

COST
Domain Committee Food and Agriculture

COST Action FA0601
Start Date 28/03/2007

Fish reproduction and fisheries

**MONITORING
PROGRESS REPORT**

Reporting Period: from 04/06/2007 to 31/12/2009

This Report is presented to the relevant Domain Committee.
It contains three parts:

- I. Management Report prepared by the COST Office/Grant Holder***
- II. Scientific Report prepared by the Chair of the Management Committee of the Action***
- III. Previous versions of the Scientific Report; i.e., part II of past reporting periods***

The report is a “cumulative” report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.D. Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year’s budget allocation.

Executive summary (max.250 words):

Most of the European marine fish resources are overexploited. Despite the technical measures implemented, many depleted stocks have failed to recover. There is increasing awareness that the traditional indicators of stock viability are inadequate because the capacity of the population to annually produce viable eggs and larvae is extremely important for stock viability and recovery. In addition, egg production is also influenced by ambient environmental conditions, the exact effects of which are still not quantified. Currently there are a number of research projects specifically examining the linkages between fish reproductive success and the subsequent population dynamics. In addition to these projects there is a need for increased cooperation between researchers, standardisation and cross calibration of the different protocols being used, enhanced exchange of ideas, demonstration of the latest advances and the creation of a common research platform that can provide fisheries managers with realistic tools for fish stock recovery. The main objective of the Action is to establish a network of researchers to co-operate on the improvement of knowledge on fish reproduction in relation to fisheries and the enhancement of the current assessment methodology in order to promote sustainable exploitation of marine fish resources.

Keywords: Fisheries management, Fisheries assessment, Fish reproduction, reproductive potential, stock recovery.

I. Management Report prepared by the COST Office/Grant Holder

I.A. COST Action Fact Sheet

Action FA0601 Fact Sheet

Title

Fish reproduction and fisheries

Contacts

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Details

Draft Mou:	Mou: 308/06
Start of Action: 04/06/2007	Entry into force: 28/03/2007
End of Action: 03/06/2011	CSO approval date: 20/11/2006

Objectives

Most of the European marine fish resources are overexploited. Despite the technical measures implemented, many depleted stocks have failed to recover. There is increasing awareness that the traditional indicators of stock viability are inadequate because the capacity of the population to annually produce viable eggs and larvae is extremely important for stock viability and recovery. In addition, egg production is also influenced by ambient environmental conditions, the exact effects of which are still not quantified. Currently there are a number of research projects specifically examining the linkages between fish reproductive success and the subsequent population dynamics. In addition to these projects there is a need for increased cooperation between researchers, standardisation and cross calibration of the different protocols being used, enhanced exchange of ideas, demonstration of the latest advances and the creation of a common research platform that can provide fisheries managers with realistic tools for fish stock recovery. The main objective of the Action is to establish a network of researchers to cooperate on the improvement of knowledge on fish reproduction in relation to fisheries and the enhancement of the current assessment methodology in order to promote sustainable exploitation of marine fish resources. Keywords: Fisheries management, Fisheries assessment, Fish reproduction, reproductive potential, stock recovery.

Parties

Country	Date	Country	Date	Country	Date	Country	Date
Belgium	28/03/2007	Croatia	22/09/2008	Denmark	14/03/2007	Estonia	14/03/2007
Germany	28/03/2007	Greece	30/03/2007	Ireland	23/04/2007	Italy	20/04/2007
Netherlands	20/04/2007	Norway	28/03/2007	Portugal	29/06/2007	Spain	13/03/2007
Switzerland	07/07/2009	United Kingdom	21/03/2007				

Total: 14

Intentions to accept the MoU

Country	Date	Country	Date	Country	Date	Country	Date
France	N/A	Sweden	N/A				

Total: 2

Participating Institutions from non-COST countries

Russian Federation	Polar Research Institute of Marine Fisheries and Oceanography
Canada	Fisheries and Oceans Canada
Georgia	Faculty of Life Sciences, Ilia Chavchavadze State University

Working Groups

WG 1.- Identifying the causes and consequences of variation in stock reproductive potential.

