



Is there a need for a new governance model for regionalised Fisheries Management? Implications for science and advice



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ABSTRACT

Over the years, the breadth and depth of EU marine policy has increased with revisions of the Common Fisheries Policy (CFP) and new legislation like the Marine Strategy Framework Directive (MSFD), Integrated Maritime Policy (IMP) and the Framework for Marine Spatial Planning Directive in Europe (FMSP). Not only do these different policies have different remits and hence scope, they also present a multitude of modes of implementation. Although the CFP and MSFD have many common goals when it comes to conservation and sustainable use of living marine resources, they differ substantially in governance set up and implementation modalities, including the underlying scientific advisory processes and structures. Regional cooperation and coordination is foreseen, but there is no governance model in place to coordinate requests for scientific advice, nor institutions coordinating the activities of advice providers, either across policies or across regions. This results in an increase in uncoordinated requests for scientific advice yet the pool of experts fuelling the advisory system is limited. As a result the European marine scientific advisory system is increasingly under pressure. In this paper the consequences of this problem are analysed and a redesign of the institutional governance setting to accommodate these challenges and make the science and advice system ready for the future is explored.

1. Introduction

In recent years, with the introduction of the revised Common Fishery Policy (CFP) in 2013 but also with the introduction of other, new, policies such as the 2008 Marine Strategy Framework Directive (MSFD), the integrated Maritime Policy (IMP) of 2011 and the July 2014 adopted legislation to create a common Framework for Maritime Spatial Planning in Europe (FMSP) two main developments manifested themselves. The first is the question of the remit for each of these policies. For example, both CFP and MSFD claim competence in the realm of biological resource management and conservation [1,2]. The second question is that of increasing attention to regionalisation of policy implementation [3–5].

In this Short Communication, the impact of these developments on regional marine ecosystem management and, in particular, fisheries management and the consequences these developments have for delivering science and advice supporting and underpinning decision making will be discussed. This contribution reflects the perspective of directors of the main European research institutes involved in fisheries and aquaculture research, as the main science suppliers for marine policy development and implementation in Europe. It is concluded that

not only the sheer and increasing volume of data required to fuel the system, but also the different specifications of data to be collected for the many policies and the analyses to be conducted to generate advice, together with the lack of coordination of these processes across policies and regions, may well lead to an implosion of the European data collection and advisory system for fisheries, aquaculture and the marine environment. It is suggested that redesigning the governance system for data collection, science and provision of advice is urgently required. Attention should be paid to the needs of different client groups with a focus on cross-policy and regional coordination in order to create a system capable of providing credible, salient and legitimate science for marine policy development.

2. Multi-level governance and policy implementation

The EU's regional seas are being managed under a complex of marine and maritime policies [2]. The CFP is traditionally the platform for sustainable management of fisheries and aquatic food production. The MSFD is designed from an ecosystem conservation perspective and stands in a tradition of directives already influencing the marine sphere such as the Bird and Habitat Directives and the Water Framework

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Directive which forms the environmental pillar of the IMP [6]. The IMP is an instrument seeking integration over a multitude of different sectoral policies (i.e. shipping, oil and gas extraction, fisheries) addressing a plethora of different challenges, stakeholders and their representative organisations [5,7]. The recently added FMSP is the pillar of the IMP seeking to promote sustainable development, clarify the utilisation of maritime space for different sea uses and manage potential user conflicts in marine areas [8].

Europe's marine and maritime policies are developed and implemented in a multi-level governance setting: i.e. a system of continuous negotiation among nested governments on several territorial tiers - supranational, national, regional and local [9]. For example under the CFP, policy and legislation are negotiated at the central European level between Commission, Council and European Parliament (EP) as fisheries is one of only five policy areas where the commission has exclusive competence [10]. Yet, implementation is left to the Member States (MS). In contrast, under the MSFD - a framework directive - individual MS are responsible for developing and implementing national laws in line with the directive [4,11]. In all policies (also in IMP and FMSP) European institutions and MS both play a role, but whereas under the CFP Member States simply implement European law, under MSFD nationally developed laws have the potential drawback that harmonisation across Member States may be hampered by differences in national legislation [12–15].

The policies and directives not only differ in legal and institutional setting, they also have a difference in focus e.g. between regional scales or economic and ecological aims, include different stakes and focus on different ways of setting rules [2]. However, a common denominator linking the four policies exists in the fact that each subscribes to the principles of sustainability and ecosystem based management and thus calls for regional cooperation between MS and, as far as possible, with other coastal states [5,16].

In the remainder of this paper a closer look is taken at policy development, especially at the regional level where differences in governance structure and mode of implementation of the different policies have an impact on the way science and advice is being produced and used in the management of our seas and oceans.

