



Steps taken towards management of shared pelagic fisheries

Northwest Africa

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Objective

- Provide an overview of some of the FAO activities undertaken in Northwest Africa aiming at strengthening collaboration in research and management of shared stocks
- Introduce some principles and practice of EAF and the broad approaches being pursued in the execution of EAF Nansen Programme

- International cooperation with the Nansen Programme. Fisheries management and Marine environment «FAO Nansen Project» (GCP/INT/730/NOR)
- Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries «EAF-Nansen» (GCP/INT/003/NOR)



A mechanism introduced for improved regional cooperation in the research, and management of the small-pelagic fisheries in the Northwest Africa Region

Regional surveys coverage

Increased national and regional assessment and research capacity

Expanded regional fisheries management scope expanded for Small Pelagic Resources

Capacity Building



Regional surveys



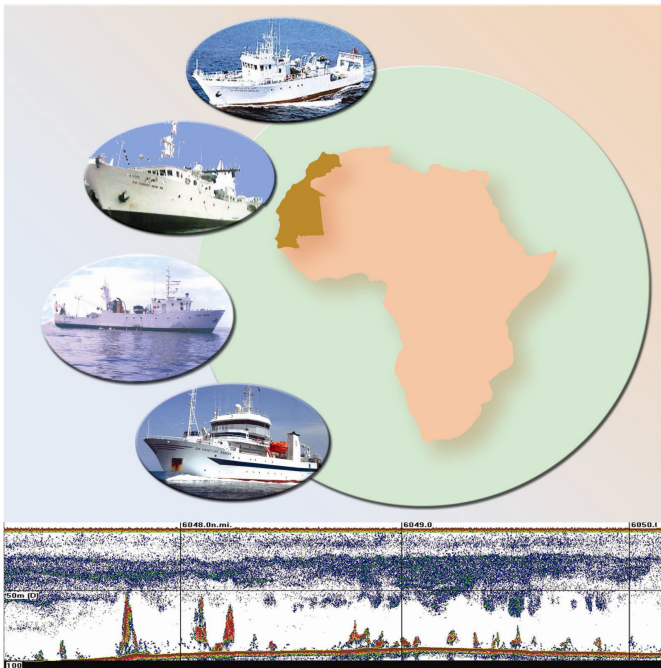
Objective: To map the distribution and abundance of the main pelagic species

Outputs

- A time series of abundance estimates
- Knowledge of the distribution of stocks
- Onboard training of local scientists in survey methodology
- Common database
- **Fisheries Independent Information**
- **Assessment is dependent on the survey estimates**



Regional surveys



- Three of the countries in the region have their own R/V's

Objective: *To train scientists of the Coastal states to carry out their own regional surveys applying the same methodology*

Main Outputs:

- Common methodology (Guidelines for Acoustic Surveys)
- Comparable results (Parallel surveys/IC's)
- Scientists and acousticians trained

→ First coordinated regional survey with national R/Vs carried out in 2007

Common analysis and report under preparation



Regional surveys

Planning Group for the Coordination of Acoustic Surveys off NWA

Sixth meeting was held in Dakar, Senegal, 29 - 30 October 2007.



General objective:

- *to plan the coordination of acoustic surveys in the region including intercalibration of RVs*
- *to act as a forum for discussion on issues important to acoustic surveys such as standardization of methods, acoustic research and training.*

Outputs

Survey plans and agreements on training priorities

→ **Common database for the storage of survey data**



FAO Fisheries Report No. 592
FAO, Rapport sur les pêches n° 592

FIRM/R592(B)
2006 (Rev. 4/07)

Report of the

**WORKSHOP ON THE REVIEW OF THE PELAGIC SURVEYS
OFF NORTHWEST AFRICA IN THE 1990s**

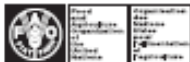
Bergen, Norway, 28 September - 2 October 1998

Rapport de

**L'ATELIER SUR LA REVUE DES PROSPECTIONS ACOUSTIQUES
DE LA CÔTE NORD-OUEST AFRICAINE DANS LES ANNÉES 90**

Bergen, Norvège, 28 septembre - 2 octobre 1998

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FAO Fisheries Report No. 636
FAO, Rapport sur les pêches n° 636

FIRM/R636(B)
2006 (Rev. 04/07)

INTERNATIONAL COOPERATION WITH THE NANSEN PROGRAMME
COOPÉRATION INTERNATIONALE AU PROGRAMME NANSEN

GCP/INT/730/NOR

Report of the

**WORKSHOP TO PLAN THE 1999 R/V DR FRIDTJOF NANSEN
SURVEYS IN THE NORTHERN CECAF AREA AND THE
STANDARDIZATION OF ACOUSTIC SURVEYS IN THE REGION**

Casablanca, Morocco, 18-22 October 1999

Rapport de

**L'ATELIER POUR LA PLANIFICATION DES PROSPECTIONS DU
N/R DR FRIDTJOF NANSEN DANS LA ZONE NORD DU COPACE EN
1999 ET LA STANDARDISATION DES CAMPAGNES ACOUSTIQUES
DE LA RÉGION**

Casablanca, Maroc, 18-22 octobre 1999



FAO Fisheries Report No. 827
FAO, Rapport sur les pêches n° 827

FIRM/R827 (B)
2006 (Rev. 4/07)

INTERNATIONAL COOPERATION WITH THE NANSEN PROGRAMME
COOPÉRATION INTERNATIONALE AVEC LE PROGRAMME NANSEN

GCP/INT/730/NOR

Report of the

**FIFTH MEETING OF THE PLANNING GROUP FOR THE
COORDINATION OF ACOUSTIC SURVEYS OFF NORTHWEST AFRICA**

Dakar, Senegal, 29-30 October 2006

Rapport de la

**CINQUIÈME RÉUNION DU GROUPE DE PLANIFICATION POUR LA
COORDINATION DES CAMPAGNES ACOUSTIQUES AU LARGE DE
L'AFRIQUE DU NORD-OUEST**

Dakar, Sénégal, 29-30 octobre 2006





Assessment and Research Capacity

FAO Working Group on the Assessment of Small Pelagic Fish off NWA

Objective: to assess the state of the small pelagic resources in Northwest Africa and recommend on fisheries management and exploitation options aimed at ensuring optimal and sustainable use of small pelagic fish resources for the benefit of coastal countries



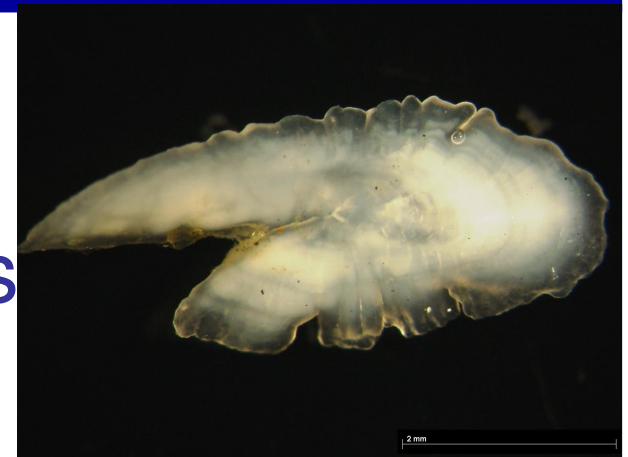
- Preparation of data in accordance to agreed format
- Analyses of trends
- Reference points
- Formulation of management advice



Key areas of research

Age Reading – Otolith exchanges and Workshops

Objective: The main objectives of these workshops were the standardization of otolith preparation techniques and age readings methodologies including the establishment of common age-reading criteria for sardinella.