WG 2.- Improving estimates of stock reproductive potential: Standardising sampling procedures and methods across North Atlantic.

WG 3.- Linking biology and assessment: Improving stock assessment through implementation of stock reproductive potential.

Website

<http://www.fresh-cost.org/>

I.B. Management Committee member list

Management Committee		
Chair	Vice Chair	DC Rapporteur
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Georgia

Dr Bela JAPOSHVILI

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I.C. Overview activities and expenditure

Meetings

Meeting Type	Date	Place	Paid part	Cost	Total
Kick-off	04-Jun-2007	Madrid (ES)		12	8914.38
Joint Management Comm	01-Oct-2007	Lisbon (PT)		25	28778.74
Working Group	07-Mar-2008	Bergen (NO)		19	12302.9
Joint Management Comm	17-Nov-2008	Palermo (IT)		36	50857.77
Working Group	13-Jan-2009	Vigo (ES)		19	20451.86
Working Group	16-Jun-2009	Cádiz (ES)		25	29793.71
Working Group	03-Nov-2009	Warnemünde (DE)		1	2069.49
					151168.85

STSM

Beneficiary	Date	From	To	Cost	Total
Ms Dorleta Garcia	09-Dec-2007	Sukarrieta (ES)	London (uk)		1762
Ms Hilka O.N. Ndjala	03-Mar-2008	Bergen (NO)	Aberdeen (uk)		2084
Mr Hoiger Haslob	12-Feb-2008	Kiel (DE)	Vigo (ES)		2500
Ms Lindsay McPherson	10-Mar-2008	Aberdeen (uk)	Cádiz (ES)		2201
Ms Agurtzane Urtizberea	31-Aug-2008	N-5020 Bergen (NO)	07015 Palma de Mallorca		1200
Mr Stefan Meyer	01-Sep-2008	Hamburg (DE)	Charlottenlund (DK)		2500
Ms Cindy van Damme	01-Sep-2008	IJmuiden (NL)	Bergen (NO)		2500
Mr Ricardo Alpoim	24-Nov-2008	Lisboa (PT)	Vigo (ES)		973
Dr Soto María	01-Mar-2008	Madrid (ES)	London (UK)		1800
Dr Rosario Dominguez-P	01-Mar-2008	Vigo (ES)	Mont Joli (CA)		2500
Mr Hoiger Haslob	01-Feb-2008	Kiel (DE)	Vigo (ES)		2500
Ms Rosalia Ferreri	09-Mar-2008	Campobello di Mazar	Vigo (ES)		2000
Ms MARIA KORTA	26-Feb-2008	PASAIA (ES)	BERGEN (NO)		2500
Mr Sebastian Nikitas Pol	01-Mar-2008	22767 Hamburg (DE)	St. Andrews, New Brunsw		2500
Ms Cindy van Damme	17-Jun-2009	Ijmuiden (NL)	Bergen (NO)		2000
Mr PEDRO ANTONIO AI	20-Jul-2009	GRANADA (ES)	OBAN (UK)		1600
Dr AKATERINI ANASTA	24-Aug-2009	ANAVISSOS (GR)	VIGO (ES)		1800
Dr Konstantinos Ganias	24-Aug-2009	Thessaloniki (GR)	Aberdeen (GB)		2440
Mr Alan Baudron	01-Sep-2009	Aberdeen (UK)	Athens (GR)		1700
Ms Patricia Gonçalves	05-Oct-2009	1449-006 Lisboa (PT)	1976 CP IJmuiden (NL)		1380
Ms Eudoxia Schismenou	05-Oct-2009	Heraklion (GR)	Bergen (NO)		2500
					42.940

Workshops

Title	Date	Place	Cost	Total
Combined Workshop_M4	01-Oct-2007	Lisbon (PT)	6.729	
Working Group 2 "Mini-w	07-Mar-2008	Bergen (NO)	3.000	
Working Group 1 + 2 and	17-Nov-2008	Palermo (IT)	5.722	
Cádiz workshop	16-Jun-2009	Cádiz (ES)	8.590	
ICES/PICES/UNCOVER	03-Nov-2009	Warnemunde (DE)	3.000	
				27,041

General Support Grants

Title	Date	Cost	Total
			0

Schools

Type	Date	Place	title	Cost	Total
SCHOOL_LLECTURERS	03-Mar-2008	Bergen (NO)	Methodological Advancements in Applied Fish Reproductive Biology	5161.78	
SCHOOL_ORGANISER	03-Mar-2008	Bergen (NO)	Methodological Advancements in Applied Fish Reproductive Biology	6000	
					11161.78

Honoraria

Title	Date	Expert	Cost	Total
				0

Grant

Grant Holder	Date	Cost	Total
			0

Dissemination

Title	Date	Cost	Total
			0

Action
Total 232311.87

II. Scientific Report

II.A. Innovative networking

This Action, Fish Reproduction and Fisheries (**FRESH**), has 4 major scientific objectives. During 2009 the following innovative activities were taking within each objective:

Objective A. *To establish a network of researchers, including assessment scientists and reproduction biologists, with the common interest to improve the assessment methodology for the sustainable exploitation of marine fish resources.*

This was the main goal during the first year of life of the Action, and partly during the second. In 2009 we believe the action becomes fully consolidated and currently 114 researchers are actively participating in the Action and distributed by countries as follows (see Annex I).

Objective B. *Coordinate current and future research on fish reproduction as applicable to fisheries assessment and management to develop common sampling and technical protocols, and improve methodology.*

During 2009 the *4th Workshop on Gonadal Histology of Fishes* was organized in conjunction with American Fisheries Society (AFS Marine Fisheries Section) was held June 16-19, 2009, in El Puerto de Santa María, Cádiz, Spain, at the Fisheries and Aquatic Research Center "El Toruño".

A total of 110 researchers participated with 35 oral presentations and 46 posters. Results will be published in two ways:

1. Extended abstracts will be formatted as a single book and delivered as PDF file and uploaded in a document repository with a Digital Object identifier (doi), so it is fully citable.
2. A Selection of 15 contribution (see Annex II) were selected to be published in the *Marine and Coastal Fisheries* journal. Three members of FRESH are part of the Editorial board.

This publication will be submitted to COST Office for support.

This was the second methodological workshop organized within the Action, while the third will be held in Athens, March 2010, Workshop on Egg Production Methods for Estimating Fish Biomass, organized together with the International Council for the Exploration of the Sea (ICES).

Objective C. *Coordinate national sampling programs to improve data availability for a range of different stocks.*

FRESH has worked in connection with the International Council for the Exploration of the Sea (ICES), within the scope of the Planning Group on Commercial Catches, Discards and Biological Sampling (PGCCDBS) held in Montpellier, France on 2-6 March 2009 and has agreed on:

1. Provide advice sampling for reproductive studies. To achieve it FRESH will prepare the "Handbook of Reproductive Ecology Studies for Fish Assessment and Management". This is a manual to harmonize sampling programs across

Europe. This handbook that will be published as a book is being edited by four members of FRESH.

2. Provide advice on the relevance of evaluate sex separated maturity ogives for each stock where ogives are available, when estimating SSB.
3. Develop statistical tools for comparison of maturity stages assignments of samples at workshops to assess the significance of agreement/disagreement among laboratories

Objective D. *Promote the implementation of stock reproductive potential into current stock assessment and advice to improve fisheries management.*

The Symposium *Rebuilding Depleted Fish Stocks-Biology, Ecology, Social Science and Management Strategies* was sponsored by FRESH and contributed to its organization together with the International Council for the Exploration of the Sea (ICES) and the North Pacific Marine Science Organization (PICES). The symposium registered 114 participants with 57 oral presentations and 26 posters. One of the Conveners and five of the scientific steering committee were members of FRESH.

