FAO
FISHERIES AND
AQUACULTURE
TECHNICAL
PAPER

569

ISSN 2070-7010

Review of the state of world marine fishery resources

Cover illustration:
Emanuela D'Antoni

Review of the state of world marine fishery resources

FAO
FISHERIES AND
AQUACULTURE
TECHNICAL
PAPER

569

Marine and Inland Fisheries Service
Fisheries and Aquaculture Resources Use and Conservation Division
FAO Fisheries and Aquaculture Department

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2011

ISBN 978-92-5-107023-9

Preparation of this document

This document, the *Review of the state of world marine fishery resources*, was prepared by the Marine and Inland Fisheries Service, Marine and Aquaculture Resources Use and Conservation Division, FAO Fisheries and Aquaculture Department. It is part of the regular programme activities and a partial fulfilment of the Organization's role with regards to the monitoring and reporting on global marine resources and relevant environmental and ecological changes. The main objective of this review is to provide the FAO Committee on Fisheries (COFI), policy-makers, fishers, civil society and managers of world fishery resources with a comprehensive, objective and global review of the state of the living marine resources. This document updates the information provided in FAO Fisheries Technical Paper No. 457, *Review of the state of world marine fishery resources*, issued in 2005, and also updates and expands the information provided in relevant fishery resources sections of the more recent FAO publications on *The state of world fisheries and aquaculture* (SOFIA). It is intended that this *Review of the state of world marine fishery resources* will be completely revised every five years, with briefer updates provided biennially.

Relevant sections of this review have been compiled by FAO and selected invited experts, as indicated by the authorship of each chapter. Yimin Ye was responsible for the general coordination and final technical editing of this document, with the valuable assistance of David Milton. Fabio Carocci prepared tables and illustrations for this report.

Abstract

Marine fisheries are very important to the economy and well-being of coastal communities. Maintaining the long-term prosperity and sustainability of marine fisheries is not only of political and social significance but also of economic and ecological importance. This review presents an updated assessment of the current status of the world's marine fishery resources. Its aim is to provide the FAO Committee on Fisheries, policy-makers, civil society, fishers and managers of world fishery resources with a comprehensive, objective and global review of the state of the living marine resources of the oceans. The review was based mainly on official catch statistics up until 2009 and relevant stock assessment and other complementary information available until 2010.

This review consists of four major components. The first is a global overview of marine fishery production and the state of marine fish resources. The second part is divided into chapters that summarize and compile the information available for each FAO major fishing area, together with a discussion of the major trends and changes that have occurred with the main fishery resources exploited in each area and comments on the stock assessment work undertaken in support of fisheries management in each region. The third section is allocated to special topics that attract great attention in the international community, including tuna and tuna-like species, sharks, the Pacific islands region, deep-sea fisheries, and fisheries and long-term climate variability. The final part lists all the tables that provide details about historical and recent catches for the major marine resources and, where possible, assessments of the most current state of exploitation of fish stocks.

FAO
Review of the state of world marine fishery resources.
FAO Fisheries and Aquaculture Technical Paper No. 569. Rome, FAO. 2011. 334 pp.

Contents

List of tables, figures and boxes

LIST OF TABLES

LIST OF FIGURES

LIST OF BOXES

Acknowledgements

This publication is one of the initiatives of the Marine and Inland Fisheries Service to assess and monitor the state of world marine fishery resources. In addition to the authors listed in each chapter, many staff members, both inside and outside the Service, made valuable contributions to the assessment and preparation of this review report. The Statistics and Information Service assisted with catch statistic data, Luca Garibaldi in particular. The library of the Fisheries and Aquaculture Department provided valuable service for references. Michel Lamboeuf, Juan Ignacio de Leiva Moreno, and Jean-Jacques Maguire assisted with analyzing FAO's catch statistic data. Tina Farmer provided various assistances with the publication of this report. A large number of regional fishery management organizations/authorities have provided data, information, comments and suggestions and are gratefully acknowledged. The final revisions and inputs of the report were provided by technical editor David Milton and FAO editor Julian Plummer. The graphic layout was prepared by Jose Luis Castilla Civit. Thanks are also expressed to many others who with our regrets are not being listed due to the large number. Nevertheless and while fully recognizing the assistance received from different sources, the full responsibility for what is presented in this review lies entirely with the Organization and the authors of each chapter.