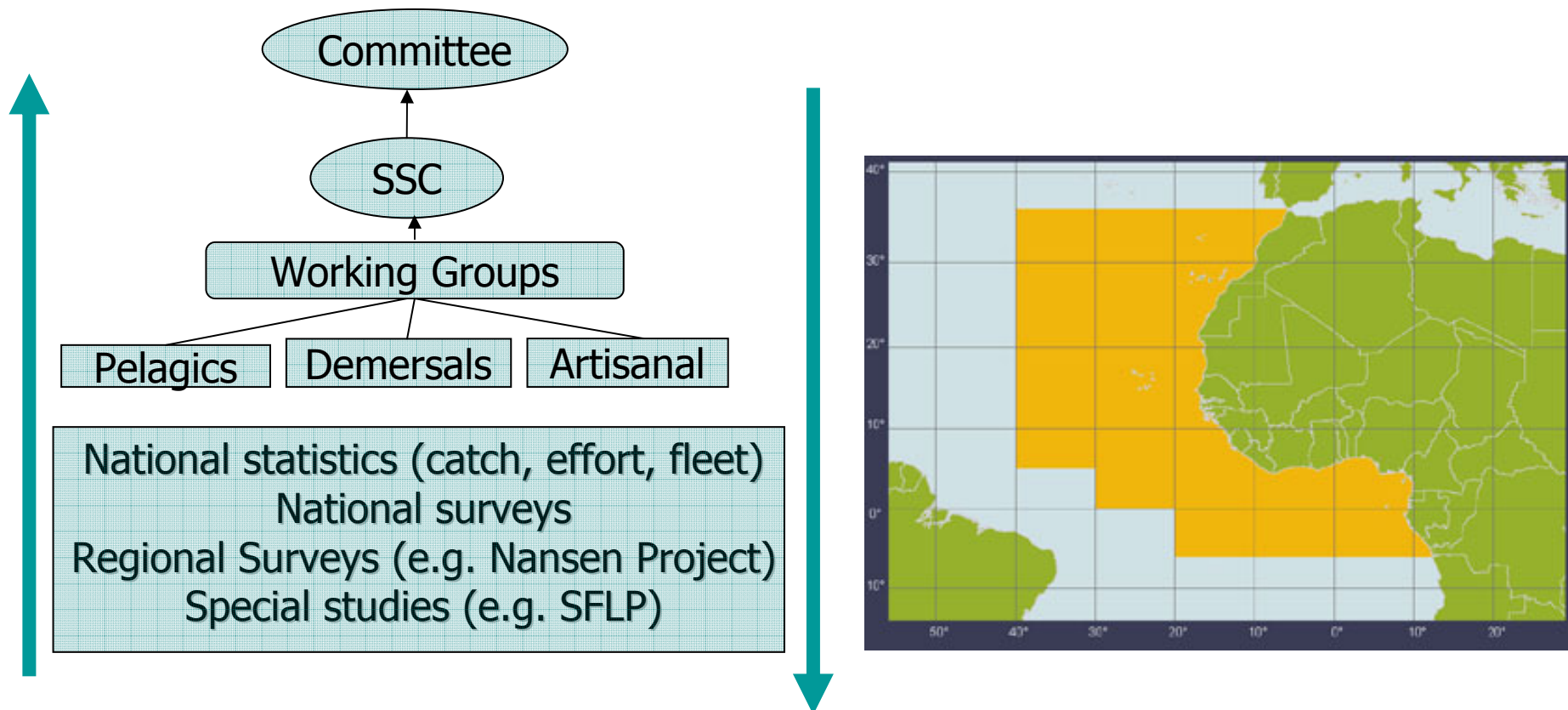
Outputs:

GUIDELINES FOR SARDINE AND SARDINELLA AGE ESTIMATION



FISHERIES RESEARCH AND FAO

STATE OF MARINE FISHERY RESOURCES- CECAF





Allocation

Technical Workshop on the analysis of data relevant to the management of shared stocks in Banjul, Gambia from 14 to 17 March 2005.

Objective: *The objective of the workshop was thus to review principles for national allocations of shared fish stocks, demonstrate a model for “zonal attachment” used in the Northeast Atlantic and assess the suitability of the model for shared stocks of small pelagic fish in Northwest Africa, considering data available from surveys by the R/V DR. FRIDTJOF NANSEN and through the FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa.*

Model: “A model of estimating biological attachment of fish stocks to exclusive economic zones” (Hamre, 1993)



Allocation

Output: For the two species analysed (Sardine and Sardinella) several sets of zonal attachments were calculated, however, the analysis showed high variability among years and within season. It was also noted that, due to the migratory behaviour of the species, the longest data series available to the Workshop (acoustic data series from R/V DR. FRIDTJOF NANSEN in November–December) was considered not to be representative for the whole year. Some information was available from other times of the year, but this was not sufficient to provide the overall annual picture.