Members of FRESH have produced the monograph *Evaluation of Stock Reproductive Potential of Commercially Important Marine Fish Species* to be published as special issue in the *Fisheries Research* journal on summer 2010. This issue contain 12 selected publications derived from EU the project *Reproduction and Stock Evaluation for Recovery*, Q5RS-2002-01825 (Annex III). This volume will be submitted to COST Office for support.

Objective E. *Dissemination of progress within this field to both the network and to the wider scientific community and end-users via open public meetings and conferences, scientific missions and website.*

As the result of scientific discussions in 2009 it has been planned a number of specific products oriented to improve the:

1. Scientific knowledge (targeting scientific community). To achieve this FRESH develops a number of scientific publications, as the two special issues (Annex II and Annex III) and the publications made by members of the Action (Annex IV).
2. Scientific advice (targeting scientific end-users). To achieve this FRESH cooperates with the two major international agencies in the NORTH-Atlantic, ICES and NAFO, providing advice as highlighted above.
3. Fisheries management (targeting managers). This has resulted in the definition of a number of products (normally scientific papers or reports) that will aid managers on improving fisheries sustainability (Annex V).

All of the above is expected to have impact on mid-term on current procedures of fish stock assessment and hence on advice and management.

II.B. Inter-disciplinary networking

Contacts have been established with Action FA0801 (LARVANET) to develop joint work, particularly a joint workshop on the "Maternal effects on fish larval biology". The contacts were established during the APC meeting held in Prague in 2009. Dates for the Workshop has not been decided.

II.C. New networking

In 2009 Switzerland has become a full member of the Action while France and Sweden have shown intentions to sign the MoU. With these initiatives Management Committee consider the network is completely consolidated. Annex I shows the total number of participants by country, including researchers countries contributing although their countries not formally participating (USA and Iceland), the proportion of females and Early Stage Researchers.

Early Stage Researchers have actively participated in the network. Several are leaders of agreed deliverables and all STSM were developed by ESRs. A total of 12 STSM were granted in 2009 that summed a total of 350 days, as shown in table below.

Name	Origin		Host	Period		
	Country	Country	Institute	start	end	duration
Ferreri	IT	ES	Institute of Marine Research	02/02/2009	28/02/2009	27
Korta	ES	NO	Institute of Marine Research	01/03/2009	31/03/2009	31
Politis	DE	CA	DFO	01/03/2009	30/04/2009	61
Soto	ES	UK	Imperial College London	01/03/2009	13/03/2009	13
Domínguez-Petit	ES	CA	DFO	28/03/2009	28/04/2009	32
Van Damme	NL	NO	IMR	17/06/2009	06/07/2009	20
Alvarez	ES	UK	SAMS	10/06/2009	27/06/2009	18
Anastasopoulou	EL	ES	Institute of Marine Research	24/08/2009	04/09/2009	12
Ganias	EL	UK	University of Aberdeen	24/08/2009	18/09/2009	26
Baudron	UK	EL	HCMR	01/09/2009	30/09/2009	30
Gonçalves	PO	NL	IMARES	05/10/2009	16/10/2009	12
Schismenou	EL	NO	Institute of Marine Research	05/10/2009	11/12/2009	68

10 researchers from non-COST countries have actively participated in the development of the Action. Although apparently this is a low proportion, their participation has been critical. FRESH has developed a close cooperation with Working Group on Reproductive Potential from Northwest Atlantic fisheries Organization (NAFO). We have held several joint meetings and developed a combined Terms of Reference and deliverables. Canadian and Russian members became officially members of FRESH, while USA researchers participate at individual level.

Along 2009 the members of FRESH has published an important number of publications, most of them as a result of the activities developed within FRESH. Annex IV list the publications that involve active members of FRESH and that are directly linked with the activities we develop.