Abbreviations and acronyms

ABF	Angola-Benguela Front
ACE	annual catch entitlement
ACOM	Advisory Committee (ICES)
ACS	Association of Caribbean States
AFMA	Australian Fisheries Management Authority
APEC	Asia-Pacific Economic Cooperation
APFIC	Asia-Pacific Fishery Commission
ASEAN	Association of Southeast Asian Nations
CalCOFI	California Cooperative Ocean Fisheries Investigation Program
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CDS	catch documentation scheme
CECAF	Fishery Committee for the Eastern Central Atlantic
CFMC	Caribbean Fisheries Management Council
CFP	Common Fisheries Policy
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLME	Caribbean Large Marine Ecosystem
CMM	conservation and management measure
Code	Code of Conduct for Responsible Fisheries
COFI	Committee on Fisheries
CPUE	catch per unit of effort
CRFM	Caribbean Regional Fisheries Mechanism
CTMFM	Joint Technical Commission for the River Plate Maritime Front
CTS	Commonwealth trawl sector (Australia)
DEPM	Daily egg production method
DFO	Department of Fisheries and Oceans, Canada
EA	Eastern Arctic
EEZ	exclusive economic zone
ENSO	El Niño-Southern Oscillation
EU	European Union
F	fishing mortality
FAD	fish aggregating device
FFA	Forum Fisheries Agency
FMA	Fisheries Management Act 1991 (Australia)
FMP	Fishery Management Plan
GCC	Cooperation Council
GEF	Global Environment Facility
GFCM	General Fisheries Commission for the Mediterranean
GSA	geographical subarea (GFCM)
HSP	Commonwealth Fisheries Harvest Strategy: policy and guidelines (Australia)
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
IOTC	Indian Ocean Tuna Commission

IPOA-Sharks	FAO International Plan of Action for the Conservation and Management on Sharks
ISSCAAP	International Standard Statistical Classification of Aquatic Animals and Plants
ISSF	International Seafood Sustainability Foundation
ITQ	individual transferable quota
IUCN	International Union for Conservation of Nature
IUU	illegal, unreported and unregulated (fishing)
IWC	International Whaling Commission
MCS	monitoring, control and surveillance
ML-TZ	Mid-Latitude "Transition Zone"
MPA	marine protected area
MSY	maximum sustainable yield
NAFO	Northwest Atlantic Fisheries Organization
NASCO	North Atlantic Salmon Conservation Organization
NEAC	Northeast Atlantic Commission (NASCO)
NEAFC	North East Atlantic Fisheries Commission
NEI	not elsewhere included
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPAFC	North Pacific Anadromous Fish Commission
NPOA	national plan of action
OECS	Organization of Eastern Caribbean States
OLDEPESCA	Latin American Organization for fishery Development
OMZ	oxygen minimum zone
ORCP	Orange Roughy Conservation Programme
OSPESCA	Central American Organization for the Fisheries and Aquaculture Sector
QMA	quota management area
QMS	quota management system
RAC	Regional Advisory Council
RBC	recommended biological catch
RECOFI	regional Commission for Fisheries
RFMO/A	regional fisheries management organization/arrangement
SAC	Scientific Advisory Committee (GFCM)
SEAFDEC	Southeast Asian Fisheries Development Centre
SciCOM	Science Committee (ICES)
SEAFO	South East Atlantic Fisheries Organisation
SICA	Sistema de la Integración Centroamericana
SIOFA	Southern Indian Ocean Fisheries Agreement
SlopeRAG	Slope Resource Assessment Group
SP-NWA	Sub-Polar Northwest Atlantic
SPC	Secretariat of the Pacific Community
SPRFMO	South Pacific Regional Fisheries Management Organisation
SSB	spawning stock biomass
SST	sea surface temperature
STECF	Scientific, Technical and Economic Committee for Fisheries
SWIOFC	South West Indian Ocean Fisheries Commission
TAC	total allowable catch
TACC	total allowable commercial catch
TAFIRI	Tanzania Fisheries Research Institute
TMP	Tuna management plan
t-RFMO	tuna regional fisheries management organization

UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNFSA	United Nations Fish Stocks Agreement
UNGA	United Nations General Assembly
VME	vulnerable marine ecosystem
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean
WECAFC	Western Central Atlantic Fisheries Commission
WFC	World Fish Center
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature