

**Federal Research Centre for Fisheries
Institute for Baltic Sea Fisheries**



BFAFI, IOR, Alter Hafen Süd 2, 18069 Rostock, Tel: +49 (0)381-8116 107, Fax: +49 (0)381-8116 199
Email: harry.strehlow@ior.bfa-fisch.de / christian.dorrien@ior.bfa-fisch.de



Strengths and Deficiencies of International and European Collaboration and Coordination of MariFish Partner Countries

Harry V. Strehlow & Christian von Dorrien



MariFish is supported by the European Commission within the 6th Framework Program,
Contract Number ERAC-CT-2006-0259989

Executive Summary

Collaboration of major European national funders of marine fisheries research on international and European level is weak, despite the fact that collaboration on working level represents contemporary marine fisheries research.

To identify existing collaborative links on international and European level a survey was carried out visiting the majority of MariFish partners. During questionnaires and desk-based studies the strengths and deficiencies of international and European collaboration in the area of marine fisheries research were gathered. This information was then shared with participants to further verify findings.

National funding structures are heterogeneous and not all major national funders are MariFish partners. This is directly linked with the varying perception of marine fisheries research and the decision to in- or exclude fish stock assessment or not.

The collaboration on international levels is also heterogeneous. Further difficulty arises from the fact that country memberships neither reflect details regarding the type of collaboration nor, if funding of marine fisheries research is discussed at all.

On European level an example of collaboration involving joint funding of marine fisheries research is that taking place in DG Fish, concerning the implementation of the DCR. However this collaboration involves only EU MariFish partners and excludes Norway and Iceland. In addition, it should be noted that EU member states come together in DG Fish to meet their obligations within their EU membership. Yet the DCR is an example for the potential collaboration of national major funders in the area of marine fisheries research. EFARO is another example for establishing collaboration on European scale, although focusing on the scientific working level. In respect to the European level the EU's Sixth Research Framework Program plays a relevant role, since it aims to promote scientific cooperation at all levels through numerous research projects.

European co-funding as formulated in Article 169 represents a powerful material incentive for collaboration. Further drivers of collaboration include the willingness of MariFish partners to participate and that MariFish partners come from the same policy area.

On international level the IOC of the UNESCO demonstrates global cooperation in ocean sciences, with GLOBEC (initiated by SCOR and the IOC in 1991) as an example for an integrated suite of research activities consisting of regional programs, national activities and cross cutting research foci activities.

An impediment to effective collaboration of national marine fisheries research funders is simply that not all major funders from MariFish countries are members of MariFish. Another drawback is the available information about the type and content of existing collaboration of some of these funding bodies in international and European organizations. For example, the fact that a national fisheries institution – with a mandate to fund and implement marine fisheries research – represents national interests in an international or European organization does not necessarily imply that the funding of marine fisheries research is discussed.

Content

Executive Summary	2
Content	3
1 Introduction	4
1.1 Marine Fisheries Research and the Need for Collaboration.....	4
1.2 Scope of the Study.....	4
1.3 Report Structure	5
2 Funding Marine Fisheries Research.....	5
2.1 Problems in Fisheries Research Terminology.....	5
2.2 National Funding Structures.....	6
3 Collaboration and Partnerships.....	7
3.1 International.....	8
3.2 European.....	9
4 Evaluation of Collaborative Linkages	11
4.1 Strengths.....	12
4.2 Deficiencies	13
5 Conclusion.....	14
Acronyms and Abbreviations.....	15
References	18
6 Appendix	19
6.1 Country Reports	19
6.1.1 Partner 1: United Kingdom	19
6.1.2 Partner 2: Norway	20
6.1.3 Partner 3: Germany	21
6.1.4 Partner 4: Netherlands	21
6.1.5 Partner 5: Sweden.....	22
6.1.6 Partner 6: Iceland.....	23
6.1.7 Partner 7: France	24
6.1.8 Partner 8: Denmark	25
6.1.9 Partner 9 Portugal	26
6.1.10 Partner 10: Poland	27
6.1.11 Partner 11: Cyprus.....	27
6.1.12 Partner 12: Greece	28
6.1.13 Partner 13: Ireland	29
6.1.14 Partner 14: Belgium.....	29
6.1.15 Partner 15: Scotland	30
6.1.16 Partner 16: Spain	30

1 Introduction

1.1 Marine Fisheries Research and the Need for Collaboration

A recent study from the FAO (2004) estimated that 76 percent of the major world fish resources were categorized as fully exploited, overexploited, depleted, and recovering from depletion. Fish stocks in the Northeast Atlantic, the North Sea and the Baltic Sea are one of the most heavily overfished (FROESE and PAULY 2003; DG FISH 2006). Thus, the pressure on European policy- and decision-makers in fisheries management is high. Fisheries research provides the necessary knowledge to formulate recommendations and scientific advice. Since fish stocks ignore national boundaries and migrate into different territorial waters, issues and problems concerning fisheries management are transboundary too. Consequently marine fisheries scientists from different nations have been working together for a long time and have established collaborative linkages that play an important role in contemporary fisheries management.

Fish stocks in EU territorial waters are managed in a concerted action involving all member states. The joint management of fish stocks is formulated in the Common Fishery Policy (CFP), which is the fisheries policy of the European Union. Fisheries research plays an important role in the CFP of the European Union (WILSON and HEGLAND 2005). The scientific advice - concerning fish stocks in the North Atlantic - for the Common Fishery Policy is mainly developed by national scientists working together in the International Council for the Exploration of the Sea (ICES). ICES brings together around 1600 marine scientists from 19 countries to develop unbiased, non-political advice. Beyond ICES, the European Commission has its own advisory committee, the European Scientific, Technical and Economic Committee for Fisheries (STECF) that gives fisheries science advice directly to the European Commission's Directorate-General for Fisheries and Maritime Affairs (DG Fish).

The current weakness in the European system is the lack of coordination between the national funding bodies that decide individually where and how research funds are spent. That means, although strong collaboration across national borders exists on working level, virtually no collaboration exists on the funding level from where funds are allocated to the relevant research institutes.

1.2 Scope of the Study

The overall goal of the ERA-Net project MariFish – funded by the European Commission's Sixth Framework Program - is to develop a network and bring together major European national funders of fisheries research to form an effective working partnership. An example for such a concerted action of creating a network of marine research and development funding agencies in the European Union is the ERA-Net project MarinERA. MarinERA aims to integrate European marine research efforts, however it focuses on fundamental research and not marine fisheries research. The ERA-Net Scheme is the principal means of the European Commission to support the cooperation and coordination of national and regional bodies that finance or manage research activities in an attempt to bring together available resources and improve the efficiency of the European Research Area (ERA). The relevant research objective of the MariFish Work Package 3 (WP 3) to accomplish this goal is to identify existing

international, European and regional collaboration in the area of marine fisheries research and identify where more effective linkages are required.

This involved the development of a questionnaire and the establishment of personal contact with the national organizations participating in MariFish. During these visits the questionnaire was filled out covering the relevant research areas and collecting information about the institutional and organizational structures of national funding agencies. In addition desk-based literature reviews were carried out relying on mainly web-based materials. The collected information was converted into write-ups to reduce the amount of data. This information was then shared with participants to ensure the validity and reliability of the collected data.

The present report concentrates in a first step on international and European collaboration.

1.3 Report Structure

The report is organized around five chapters. In this chapter the need for collaboration in marine fisheries research is depicted and a context for the study provided.

Chapter 2 continues with a review of definitions, terms and concepts that are used in the evaluation of European marine fisheries research-funding structures within the consensus of MariFish.

Chapter 3 provides a descriptive overview of international and European collaboration of MariFish partner countries.

In chapter 4 the focus lies on the evaluation of collaborative linkages of the national marine fisheries research funders and the identified strengths and weaknesses.

Finally, in chapter 5 the general conclusion is given and some first implications for future joint funding highlighted.

2 Funding Marine Fisheries Research

2.1 Problems in Fisheries Research Terminology

According to the MariFish project proposal:

“MariFish will focus on that research which provides evidence to managers for the development of strategies for sustainable fisheries, including links with aquaculture, set within the ecosystem based principle.”

Given that this statement allows for a rather broad definition of marine fisheries research, considerable debates were held with MariFish partners about what to subsume under marine fisheries research and what not. Furthermore, visits revealed that participants had different perceptions of terms and concepts in marine fisheries research. For example, some countries do not differentiate between applied research and basic research. On the other hand some countries differentiate clearly between applied science and what they call “blue sky research”, basically referring to oceanographic research. Another example is the inclusion and subsequently funding of monitoring and fish stock assessment tasks into applied science by some MariFish partners such as Ministries of Fisheries, etc. while other MariFish partners such as Research Councils do not regard monitoring and assessment tasks as research and subsequently do not fund these activities.

Keeping this in mind is relevant when viewing collaborative structures of countries and their respective marine fisheries research systems. For the work of WP 3, all marine fisheries research was included that allows for a better management of fisheries resources,

e.g. fish biology and fisheries research, modeling and method development, as well as monitoring and assessment of fish stocks. As a result of the different perceptions of marine fisheries research and the heterogeneous national funding structures, in some countries not all ‘major’ national funders of marine fisheries research are partners in MariFish.

2.2 National Funding Structures

According to the previous paragraph the national funding structure is quite diverse. Some of the national funding agencies that are partners in MariFish do not finance monitoring and fish stock assessment tasks. Instead the relevant ministry in charge of fisheries finances these tasks. However, for some partners of MariFish this is their main activity.

To illustrate national funding structures of marine fisheries research one can differentiate between funding and executive level. The funding level can be further differentiated into national ministries on one side and research foundations with a mandate to implement, manage and fund marine fisheries research on the other side. An example for the first is the German Ministry of Food, Agriculture and Consumer Protection (BMELV); an example for the latter is the Research Council of Norway (RCN). The executive level consists of the respective institutions carrying out marine fisheries research. These might be dedicated fisheries research institutes such as the Federal Research Centre for Fisheries (BFAFI) in Germany or the Marine Institute (MI) in Ireland. On the University level, departments mainly apply for funds at the relevant research foundation. The following Table 1 gives an overview of the relevant ministries, research councils, national fisheries institutes and universities that act as major funders and recipients in marine fisheries research with their respective political or academic agenda.

Table 1: National ministries and research councils and their main recipients in the context of marine fisheries and their affiliation with MariFish.

Country	Political Responsible for fisheries, e.g. Ministry	Main Recipient	Academic basic research orientated, e.g. Research Council or Ministry	Main Recipient
United Kingdom	DEFRA	CEFAS	NERC	Several (e.g. University of Portsmouth)
Norway	Ministry of Fisheries and Coastal Affairs	IMR	RCN	Several (e.g. University of Bergen)
Germany	BMELV	BFAFI	DFG	Several (e.g. IFM-GEOMAR)
Netherlands	LNV	IMARES/RIVO/LEI		
Sweden	Ministry of Agriculture, Food and Consumer Affairs	SBF	FORMAS	Several (e.g. University of Goteborg)
Iceland	Ministry of Fisheries	MRI	RANNIS	Several (e.g. University of Iceland)
France	Several (e.g. Ministry of Research)	IFREMER		
Denmark	DFFE	DIFRES		
Portugal	MADRP	IPIMAR	MCTES	
Poland	Ministry of Agriculture and Rural Development		MSHE	SFI
Cyprus	Ministry of Agriculture, Natural Resources and Environment	DFMR	RPF	
Greece	Ministry of Rural Development and Food	NAGREF	GSRT	HCMR/FRI
Ireland	DCMNR	MI		
Belgium	MGV	ILVO		
Scotland	SEERAD	FRS		
Spain	MAPA		MEC	IEO

MariFish partner

To further complicate and confuse matters the arrangements and responsibilities of funders are not consistent and vary considerably from country to country. In Germany for example the major national funder of marine fisheries research is the Ministry of Food, Agriculture and Consumer Protection (BMELV), whereas in Sweden one of the major funders is the Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS). Thereby the German ministry is responsible for fisheries policy whereas the Swedish research foundation is not. Further comprehensive difficulty arises from the fact that a mix of arrangements exists. In the case of Sweden, the Ministry of Agriculture, Food and Consumer Affairs covers fisheries policy and acts as second major funder of marine fisheries research via the Swedish Board of Fisheries. But neither the Ministry of Agriculture, Food and Consumer Affairs nor the Swedish Board of Fisheries are partners of MariFish.

In order to acquire all relevant organizations with decision-making functions in the field of funding marine fisheries research, a simple definition was adopted. Therefore all organizations were treated as funders that have virtually all control over their research budget. This applies for such organizations that are financed via lump sum or government grants and to a large extent allocate funds to their individual research projects independently. The underlying assumption for the work of WP 3 is, that responsible officials from these organizations have influence on the development of national research programs and their funding. Consequently these organizations were considered as funding bodies. However, it should be noted that these officials are not fully free in budget decisions, especially when additional funds are needed.

Ministries are organized into various departments with different duties and responsibilities. Accordingly the ministerial department funding marine fisheries research is not necessarily the ministerial department engaging in fisheries policy. Since information concerning the internal decision-making structures of ministries is difficult to obtain, ministries and their subordinate departments were treated as a whole, depending on the available information. Keeping this in mind is important when comparing collaborative linkages of ministries, since they might suggest collaboration on funding level, whereas collaboration takes place on a fisheries policy level (e.g. quota setting).

3 Collaboration and Partnerships

For the context of this study, the overarching question needs to be answered: What is collaboration? Collaboration occurs when people interact and exchange knowledge in pursuit of a shared goal. This interaction may involve communication, information sharing, coordination, cooperation, problem solving, and negotiation (HALL 1999). However, simply contributing to a shared goal does not constitute collaboration. On the other hand, having a shared goal does not imply that everybody has the same goal. Quite the contrary, collaborators may very well have their own individual goals, yet they must be minimally complementary. Collaboration can be formally or informally organized, e.g. in regular working group meetings or ad hoc meetings and collaborative fora may be international and European organizational structures. However for the purpose of MariFish all types of collaboration were considered.

3.1 International

The relevant organizations on international scale are quite diverse and need to be viewed carefully in regard to their agenda and pursuit objectives. The Food and Agriculture Organization (FAO) of the United Nations for example aims to achieve food security for all, improve agriculture, forestry and fisheries practices and pay special attention on developing rural areas. Thereby the FAO serves as a knowledge network, shares policy expertise and provides a meeting place for nations. FAO membership is by country, yet collaboration occurs on various working levels involving different country representatives from a number of government ministries and offices.

The Intergovernmental Oceanographic Commission (IOC) is part of the UNESCO. The IOC's objective is to contribute to the development of scientific research to obtain better knowledge of the oceans by means of international scientific cooperation. This includes the coordinated use of research vessels, the standardization of methods and the shared documentation and exchange of oceanographic data on an international basis. The IOC implements international research programs with a fishery related component such as GOOS and GLOBEC. The engagement in fisheries and ecosystem studies is highlighted by the IOC's statement:

“The IOC is concerned with how the environment influences the productivity of commercially important fish stocks and how to detect relevant changes in their health. The IOC uses an ecosystem approach that recognizes the interdependence of species and the need to understand the total environment.”

Finally the International Whaling Commission (IWC) acts as an international fisheries organization with the purpose to conserve and manage whale stocks. Incorporated in the IWC is a Scientific Committee comprising of sub-committees and working groups that provide scientific advice. Furthermore, the International Whaling Commission sponsors and supports international fisheries research.

The following Table 2 depicts the collaboration of major national funders of marine fisheries research of MariFish countries in the introduced international organizations.

Table 2: Collaboration of MariFish countries major national funders of marine fisheries research in relevant international organizations.

		Funders		Organizations		
		MariFish Partner	Non-partner	FAO	IOC	IWC
Country	United Kingdom	DEFRA				X
		RCN				
	Norway		Ministry of Fisheries, (...)		X	X
	Germany	BMELV/BFAFI		X	X	X
	Netherlands	LNV		X		X
		FORMAS				
	Sweden		Ministry of Agriculture, (...)			
		RANNIS				
	Iceland		Ministry of Fisheries		X	X
	France	IFREMER		X	X	
	Denmark	DFFE				
	Poland	MSHE/SFI				
	Ireland	MI			X	
	Belgium	MGV-ALT/ILVO				
	Scotland	FRS				
	Portugal	MADRP/IPIMAR		X	X	
	Cyprus	RPF				
			DFMR	X	X	
	Greece	GSRT/HCMR			X	
			Ministry of Rural Development			
Spain	MEC/IEO		X	X	X	
		Ministry of Agriculture, (...)				

The analysis of international collaboration in Table 2 presents a heterogeneous picture of collaboration of national funders of marine fisheries research. Basically, the country is partner of any of the relevant international organizations and not single research institutes. The exact type of collaboration remains vague, thus Table 2 provides a basis but has no further relevance for the analysis of research collaboration. This is in particular related to the fact that Table 2 does not provide any relevant information concerning the type of participation and/or the content being discussed. The crosses in Table 2 may either represent an institution or that a scientist of that institution participates in the international organization's meetings and working groups. In terms of participation this covers the number and position of the actors, respectively if the participant is the person in charge of funding. In terms of content this relates to the fact that it is unclear if funding issues were discussed at all. As a result the interpretation of Table 2 is difficult and requires further investigation. It is clear to see that few MariFish partners are active in international organizations concerning the issue of discussing collaborative funding of marine fisheries research.

3.2 European

The relevant organizations on European scale represent an administrative structure, a research association and a science promotion foundation.

The Directorate-General for Fisheries and Maritime Affairs or DG Fish is a department of the European Commission, responsible for the political priorities in the area of fisheries, the Law of the Sea and Maritime Affairs. Thereby DG Fish is responsible for the

sustainable management of fisheries within the Community, since single member states have transferred their fisheries competencies to the EU. The most important task of the DG Fish is the management of fisheries and aquaculture, according to the Common Fisheries Policy (CFP) through:

- Formulating and negotiating quotas
- Representing the Community and its respective member countries in relevant international and regional fisheries organizations
- Promoting and funding scientific assessments and research in fisheries.

The European Fisheries and Aquaculture Research Organization (EFARO) is an association composed by the directors of the main European research institutes involved in fisheries and aquacultural research. EFARO aims to promote scientific cooperation in the area of fisheries and aquaculture by providing information about ongoing research projects, new initiatives and new national strategies. The updated research objectives strive to avoid duplication and redundancies in fisheries and aquacultural research by organizing research activities and promoting synergy between the member institutions. Hence EFARO is a good example for coordination and collaboration on working level.

The European Science Foundation (ESF) - Marine Board acts as an international research consortium bringing together major national marine research institutes and funding agencies within Europe. The ESF - Marine Board aims to improve the coordination between European marine science organizations and to develop a European strategy for marine research. Therefore the ESF - Marine Board has adopted four main objectives:

- Create a forum for its member organizations
- Identify scientific strategic issues
- Provide a voice for European marine science
- Promote synergy among national programs and research facilities

The aim of the ESF - Marine Board is put into effect in the ERA-Net project MarinERA, which is at the same time managed by the ESF - Marine Board.

As mentioned above MarinERA is a European project with the overall goal to coordinate national and regional marine research and technology development (RTD) activities in Europe. In pursue of this goal MarinERA aims to:

- *“Provide a strategic and operational network of national, EU and international initiatives;*
- *Reduce fragmentation and duplication;*
- *Enhance coordination of marine research infrastructures;*
- *Facilitate reciprocal opening of national marine research programmes;*
- *Establish common marine research funding programmes.”*

In congruence with the objectives MarinERA sees itself as a key facilitator and an important platform to promote marine science in the European Research Area.

Table 3 illustrates the collaboration of major national funders of marine fisheries research in the introduced European organizations.

Table 3: Collaboration of MariFish countries major national funders of marine fisheries research in relevant European organizations.

		Funders		Organizations			
		MariFish Partner	Non-partner	DG Fish	EFARO	ESF – Marine Board	MarinERA
Country	United Kingdom	DEFRA		X			
	Norway	RCN				X	X
			Ministry of Fisheries, (...)		X	X	
	Germany	BMELV/BFAFI		X	X		
	Netherlands	LNV		X			
	Sweden	FORMAS					
			Ministry of Agriculture, (...)	X	X		
	Iceland	RANNIS				X	
			Ministry of Fisheries		X		
	France	IFREMER		X	X	X	X
	Denmark	DFFE		X			
	Poland	MSHE/SFI				X	X
	Ireland	MI		X	X	X	X
	Belgium	MGV-ALT/ILVO		X	X		
	Scotland	FRS		X	X		
	Portugal	MADRP/IPIMAR		X	X		
	Cyprus	RPF					
			DFMR	X	X	X	
Greece	GSRT/HCMR			X	X	X	
		Ministry of Rural Development	X				
Spain	MEC/IEO		X	X	X	X	
		Ministry of Agriculture, (...)	X				

Within the scope of the DG Fish, EU countries and their respective funders of marine fisheries research come together to fulfill their obligations. At a closer look the participants are MariFish partners like government departments and non-partners such as the ministries responsible for Fisheries from Sweden, Cyprus and Greece. Thus the DG Fish represents a forum where national funders of fisheries research meet on European scale.

Both the European Fisheries and Aquaculture Research Organization (EFARO) and the ESF – Marine Board involve the same number of MariFish partners and MarinERA brings together one third of the MariFish partners.

4 Evaluation of Collaborative Linkages

The heterogeneous structure of national funders has various consequences for the identification and evaluation of collaborative linkages. National ministries usually have more collaborative linkages as research councils. In some countries the ‘major’ national funders of marine fisheries research, with collaborative linkages inside the marine fisheries research sector, are not partners in MariFish. Identifying existing international and European collaboration not necessarily means that these collaborations involve MariFish partners. However, to fulfill the research objective identifying where more effective linkages are required and subsequently building on the strengths of existing scientific collaborations, relevant collaborations and partnerships in fisheries management were assessed and depicted.

4.1 Strengths

On international scale the Intergovernmental Oceanographic Commission (IOC) represents an example, providing a framework and mechanisms to implement international research programs such as GOOS and GLOBEC, in which, however, fisheries plays a minor role.

Exemplary for the encouragement of collaboration to improve fisheries management in the Mediterranean is the Food and Agricultural Organization (FAO). Thereby the FAO acts as funder of several regional research projects in the Mediterranean area.

On European scale the EU itself represents a major funder of marine fisheries research. This is laid down in the 6th Framework Programme, which among other research areas prioritizes: *“Fisheries and Aquaculture - Towards sustainable development of fishing and aquaculture activities”*.

The Directorate-General for Fisheries and Maritime Affairs (DG Fish) corresponds to a forum that has the potential to integrate MariFish partners funding marine fisheries research, since all EU countries participating in MariFish are represented. However, this does not include Norway and Iceland. The DG Fish further portrays the administrative structure under which MariFish countries meet in pursue of their European obligations. The Data Collection Regulation (DCR) is such an example, where member states are co-funded by the Community to collaborate in and coordinate multi annual data collection programs. The DG Fish brings together national correspondents for the DCR, directors of the relevant institutes (EFARO list) and directors of national fisheries administrations to discuss the data collection framework according to:

“Member States and the Commission shall co-ordinate and co-operate to further improve the reliability of scientific advice, quality of the work programmes and working methods of international scientific bodies and scientific bodies belonging to regional fisheries organizations.

This coordination and cooperation shall take place without prejudice to open scientific debate and shall aim to promote impartial scientific advice.”

Thus DG Fish respectively its DCR is exemplary for bringing together not only scientists from different countries but also national funding bodies of marine fisheries research.

The European Fisheries and Aquaculture Research Organization (EFARO) is another example of a European organization that brings together many MariFish partners and non-partners. Of particular interest is the fact that EFARO has been the main driver in the initiative to create MariFish and thus shares the MariFish objective to promote scientific cooperation in the field of fisheries research. However, EFARO focuses on cooperation on working level and not funding level.

The ESF-Marine Board has been recognizing the need for improved coordination between European marine research institutes and funding organizations for over 10 years. At the same time it recognizes the need for the development of a European strategy for marine research. Therefore it has proposed a strategy for marine science in Europe integrating research areas in a holistic approach. The key priorities for marine research and recommendations to improve integration are formulated in the position paper *Integrating Marine Science in Europe* (2002). Although this report incorporates the whole bandwidths of marine science, parts of it relate to marine fisheries research in line with the MariFish objective.

4.2 Deficiencies

Existing collaboration as for example in the DCR only cover single aspects of marine fisheries research such as fish stock assessment. In this context the assertion proves correct that the strongest impediment of effective collaboration of national marine fisheries research funders is simply the absence of some of these funding bodies in international and European organizations. Thus findings from the questionnaires and personal interviews underline the MariFish statement that there is an “*absence of coordination between the funding bodies*”. Moreover, although some countries participate in all of the selected international organizations, none of the international and European organizations integrates all of the MariFish partners.

To come a close second is the lack of accessible and available information concerning the type of ongoing collaboration in the area of marine fisheries research and funding mechanisms. This concerns questions about direct collaboration, formal or informal collaboration or collaboration on ad hoc basis. More important though is the question of the subject matter that is discussed during collaborative meetings. In general, the collected information on international and European collaboration of major national funders of marine fisheries research does not specify the type of collaboration. The question arises, if the participation of a single scientist from any of the MariFish partners allows the assumption that his or her competent funding body is collaborating? The answer in most cases is no. The fact that national funding bodies of marine fisheries research collaborate in international or European organization does not necessarily imply that the funding of marine fisheries research is discussed. Quite the contrary, it may be assumed that in particular national Ministry of Fisheries, etc. - when coming together with other ministries - debate fishing quotas and other policies affecting fisheries management and trade. This is most likely the case in the European Directorate-General for Fisheries and Maritime Affairs (DG Fish). Although this is the only organization integrating all of the EU MariFish countries it predominantly focuses on EU Fisheries and Maritime Policy and does not include all MariFish partners.

The type of collaboration as discussed above is directly linked with the competent funding body, thus the diversity of funding organizations plays an important role and challenges consensus on the level of funding bodies. This diversity is reflected in the fact that some of the MariFish partners are government ministries, some are departments within government ministries, some are research councils, and some are fisheries research institutes with a mandate to fund and implement marine fisheries research.

There is a danger that some of the participating funding bodies have assigned duties and responsibilities concerning the implementation of MariFish to subordinate working levels and fisheries research institutes. Furthermore, national memberships in international and European organizations are often delegated to fisheries research institutes, which is not the same as research coordination in the field of marine fisheries research. Thus a threat to the future work of MariFish is the possible retreat of funding body representatives and the delegation of work to subordinate levels.

5 Conclusion

In general the type of existing collaboration of major national funders of marine fisheries research is difficult to obtain and the subject matter vague. This is in particular the case on international level. Improving transparency in international and European decision-making structures concerning the funding of marine fisheries research is a necessity and will need to be followed up during the entire MariFish project. Thus the type and content of collaboration needs to be and will be further qualified during the next months in work package 3.

On European level some collaboration exists within DG Fish concerning the common implementation of the DCR. However this applies only for the EU MariFish partners and excludes Norway and Iceland. In respect to the European level the EU's Sixth Research Framework Program plays a relevant role, since it aims to promote scientific cooperation at all levels through numerous research projects. EFARO is another example for establishing collaboration on European scale, although focusing on the scientific working level.

The most powerful material selective incentive available to EU MariFish partners collaborating in funding marine fisheries research is European co-funding such as formulated in Article 169 of the EC Treaty. Another factor supporting collaboration of national funders is that MariFish partners come from the same policy area. Furthermore, MariFish partners already recognized the collective benefit deriving from collaboration by joining the MariFish ERA-Net, i.e. there is a willingness to collaborate.

MarinERA follows a similar objective than MariFish with the exception that it encompasses the entire field of marine research instead of focusing on marine fisheries research, as is the case in MariFish. With a head start of one year, MarinERA provides a baseline study of barriers to cooperation and strategic activities how these barriers will be addressed. On the other hand MariFish has and will have answers where more effective linkages are required. The two ERA-Net projects complement one another, hence stronger linkages and cooperation between MariFish and MarinERA and sharing of knowledge through the exchange of lessons learned is expected to result in synergy effects.

Attention should be paid to the possible development of a top-down shift of project participants from funding level to working level. Instead attention should be directed towards scaling-up, i.e. the establishment of partnerships on higher system levels with decision-making power concerning the funding of marine fisheries research.

Acronyms and Abbreviations

ARMINES	Ecole des Mines de Paris
BECAUSE	Critical Interactions Between Species and their Implications for a Precautionary Fisheries Management in a Variable Environment
BFAFI	Federal Research Centre for Fisheries (Germany)
BITS	Baltic International Trawl Survey
BMELV	Federal Ministry of Food, Agriculture and Consumer Protection (Germany)
BONUS	Baltic Organizations Network for Funding Science
BTS	Beam Trawl Survey
CEFAS	Centre for Environment, Fisheries and Aquaculture Science (United Kingdom)
CEVIS	Comparative Evaluations of Innovative Solutions in European Solutions in European Fisheries Management
CFP	European Common Fisheries Policy
CNRS	National Center for Scientific Research (France)
DARDNI	Department for Agriculture and Rural Development Northern Ireland (UK)
DCMNR	Department of Communications, Marine and Natural Resources (Ireland)
DCR	Data Collection Regulation
DEFRA	Department for the Environment, Food and Rural Affairs (United Kingdom)
DEPM	Daily Egg Production Method
DFFE	Directorate for Food, Fisheries and Agri Business
DG	Directorate General
DRA	Danish Research Agency
DYFS	Demersal Young Fish Survey
EAFE	European Association of Fisheries Economists
EASE	European Advice System Evaluation
EC	European Commission
EFARO	European Fisheries and Aquaculture Research Organisations
EFIMAS	Operational Evaluation Tools for Fisheries Management Options
ENIB	Ecole Nationale d'ingénieur de Brest
ERA	European Research Area
ESF	European Science Foundation
EUROCEANS	European Network of Excellence for Ocean Ecosystems Analysis
FAO	Food and Agriculture Organization
FISBOAT	Fisheries Independent Survey Based Operational Assessment Tools
FORMAS	Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning
FRI	Fisheries Research Institute (Greece)
FRS	Fisheries Research Services (UK, Scotland)
FSS	Fisheries Science Services (Ireland)
GENIMPACT	Evaluation of Genetic Impact of Aquaculture Activities on Native Populations
GFCM	General Fisheries Council for the Mediterranean
GLOBEC	Global Ocean Ecosystem Dynamics
GOOS	Global Ocean Observing System
GRICES	International Science and Higher Education Relation Office (Portugal)
GSRT	Ministry of Development – General Secretariat for Research and Technology (Greece)
HCMR	Hellenic Centre for Marine Research (Greece)
HELCOM	Helsinki Commission – Baltic Marine Environment Protection Commission
IBTS	International Bottom Trawl Survey
IBWAS	International Blue Whiting Acoustic Survey

ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICSEM	International Commission for the Scientific Exploration of the Mediterranean Sea
IEO	Spanish Institute of Oceanography
IFF	Institute for Fishery Technology and Fishery Economics (Germany)
IFM-GEOMAR	Leibnitz-Institute of Marine Science (Germany)
IFÖ	Institute for Fishery Ecology (Germany)
IFREMER	French Research Institute for the Exploitation of the Sea
IGFS	Irish Groundfish Survey
IHF	Institute of Hydrobiology and Fishery Science, University Hamburg (Germany)
IHLS	International Herring Larvae Survey
ILVO	Institute for Agricultural and Fisheries Research (Belgium)
IMARES	Institute for Marine Resources & Ecosystem Studies (Netherlands)
IMO	International Maritime Organization
IN EX FISH	Incorporating the Extrinsic Drivers into Fisheries Management
INDECO	Development of Indicators of Environmental Performance of the Common Fisheries Policy
INDICANG	Indicating the Abundance and Distribution of the European Eel
INIAP/IPIMAR	National Institute for Agronomy and Fisheries Research/Research Institute for Marine Fisheries (Portugal)
INTAS	International Association for the Promotion of Cooperation with Scientists from the New Independent States of the former Soviet Union (NIS)
IO PAS	Institute of Oceanology of the Polish Academy of Science
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IOR	Institute of Baltic Sea Fisheries (Germany)
IOW	Baltic Sea Research Institute (Germany)
IPIMAR	Research Institute for Marine Fisheries (Portugal)
IST	Information Society Technologies
IWC	International Whaling Commission
LEI	Agricultural Economics Research Institute (Netherlands)
LNv	Ministry of Agriculture, Nature and Food Quality (Netherlands)
LOV	Laboratoire d'Océanographie de Ville (France)
MADRP	Ministry of Agriculture, Rural Development and Fisheries (Portugal)
MAPA	Ministry of Agriculture, Fisheries and Food (Spain)
MAR-ECO	Patterns and Processes of the Ecosystems of the Northern Mid-Atlantic
MARIFISH	Coordination of European Marine Fisheries Research
MarinERA	Facilitating the Coordination of National and Regional Marine RTD Programmes in Europe
MCTES	Ministry of Science, Technology and Higher Education (Portugal)
MEC	Ministry of Education and Science (Spain)
MEDITS	International Bottom Trawl Survey in the Mediterranean
MGV	Ministry of the Flemish Community (Belgium)
MI	Marine Institute (Ireland)
MIR	Sea Fisheries Institute (Poland)
MRI	Marine Research Institute (Iceland)
MSHE	Ministry of Science and Higher Education (Poland)
MUTFISHARE	Mutualisation on Fisheries and Aquaculture European Research Institutes (EFARO)
NAGREF	National Agricultural Research Foundation (Greece)
NERC	Natural Environment Research Council (United Kingdom)
OSPAR	Commission for the Protection of the Marine Environment of the North-East Atlantic

POLMARF	Polish Marine Fishery Science Centre
Premecs II	Development of Predictive Model of Cod-end Selectivity
PROTECT	Marine Protected Areas as a Tool for Ecosystem Conservation and Fisheries Management
PUBERTIMING	Photoperiod Control of Puberty in Farmed Fish: Development of New Techniques and Research into Underlying Physiological Mechanisms
RANNIS	Icelandic Centre for Research
RCN	Research Council of Norway
RIKZ	National Institute for Coastal and Marine Management (Netherlands)
RIVO	Netherlands Institute for Fisheries Research
RPF	Research Promotion Foundation (Cyprus)
RTD	Research and Technology Development
SARDYN	Sardine Dynamics and Stock Structure in the North-east Atlantic
SEERAD	Scottish Executive Environment and Rural Affairs Department (UK)
SELAM	Socio-Economic and Legal Aspects of Aquaculture in the Mediterranean (CIHEAM)
SEPA	Swedish Environmental Protection Agency
SFD	Sea Fisheries Department (Belgium)
SFI	Sea Fisheries Institute (Poland)
SGPM	Fisheries Directorate (Spain)
SIBER	Silicate and Baltic Sea Ecosystem Response
SIPAM	Information System for the Promotion of Aquaculture in the Mediterranean
SNF	Danish Natural Science Research Council
STECF	Scientific, Technical and Economic Committee for Fisheries (EC)
TECAM	Technical Aspects of Mediterranean Aquaculture (CIHEAM)
TTQ Leonardo	Training for Traceability and Quality in the Capture Fish Industry of Europe
UNCLOS	United Nations Convention on the Law of the Sea
UNCOVER	Understanding the Mechanisms of Stock Recovery
UNESCO	United Nations Educational, Scientific and Cultural Organization
WEALTH	Welfare and Health in Sustainable Aquaculture

References

- BOISSONAS, J. et al. 2002: Integrating Marine Science in Europe. ESF Marine Board Position Paper 5, November 2002, p. 150. [online] URL: <http://www.esf.org/publication/146/Marinescience.pdf> (30.08. 2006)
- DG FISH 2006: Three leading species, pp. 6-7. In: Directorate-General for Fisheries and Maritime Affairs (ed.). *Fisheries and Aquaculture in Europe*, Nr. 29, June 2006, Brussels, Belgium, p. 11. [online] URL: http://ec.europa.eu/fisheries/publications/magaz/fishing/mag29_en.pdf (04.08. 2006)
- FAO 2004: The State of World Fisheries and Aquaculture 2004. FAO Fisheries Department, Rome, Italy, p. 153. [online] URL: <ftp://ftp.fao.org/docrep/fao/007/y5600e/y5600e00.pdf> (09.08. 2006)
- FROESE, R. and D. PAULY 2003: Dynamik der Überfischung, pp. 288-295. In: LOZÁN, J.L.; E. REISE; J. SÜNDERMANN und H. VON WESTERNHAGEN (Hrsg.). Warnsignale aus Nordsee und Wattenmeer – eine aktuelle Umweltbilanz. *GEO*, Hamburg, Germany, p. 448. [online] URL: <http://www.searoundus.org/bookChapters/2003/Dynamik%20der%20Überfischung.pdf> (04.08. 2006)
- HALL, T. 1999: Intelligence Community Collaboration Baseline Study. [online] URL: http://collaboration.mitre.org/prail/IC_Collaboration_Baseline_Study_Final_Report/toc.htm (10.08. 2006)
- WILSON, D.C. and T.J. HEGLAND 2005: An Analysis of Some Institutional Aspects of Science in Support of the Common Fisheries Policy. Project Report for Policy and Knowledge in Fisheries Management. CEC 5th Framework Program No. Q5RS-2001-01782. Working paper No 3-2005. Institute for Fisheries Management & Coastal Community Development, Hirtshals, Denmark, p. 61. [online] URL: <http://www.ifm.dk/reports/126.pdf> (04.08. 2006)

6 Appendix

6.1 Country Reports

6.1.1 Partner 1: United Kingdom

Overview of the United Kingdom Fisheries Research System

The Department for Environment, Food and Rural Affairs (DEFRA) is the major national funding body of marine fisheries research in the United Kingdom. Executive agencies are the Marine Fisheries Agency and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS). Minor funding bodies of fisheries research include, the Scottish Executive Environment and Rural Affairs Department (SEERAD), the Natural Environment Research Council (NERC) and the Department of Agriculture and Rural Development Northern Ireland (DARDNI).

