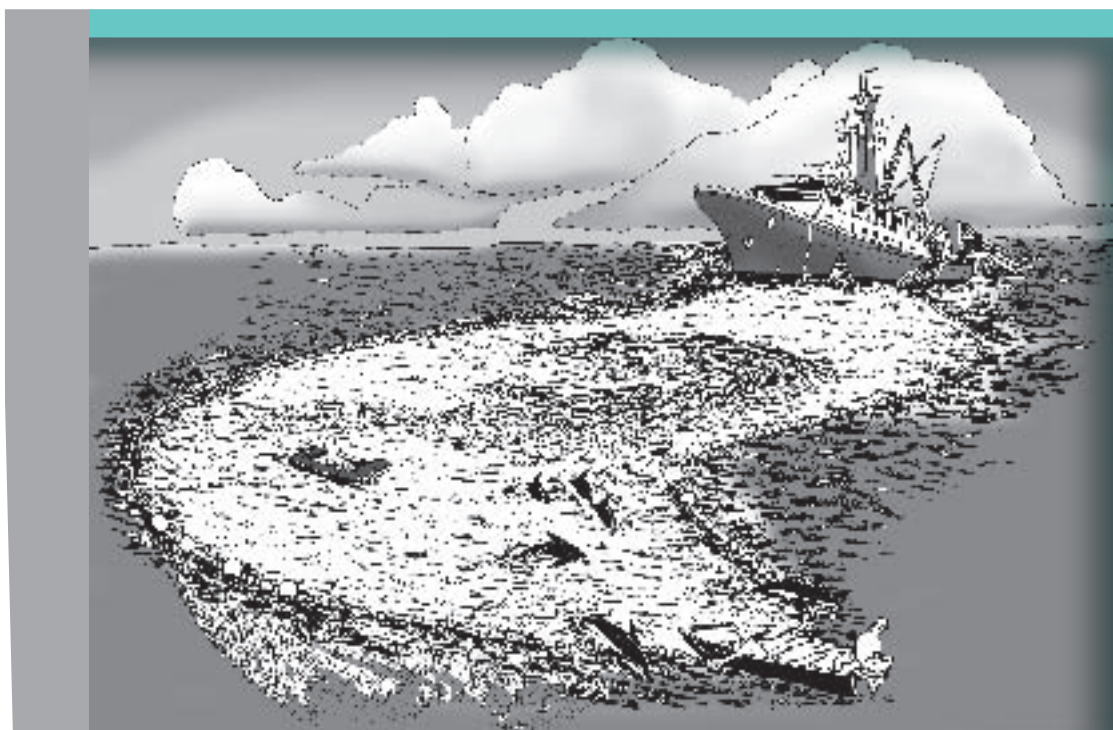


# Methodological Workshop on the Management of Tuna Fishing Capacity

Stock status, data envelopment analysis,  
industry surveys and management options

8–12 May 2006

La Jolla, California, United States of America



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Edited by

**W.H. Bayliff**

Inter-American Tropical Tuna Commission

La Jolla, California, United States of America

and

**J. Majkowski**

Fisheries Management and Conservation Service

Fisheries and Aquaculture Management Division

FAO Fisheries and Aquaculture Department

Rome, Italy

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# Preparation of this document

These Proceedings present an outcome of the Methodological Workshop on the Management of Tuna Fishing Capacity: Stock Status, Data Envelopment Analysis, Industry Surveys and Management Options. It was hosted by the Inter-American Tropical Tuna Commission (IATTC) in La Jolla, California, United States of America, from 8 to 2 May 2006.

This Workshop was organized by FAO's Project on the "Management of tuna fishing capacity: conservation and socio-economics", which was financed by the Government of Japan. It was undertaken in collaboration with and with financial and in-kind support of (i) most tuna agencies and programmes, (ii) other international and national fisheries institutions involved in tuna fishing, fisheries research and management (including those of tuna fishing industry) and (iii) some universities. They included, respectively:

- i. the Forum Fisheries Agency (FFA), IATTC, the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Indian Ocean Tuna Commission (IOTC), the Secretariat of the Pacific Community (SPC);
- ii. the Japan Federation of Tuna Fisherman's Association (Japan Tuna), the National Fisheries Service (NMFS), the National Research Institute of Far Seas Fisheries (NRIFSF), the World Tuna Purse-Seine Organization (WTPO); and
- iii. the College of William and Mary (CWM) and the University of California, San Diego (UCSD).

