
Report of the 1st Workshop on Connecting the IOTC Science and Management Processes (SMWS01)

Phuket, Thailand, 25–27 July 2014



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BIBLIOGRAPHIC ENTRY

IOTC–SMWS01 2014. Report of the 1st Workshop on Connecting the IOTC Science and Management Processes (SMWS01), Phuket, Thailand, 25–27 July 2014. *IOTC–2014–SMWS01–R[E]*: 10 pp.

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ACRONYMS

BOBLME	Bay of Bengal Large Marine Ecosystems project
IOTC	Indian Ocean Tuna Commission
CMM	Conservation and Management Measure (of the IOTC; Resolutions and Recommendations)
CPCs	Contracting parties and cooperating non-contracting parties
CSIRO	Commonwealth Scientific and Industrial Research Organisation, of Australia
MPF	Meeting Participation Fund, of the IOTC
SMWS	Science to Management Workshop (Workshop on Connecting the IOTC Science and Management Processes)
WPNT	Working Party on Neritic Tunas, of the IOTC

BACKGROUND

At its 17th Session in 2013, the Commission agreed to further support capacity building activities among its Members by implementing adequate capacity building and support programmes, financially supported by Members through the Commission's budget, as well as through voluntary contributions by CPCs and other interested parties.

As a result, the IOTC Secretariat reached an agreement with BOBLME to co-finance a three day workshop 25–27 June, 2014 in Phuket, Thailand. The workshop occurred in the days prior to the 4th Session of the IOTC Working Party on Neritic Tunas (WPNT04) so that participants may attend both meetings for maximum cost effectiveness and to further build capacity among developing coastal state scientists who attend the WPNT.

The aims of the three day workshop were to:

- improve the level of comprehension among IOTC Members on how the scientific process informs the management of IOTC species and ecosystems
- increase the awareness of IOTC Members to their obligations, as stipulated in the Commissions' Conservation and Management Measures which are based on rigorous scientific advice
- Improve the decision making process within the IOTC.

The workshop covered the following core topics:

- Structure and functioning of the IOTC
- Current status of IOTC stocks
- Communicating IOTC science to managers
- Lessons to be learnt from other fisheries management structures
- How to interpret science advice as a manager
- Country level implications arising from stock assessment results and management options analyses
- How the Commission uses Science advice to develop Conservation and Management Measures
- Implications of current Conservation and Management Measures for CPCs
- Effects of poor compliance with IOTC requirements on the provision of scientific advice and management.

The **target audience** for the workshop were national scientists and middle managers, who support IOTC Commissioners from developing coastal states.

All participants to the WPNT04 were encouraged to attend the three day workshop, and those receiving financial support from the IOTC Meeting Participation Fund (MPF) were required to attend the SMWS01.

Please note that the documents available for the workshop will be posted to the IOTC website as soon as they are available: <http://iotc.org/meetings/1st-workshop-connecting-iotc-science-and-management-processes>

The participation of developing coastal state CPCs of the IOTC was supported through the Capacity Building budget line of the IOTC budget for 2014 and through support from BOBLME.

The workshop was taught by Dr. David Wilson (Deputy Secretary/Science Manager, IOTC) Dr. Rishi Sharma (Fishery Officer – Stock Assessment, IOTC), Dr. Shijie Zhou (Invited Expert, CSIRO) and Dr. Chris O'Brien (Regional Coordinator, BOBLME). A total of 30 participants attended the workshop. A list of participants is provided at [Appendix I](#).

APPROACH AND WORKSHOP CONTENT

The workshop was run in the format of lectures/presentation followed by case studies, open discussion and practical exercise by participants and revolved around the following four key topics:

- 1) Background to IOTC & the management of highly migratory species
- 2) How scientific advice is generated and effectively communicated (Theory and practice)
- 3) The decision making process based on advice received (Theory and practice)
- 4) National implementation and compliance with decisions of the Commission

The Agenda is provided at [Appendix II](#), and all of the presentations made are available from the IOTC website: <http://iotc.org/meetings/1st-workshop-connecting-iotc-science-and-management-processes>

WORKSHOP EFFECTIVENESS

A survey was designed for feedback at the end of the workshop ([Appendix III](#)) and the results are summarised in [Appendix IV](#).

The overall rating for the SMWS01 were as follows:

Rating	Number of responses	% score
Not relevant	0	0
Satisfactory	1	3.85
Good	9	34.62
Excellent	11	42.31
Outstanding	5	19.22
Total	26	100

FUTURE WORKSHOPS

As required by IOTC Resolution 14/03 On *enhancing the dialogue between fisheries scientists and managers*, the SMWS series will continue into the future, with the 2nd Workshop on Connecting the IOTC Science and Management Process scheduled to be held in September, 2014 in Cape Town, South Africa.

The SMWS02 will repeat much of the SMWS01 to participants from the western Indian Ocean CPCs, with refined course material and objectives.