International research programs and surveys

- According to the EU Data Collection Regulations No. 1543/2000, 1639/2001 and 1581/2004 the United Kingdom carries out surveys with help of DEFRA; SEERAD; CEFAS; DARDNI; and the Scottish Fisheries Research Services (FRS), including:
 - International Bottom Trawl Survey (IBTS)
 - Mackerel and Horse Mackerel Egg Survey
 - International Blue Whiting Acoustic Survey (IBWAS)
 - Herring Acoustic Survey
 - Nephrops Underwater TV Survey
 - Deepwater Survey
 - Beam Trawl Survey (BTS)
- NERC participates in the ERA-Net project MarinERA and the EU project PROTECT.
- The University of Durham and the Southampton Oceanography Centre participate in the international project MAR-ECO within the Census of Marine Life.
- Scientists from the University of Portsmouth and CEFAS participate in the EU funded projects EFIMAS and UNCOVER.
- The University of Wales, Bangor participates in the EU funded project GENIMPACT and UNCOVER.
- The University of Liverpool is coordinator of the EU project IN EX FISH.
- CEFAS is partner of the EU funded projects BECAUSE, FISBOAT, PROTECT, and WEALTH.

Collaboration & Partnerships

European

- DG Fish: DEFRA
- EFARO: CEFAS
- ESF - Marine Board: NERC

International

- IOC: NERC
- IWC: DEFRA

6.1.2 Partner 2: Norway

Overview of the Norwegian Fisheries Research System

The Research Council of Norway (RCN) administers a part of the funds available for fisheries research, according to guidelines issued by the Ministry of Fisheries and Coastal Affairs. The Council is under jurisdiction of the Ministry of Education and Research. However, funds allocated to the RCN come from various ministries. Major funding, provided by the Ministry of Fisheries and Coastal Affairs, is designated to its Institute of Marine Research (IMR) and the Directorate of Fisheries, who carry out fisheries research and provide advisory services to policy making in the field of fisheries management.

International research programs and surveys

- Norway has a long history taking part in international surveys. At present IMR participates in the:
 - International Bottom Trawl Survey (IBTS) in the North Sea
 - International Acoustic Surveys
 - Herring Acoustic Survey
 - Herring Larvae Survey
 - Surveys on Pelagic Fish in the Norwegian Sea
 - Northeast Atlantic Pelagic Ecosystem Surveys
- Members of RCN are partners of the ERA-Net project MarinERA.
- IMR is further partner of numerous EU funded projects, including: BECAUSE, CEVIS, EFIMAS, FISBOAT, PROTECT, GENIMPACT, EUROCEANS, UNCOVER, WEALTH.
- And IMR together with the University of Bergen, is coordinating institution of the international research project MAR-ECO within the Census of Marine Life Network.

Collaboration & Partnerships

European

- EFARO: IMR
- ESF – Marine Board: RCN

International

- FAO: IMR
- IWC: Ministry of Fisheries and Coastal Affairs
- IOC: IMR

6.1.3 Partner 3: Germany

Overview of the German Fisheries Research System

The Ministry of Food, Agriculture and Consumer Protection (BMELV) is the main national body funding fisheries research in Germany, which is carried out by the Federal Research Centre for Fisheries (BFAFI).

International research programs and surveys

- According to EU Regulation No. 1543/2000, 1639/2001 and 1581/2004 the German national fisheries data collection program is coordinated by the BFAFI and carries out the following surveys:
 - Baltic International Bottom Trawl Survey (BITS)
 - International Bottom Trawl Survey (IBTS)
 - Herring Acoustic Survey
 - Sprat Acoustic Survey
 - International Hydro-Acoustic Oceanic Redfish Survey
 - Blue Whiting Survey
 - Herring Larvae Survey
 - Beam Trawl Survey (BTS)
- The Project Management Organization Jülich (PTJ) is partner in the ERA-Net projects MarinERA and BONUS.
- Members of the University of Hamburg and the Leibnitz-Institute for Marine Research (IFM-GEOMAR) participate in the international project MAR-ECO within the Census of Marine Life.
- Further, members of the University of Hamburg and IFM-GEOMAR participate in the EU funded projects PROTECT and BECAUSE.
- BFAFI, IFM-GEOMAR and the University of Hamburg are partners of the EU funded project UNCOVER.
- The Heinrich-Heine University is partner in the EU project IN EX FISH.

Collaboration & Partnerships

European

- DG Fish: BMELV
- ESF – Marine Board: German Research Society (DFG); Helmholtz Association of National Research Centres
- EFARO: BFAFI

International

- FAO: BMELV; BFAFI
- IOC: BMELV; BFAFI
- IWC: BMELV

6.1.4 Partner 4: Netherlands

Overview of the Dutch Fisheries Research System

The Fisheries Directorate within the Ministry of Agriculture, Nature and Food Quality (LNV) is the main national funding agency for fisheries research in the Netherlands. However, a subsidiary relationship exists between the Ministry of Agriculture, Nature and

Food Quality and the Institute for Marine Resources and Ecosystem Studies (IMARES), the Netherlands Institute for Fisheries Research (RIVO) and the Agricultural Economics Research Institute (LEI) both from the Wageningen University and Research Centre, who carry out most of the fisheries research. Marginal funding to fisheries research is provided by the Ministry of Education, Culture and Science.

International research programs and surveys

- According to EU Council Regulation No. 1543/2000 and 1639/2001 the Netherlands national program for the collection of fisheries data is carried out in close collaboration between LNV as national coordinator, LEI collecting data and the RIVO providing expertise. The following surveys are covered:
 - International Bottom Trawl Survey (IBTS)
 - Herring Acoustic Survey
 - Mackerel Egg Survey
 - Beam Trawl Survey (BTS)
 - International Blue Whiting Acoustic Survey
 - Herring Larvae Survey
- IMARES participates in the ERA-Net project UNCOVER.
- The Netherlands Organisation of Scientific Research (NOW) participates in MarinERA.
- Scientists from the Wageningen University participate in the EU funded projects CEVIS, EFIMAS, FISBOAT, IN EX FISH, PROTECT, and WEALTH.

Collaboration & Partnerships

European

- DG Fish: LNV
- DG Research: LNV
- EFARO: IMARES
- ESF – Marine Board: NOW; Royal Netherlands Academy of Arts and Sciences

International

- FAO: LNV
- IWC: LNV

6.1.5 Partner 5: Sweden

Overview of the Swedish Fisheries Research System

The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS) is the major national fisheries research funding body under the Ministry of Sustainable Development, the Ministry of Agriculture, Food and Consumer Affairs and the Ministry of Education, Research and Culture. Close second is the Ministry of Agriculture, Food and Consumer Affairs, which allocates funds for fisheries research to its subordinate Swedish Board of Fisheries (SBF) respectively the Institute of Marine Research (IMR).

International research programs and surveys

- Within the European Common Fisheries Policy (CFP) regulated in Council Regulation (EC) No. 1543/2000, 1639/2001 and 1581/2004 scientists of the SBF participate in surveys including:
 - Baltic International Trawl Survey (BITS)
 - International Bottom Trawl Survey (IBTS)
 - Acoustic Surveys
- FORMAS is partner of the ERA-Net project BONUS.
- The University of Umea is partner of the international research project MAR-ECO within the Census of Marine Life.
- The University of Goteborg is partner in the EU funded projects PROTECT and WEALTH.
- The University of Lulea participates in the EU funded project CEVIS.
- The University of Stockholm is partner in the EU project IN EX FISH.
- SBF is partner of EFIMAS and PROTECT.