Shortly after its commencement, the Project established an external Technical Advisory Committee (TAC) composed of experts affiliated with the tuna agencies and programmes and some other institutions involved in tuna fishing, fisheries research and management to foster the collaboration with these institutions. From 26 to 28 March 2003 the Project organized the first meeting of TAC to:

- review methods for the estimation of fishing capacity and their data requirements;
- determine the applicability of these methods for tuna fisheries; and
- finalize proposals of the Studies to be carried out by the Project.

The subjects of these Studies were:

- tuna resources and fisheries;
- the quantification of tuna fishing capacity;
- the demand for tuna raw materials and products and their prices; and
- the management of tuna fisheries, particularly through controlling fishing capacity.

From 15 to 8 March 2004, the second meeting of TAC was held in Madrid, Spain to:

- review the outcome of the Studies implemented by the Project and
- make recommendations on tuna fishing capacity management and future activities of the Project.

The second meeting of TAC also prepared a Statement, which was presented at the Technical Consultation to Review Progress and Promote the Full Implementation of the International Plan of Action (IPOA) to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing and the IPOA for the Management of Fishing Capacity (Rome, Italy, 24–29 June 2004). The papers resulting from the Studies were published in 2005 as FAO Fisheries Proceedings No. 2 entitled "Proceedings of the Second Meeting of the Technical Advisory Committee of the FAO Project

Management of tuna fishing capacity: conservation and socio-economics Madrid (Spain), 15-18 March 2004.”

As a result of recommendations of the second meeting of TAC, the Project organized the Workshop, the outcome of which is presented in these Proceedings. Its objectives were:

- to develop a method for the estimation of tuna fishing capacity from stock assessment-related information;
- to determine the feasibility of: (i) routinely collecting input data for the so-called Data Envelopment Analysis (DEA); and (ii) performing industry surveys of tuna fishing capacity utilization;
- to relate DEA estimates of fishing capacity utilization to traditional estimates of fishing capacity;
- to review the factors affecting fishing capacity (like the number of vessels and their physical characteristics) that could be regulated by fisheries authorities;
- to review the existing measures for managing tuna fishing capacity and, possibly, to identify additional options for such measures in the context of the outcome of addressing the above-mentioned objectives;
- to prepare a Statement of participants of the Workshop; and
- to formulate recommendations of the Workshop to the FAO Project on the Management of Tuna Fishing Capacity, FAO and the other institutions participating in the Workshop.

After the Workshop, the papers presented were revised in response to comments received during the Workshop and technically edited. The papers are included as part of these Proceedings together with the Report of the Workshop. The Statement prepared by the Workshop is enclosed in the Report. That Statement was presented at the Meeting of Tuna Regional Fisheries Management Organizations, which was held in Kobe, Japan, from 22 to 26 January 2007.

# Abstract

These Proceedings include the report and papers presented at the Methodological Workshop on the Management of Tuna Fishing Capacity: Stock Status, Data Envelopment Analysis, Industry Surveys and Management Options. The Workshop was hosted by the Inter-American Tropical Tuna Commission (IATTC) in La Jolla, California, United States of America, from 8 to 12 May 2006 as an activity of FAO's Japan-funded Project on the "Management of tuna fishing capacity: conservation and socio-economics". The Workshop was organized by the Project in collaboration with and with financial and in-kind support of: (i) most tuna agencies and programmes; (ii) other international and national fisheries institutions involved in tuna fishing, fisheries research and management (including those of tuna fishing industry); and (iii) some universities.

The objectives of the Workshop were:

- 1) to develop a method for the estimation of tuna fishing capacity from stock assessment-related information;
- 2) to determine the feasibility of: (i) routinely collecting input data for the so-called data envelopment analysis (DEA); and (ii) performing industry surveys of tuna fishing capacity utilization;
- 3) to relate DEA estimates of fishing capacity utilization to traditional estimates of fishing capacity;
- 4) to review the factors affecting fishing capacity (like the number of vessels and their physical characteristics) that could be regulated by fisheries authorities;
- 5) to review the existing measures for managing tuna fishing capacity and possibly, to identify additional options for such measures in the context of the outcome of addressing the above-mentioned objectives;
- 6) to prepare a statement of participants of the Workshop; and
- 7) to formulate recommendations of the Workshop to the FAO Project on the Management of Tuna Fishing Capacity, FAO and the other institutions participating in the Workshop.

