics would you like to learn about or discuss at the future training?

13. How often do you think observer training should be offered?
    1) Once every six month
    2) Once a year
    3) Others. Please specify:

14. Do you have any other comments or suggestions for the future training?