Collaboration & Partnerships

European

- DG Fish: SBF
- ESF – Marine Board: Swedish Research Council under the Ministry of Education, Research and Culture
- EFARO: SBF

International

- IOC: Swedish Meteorological and Hydrological Institute (SMHI)
- IWC: Ministry of Sustainable Development; Swedish Museum of Natural History
- FAO: SBF

6.1.6 Partner 6: Iceland

Overview of the Icelandic Fisheries Research System

The Icelandic Ministry of Fisheries is the major national funding body financing fisheries research. The majority of government expenditure is directly allocated to its subordinate Marine Research Institute (MRI). The Icelandic Centre for Research (RANNIS) is the second biggest funder of marine fisheries research and reports to the Ministry of Education, Science and Culture.

International research programs and surveys

- MRI participates in international surveys, including:
 - Surveys on Pelagic Fish in the Norwegian Sea
 - Northeast Atlantic Pelagic Ecosystem Surveys
 - International Hydroacoustic Surveys
- MRI is partner of the international project MAR-ECO within the Census of Marine Life.
- MRI is partner in the EU funded project BECAUSE and IN EX FISH.
- The Icelandic Fisheries Laboratories (IFL) is partner in the EU funded project GENIMPACT.

- The University of Iceland participates in the EU funded project CEVIS.

Collaboration & Partnerships

European

- ESF – Marine Board: RANNIS
- EFARO: MRI

International

- IOC: MRI
- IWC: MRI; Ministry of Foreign Affairs

6.1.7 Partner 7: France

Overview of the French Fisheries Research System

The Ministry of Research is the major national funding body of marine fisheries research in France, with minor funds coming from the Ministry of Agriculture and Fisheries and the Ministry of Ecology and Sustainable Development. Recipient is the French Research Institute for the Exploitation of the Sea (IFREMER) responsible for the implementation of the national research programs on behalf of the French authorities.

International research programs and surveys

- According to EC Regulation No. 1543/2000, 1639/2001 and 1581/2004 the national data collection program is carried out by IFREMER involving the following surveys:
 - International Bottom Trawl Survey (IBTS) in the North Sea
 - Channel Ground Fish Survey
 - Sardine-Anchovy-Horse mackerel-Mackerel Acoustic Survey
 - Blue Whiting Survey
 - Mediterranean International Trawl Survey (MEDITS)
 - Mediterranean Small Pelagic Fish Acoustic Survey (PELMED)
 - Tuna Tagging
- IFREMER participates in the ERA-Net projects MarinERA.
- Members of IFREMER participate in the EU funded projects BECAUSE, EFIMAS, EUROCEANS, PROTECT, and UNCOVER.
- Scientists from IFREMER, the University of Lille and LOV (Laboratoire d'Océanographie de Ville) participate in the international research project MAR-ECO within the Census of Marine Life.
- Among other institutes IFREMER participates in the EU funded project INDICANG and GENIMPACT.
- Scientists from IFREMER and ARMINES (Ecole des Mines de Paris) participate in the EU funded project FISBOAT.
- Scientists from IFREMER and ENIB (Ecole Nationale d'ingénieur de Brest) participate in the EU funded project Premecs II.

Collaboration & Partnerships

European

- DG Fish: IFREMER

- EFARO: IFREMER
- ESF – Marine Board: IFREMER; National Center for Scientific Research (CNRS)

International

- FAO: IFREMER
- IOC: IFREMER

6.1.8 Partner 8: Denmark

Overview of the Danish Fisheries Research System

The Directorate for Food, Fisheries and Agri Business (DFFE) within the Ministry of Food, Agriculture and Fisheries is the main national funding agency of fisheries research in Denmark, which is implemented by the Danish Institute for Fisheries Research (DIFRES).

International research programs and surveys

- According to EC Regulation No. 1543/2000, 1639/2001 and 1581/2004 the national program for the collection of fisheries data is carried out by DIFRES, DFFE and the Danish Institute of Food Economics, who participate in the following surveys:
 - International Bottom Trawl Survey (IBTS)
 - Baltic International Trawl Survey (BITS)
 - Herring Acoustic Survey
 - Acoustic Survey in the Norwegian Sea (ASH)
 - International Blue Whiting Acoustic Survey
 - Beam Trawl Survey (BTS)
- The Danish Agency for Science, Technology and Innovation is partner in the ERA-Net project BONUS.
- Members of DIFRES and the Institute for Fisheries Management & Coastal Community Development (IFM) participate in the EU funded projects CEVIS, EFIMAS and UNCOVER.
- Members of DIFRES participate in the EU projects BECAUSE, CONSENSUS, EUR-OCEANS, IN EX FISH, INDECO, NECESSITY, PROTECT, Premecs II, SEAFOODPLUS and, UNCOVER
- The Zoological Museum is partner of the international research project MAR-ECO within the Census of Marine Life.

Collaboration & Partnerships

European

- DG Fish: DFFE
- ESF – Marine Board: Danish Natural Science Research Council
- EFARO: DIFRES; Institute of Agriculture and Fisheries Economics

International

- IOC: DIFRES
- IWC: Ministry of Foreign Affairs

6.1.9 Partner 9 Portugal

Overview of the Portuguese Fisheries Research System

The main Portuguese funding agencies for fisheries research are the Ministry of Agriculture, Rural Development and Fisheries (MADRP) and the Ministry of Science, Technology and Higher Education (MCTES). The main recipient is the National Institute of Agronomy and Fisheries Research INIAP/IPIMAR constituted by two units – agro/rural (INIAP) and fisheries (IPIMAR), responsible for implementing and managing research as well as representative of national and international commissions.

International research programs and surveys

- Members of IPIMAR participate in surveys required for the Common Fisheries Policy concerning EC Council Regulation No. 1543/2000, 1639/2001 and 1581/2004 including:
 - Western International Bottom Trawl Survey (IBTS)
 - Mackerel and Horse Mackerel Egg Survey
 - Sardine, Anchovy and Horse Mackerel Acoustic Survey
 - Sardine Daily Egg Production Method Survey (DEPM)
 - Flemish Groundfish Survey
 - Tuna Tagging
- IPIMAR participates in the EU funded projects EFIMAS, IN EX FISH and SARDYN.
- The Foundation for Science and Technology (FCT) is the representative body of MCTES in the ERA-Net project MarinERA and the EU funded project EUROCEANS.
- IPIMAR is member of the international project MAR-ECO within the Census for Marine Life.

Collaboration & Partnerships

European

- DG Fish: IPIMAR
- ESF – Marine Board: International Science and Higher Education Relation Office (GRICES)
- EFARO: IPIMAR

International

- FAO: IPIMAR
- IWC: University of Lisbon; Institute for Nature Conservation
- IOC: IPIMAR

6.1.10 Partner 10: Poland

Overview of the Polish Fisheries Research System

The Ministry of Science and Higher Education (MSHE) is the main national funding agency for fisheries research in Poland. The primary recipient is the Sea Fisheries Institute in Gdynia (SFI), which is under the supervision of the Ministry of Agriculture and Rural Development. Of secondary importance is the Institute of Oceanology of the Polish Academy of Sciences (IO-PAS).

International research programs and surveys

- The Polish national program for the collection of data in the fisheries sector according to EC Regulations No. 1543/2000, 1639/2001 and 1581/2004 is carried out by the SFI and the Department of Fisheries of the Ministry of Agriculture and Rural Development including:
 - Baltic International Bottom Trawl Survey (BITS)
 - Herring Acoustic Survey
 - Sprat Acoustic Survey
- SFI is further partner of the following 5th and 6th FP projects: BECAUSE, CEVIS, EFIMAS, ELME, EUROCEANS, FISBOAT, INDECO, IN EX FISH, PROTECT, TTQ Leonardo and UNCOVER
- Members of MSHE and IO-PAS are partners of the ERA-Net projects MarinERA and BONUS.

