In: Fishery Management
Editor: Janice S. Intilli
ISBN: 978-1-61209-682-7
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Chapter 6

TOWARDS SMART MANAGEMENT OF THE BALTIC SEA FISHERY

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ABSTRACT

Europe 2020: strategy for smart, sustainable and inclusive growth is proposing among other flagship initiatives the resource efficient Europe. Integrated Maritime Policy for the European Union (IMP) considers the Maritime Spatial Planning (MSP) as a fundamental tool for the sustainable development of marine areas and coastal regions, and for the restoration of Europe's seas to environmental health. Governance of marine spaces aims to provide a mechanism for a strategic and integrated plan-based approach for marine management that makes it possible to manage current and potentially conflicting uses. Fishery systems are an obvious example of coupled human and natural systems. A precondition for smart management of the fishery system is the availability of a negative feedback loop based regulatory measure that can constantly work to reduce the difference between the actual and desired states of the system. Fishing feet overcapacity remains the fundamental problem of the Common Fisheries Policy (CFP) while the European fleets remain far too large for the resources available. It is believed that introducing the principles of Europe 2010 Strategy, EU IMP and of the MSP as a key instrument for the IMP implementation, the fishery property rights, e.g. the Individual Transferable Quota (ITQ) system, the Marine Stewardship Council's Principles and Criteria into the Baltic Sea fishery management would contribute to the actual removal of excess fishing capacity. It is suggested that the reversal of burden of proof, when and as necessary, could be technically performed based on the legal procedure of the Environmental Impact Assessment that gives the fishing industry the opportunity to demonstrate that it operates responsibly in return for access to fishing.

Keywords: Baltic Sea, governance of marine spaces, maritime spatial planning, fishery management, reversal of the burden of proof

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INTRODUCTION

Europe 2020: a strategy for smart, sustainable and inclusive growth“ puts forward three mutually reinforcing priorities: 1) developing an economy based on knowledge and innovation, 2) promoting a more resource efficient, greener and more competitive economy, and 3) fostering a high-employment economy delivering social and territorial cohesion [1]. EU maritime affairs are addressed by the Integrated Maritime Policy for the European Union (IMP) [2] based on the clear recognition that all matters relating to Europe's oceans and seas are interlinked, and that sea-related policies must develop in a joined-up way if we are to reap the desired results.

The EU Marine Strategy Framework Directive (MSFD) [3] is seen as an environmental pillar of the IMP and it requires Member States to achieve good marine environmental status by 2020, to apply an ecosystem approach, and to ensure that pressure from human activities is compatible with good environmental status. Moreover, the Member States are required to cooperate where they share a marine region or sub-region and use existing regional structures for coordination proposes, including with third countries.

IMP considers the Maritime Spatial Planning as a fundamental tool for the sustainable development of marine areas and coastal regions, and for the restoration of Europe’s seas to environmental health [4]. Although the decision-making competence in this area lies with the Member States the commitment at European level to common principles and guidelines is necessary to facilitate the process in a flexible manner and to ensure that regional marine ecosystems that transcend national maritime boundaries are respected.

While the implementation of MSP is responsibility of the Member States its overarching objective is to balance sectoral interests and achieve sustainable use of marine resources in line with the EU Sustainable Development Strategy by addressing the economic, social and environmental aspects on an equal footing [5].

In line with the IMP, the ecosystem approach is an overarching principle for MSP that operates within three dimensions, addressing activities on the sea bed, in the water column and on the surface while time is also taken into account as a fourth dimension [2]. EU IMP Action Plan [6] stipulates that integrated MSP across EU waters is a fundamental requirement for the continued sustainable development of maritime economic activities, because it provides a neutral tool to arbitrate between conflicting or competing activities or interests. It is clearly stated that MSP should be legally binding if it is to be effective and this might raise the issue of the appropriate administrative framework for MSP.

The EC Green Paper on Reform of the Common Fisheries Policy [7] states that 88 % of Community stocks are being fished beyond the Maximum Sustainable Yield (MSY) and 30 % of these stocks are outside safe biological limits, which means that they may not be able to replenish. Furthermore, despite continued efforts, fleet overcapacity remains the fundamental problem of the Common Fisheries Policy (CFP) while the European fleets remain far too large for the resources available and this imbalance is at the root of all problems related to low economic performance, weak enforcement and overexploited resources.This Chapter addresses some options for reduction of excess fishing capacity through more efficient and smart fishery management based on the EU Integrated Maritime Policy.

FROM PLANNING TO GOVERNANCE OF THE MARINE SPACE

The roots of the Europe 2020: strategy for smart, sustainable and inclusive growth, the Integrated Maritime Policy for the European Union and the EU Common Fisheries Policy (CFP) can be found in the European model of public management. Drechsler [8] argue that the EU paradigm for times to come in all of Europe is a state structure, and what is more, the EU is a Continental "state" organized and working along Continental French and/or German lines while the New Public Management (NPM) comes from Anglo-America, and it originates from the 1980s with their dominance of neo-liberal governments.

König [9] argues that the challenge faced today by continental Europeans in their confrontation with a NPM goes beyond the claim to an internal rationalization of the public administration by means of good management while the new diction is the language of the market, of competition, of enterprises, services, customers and of entrepreneurial management symbolizing the departure from the old administrative management. However, it is stated [8] that the contemporary European model of public management is most probably slowly thriving towards the hybrid Neo-Weberian State (NWS) model. For the EU CFP it means functioning "strong state" to back reinforcing the smart elements of the Baltic Sea fishery system, such as: 1) further regionalization to provide a more meaningful framework for coordinating different strands of marine policy - fisheries, environmental protection, maritime development, 2) development of the MSP as a main tool for managing fish stocks at Maximum Sustainable Yields (MSY) and providing a better future for the European fishing community, 3) further development of the property rights based fisheries management, and 4) the reversal of burden of proof if and as necessary.

It is stated [10] that the governance is the process of decision-making with a view to managing change as societies and organizations pursue their objectives. Sutherland and Nichols [11] argue that the good governance is based on recognition of the interests of all stakeholders and inclusion of their interests that can be expressed in a variety of ways: sovereignty, jurisdiction, administration, ownership (title), lease, license, permit, quota, customary rights, aboriginal rights, collective rights, community rights, littoral rights, public rights, rights of use, and public good.

Nichols et al. [12] suggests that the marine space governance should be linked to the law and information including 1) allocation of resource ownership, control, stewardship and use within society, 2) regulation of resources and resource use (e.g., environmental protection, development and exploitation, rights to economic and social benefits), 3) monitoring and enforcement of the various interests; adjudication of disputes, including inclusive processes, 4) management of spatial (geographically referenced) and other types of information to support all of the above functions.

According to Douvere and Ehler [13] „In its broadest sense, marine spatial management is about analyzing and allocating parts of three-dimensional marine spaces to specific uses, to achieve ecological, economic, and social objectives that are usually specified through the political process. Marine spatial management aims to provide a mechanism for a strategic and

integrated plan-based approach for marine management that makes it possible to look at the „bigger picture" and to manage current and potentially conflicting uses to reduce the cumulative effects of human activities, and to deliver marine protection."

Pomeroy and Douvere [14] argue that the ultimate decision on what space will be allocated for what use (or non-use) is a matter of societal choice because the people are central to the decision-making process and are the agents for change.

It is stated [15] that fisheries management at both European and local levels is already strongly influenced by a spatial approach: 1) Total Allowable Catches (TACs) and quotas - the cornerstone of the CFP's stock conservation strategy – are set for International Council For the Exploration of the Sea (ICES) areas, 2) closed areas are used to protect commercial species at vulnerable stages in their life cycles, 3) multi-annual recovery plans for have attempted to deploy spatial controls through the designation of areas where fishing is permitted under particular conditions.

EC Green Paper on Reform of the Common Fisheries Policy [7] is addressing the integration of the Common Fisheries Policy into broader maritime policy context is stating that capture fisheries and aquaculture compete increasingly with other maritime sectors for marine space. Therefore, the marine spatial planning is an important element of the IMP with which the future CFP must be integrated. It seems to be quite natural to include the fishery management as an element among others into the framework of the emerging marine space governance.