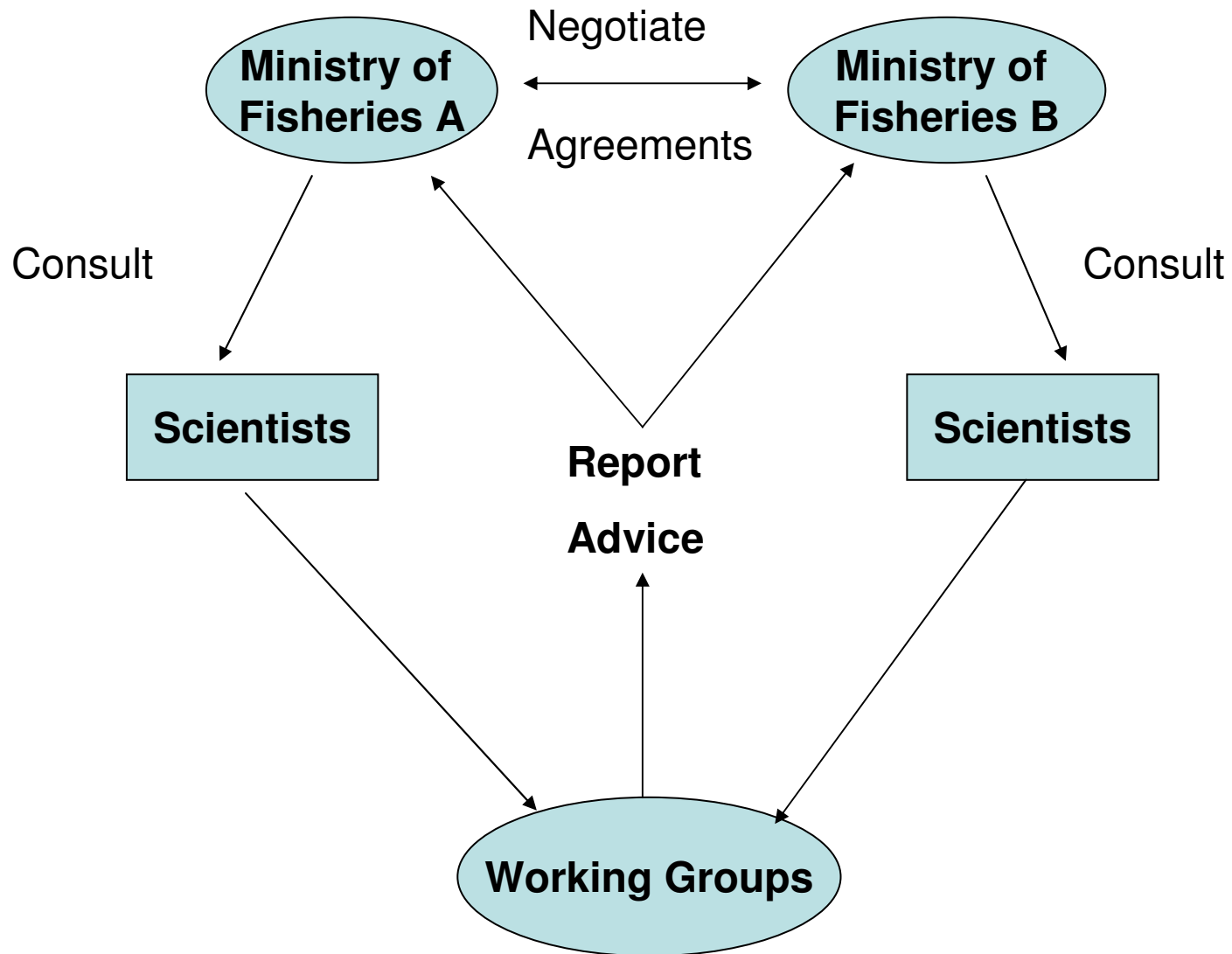
Attempts to follow cohorts throughout life in relation to zones were unsuccessful due to inconsistencies in the time series possibly caused by the age length key used or difficulties in age determination. The Workshop hence recommended obtaining more information on the species distribution in the periods where information was lacking, including through the organization of surveys to take place in these periods, and to continue the work on age readig.



Stock	Data used	% in Biomass Weight							
		C.Cantin- C.Juby Zone I	C.Juby- C.Blanc Zone II	C.Blanc- C.Timiris Zone III	C.Timiris- St. Louis Zone IV	St.Louis- Cape Vert Zone V	C.Vert- Gambia Zone VI	Gambia Zone VII	Casa- mance Zone VIII
<i>Sardinella aurita</i>									
Total stock	Avg B distrb. survey (mai-juin 2001-2003)		29.9	27.1	29.8	3.1	1.8	5.3	3.1
Adult stock (>20 cm)	Avg B distrb. adults (mai-juin2001-2003)		34.3	21.9	30.0	3.6	2.1	5.6	2.6
Total stock	Avg B distrb. survey (Nov-Dec 96-03)		58.5	5.3	21.0	0.5	7.1	4.8	1.7
	Avg B distrb. survey (nov-dec 2001-2003)		60.5	4.3	21.9	1.6	6.4	4.0	1.4
Adult stock (>20 cm)	Avg B distrb. adults (nov- dec2001-2004)		83.1	0.9	6.3	0.0	3.1	3.5	3.1
Juvenile stock (< 20 cm)	Avg B distrb. juveniles (mai-juin2001-2003)		3.4	58.3	28.4	0.1	0.1	3.7	5.9
	Avg B distrb. juveniles (nov-dec2001-2004)		26.3	27.0	3.6	0.5	26.3	14.5	1.7
<i>Sardina pilchardus</i>									
Total stock	Avg B distrb. survey (mai-juin 2001-2003)	13	71.0	16.0	0.0				
Adult stock (>14cm)	Avg B distrb. adults (mai-juin2001-2003)	13	74.0	13.0	0.0				
Total Stock	Avg B distrb. survey (Nov-Dec 95-03)	14	82	3	1				
	Avg B distrb. survey (nov-dec 2001-2003)	14	79.0	5.0	2.0				
Adult stock (>14 cm)	Avg B distrb. adults (nov- dec2001-2004)	12	81.0	5.0	2.0				
	Avg B distrb. adults (Nov- Dec 95-03)	11	85.0	3.0	1.0				



Allocation





FAO Fisheries Report No. 649
 FAO, Rapport sur les pêches n° 649

FIMF/R649 (B)
 2008 9242 3217

Report of the

**FAO WORKING GROUP ON THE ASSESSMENT OF SMALL PELAGIC
 FISH OFF NORTHWEST AFRICA**

Agadir, Morocco, 17-26 April 2007

Rapport de

**GROUPE DE TRAVAIL DE LA FAO SUR L'ÉVALUATION DES PETITS
 PÉLAGIQUES AU LARGE DE L'AFRIQUE NORD-OCCIDENTALE**

Agadir, Maroc, 17-26 avril 2007



FAO Fisheries Report No. 685
 FAO Rapport sur les pêches N° 685

FIRM/R685(B)

Report of the

SARDINE (*Sardina pilchardus*) OTOLITH WORKSHOP

Kaliningrad, Russian Federation, 28-31 August 2001

Rapport de

**L'ATELIER SUR L'OTOLITHE DE SARDINE
 (*Sardina pilchardus*)**

Kaliningrad, Fédération de Russie, 28-31 août 2001





Expanded Regional Fisheries Management Scope

Objectives

- *Raise awareness on shared stock issues*
- *Examine existing mechanisms for collaboration*
- *Identify the requirements and mechanisms for sustainable management*
- *Explore possible ways of how sustainable management of shared stocks can be achieved*



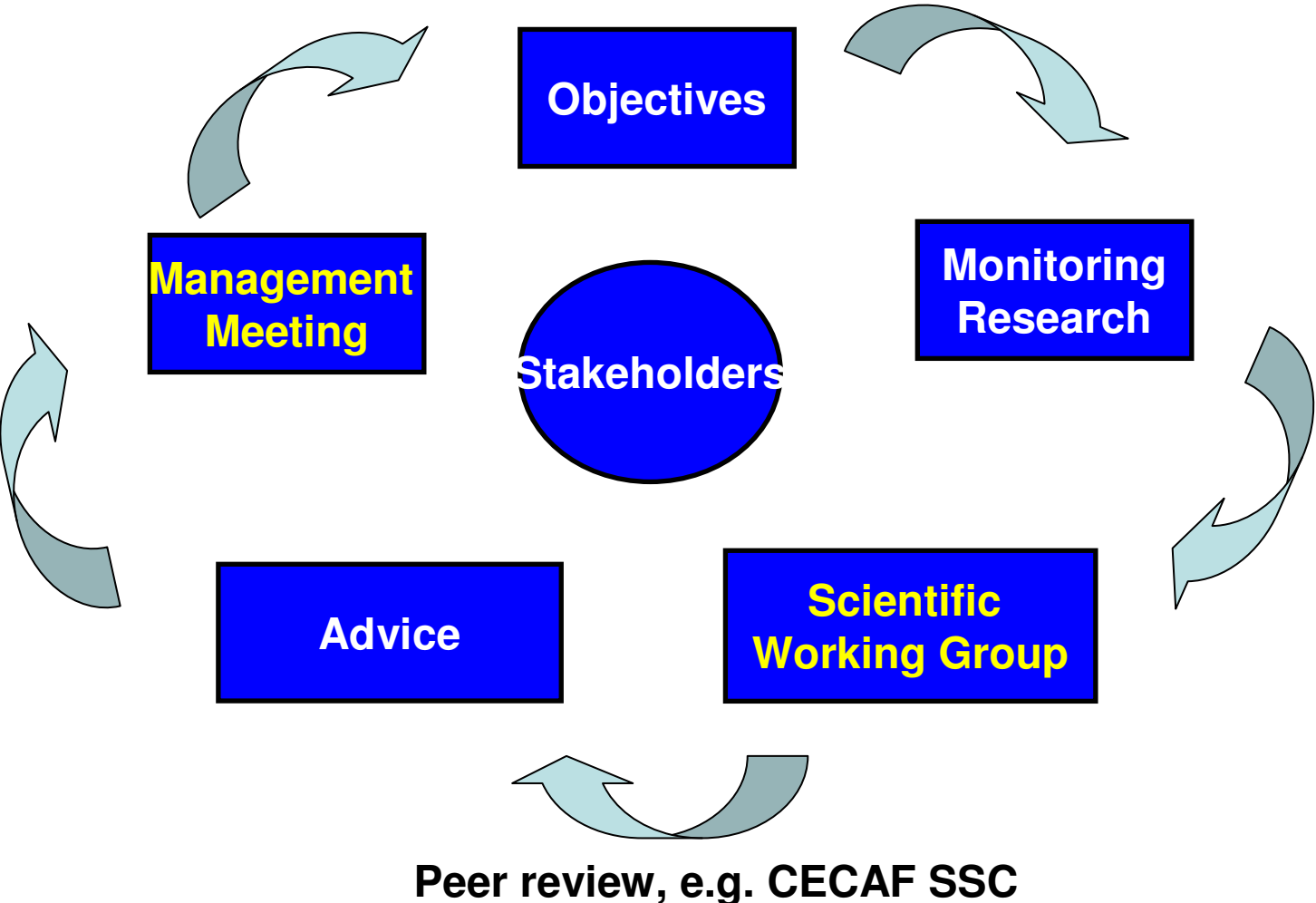
Expanded Regional Fisheries Management Scope

Main outputs

- Case studies on *Sardinella* sp. and *Trachurus* sp
- Study on Legal and Institutional Arrangements for shared stocks (Owen 2003)
- General agreement on the importance of the establishment of a cooperative scheme for shared stocks (Workshop on the Management of Shared Fishery Resources, Banjul, The Gambia, 2002)
- A first draft of a proposed scheme for cooperation in the conservation and management of small pelagic stocks NW Africa



Framework for cooperation





FAO Fisheries Circular No. 988
 FAO, Circulaire sur les pêches n° 988

FIRM/C988

INTERNATIONAL COOPERATION WITH THE NANSEN PROGRAMME
 COOPÉRATION INTERNATIONALE AVEC LE PROGRAMME NANSEN
 in cooperation with/en coopération avec:
 FAO DEVELOPMENT LAW SERVICE/
 SERVICE DROIT ET DÉVELOPPEMENT DE LA FAO

(CC)INT/731

LEGAL AND INSTITUTIONAL ASPECTS OF MANAGEMENT
 ARRANGEMENTS FOR SHARED STOCKS WITH REFERENCE
 TO SMALL PELAGICS IN NORTHWEST AFRICA

ASPECTS LÉGAUX ET INSTITUTIONNELS DE L'AMÉNAGEMENT DE S
 STOCKS PARTAGÉS: CAS DES POISSONS PÉLAGIQUES CÔTIERS
 DE LA RÉGION NORD-OUEST AFRICAINE



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GCP/INT/730/NO3

Report of the

WORKSHOP ON THE MANAGEMENT OF SHARED SMALL PELAGIC
 FISHERY RESOURCES IN NORTHWEST AFRICA

Banjul, Republic of the Gambia, 30 April-3 May 2002

Rapport de

L'ATELIER SUR L'AMÉNAGEMENT DES RESSOURCES PARTAGÉES
 DE PETITS PÉLAGIQUES EN AFRIQUE DU NORD-OUEST

Banjul, République de Gambie, 30 avril-3 mai 2002



FAO Fisheries Report No. 695, Supplement

FIPP/R695 (Suppl.)

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Papers presented at the

NORWAY-FAO EXPERT CONSULTATION ON THE MANAGEMENT OF
 SHARED FISH STOCKS

Bergen, Norway, 7-10 October 2002





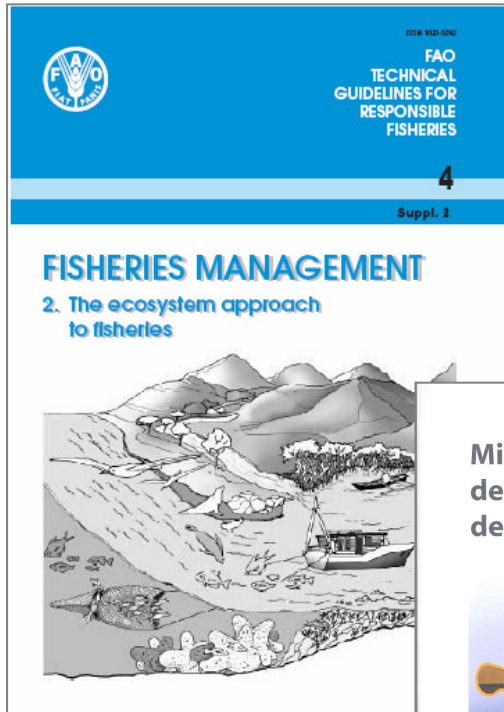
Conclusions

Although progress has been observed both in respect to the contribution to the knowledge base and capacity building, further progress is linked to the will of managers to “listen” and to agree on the importance.

Examples:

- Regional surveys critically depend on approval and finance from the governments
- Working Group provides recommendations on total catch/effort level, but recommendations are not well implemented.
- Age reading requires dedicated staff

EAF could assist with addressing some of these issues



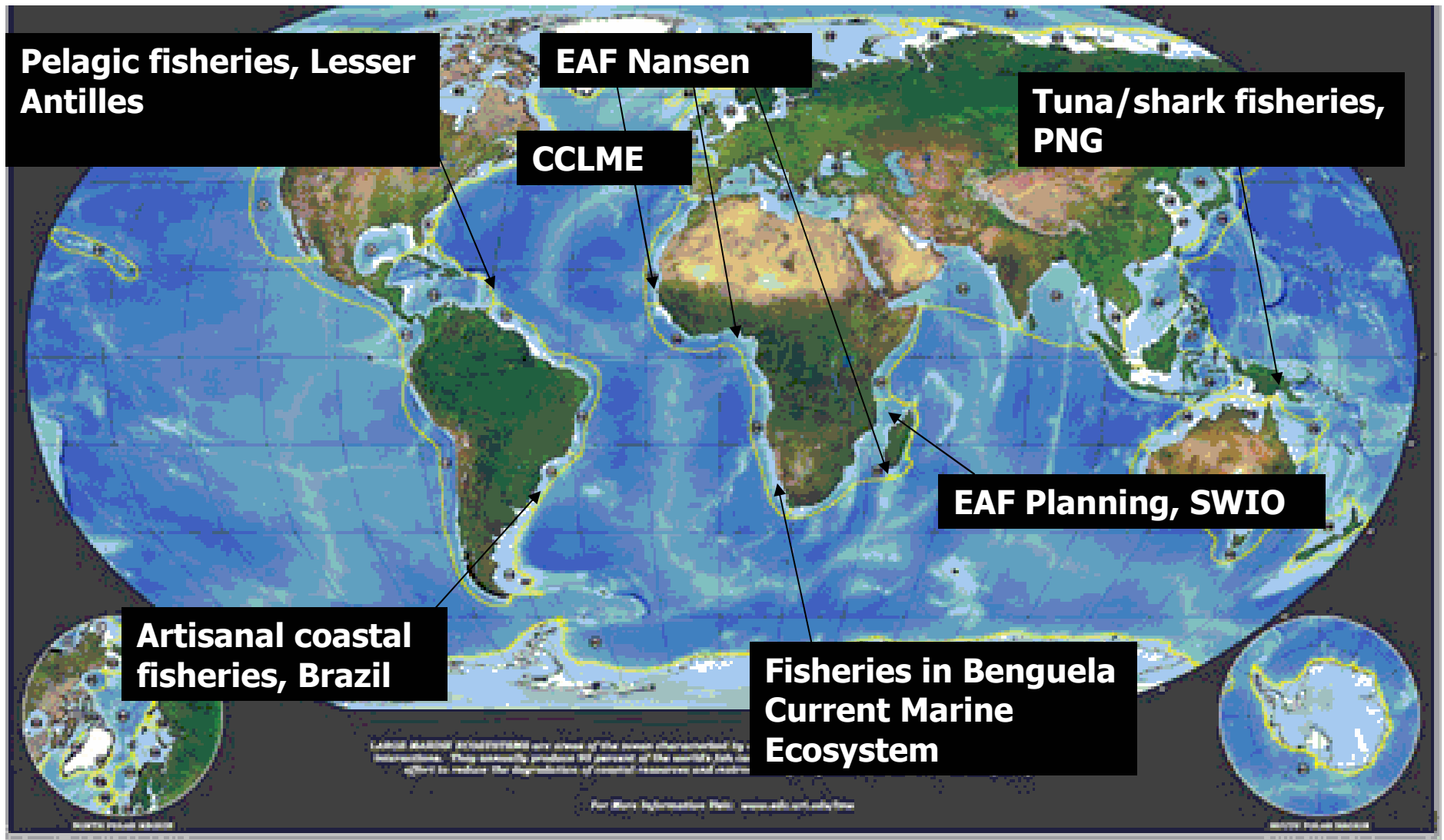
”An Ecosystem Approach to Fisheries strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries.”

FAO Guidelines (FAO 2003, 2005)



Principles

1. None of the principles that underlie the EAF are new. They can all be traced in earlier instruments, agreements, declarations.
2. Implementation of these principles lags behind in relation to their formulation in agreed international instruments
3. The EAF highlights and reorganizes the principles of sustainable development making their application more imperative



Examples of FAO projects and case studies on EAF



Project Components

<p>EAF Policy and management</p>	<p>Ecosystem Assessment & Monitoring</p>	<p>Capacity Building</p>	<p>Support to Regional R/V's</p>	<p>Planning & dissemination</p>
<p>Output 1 Policy at national and Regional level (Activity 1.1, 1.2 and 1.3) Output 2 Rev. Mngt. plans (Activity 2.1, 2.2, 2.3, 2.4)</p>	<p>Output 3 Procedures & methods for assessment and monitoring of key ecosystem properties</p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">Surveys</div> <p>Activity 3.2</p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">EAF Research</div> <p>Activity 3.1, 3.3, 3.4 & 3.5</p>	<p>Output 4 Increased capacity at scientific and management level on EAF Approaches (Activity 4.1, 4.2, 4.3 & 4.4)</p>	<p>Output 5 Advice on use of national or regional research vessels included coordinated coverage (Activity 5.1, 5.2 & 5.3)</p>	<p>Output 6 Project planning and dissemination of information (Activity 6.1, 6.2, 6.3, 6.4, 6.5 & 6.6)</p>

High level policy goals

1. Context review (scoping)

2. Setting broad objectives

3. Issue identification and prioritization

4. Management response identification

5. Cost-benefit analyses

Coherent and updated management plans

Issue identification

Fishery

Ecological well-being

Social and economic well-being

Ability to achieve

Risk analysis (issue prioritization)



How can this be of use for shared stocks management?

- **It puts all actions and issues into context**
- **Without a framework it is too easy to conduct unnecessary work and/or miss working on the real issues**
- **Helps determine what actions should be undertaken**
- **Should maximise benefits**