Collaboration & Partnerships

European

- DG Fish: Ministry of Agriculture and Rural Development
- ESF – Marine Board: IO-PAS
- EFARO: SFI

International

- IOC: IO-PAS
- FAO: Ministry of Agriculture and Rural Development

6.1.11 Partner 11: Cyprus

Overview of the Cyprus Fisheries Research System

The independent Research Promotion Foundation of Cyprus (RPF) is the major funding agency for fisheries research. Next to funding, the RPF develops and implements national research programs and promotes national and international collaboration of Cypriot researchers. Of minor importance, in terms of funding fisheries research, is the Department of Fisheries and Marine Research (DFMR) within the Ministry of Agriculture, Natural Resources and Environment.

International research programs and surveys

- According to EC Council Regulation No. 1543/2000 and 1639/2001 DFMR carries out the following surveys within the Cypriote national program for the collection of fisheries data:
 - Mediterranean International Trawl Survey (MEDITS)

- Tuna Tagging

Collaboration & Partnerships

European

- DG Fish: DFMR
- DG Research: DFMR
- ESF – Marine Board: DFMR
- EFARO: DFMR

International

- FAO: DFMR
- IOC: DFMR

6.1.12 Partner 12: Greece

Overview of the Greek Fisheries Research System

Fisheries research is mainly funded by the General Secretariat for Research and Technology (GSRT) under the jurisdiction of the Ministry of Development. The GSRT supervises and distributes funds to the most important public research centres in the field of fisheries and aquaculture, such as the Hellenic Centre for Marine Research (HCMR). Minor funding is provided by the Ministry of Rural Development and Food. Recipient is the National Agricultural Research Foundation (NAGREF) in particular the Fisheries Research Institute (FRI).

International research programs and surveys

- According to the EU Data Collection Regulations No. 1543/2000 HCMR and FRI carry out surveys, including:
 - Mediterranean International Trawl Survey (MEDITS)
 - Anchovy Daily Egg Production Method (DEPM)
 - Tuna Tagging
- GSRT funds international bilateral projects under bilateral agreements with various countries
- GSRT is partner of the ERA-Net project MarinERA.
- HCMR participates in the EU funded projects EFIMAS, FISBOAT and WEALTH.
- Scientists from the HCMR and the Aristotle University of Thessalonica (AUTH) participate in the EU funded project GENIMPACT.

Collaboration & Partnerships

European

- DG Fish: Ministry of Rural Development and Food
- DG Research: GSRT
- EFARO: HCMR
- ESF – Marine Board: HCMR

International

- IOC: HCMR

6.1.13 Partner 13: Ireland

Overview of the Irish Fisheries Research System

The Marine Institute (MI), under the aegis of the Department of Communications, Marine and Natural Resources (DCMNR), is the single major funding body promoting and implementing fisheries research in Ireland.

International research programs and surveys

- Under the European Data Collection Regulation No. 1543/2000 the Marine Institutes, Fisheries Science Services (FSS) participates in the following surveys:
 - International Blue Whiting Acoustic Survey (IBWAS)
 - Irish Groundfish Survey (IGFS)
 - Mackerel egg survey
 - International Bottom Trawl Survey (IBTS)
 - Nephrops Underwater TV Survey
 - Deep-water trawl survey
- Members of MI participate in the ERA-Net project MarinERA.
- MI is member of the international project MAR-ECO within the Census of Marine Life.
- The University College Cork (UCC) is partner of the EU funded project GENIMPACT.
- And MI participates in the EU funded projects EFIMAS, EUROCEANS and PROTECT.

Collaboration & Partnerships

European

- DG Fish: MI
- ESF – Marine Board: MI
- EFARO: MI

International

- IOC: MI
- IWC: Department of Foreign Affairs

6.1.14 Partner 14: Belgium

Overview of the Belgium Fisheries Research System

The Ministry of the Flemish Community (MGV) and in particular its Department for Agriculture, Fisheries and Rural Development is the major national funding body of marine fisheries research in Belgium. Responsible for the implementation of fisheries research is the Institute for Agricultural and Fisheries Research (ILVO) and its respective Animal Science Unit – Fisheries.

International research programs and surveys

- According to EC Regulation No. 1639/2001 and 1581/2004 the national program for data collection involves the:
 - Demersal Young Fish (and Brown Shrimp) Survey (DYFS)
 - North Sea Beam Trawl Survey (BTS)

- ILVO participates in the EU funded project EFIMAS.

Collaboration & Partnerships

European

- DG Fish: ILVO
- ESF – Marine Board: Belgium National Fund for Scientific Research (FNRS)
- EFARO: ILVO

6.1.15 Partner 15: Scotland

Overview of the Scottish Fisheries Research System

The Scottish Executive Environment and Rural Affairs Department (SEERAD) is the major funder of fisheries research, which is implemented through its Fisheries Research Services (FRS).

International research programs and surveys

- As part of the wider UK effort in support of the European Common Fishery Policy (CFP) the FRS participates in the following surveys:
 - International Bottom Trawl Survey (IBTS)
 - Mackerel and Horse Mackerel Egg Survey
 - International Blue Whiting Acoustic Survey (IBWAS)
 - Herring Acoustic Survey
 - Nephrops Underwater TV Survey
 - Deepwater Survey
- The University of Aberdeen and St. Andrews and the Scottish Association for Marine Science are members of the international project MAR-ECO within the Census of Marine Life.
- Scientists from the University of Aberdeen and FRS participate in the EU funded project UNCOVER.
- FRS participates in the EU funded projects FISBOAT, GENIMPACT, Premecs II, and WEALTH.
- Scientist from both the University of Aberdeen and FRS participate in the EU funded project BECAUSE.

Collaboration & Partnerships

European

- DG Fish: SEERAD; FRS
- EFARO: FRS

6.1.16 Partner 16: Spain

Overview of the Spanish Fisheries Research System

The Secretariat of State of Universities and Research under the jurisdiction of the Ministry of Education and Science (MEC) is the main funder of Spanish fisheries research. Recipients are several Universities and regional/national public research institutions, including the Spanish Institute of Oceanography (IEO), which is the most important public research organization devoted to fisheries and marine environment. An interministerial commission between MEC and the Ministry of Agriculture, Fisheries and

Food (MAPA) ensures the collaboration and coordination in particular between the Fisheries Directorate (SGPM) of MAPA and IEO. The most important private research center in marine and food research is AZTI-Tecnalia, located in the Bask country.

International research programs and surveys

- According to the European Data Collection Regulation No. 1543/2000, 1639/2001 and 1581/2004 the IEO participates in numerous surveys, including:
 - International Bottom Trawl Survey (IBTS)
 - Mackerel and Horse Mackerel egg survey
 - Sardine, Anchovy and Horse Mackerel Acoustic survey
 - Mediterranean International Trawl Survey (MEDITS)
 - Tuna Tagging
 - Flemish Groundfish Survey
- MEC is the partner of the ERA-Net project MarinERA.
- Scientists from the University of Murcia and the Spanish National Research Council (CSIC) participate in the EU funded project WEALTH.
- The University of Oviedo participates in the EU funded project GENIMPACT.
- AZTI-Tecnalia participates in the EU funded projects CEVIS, EFIMAS and FISBOAT.

Collaboration & Partnerships

European^o

- DG Fish: IEO
- ESF – Marine Board: IEO
- EFARO: IEO
- Franco-Spanish cooperation between the Spanish Institute of Oceanography and the French Research Institute for the Exploitation of the Sea (IFREMER).
- Bilateral agreement between IEO and IPIMAR.

International

- IOC: IEO
- FAO: IEO
- IWC: IEO