The papers presented in these Proceedings include those associated with objectives 1 to 5. The report documents presentations made at and the discussions carried out during the Workshop, their conclusions and the recommendations. The Statement prepared by the Workshop (see Objective 6) is enclosed in the report. That Statement was presented at the Meeting of Tuna Regional Fisheries Management Organizations, which was held in Kobe, Japan from 22 to 26 January 2007.

**Bayliff, W.H.; Majkowski, J. (eds.)**

Methodological Workshop on the Management of Tuna Fishing Capacity: Stock Status, Data Envelopment Analysis, Industry Surveys and Management Options. La Jolla, California, United States of America, 8–12 May 2006.

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# Contents

Preparation of this document	iii
Abstract	v
Acknowledgements	ix

## **REPORT OF THE WORKSHOP 1**

1. Opening	1
2. Introduction of participants	1
3. Adoption of the provisional agenda	1
4. Logistic arrangements for the Workshop	1
5. Statement from and report of the Workshop: content and logistic arrangements for their preparation	2
6. Overview of the project and its implementation	2
7. Development of quantitative methods to determine the desired change to fishing capacity on the basis of the status of stocks	2
8. Feasibility of (1) routinely collecting input data for data envelopment analyses (DEAs) and (2) performing industry surveys of fishing capacity utilization	4
9. Review of factors affecting fishing capacity that could be regulated by fisheries authorities	7
10. Review of existing measures for managing tuna fishing capacity and possible identification of additional options for such measures in the context of the outcome of addressing agenda items 7 to 9	8
11. Statement from the Workshop: discussion of content	11
12. Future research related to the management of tuna fishing capacity: formulation of a proposal (combined with agenda item 13)	12
13. Overall discussion and recommendations (combined with agenda item 12)	12
14. Statement from the Workshop: review of its first draft	13
15. Other matters	13
16. Adoption of the statement from and report of the Workshop provisional list of papers	13
17. Adjournment	13
APPENDIX I – Programme	15
APPENDIX II – List of participants	17
APPENDIX III – Provisional agenda	19
APPENDIX IV – List of papers	21
APPENDIX V – Glossary of terms	23
APPENDIX VI – Statement from the Workshop	27

## **PAPERS PRESENTED AT THE WORKSHOP 29**

<b>Overview of the FAO Project on the Management of Tuna Fishing Capacity and its implementation</b>	<b>31</b>
JACEK MAJKOWSKI	

<b>Estimated target fleet capacity for the tuna fleet in the eastern Pacific Ocean, based on stock assessments of target species</b>	<b>39</b>
PABLO ARENAS	
<b>Estimates of large-scale purse-seine, baitboat and longline fishing capacity in the Atlantic Ocean: an analysis based on a stock assessment of bigeye tuna</b>	<b>51</b>
VICTOR R. RESTREPO	
<b>Case study of the impact of recent management measures on overall fishing capacity and fishing effort of the United States North Atlantic Ocean longline fleet</b>	<b>63</b>
GERALD P. SCOTT AND GUILLERMO DIAZ	
<b>Estimates of large-scale purse-seine and longline fishing capacity in the western and central Pacific Ocean based on stock assessments of target species</b>	<b>71</b>
JOHN HAMPTON	
<b>Measuring fishing capacity in tuna fisheries: Data Envelopment Analysis, industry surveys and data collection</b>	<b>87</b>
CHRIS REID AND DALE SQUIRES	
<b>Assessing capacity in the United States Northwest Atlantic pelagic longline fishery for highly migratory species with undesirable outputs</b>	<b>99</b>
TARA SCOTT, JAMES E. KIRKLEY, RONALD RINALDO AND DALE SQUIRES	
<b>Factors affecting recent developments in tuna longline fishing capacity and possible options for management of longline capacity</b>	<b>107</b>
MAKOTO PETER MIYAKE	
<b>Tuna fishing capacity: perspective of the purse-seine fishing industry on factors affecting it and its management</b>	<b>117</b>
JULIO MORÓN	
<b>Productivity growth in natural resource industries and the environment: an application to the Korean tuna purse-seine fleet in the Pacific Ocean</b>	<b>129</b>
DALE SQUIRES, CHRIS REID AND YONGIL JEON (corresponding author)	
<b>Relating estimates of fishing capacity obtained from Data Envelopment Analysis to traditional measures of fishing capacity</b>	<b>141</b>
DALE SQUIRES, JAMES KIRKLEY, JAMES JOSEPH, THEODORE GROVES AND CHRIS REID	
<b>Requirements and alternatives for the limitation of fishing capacity in tuna purse-seine fleets</b>	<b>153</b>
JAMES JOSEPH, DALE SQUIRES, WILLIAM BAYLIFF AND THEODORE GROVES	
<b>Buybacks in fisheries</b>	<b>193</b>
DALE SQUIRES, JAMES JOSEPH AND THEODORE GROVES	