FISHERY SYSTEM

Systems thinking that concerns an understanding of a system by examining the linkages and interactions between the elements that comprise the entirety of the system is used by Charles [16] when analyzing sustainable fishery systems and considering the following sub-systems of the fishery system: 1) the natural system (fish, ecosystem, biophysical environment), 2) the human system (fishers, post harvest sector and consumers, fishing households and communities, social/economic/cultural environment), and 3) the fishery management system (fishery policy and planning, fishery management, fishery development and fishery research).

Systems approach is usually applied to modeling of the complex fishery systems and/or their sub-systems [17-18]. In general, conception of the fisheries system as a set of interacting or interdependent entities forming an integrated whole is close to the conception of the coupled human and natural system [19].

Addressing the biological objectives of the fishery management Punt and Smith [20] argue that MSY has been, and to some extent remains, a key paradigm in fisheries management science that is representing the traditional key objective for fisheries management: removals should be as large as possible but nevertheless sustainable in long term. Commenting on MSY concept in general Larkin [21] argues that „The approach must be anthropocentric. It is a contradiction in terms to speak of biological objectives of fisheries management. Much more logical is to speak of biological constraints to management ... The real questions are: what should be the biological constraints and what should be the social objectives". Sissenwine and Symes [22] say that "Somewhat unwillingly, as a result of decisions made at the World Summit on Sustainable Development (WSSD), DG Fish has been obliged to adopt the concept of maximum sustainable yield (MSY) as a strategic goal for the management of Europe's fisheries." Nowadays MSY still remains a key concept in fisheries management emerging as a limit rather than as target reference point.

Economists traditionally use economic (resource) rents as a measure of the net economic benefits attributable to a natural resource. The economic objective of fishery management is to maximize the net economic benefits (sustainable rents) flowing from the fishery [23]. It is observed also that the Maximum Economic Yield (MEY) is generated at an effort level somewhat below MSY and therefore a policy aimed at achieving maximum resource rent would be ecologically friendlier than a policy targeting. It is suggested that efficiency/inefficiency of fisheries may be measured as the difference between maximum rents obtainable from the fisheries and the actual rents currently obtained.

According to Sissenwine and Symes [22] the economic objectives closely relate to concepts of efficiency, profitability and competitiveness in a subsidy free environment for the sector as a whole and for individual enterprises in the catching and processing areas while they must also concern the ability of the economic structures to evolve in line with the availability of natural resources, technological development and changing market opportunities. Christy and Scott [24] suggested already in 1965 that the 'maximize sustained yield' objective should be replaced by a 'maximize rent from the sea' objective.

The EC Green Paper on Reform of the Common Fisheries Policy [7] states that only a few EU fleets are profitable with no public support while most of Europe's fishing fleets are either running losses or returning low profits. World Bank and United Nations Food and Agriculture Organization (UN FAO) in their economic justification for fisheries reform [23] argue that "The notion that harvesters (fishers) have an exclusive, rather than a partial and conditional, right to the benefits from marine fisheries has tended to obscure the quest for increased [negative] social and economic benefits to society as a whole. This study shows that, in aggregate, the benefits to society as a whole are negative; that society underwrites the sector, through subsidies, by paying the costs of fisheries management and through depletion of capital (fish wealth)."

It is argued [25] that the most governments understand the problem of rent dissipation and it is common to see the management objectives that, not only include the conservation of fish stocks, but also improvement of the economic contribution of fisheries into the national economies.

BALTIC SEA FISHERY

In European seas, chronic overfishing continues to be a major problem, largely because the forces driving overexploitation have not been properly addressed [26]. Regarding the Baltic Sea fisheries, the International Baltic Sea Fishery Commission (IBSFC) was responsible for the management of shared Baltic Sea fishery resources in 1974 - 2005. Aps et al. [27] argue that given the political and economic pressure inherent in Baltic Sea fishery management the IBSFC Contracting Parties, as maximizers of economic returns, attempted to ensure that a greater common value was allocated to them. Therefore, they systematically set the TACs for all unit stocks more than the sustainable levels of exploitation while the science-based advice then served mainly as the starting point for "talking up quotas".