3. Regionalisation of policy implementation

Harmonising implementation of different EU policies at the regional level encounters a number of challenges. At the regional sea level there is quite a mismatch of scales between the larger ecosystem level, the institutional scales - international, EU, regional and national - as part of sectoral governance systems, as well as the socio-economic scales of individual marine sectors [5,6]. To cite one example: international shipping is managed by the supra-international UN International Maritime Organisation, fisheries are managed at the EU level and renewable energy at the national level [6,7,17–20].

The mismatch of scale can be partly attributed to the design and focus of the different EU policies and partly to implementation modes of policies at different regional scales and the degree to which policy implementation is harmonised between coastal states, frequently involving different legal scales and policy traditions [12,21]. If we focus on the CFP and the MSFD, the two policies currently needing the highest amount of scientific advice for implementation and execution, we note that the two are championed at the European level by DG Mare and DG Environment respectively. In most MS, this situation is further complicated by the involvement of two separate ministries responsible for fisheries and the marine environment [2].

Although the need for cooperation at the regional seas level e.g. to inter-calibrate perception of good environmental status across Member States or harmonise science and advisory processes has been fully acknowledged in both policies (and similarly in the FMSP Directive), details on how this cooperation can be achieved across policies are not being provided [4]. Instead of establishing a body at the regional level,

such as the Advisory Councils under the new CFP, the MSFD and the FMSP suggests MS use existing regional institutional cooperation structures, including those under Regional Sea Conventions [22]. So the directives provide no specific legal framework nor do they specify governing structures ensuring policy coordination and integration within a marine region [5].

The lack of a single unifying legal framework for policy implementation or the underpinning of scientific advisory systems can be attributed to the very nature of the policy instruments. The CFP is a common policy: under European law its measures take immediate effect. The directive nature of the MSFD requires MS to prepare a plan to achieve good environmental status in their marine waters, implemented via national legislation [23,24]. As a result, governance systems and structures, management measures and even the indicators used to measure the implementation and success of the MSFD differ between MS and so hamper the overall effective (regional or ecosystem) operationalisation of the MSFD [5,14,21,25].

This situation strongly affects the structure and functioning of the research institutes collecting data and providing advice to policy development, implementation and monitoring. Before the introduction of the MSFD the CFP was the only policy that included a legal obligation to base decisions on best available scientific advice and had a well-defined scientific advisory system at its disposal. All MS were obliged to have scientific institutions capable of collecting and analysing data required to provide advice for fisheries management. Advice was generated in fora such as the International Council for the Exploration of the Seas (ICES), regional fisheries management commissions or the Commission's Scientific, Technical and Economic Committee on Fisheries (STECF) and its Joint Research Council (JRC) [16,26].

With the establishment of the Regional Advisory Councils (RAC) under the 2002 CFP reform the demand for science and advice increased substantially as RACs at times demanded additional and in some cases more detailed advice. This demand increased further as under the 2013 reform of the CFP MS are tasked with developing concrete regionalised, ecosystem oriented fisheries management measures. Coordination and implementation of regionalised fisheries management is organised via the newly established, so called, "regional groups", e.g. Scheveningen, Northwestern Waters and Baltfish groups. For the implementation of complex regional elements of the revised CFP, such as the landing obligation including discard plans or the development of long-term management plans for mixed fisheries, these newly established management groups have generated an additional and quite substantial demand for science and advice supporting and underpinning policy development.

The existing European science and advisory bodies (ICES, STECF, JRC) as well as the national fisheries research institutes are not capable of responding adequately to these new, additional, demands. Moreover, the regional fisheries management groups tend to ignore existing European science structures and advisory bodies and individual MS task their national research institutes heavily with additional requests for science and advice.

Furthermore, under the MSFD the Regional Sea Conventions gained an important role in harmonising marine conservation management across Member States. This resulted in an increased demand for scientific advice on aspects of managing fisheries resources, particularly from the perspective of reaching Good Environmental Status at the regional level. As a result, individual Member States facing the responsibility for implementing the MSFD, tasked their national science institutions with these new obligations again resulting in increased demand for advice.

Thus, a major increase in demand on the scientific advisory system has evolved over the last decade as a consequence of the new and revised European marine policies. But not only is there an increased demand for advice, there is also the issue of interpretation. Not only do MS differ in their interpretation of the several policies, but the bodies providing the underpinning science may well interpret the targets of

different policies differently: a case in point is the discussion of whether F-MSY is to be interpreted as a target or a limit [27–29].

An additional obstacle to achieving a better coordinated and more efficient science and advisory system is the new European funding mechanism for data collection and advice under the CFP, i.e. the European Maritime and Fisheries Fund (EMFF). Under the former EU data collection framework (DCF) data were collected by MS based on EU Commission agreed, regionally coordinated, annual national programs. Under the new DCF data collection is now governed by 7-year national operational programs that have not been internationally coordinated before implementation. After final approval of the national operational programmes by the Commission it is foreseen that regional coordination groups will see to regional coordination of data collection. Yet this only pertains to data collection under the CFP. No coordination with MSFD requirements is stipulated.