# Acknowledgements

The organization of the Workshop, the outcome of which is presented in these Proceedings, was possible only due to FAO's Project on the Management of tuna fishing capacity: conservation and socio-economics. This Project was financed by the Government of Japan. The Project organized the Workshop in collaboration with and with financial and in-kind support of: (i) most tuna agencies and programmes; (ii) other international and national fisheries institutions involved in tuna fishing, fisheries research and management (including those of tuna fishing industry); and (iii) some universities. They included, respectively:

- the Forum Fisheries Agency (FFA), the Inter-American Tropical Tuna Commission (IATTC), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Indian Ocean Tuna Commission (IOTC), the Secretariat of the Pacific Community (SPC);
- the Japan Federation of Tuna Fisherman's Association (Japan Tuna), the National Fisheries Service (NMFS), the National Research Institute of Far Seas Fisheries (NRIFSF), the World Tuna Purse-Seine Organization (WTPO);
- the College of William and Mary (CWM) and the University of California, San Diego (UCSD).

These institutions contributed to the preparatory technical work for the Workshop, including the implementation of various studies, which were documented in the papers presented at the Workshop. They also financed the participation of their experts at the Workshop.

Shortly after its commencement, the Project established an external Technical Advisory Committee (TAC) composed of experts affiliated with the Tuna Agencies and Programs and some other institutions involved in tuna fishing, fisheries research and management to foster the collaboration with these institutions. The Members of TAC at the time of holding the Workshop are listed below.

- Dr Robin Allen, Director, Inter-American Tropical Tuna Commission (IATTC).
- Mr Alejandro Anganuzzi, Secretary, Indian Ocean Tuna Commission (IOTC).
- Dr John Annala, Chair, Stock Assessment Group (SAG), Commission for the Conservation of Southern Bluefin Tuna (CCSBT).
- Dr John Hampton, Manager, Oceanic Fisheries Programme (OFP), Secretariat of the Pacific Community (SPC).
- Dr James Joseph, Consultant.
- Dr Peter Miyake, Scientific Advisor, Japan Tuna Fisheries Co-operative Association.
- Dr Julio Morón, Assistant Director, Organización de Productores Asociados de Grandes Atuneros Congeladores (OPAGAC) and, till May 2003, Secretary, World Tuna Purse Seine Organization (WTPO).
- Dr Chris Reid, Market Advisor, Forum Fisheries Agency (FFA).
- Dr Victor Restrepo, Assistant Executive Secretary, International Commission for the Conservation of Atlantic Tuna (ICCAT).
- Dr Suba Subasinghe, Director, INFOFISH.
- Dr Naozumi Miyabe, Director, Temperate Tuna Resources Division, National Research Institute of Far Seas Fisheries (NRIFSF).

The TAC recommended the organization of the Workshop.

The editors of these Proceedings are grateful to the Government of Japan, the institutions and persons listed above, the authors of the papers included as part of

these Proceedings and all the participants of the Workshop for their collaboration and support of the Workshop. Only thanks to this collaboration and support, was it possible to produce these Proceedings. Thanks are also due to Ms Emanuela D'Antoni who prepared the cover drawing of this publication.