Aps and Lassen [28] show that for all fish stocks, TACs have been set systematically more than the scientific advice based on sustainable exploitation. Authors use the language of Eagle and Thompson [29] and interpret this as "decision overfishing" while the evidences of extensive underreporting of catches are interpreted as "implementation overfishing". It is

argued that despite the measures that have been taken by IBSFC to combat the situation this still means that a management body was knowingly accepting a situation of overfishing. It is concluded that the combination of decision overfishing and implementation overfishing, and not the management measures per se, could be the reason for the failure of depleted stocks to recover [28].

Fishing fleet overcapacity is generally considered to be a major cause of persisting overfishing, because it creates a strong incentive to catch more than is allowed and it undermines the control and enforcement efficiency. Fleet overcapacity is believed to be the driving force behind illegal, unreported and unregulated (IUU) fishing because under the pressure of cuts in quota and increasing fishing costs, vessel owners and fishers feel forced to break the rules to ensure continued payments on the vessels as well as a decent living for themselves [30].

ELEMENTS OF THE SMART MANAGEMENT

Regionalization

There is growing consensus that the regionalized approach to European fishery management would take into account the particular nature of the regions in a smarter way. It is stated [22] that „ ... the need for a regionalized approach goes beyond that of rational fisheries management. It provides a more meaningful framework for coordinating different strands of marine policy - fisheries, environmental protection, maritime development and the common instrument of MSP. In short it is the only sensible design for developing IMM [Integrated Marine Management].“ Authors suggest that the choice of institutional model for regionalizing the CFP lies between promoting the RACs to the status of regional management councils or tasking the relevant coastal EU Member States [e.g. Standing Conference of Ministers] to manage the region’s fisheries on a collective basis using the RACs as their principal advisory partners. It is suggested also [22] that in any case „The European institutions would remain responsible for establishing the principles, broad objectives and strategic framework for sustainable development and for monitoring progress at the regional level. Responsibility for translating the principles etc into specific long term management plans would rest with the regional authority.“

Maritime Spatial Planning

The MSP based fishery management is expected to be smarter than the recent command-and-control based management. MSP related decision-making competence lies with the Member States while the Common Fisheries Policy (CFP) is exclusive EU competence. IMP [1] states that managing fish stocks at Maximum Sustainable Yields (MSY) will provide a better future for the European fishing community and ensure its contribution to Europe's food security. IMP underlines that fisheries management must take more into account the welfare of coastal communities, the marine environment and the interaction of fishing with other activities. Methodology of MSP is seen as a suitable tool for integrated maritime policy

development, and such a planning is a fundamental requirement for the continued sustainable development of maritime economic activities, including fisheries, because it provides a neutral tool to arbitrate between conflicting or competing activities or interests.

Coming age of Maritime Spatial Planning is bringing the Baltic fishing industry at the negotiation table with the representatives of other sea use interests (maritime transport, wind farms, mineral and oil extraction etc.) with aim to negotiate the allocation of the marine space concerned [31]. In order to meet the challenge the Baltic Sea RAC should develop sufficient knowledge base and argumentation setting to be efficient partner in a fully comprehensive, integrated, plan led system of management for the present and future exploitation and development of marine resources, including fisheries.

Symes [15] states that the fishing industry's concern at the prospect of MSP is rooted in its unique pattern of space use while fishing involves an extensive form of space use (laterally and vertically and endemic uncertainty demands flexibility in the use of space. Therefore, in order to increase the capacity of the Baltic Sea Region fishing industry for informed participation in a process of the MSP 1) the impact of actual or planned competing sea uses on spatial/temporal allocation of fishing possibilities for the Baltic fisheries should be assessed, and 2) the credible, relevant and sound arguments should be generated to be used by the stakeholders when balancing environmental, economic and social interests in a process of the Maritime Spatial Planning.

