CCSBT-EC/2010/22
(EC Agenda item 4.1.1)

Australian Government
Department of Agriculture, Water and the Environment

Commission for the Conservation of Southern Bluefin Tuna

Australia's progress toward implementation of stereo video

Cataloguing data

Purpose

At CCSBT26 Australia committed '*to submit a paper at least 4 weeks prior to CCSBT 27 providing a plan on its efforts to implement SV* [stereo video]. *An alternative outlook could be provided to improve confidence in the sampling system (currently the 100 fish greater than or equal to 10kg sample), seeking advice on protocols to avoid sampling bias from ESC 25.'* ***(Report of the Twenty Sixth Annual Meeting of the Commission)***.

This paper provides Australia's plan on its efforts to implement stereo video. Australia did not seek advice from the ESC to improve confidence in the current sampling technique. Australia remains committed to implementing stereo video and will continue to focus our efforts in this regard.

This paper can be read as supplement to ***(Australia) Progress toward implementation of stereo video CCSBT-EC/1910/26***.

1 Recent work conducted to implement stereo video

1.1 Engagement with other CCSBT Members

Australia has previously requested assistance from all CCSBT Members in identifying new or emerging technology or systems that might meet our preconditions for implementation. Australia continues to seek any assistance that can be provided by Members.

Australia sought information on the use of stereo video by Members of the International Commission for the Conservation of Atlantic Tunas (ICCAT) through the ICCAT Secretariat. The Secretariat responded noting stereoscopic cameras are required for certain bluefin tuna farming activities in accordance with the ICCAT paper ***Recommendation by ICCAT establishing a multi-annual management plan for Bluefin Tuna in the Eastern Atlantic and the Mediterranean Sea*** **(ICCAT, 2018, Rec. 18-02),** and in particular Annex 9 of that paper.

The Secretariat noted however that the actual implementation of the Recommendation is up to each individual contracting party, and the Secretariat does not have detailed information on the costs or technical aspects of the technology. The Secretariat suggested Australia approach the relevant Contracting Parties directly, noting the European Union (DG MARE), Morocco, Tunisia and Turkey are currently involved in bluefin tuna farming activities in the ICCAT Convention area. Australia is currently preparing a formal request to ICCAT seeking information from these Contracting Parties.

1.2 Meeting with Australian systems supplier and industry

AQ1 systems (AQ1) is an Australian based supplier of equipment to the aquaculture sector worldwide, including some stereo video measurement systems.

Following on from discussions from 2019 with AQ1, in early 2020 the Australian Government convened a meeting in Port Lincoln including AQ1 and representatives of Australia's SBT farm industry. The meeting discussed the potential use of AQ1's systems in Australia's SBT farms.

AQ1 advised they are continuing work toward a fully automated system which may be available in the medium term. It was again reiterated that work to develop a system to meet the particular needs of Australian SBT farms would be required.

The Australian Government remains in contact with AQ1.

1.3 Collaboration with Japanese systems supplier

With the assistance of the Japanese Government, Australia has been in contact with a Japanese commercial company NEC regarding their stereo video technology. NEC has developed stereo video technology using Artificial Intelligence which is used in some tuna farming operations in Japan.

In early 2020, NEC gave a presentation to Australian officials in Japan, providing an overview of their stereo video technology. As follow up, the Australian Government sought an opportunity to observe this technology in operation in Japanese tuna farms. We understand work safety issues may prevent direct observation of transfer measurement technology, but a farm using NEC technology has agreed to allow observation of other application of stereo video on the farm. However the COVID-19 situation has prevented this from happening. Australia remains

committed to a site visit once it is safe to do so and, in the meantime, may seek to organise a video conference with NEC to observe and discuss the technology.

1.4 Collaboration with New Zealand

Australia continues to monitor scientific literature in the field of stereo video and as a result found a New Zealand based company —Plant and Food Research— who are active in camera based measurement applications and technology in aquaculture. Plant and Food Research has developed underwater vision technology for measuring aquaculture broodstock. Australia was subsequently introduced to the company by the New Zealand CCSBT Commissioner.

Plant and Food Research have indicated that technology that would meet Australia's preconditions for adoption is not yet available, but there may be opportunities for collaborative development of such technology. Australia continues to discuss this with Plant and Food Research.

2 Forward plan

Despite Australia's active investigation of systems that are currently available, it is not certain that any system currently commercially available would be able to meet Australia's pre conditions without trialling the technology.

For this reason, Australia will trial the cost effectiveness and accuracy of automated stereo video systems *in situ* in Australia's tuna farms. Part of this trial will determine the extent that stereo video technology is currently able to be automated. We will endeavour to start the trial in early 2021 subject to the trial design allowing tenderers to proceed under COVID-19 restrictions.

The trial will form the first of three phases to progress Australia's implementation of stereo video. Once the trial is complete we will move to the second phase – working with our industry on the trial results and discussions on the operational aspects of the implementation of the technology.

Subject to the results of the trial, the final phase would be to work with our industry and fisheries managers on the implementation of the technology and related regulations and conditions. In considering the implementation of any system requirement, Australia's preconditions of being fully automated and cost effective remain. We will also consider any regulatory burden on businesses, community organisations and individuals.

Implementation of any new system would need to be done in accordance with rules and policies that the Australian Government has in place. These include notice and consultation requirements if changes to Australia's Southern Bluefin Tuna Fishery Management Plan are required, the drafting and consideration of a Regulatory Impact Statement and drafting and approval by parliament of any amendments to fisheries legislation that might be required to allow for the implementation of stereo video.

Australia envisages implementation of a satisfactory stereo video measurement system, once one is identified, might take in the order of two years from when a system is identified.

As noted above, COVID-19 restrictions continue to impact on domestic and international travel and this may prevent some companies worldwide from tendering to undertake the trial. Australia will consider this issue in deciding when to tender for the trial, noting our desire to maximise the likelihood that a suitable system can be identified.

If the trial is not successful, Australia will continue to engage with stereo video providers and industry to work toward finding a stereo video technology that meets our preconditions.

3 References

CCSBT, 2019, *Report of the Twenty Sixth Annual Meeting of the Commission*, 14-17 October, 2019, Cape Town, South Africa.

CCSBT, 2019, *(Australia) Progress toward implementation of stereo video*, CCSBT-EC/1910/26, Meeting of the Extended Committee, 14-17 October, 2019, Cape Town, South Africa.

ICCAT, 2018, *Recommendation by ICCAT establishing a multi-annual management plan for Bluefin Tuna in the Eastern Atlantic and the Mediterranean Sea (Rec. 18-02),* available at: https://www.iccat.int/Documents/Recs/compendiopdf-e/2018-02-e.pdf