

SC-02-08 (02)

2nd Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific
Committee

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SIOFA Orange Roughy Acoustic Data Review

Approach and Timelines

Relates to agenda item: 8

Working paper info paper

SIOFA Secretariat

Abstract

Following the terms of reference for the project as attached below and building on the FAO/ABNJ meeting held in Rome in February 2017 the following work plan is proposed within the financial constraints of the project. It is expected there will be a follow up meeting of the FAO/ABNJ meeting participants in September 2017. If enough funds can be sourced this meeting will be face to face at a suitable location, potentially the Cook Islands, alternatively it will need to be done remotely

Recommendation

The meeting is invited to consider the approach and timelines for this review

SIOFA Orange Roughy Acoustic Data Review

Rudy Kloser 10/02/2017

Following the terms of reference for the project as attached below and building on the FAO/ABNJ meeting held in Rome in February 2017 the following work plan is proposed within the financial constraints of the project. It is expected there will be a follow up meeting of the FAO/ABNJ meeting participants in September 2017. If enough funds can be sourced this meeting will be face to face at a suitable location, potentially the Cook Islands, alternatively it will need to be done remotely.

Work plan addressing the terms of reference below:

1. Building on the FAO/ABNJ Rome workshop describe and quantify the various sources of uncertainty in estimates of orange roughy biomass using acoustic data. The FAO/ABNJ meeting highlighted that factors of 2 to 4 were possible and these need to be summarised and quantified prior to use of the data in stock assessments.
Based on the potential uncertainty in the acoustic data at different levels suggest and demonstrate how the biomass estimates could be used in a stock assessment as ground snapshots (absolute estimates) and as a time series of estimates in a relative sense to reduce uncertainties in target strength and absorption assumptions.
2. Review the protocols for collection of acoustic and ancillary data using the existing data collected and the guidelines provided in the FAO Tech Rep 1020. Build on the work conducted in FAO/ABNJ 2017 to refine and test existing and new survey protocols to facilitate this data collection. In particular address the issue of survey design through analysis of existing data sets as outlined in 3 below.
3. Several surveys were identified at the Rome workshop (e.g. Sleeping Beauty) including vessel mounted and net attached Acoustic Optical System with data provided. Building on the protocols developed at the FAO/ABNJ meeting work through the Sleeping Beauty data set and formalise the error estimate. These data will be analysed and compared to the original and revised 2009 estimates and reported so suitable for use in a stock assessment. An important aspect of this will be to analyse the net attached acoustic optical system data to inform estimates of the target strength of larger orange roughy as well as to explore the species composition on the SB ground.

Where possible and appropriate, this work would be undertaken in collaboration with SIOFA industry and other regional experts (e.g. Edwin Niklitschek from Chile). If within budget constraints we propose a meeting in late 2017 (potential Cook Island) to check data collected from the 2017 surveys and review progress of the historic data review and survey design method review.

Terms of Reference

Background

The third meeting of the parties agreed to a science budget that included:

“Start the analysis of existing acoustic data (Collected by industry vessels). The SC discussed that these data may be important for stock assessments (initially orange roughy). These data need to be reviewed, to consider such things as the uncertainty in species composition and check the calibration of the systems. The data from one or two grounds could be analysed to estimate biomass and the associated uncertainties. This is estimated as ~1 month work for the appropriate expert”

This activity was based on the SC1 discussion around progressing towards assessments for key fisheries resources. The SC1 noted the work tabled by the Cook Islands (analysing data 2004-08 and the suggestion that more recent data will be analysed prior to SC2) and the need for specialist technical expertise to assist the SIOFA SC. The SC operational work plan included analysis of acoustic data prior to SC2, building towards orange roughy assessments. Furthermore, CMM 2016/01 identifies that the status of stocks of principal fishery resources targeted to be undertaken by 2019 SC

This work recognises the SC1 discussion on the role of industry vessels as platforms for collecting data to inform stock assessments. Given the previous work analysing the existing acoustic data and in working towards stock assessments, there is a need for the SC to consider standards that assist in understanding how the data should be interpreted and used within an assessment framework.

Terms of Reference

1. Describe the use and interpretation of acoustic data within a deep-water orange roughy stock assessment framework. This would consider various levels of uncertainty (e.g. species

identification, survey design, target strength, absorption, calibration and data quality). This would also propose guidance to evaluate the quality of the data and the corresponding estimations.

2. Recommend methods for acoustic data collection from fishing vessels without on-board dedicated technicians to meet the stock assessment objectives above. Including issues such as data collection, quality control, survey design and ancillary species identification, target strength and biological parameters.

3. Provide an evaluation of the existing industry data, focused on one or two fishing grounds, against the adopted framework and how these data may be used within single stock assessments, as for orange roughy. This will include consideration of uncertainty in species identification, absorption, dead zone, data quality, calibration and survey strategy. This will be dependent on access to the industry data collected to date negotiated with the assistance of the SIOFA Secretariat.

Deliverables

- Paper to SC2 that summarises the proposed approach and timelines to elicit SC comment – deadline 10 Feb 2017.
- Paper to SC3 that addresses the terms of reference – 30 days before SC3 meeting dates (tbc).

Resources

The tasks are expected to take ~ 1 month of FTE.