Property Rights Based Fishery Management

The substantial body of published evidences shows that with open-access, non-exclusive fishing rights, too many resources are concentrated into fishing. The Individual Transferable Quota (ITQ) system remarkably improves the allocation of resources because the fishing right-holders have a greater vested interest in the resource and are better motivated to take more responsibility for management. Scott [32] states that "There are three general powers of ownership: to manage the asset, to transfer or sell it, and to take the income from it. The ITQ certainly gave the fisherman the third power. Instead of merely allowing him to go out and compete with others until the TAC was reached, it entitled him to a definite fixed percentage of the TAC - that is to the yield itself." It is widely demonstrated that introduction of ITQ system is efficiently contributing to the actual removal of excess fishing capacity [32-33].

The Marine Stewardship Council's Certification

The Marine Stewardship Council (MSC), an international non-profit organization [34], has set an environmental standard to measure and reward well-managed fishery provided that 1) the fishing activity is at a level which is sustainable for the fish population, 2) fishing operations are managed to maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends, and 3) the fishery is meeting all local, national and international laws and has a management system in place that is able to respond to changing circumstances and maintain sustainability. It is expected that the MSC potential certification of the Baltic Sea fishery would mobilize the consumer community, the seafood market and the associated fishery to a more sustainable basis including substantial reduction of fishing fleet overcapacity.

Reversal of the Burden of Proof

With a wiev to reverse the current situation, among other measures, it is proposed [7] that the fishing industry should be given more responsibility through self-management: „Results based management could be a move in this direction: instead of establishing rules about how to fish, the rules focus on the outcome and the more detailed implementation decisions would be left to the industry. Public authorities would set the limits within which the industry must operate, such as a maximum catch or maximum by-catch of young fish, and then give industry the authority to develop the best solutions economically and technically. ... It would have to be linked to a reversal of the burden of proof: it would be up to the industry to demonstrate that it operates responsibly in return for access to fishing.“

The Precautionary Principle is usually defined as follows [35]: “When an activity raises threats to the environment or human health, precautionary measures should be taken, even if some cause-and-effect relationships are not fully established scientifically. In this context, the proponent of an activity, rather than the public, should bear the burden of proof [for the safety of the activity].” According to this definition, the Precautionary Approach clearly shifts the burden of proof: fishing is only permitted when it is proved that the activity will not cause undue harm to fish stocks or the marine ecosystem rather than the present situation when fishing restrictions are only accepted if the fishing activities are proved harmful.

In the context of the Baltic Sea MSP the fisheries is representing just one of the sea space use interests. Spatial allocation of the fishing grounds in the future most probably will be based on the different individual fishing rights. Technically speaking, one of the preconditions for the fishing grounds and/or fishing quota allocation could be the production of satisfactory Environmental Impact Assessment (EIA) for that particular fishery. Production of EIA in EU is sufficiently backed legally and can be used as evidence that the particular fishery operates responsibly in return for access to fishing. In addition, successful Marine Stewardship Council (MSC) certification of that fishery could be seen as an additional evidence of responsible fishing.

CONCLUSION

Baltic Sea fishery management is characterized by the regulatory overfishing: TACs are often set more than the scientific advice based on sustainable exploitation (decision overfishing) while the evidences of extensive underreporting of catches are interpreted as implementation overfishing. Consequently, many fishery resources are harvested neither at MSY nor at MEY and the resource rent is eventually dissipated.

It is believed that introducing the principles of EU IMP and of the MSP as a key instrument for the IMP implementation, the Fishery Property Rights (e.g. ITQ system), the MSC’s Principles and Criteria into the Baltic Sea fishery management would contribute to the actual removal of excess fishing capacity. It is expected also that e.g. the ITQ system would create and enforce the missing smart negative feedback loop that will be constantly pushing the fishery system towards higher economic efficiency and ecological sustainability.

It is suggested that the reversal of burden of proof could be technically performed based on the legal EIA procedure that gives the fishing industry the opportunity to demonstrate that it operates responsibly in return for access to fishing.

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