APPENDIX I

LIST OF PARTICIPANTS

Facilitators

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APPENDIX II
AGENDA – 1ST WORKSHOP ON CONNECTING THE IOTC SCIENCE AND MANAGEMENT PROCESSES (SMWS01)

Date: 25–27 June 2014

Location: Phuket, Thailand

Venue: Novotel Phuket Resort, Patong, Phuket, Thailand

Time: 09:00 – 17:00 daily

Facilitator: Dr. David Wilson; **Co-Facilitators:** Dr. Chris O'Brien; Dr. Rishi Sharma; Dr. Shijie Zhou

1. **OPENING OF THE MEETING AND ARRANGEMENTS FOR THE WORKSHOP** (IOTC Secretariat/ BOBLME)
2. **THE STRUCTURE AND FUNCTIONING OF THE IOTC PROCESS: Overview** (Dr. David Wilson: IOTC Secretariat)
3. **SIMPLE STOCK ASSESSMENT METHODS AND INDICATORS** (Dr. Rishi Sharma: IOTC Secretariat; Dr. Shiji Zhou: Invited Expert for WPNT04)
 - 3.1 Basic models
 - 3.2 The basic data types used by simple models; effects of problems in these data types
 - 3.3 Effects of errors (process and measurement) in the assessment
 - 3.4 Review of a typical analysis: data issues, CPUE analysis, basic kinds of assessments
 - 3.5 Discussion and practical session
4. **DATA-POOR APPROACHES TO DETERMINE STOCK STATUS** (Dr. Rishi Sharma: IOTC Secretariat & Dr. Shiji Zhou: Invited Expert for WPNT04)
 - 4.1 Use of management advice in the formulation of joint management actions in the presence of uncertainty: basic introduction
 - 4.2 Precautionary approach: reference points and harvest control rules
 - 4.3 Discussion and practical session
5. **THE WEIGHT-OF-EVIDENCE FRAMEWORK** (Dr. David Wilson: IOTC Secretariat)
 - 5.1 Introduction to the Weight-of-Evidence Framework
 - 5.2 Case studies on how to apply the framework
 - 5.3 Communicating the Weight-of-Evidence results to managers and policy makers within the IOTC
 - 5.4 Discussion and practical session
6. **DEVELOPMENT AND EFFECTIVE COMMUNICATION OF SCIENTIFICALLY-BASED MANAGEMENT ADVICE** (Dr. David Wilson & Dr. Rishi Sharma: IOTC Secretariat; Dr. Chris O'Brien: BOBLME))
 - 6.1 Use of management advice in the formulation of joint management actions in the presence of uncertainty: basic introduction
 - 6.2 Precautionary approach: reference points and harvest control rules
 - 6.3 What are acceptable levels of risk for management?
 - 6.4 Constructing robust harvest control rules: Management Strategy Evaluation
 - 6.5 Communicating effectively the effects of uncertainty
 - 6.6 Implementation of management actions including data collection
 - 6.7 Case studies on how the IOTC working parties develop management advice: Species executive summaries
 - 6.8 Discussion and practical session
7. **IOTC CONSERVATION AND MANAGEMENT MEASURES** (Dr. David Wilson & Dr. Rishi Sharma: IOTC Secretariat)
 - 7.1 Defining an IOTC Conservation and Management Measure
 - 7.2 Case studies of how the Commission has used and not used scientifically-based management advice in the development of its Conservation and Management Measures
 - 7.3 Pitfalls of waiting too long or being too quick to provide scientifically-based management advice
 - 7.4 Discussion and practical session
8. **IMPLEMENTATION OF MANAGEMENT ACTIONS** (Dr. David Wilson & Dr. Rishi Sharma: IOTC Secretariat)
 - 8.1 Obligations of IOTC Members in the implementation of IOTC CMMs
 - 8.2 Effects of poorly implemented management actions
 - 8.3 Decision making processes and implementation within the IOTC
 - 8.4 Discussion and practical session

APPENDIX III
SMWS01: COURSE SURVEY

Please answer the questions as to relevance (please circle)

1. What is your role within your organisation?
 Manager Policy maker Research Scientist/Biologist Academia
2. Did you find this course useful?
 1. Not relevant 2. Somewhat relevant 3. Relevant 4. Highly Relevant
3. Would you want another course as a follow up in more depth?
 1. No 2. Unsure 3. Maybe. 4. Yes 5. Undoubtedly Yes
4. Would you want a course dealing with intricate details of stock assessment to be the focus?
 1. No 2. Unsure 3. Maybe. 4. Yes 5. Undoubtedly Yes
5. Would more exercises/practicals make some of this material easier to understand?
 1. No 2. Unsure 3. Maybe. 4. Yes 5. Undoubtedly Yes
6. Is there a need for more workshops and trainings of this sort in the region?
 1. Yes 2. No 3. Maybe
7. Please rate each of the sections of the use in terms of how useful you found it to be:

Agenda Item 2: The structure and functioning of the IOTC process: overview
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Agenda Item 3: Simple stock assessment methods and indicators
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Agenda Item 4: Data-poor approaches to determine stock status
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Agenda Item 5: The weight-of-evidence framework
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Agenda Item 6: Development and effective communication of scientifically-based management advice
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Agenda Item 7: IOTC Conservation and Management Measures
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Agenda Item 8: Implementation of management actions
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding
8. Overall course rating.
 1. Not relevant 2. Satisfactory 3. Good. 4. Excellent 5. Outstanding

Other comments:

APPENDIX IV
SMWS01: SURVEY RESULTS

Survey question			Response		
1) What is your role within your organization?	Manager = 3	Policy maker = 7	Scientist/ researcher = 15	Academia = 1	Other = 0
2) Did you find this course useful?	Not relevant = 1	Somewhat relevant = 4	Relevant = 6	Highly relevant = 8	No response = 13
3) Would you want another course as a follow up in more depth?	No = 0	Unsure = 1	Maybe = 3	Yes = 12	Undoubtedly Yes = 10
4) Would you want a course dealing with intricate details of stock assessment to be the focus?	No = 1	Unsure = 0	Maybe = 4	Yes = 12	Undoubtedly Yes = 9
5) Would more exercises/practicals make some of this material easier to understand?	No = 0	Unsure = 0	Maybe = 4	Yes = 13	Undoubtedly Yes = 9
6) Is there a need for more workshops and trainings of this sort in the region?	Yes = 25	No = 0	Maybe = 1		
7) Please rate each of the sections of the use in terms of how useful you found it to be:					
Agenda Item 2: The structure and functioning of the IOTC process: overview	Not relevant = 0	Satisfactory = 3	Good = 15	Excellent = 8	Outstanding = 0
Agenda Item 3: Simple stock assessment methods and indicators	Not relevant = 0	Satisfactory = 1	Good = 16	Excellent = 7	Outstanding = 2
Agenda Item 4: Data-poor approaches to determine stock status	Not relevant = 0	Satisfactory = 2	Good = 18	Excellent = 6	Outstanding = 0
Agenda Item 5: The weight-of-evidence framework	Not relevant = 0	Satisfactory = 0	Good = 17	Excellent = 8	Outstanding = 1
Agenda Item 6: Development and effective communication of scientifically-based management advice	Not relevant = 0	Satisfactory = 3	Good = 10	Excellent = 8	Outstanding = 4
Agenda Item 7: IOTC Conservation and Management Measures	Not relevant = 0	Satisfactory = 3	Good = 9	Excellent = 10	Outstanding = 4
Agenda Item 8: Implementation of management actions	Not relevant = 0	Satisfactory = 2	Good = 14	Excellent = 6	Outstanding = 4
8) Overall course rating.	Not relevant = 0	Satisfactory = 1	Good = 9	Excellent = 11	Outstanding = 5

Other comments (from participants on survey):

There may be some similar level workshops in some countries, especially where management measures are well understood and being implemented.

More time is required for practical sessions to enable trainees to apply the theory in practice. Much time has been spent on theoretical part but only few hours was used in practical.

This workshop is very useful for me as a new comment for this field. Si it is great experience.

Capacity building in the data analysis areas (catch & effort, and size, CPUE etc). This will improve the quality of papers and science at working party meetings.

Thank you for the training. Hopefully there will be another training.

Perhaps we need workshops of four days which would allow better discussion of some important issues. The group discussion would be [expanded] when possible to give a chance to present the results in powerpoint for better sharing the ideas in most of the exercises.

<p>A course on 'R' statistical analysis will be useful to increase the capacity of the scientists in the region.</p>
<p>Dealt in detail about the Reference Points, which are the major parameters for arriving at stock conditions and formulating advice. However, the estimation of these parameters from the available datasets, and with the CPC's or scientists were not taught. It should be taken care of in the next workshop.</p>
<p>I think the workshop is very good, its improving my understanding on data analysis and policy processes in the IOTC. However, the time is too short. I suggest that every section need to include the practice/activity, especially for data (using real data). I recommend that IOTC upgrade the ability of the members by conducting advanced training for data analysis and presentation. Thank you very much for IOTC and BOBLME and all the presenters.</p>
<p>The workshop was thoroughly planned and was an eye opener on several existing issues in the IOTC region. The IOTC must come out with detailed working manuals for stock assessment and resources with examples on plotting KOBE and interpreting them so that the participants from different IOTC CPC countries can follow these methods and for uniform pattern of estimating the stock status.</p>
<p>The problem in coastal countries could be written in two different categories (1 – Fisheries department and 2 – scientists/researchers). 1) The fisheries department goes his way and it is not important for them stock assessment and advices or recommendations of research. 2) It is the care that fisheries organization should be focal point but I think that researchers should have the right to attend and give their ideas. So it is the IOTC duty to cover this problem. 3) to give examples and explain for example KOBE plot from beginning step by step is more comprehensive than give a lot of examples without understanding the briefs. 4) Working Parties is a meeting for research officer not experts from fisheries departments in my opinion, experts of fisheries departments could attend in some working parties such as WPP on Data Collection and Statistics.</p>