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Marine strategy framework directive: Defining joint monitoring opportunities for the Eastern Mediterranean and the Black Sea, through dedicated decision making workshops and innovative policy tools

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ABSTRACT

The Marine Strategy Framework Directive (MSFD) is an important milestone for the preservation of the European marine environment. However, Member States can find its monitoring requirements challenging, particularly where it regards the definition and implementation of joint monitoring programmes between neighbouring countries. The challenges are even greater in the Mediterranean and the Black Sea, where many countries are not members of the European Union and where Regional Sea Conventions face greater difficulties in coordinating monitoring activities. This paper presents the results from two regional workshops, within the framework of IRIS-SES project, which aimed to inform policy- and decision-makers in the Eastern Mediterranean and the Black Sea on what key stakeholders, including scientists, academia and local authorities, consider the main gaps, needs and opportunities for the MSFD joint monitoring regarding eutrophication and contaminants. It shows that a bottom-up approach, guided by structured workshops, can be a successful means of enhancing cooperation.

1. Introduction

The European marine environment is an important resource, providing food and energy and attracting valuable tourism to the continent. Therefore, its protection is of the utmost importance. The European Commission has implemented several pieces of legislation to protect coastal and marine areas, including the Common Fisheries Policy and the Water Framework Directive. However, these legislative instruments protect specific areas or refer to specific pressures and sectors. The first comprehensive approach for the protection of European seas came in 2002 with the Recommendation on Integrated Coastal Zone Management [4]. In 2008, the Commission introduced a second integrative instrument, this time for the protection of the marine areas within the entire Exclusive Economic Zone of Member States, in the form of the Marine Strategy Framework Directive (MSFD) [2].

The aim of the MSFD is to ensure that European marine waters achieve Good Environmental Status (GES) by 2020, meaning that their natural states should not be much altered by human activities and that their biodiversity should be maintained [2]. Due to the heterogeneity of European seas, it is up to the Member States to define what GES means for their national waters. Starting from an assessment of the current state of the marine environment, Member States have to strive towards achieving GES, tracking their progress through the implementation of a comprehensive monitoring programme. To assist in the formulation of such monitoring programmes the MSFD defined 11 Descriptors of GES. An outline of the Descriptors, together with an explanation of what constitutes GES for each descriptor, is presented in Table 1. The Commission also published a decision outlining criteria and indicators that define GES, as an additional way of assisting with monitoring [1].

After an initial definition of the state of the environment in 2012, Member States were called to formulate national monitoring programmes by October 2014. Many of these programmes are primarily based on existing monitoring undertaken in response to already established regulations, such as the Water Framework Directive [3]. However, the MSFD has a much larger geographical scope than other EU legislation and therefore requires additional monitoring [11]. Furthermore, the MSFD requires the establishment and implementation of coordinated and compatible monitoring of the marine waters within marine regions or sub-regions.

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Table 1
Eleven MSFD descriptors for defining good environmental status [2].

Descriptor	How is GES defined?
1- Biodiversity	The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.
2- Non-indigenous species	Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.
3- Commercial fish and shellfish	Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.
4- Food webs	All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.
5- Eutrophication	Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.
6- Sea-floor integrity	Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.
7- Hydrographical conditions	Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.
8- Contaminants	Contaminants are at a level not giving rise to pollution effects.
9- Contaminants in seafood	Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.
10- Marine litter	Properties and quantities of marine litter do not cause harm to the coastal and marine environment.
11- Energy including underwater noise	Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

Therefore, there is a need for joint, integrated monitoring programmes that will ensure comparability and coherence of monitoring while inferring economic, resource and time benefits.

An integrated/joint monitoring programme is one that "provides data relevant to different MSFD descriptors, criteria and indicators, to different pieces of legislation, for more than one Member State and collected in a comparable way" [11]. But the formulation of joint monitoring programmes can result in many difficulties stemming from the heterogeneity of water body characteristic, differences in monitoring schemes between Member States and also, in some cases, political reasons [10]. Such monitoring is even more challenging in the Eastern Mediterranean and the Black Sea, (i) because of the large number of non-EU member states, which are not obligated to ratify the MSFD, and (ii) because the Regional Sea Conventions in these areas face greater difficulties than those in the Baltic and North East Atlantic [5].

This paper presents the results from two decision-making workshops, one held in the Eastern Mediterranean and one in the Black Sea, which brought together key stakeholders working in MSFD monitoring to discuss collaboration opportunities for joint monitoring. The workshops fell within the framework of project 'Integrated Regional Monitoring Implementation Strategy in the South European Seas' (IRIS-SES), which aims to develop a new concept and decision-making tools for the integrated environmental monitoring of the MSFD in the Eastern Mediterranean and the Black Sea, as a means of supporting the management of human activities and their effects on EU waters (www.iris-ses.eu).

2. Method

The implementation of joint monitoring programmes requires close cooperation between neighbouring countries. Therefore, the developed method was implemented at two regional workshops, one held in Athens, Greece on 24 October 2014, bringing together stakeholders from the Eastern Mediterranean countries of Cyprus, Greece and Turkey, and one held in Constanta, Romania on 12 January 2015, for stakeholders from the Black Sea countries of Bulgaria, Romania and Turkey. The workshops aimed to identify joint collaboration opportunities for Descriptor 5 (Eutrophication) and Descriptors 8 and 9 (Contaminants), as these are among the most well-established MSFD descriptors. Descriptors 8 and 9 were assessed together due to their closely-linked nature and since it has been suggested that a close synergy of their monitoring would be cost-effective and could increase knowledge on how contaminants affect human health [6].

2.1. Stakeholder mapping

To ensure the validity of the decisions and suggestions resulting from the workshops and to guarantee policy and expert buy-in, a stakeholder mapping exercise took place well before the implementation of the workshops to identify the key actors and stakeholders involved in the MSFD processes in each of the participating countries. To facilitate this selection process, the authors prepared a list of main stakeholder categories (Table 2). The MSFD experts in each country (i.e. the IRIS-SES project partners) were provided with this stakeholder category list and used it to identify key individuals within these groups and sub-groups to be invited to the regional workshops. These categories included the 'producers' of pollution, the decision-makers for solutions, the monitoring actors, civil society and the media. The importance of carefully selecting the representatives from the given categories was emphasised, since participation by the right individuals, and especially by those directly involved with decision-making regarding the MSFD monitoring, would ensure that real, site-specific input and expertise would be available at the workshops.

2.2. Data gathering

A prerequisite for the definition of joint monitoring gaps, needs and opportunities is an understanding of the current state of monitoring. To this purpose, factsheets were prepared and shared with the body responsible for marine monitoring in each of the participating countries. The factsheets (Table 3) aimed to record information regarding the indicators that are being monitored for Descriptors 5 and 8/9, the parameters being monitored for each indicator, the frequency of monitoring, the background and upper limits for each parameter, as defined by national or European legislation, indicative values and the monitoring method used.

2.3. The regional workshops

The workshops were structured in a participatory way that encouraged the active interaction between attending stakeholders. The method used was based on the DeCyDe-4 methodology and toolbox– an adaptable, site- and case-specific decision-support method developed to assist policy- and decision-makers to make informed and justifiable decisions on issues relating to sustainable development [8]. It was created in response to a real need to provide decision-makers with a tool that would minimise bias and arbitrariness in the way decisions are taken by public officials, particularly when it regards issues where they lack knowledge and