The development of appropriate regional governance structures together with a methodological framework for regional ecosystem management (under CFP, MSFD and perhaps for marine spatial planning) including appropriate structures for science and advice at the regional level to support this, are urgently needed [30]. In the current system, there is a lack of coordination and high level steering, resulting in a low efficiency in producing adequate advice. Moreover, as there are no appropriate internationally agreed quality standards in place to guide the new regional and national advisory requirements, the substance and quality of advice provided by individual national labs may vary quite considerably.

The question discussed below is: how can an appropriate regional institutional setting that will facilitate and allow for this regional coordination be developed? Is this to be achieved by the governance and institutional structures being developed within the existing legal framework for implementing policies involving delegation and the inclusion of stakeholders or by changing the legal structures, the buy-in of stakeholders and the establishment of an effective and efficient management system that avoids both micro-management and the creation of parallel structures?

4. Enhancing regional coordination and coherent data collection as a basis for implementing a regionalised ecosystem based fisheries management

To ensure that under limited funds, with increasing demands on data collection, and a new more sophisticated funding model credible, salient and legitimate science for policy development can be provided, redesigning the data collection and advisory governance system is urgently needed. Attention must be paid to the needs of different client groups, the inclusion of stakeholders within the governance process and a clear focus on regional coordination.

Prior to the development of the new system it is essential to both assess the real data needs for a regionalised, ecosystem based fisheries and marine management approach and develop an implementation strategy for regional data collection programmes, which takes full account of such needs. Today the system seems to operate on a maximum data model trying to cover as many aspects as possible, rather than one that optimises efficiency and quality. In an optimal data collection and advisory system the effort and means invested have a direct and strong relation with the scientific and policy requirements, equipping the science community with the data needed to be able to provide accurate yet robust, legitimate and relevant advice to policy development [31–33].

One way to organise and structure the current system of scientific advice for marine policy development lies in making better use of the regional coordination mechanism provided under the new DCF. Regional coordination groups, consisting of data and science providers as well as end-users of data and advice are now being established under the new framework. These could become the focal points for elaborating a new governance structure for marine data collection,

overarching and coordinating data collection and advice required for implementing the CFP, MSFD, IMP and FMSP alike [34,35].

Although it would have been desirable to have had these regional coordination groups already in place to ensure regional coordination of the current 7-year national operational CFP data collection programs, this development does provide the opportunity to enable the groups to take a pivotal coordinating role in collecting marine data and to empower the groups with sufficient expertise and a robust mandate to:

- i) ensure coordinated implementation of national programs in line with the demands of end-users of data and advice;
- ii) create a steering role for channelling and prioritising the advisory demands of the various new and old science and advice clients; and
- iii) provide the institutional platform for coordination of the several streams of demand for data collection and advice are being coordinated, both in terms of resource allocation, implementation protocols and quality assurance.

In addition to this immediate need for action to stabilise the current overstretched system of data collection and scientific advice in Europe, there is a growing need for interdisciplinary research to assess the present governance structures of the European marine research and advisory systems, to propose more fundamental solutions for changing the existing landscape and develop an appropriate new governance structure accounting for the new demands implicit in ecosystem based regional seas management [5,21]. This approach would have to consider certain key elements including the current set of claims on data collection and advice that stems from the different sets of legislation and specific regional and national demands. When considering this from the perspective of regional coordination, differences in policy governance and implementation scale need to be addressed. Although the need for regional coordination of policy implementation is widely acknowledged in the set of EU marine policies (CFP, MSFD, IMP and FMSP), the tools to achieve this are not so clear. The CFP provides the strongest legal basis for regional coordination as fisheries management is the prerogative of the European Commission [2,4,11]. So building on the established Regional Coordination Groups under the CFP, the DCF would be a proper starting point. These fora can then be used in coordination and cooperation with the Regional Sea Conventions and competent MS authorities to harmonise other demands on data collection and advice [5,20,36].

The new regional coordinating body will need to guard against institutional ambiguity arising from the requirement to deploy data collection protocols for different policies with different legal bases and varying scales of implementation [4]. A “best regional fit” model could be developed for each of the EU Regional Sea Areas [15,18,20]. Most pressing is the need to coordinate the demands of fisheries management under the CFP and the monitoring of Good Environmental Status under the MSFD. The issues of Blue Growth (IMP) and aspects of Marine Spatial Planning (FMSP) will also need to be considered. Running parallel to these are the additional competences of the relevant national and supra-national authorities [1,2] and the need to devise a governance model that embraces these authorities while coordinating implementation.

Even with a revised and optimal regional governance model for marine data collection in place fresh challenges will present themselves. These will stem partly from a striving for integrated ecosystem based management and partly from technological innovations in data collection and analysis of large data sets. Such developments will require smart redesigning of data collection, handling and storage, together with a thorough review of the advisory process and the kind of science society is willing to pay for. Equally important is buy-in to the new model from all relevant actors and stakeholders that will affirm the system's potential for providing credible, salient and legitimate science for future policy development.

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