Editorial

What did we learn from PEGASEAS forum "Science and Governance of the Channel Marine Ecosystem"?

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ABSTRACT

As one of the busiest marine ecosystems in the world, the English Channel is subjected to strong pressures due to the human activities occurring within it. Effective governance is required to improve the combined management of different activities and so secure the benefits provided by the Channel ecosystem. In July 2014, a Cross-Channel Forum, entitled "Science and Governance of the Channel Marine Ecosystem", was held in Caen (France) as part of the INTERREG project "Promoting Effective Governance of the Channel Ecosystem" (PEGASEAS). Here we use outputs from the Forum as a framework for providing Channel-specific advice and recommendations on marine governance themes, including the identification of knowledge gaps, which may form the foundation of future projects for the next INTERREG project call (2015–2020).

1. Introduction

For centuries, the English Channel ("la Manche" in French) has been subjected to intense human influence including tourism and leisure, international ports and freight, and the exploitation of living and non-living resources (Carpentier et al., 2005; Dauvin, 2012). It is among the most impacted marine ecosystems in the word due to cumulative effects of human pressures (Halpern et al., 2008). The Channel represents one of the world's busiest shipping lanes, connecting the main ports of North-West Europe to the rest of the world, and used by hundreds of vessels every day. The Channel also contains diverse and abundant living marine resources and thus makes this maritime sector economically important for local and international fisheries that are targeting species threatened by over-exploitation and environmental change. Today, the Channel therefore represents considerable economic potential but its users often have conflicting interests and

inadequate governance (Carpentier et al., 2005). The Channel is separated into several international regions (French, English and Belgium), which have different priorities concerning marine ecosystem conservation and management and which threaten the sustainability of the Channel marine ecosystem (Dauvin, 2012; Skinner et al., 2014).

In 2013, the EU's INTERREG programme funded several 'capitalisation' projects, which focused on adding value to previous INTERREG IVA projects in the Channel, by extracting the most important information that could be used to achieve sustainable development in the Channel. The "Promoting Effective Governance of the Channel Ecosystem" project (PEGASEAS) aimed to promote improved governance of the Channel marine environment by capitalising on several INTERREG IVA projects.

During the PEGASEAS project, three Cross-Channel Forums were held concerning the theme of Channel governance which was defined in the broadest sense as the sum of all the processes, organisations, institutions and instruments with an influence over how the marine ecosystem of the English Channel is used and managed. As there is no official Channel governance body or association, the forums provided a unique opportunity for decision-makers, scientists, managers and stakeholders to discuss

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how to improve the governance of the Channel marine ecosystem through linking the environmental and socio-economic sciences. These forums followed four Cross-Channel Forums organized by the INTERREG project CAMIS ("Channel Arc Manche Integrated Strategy") (CAMIS, 2013). Each Forum provided the opportunity for actors on both sides of the Channel to meet and exchange views on methods to improve the management of the Channel's marine ecosystem. While the first and last PEGASEAS forums had a wide remit around governance needs, the second forum focussed specifically on the exchange of best practices and methods between scientists and policy-makers and stakeholders.

This editorial synthesises the outputs arising from the second PEGASEAS Cross-Channel Forum 'Science and Governance of the Channel Marine Ecosystem', held in July 2014 at the University of Caen Basse-Normandie, and extracts key messages arising from the forum to apply to future governance. During this event, scientists and stakeholders discussed scientific Channel-relevant research focusing on integrating marine science into the governance of the Channel ecosystem. It provided an opportunity for scientists to present their research in the context of Channel governance and to contribute to a trans-disciplinary analysis of the Channel marine ecosystem. It stimulated discussions between a wide variety of stakeholders (i.e. scientists, industry, experts and policy makers) about the Channel's marine ecosystem and how current science can be applied to support the governance of the Channel. The forum clearly highlighted important knowledge gaps and suggestions for future areas of research, enabling the formulation of recommendations for upcoming projects, for example those in the next INTERREG project call.

2. Outputs from the Cross-Channel Forum 'Science and Governance of the Channel Marine Ecosystem' organized by the PEGASEAS project

2.1. The PEGASEAS project and the Cross-Channel Forum

PEGASEAS explored a range of themes, from conservation of biodiversity to trans-boundary cooperation of political bodies to challenges for marine spatial planning in the Channel (Petit and Carpenter, 2014). Through 19 oral presentations and 30 posters produced by scientists and stakeholders, the 150 participants of the Caen Forum had the opportunity to understand and explore

important challenges and issues for the Channel marine ecosystem and its governance (Evariste et al., 2014). The forum facilitated the discussion of interdisciplinary themes, previously identified as relevant to aspects of improving Channel governance (Petit and Carpenter, 2014), through a series of workshops which were comprised of scientists, stakeholders and decision-makers from both sides of the Channel. The relationships and pathways of influence between the themes, as well as the roles of different regional actors, were then articulated, resulting in a clearer understanding of the complex and interdisciplinary structure of Channel governance (Fig. 1). The themes of the workshops, which are represented in the boxes in Fig. 1, are linked to each other due to the influence and impact they have. For example, scientific projects can produce long-term time-series data obtained from the ecosystem which may be shared by partners allowing the production of models and indicators. These outputs could be used to improve the ecosystem conservation.

The outputs of the workshops, and their relevance to Channel governance, are summarised in the following sections. The Cross-Channel Forum may be thought of as a case study facilitating improved communication between different actors to address issues that are not within the remit of any single governance body and which there is no alternative forum for debate.

2.2. Interdisciplinary approach

A clear need to strengthen relationships between the different actors (scientists, practitioners, stakeholders) working on the Channel and its governance emerged from the Forum workshops (Evariste et al., 2014). Interdisciplinary projects, such as those funded by INTERREG, facilitate interactions between scientists, stakeholders and decision makers. However, during a project's development stage appropriate scientific and governance partners must be identified in order to ensure project effectiveness. Long-term existing collaborations between scientists and stakeholders, including decision makers, where partners know and trust each other, enable the development of a strong network, while developing new relationships is more challenging. However, it is also important to build new collaborations as they can bring fresh perspectives, new partnerships, and new methods and facilities.

When considering a complex system such as the Channel in which social, economic and ecological elements are closely linked
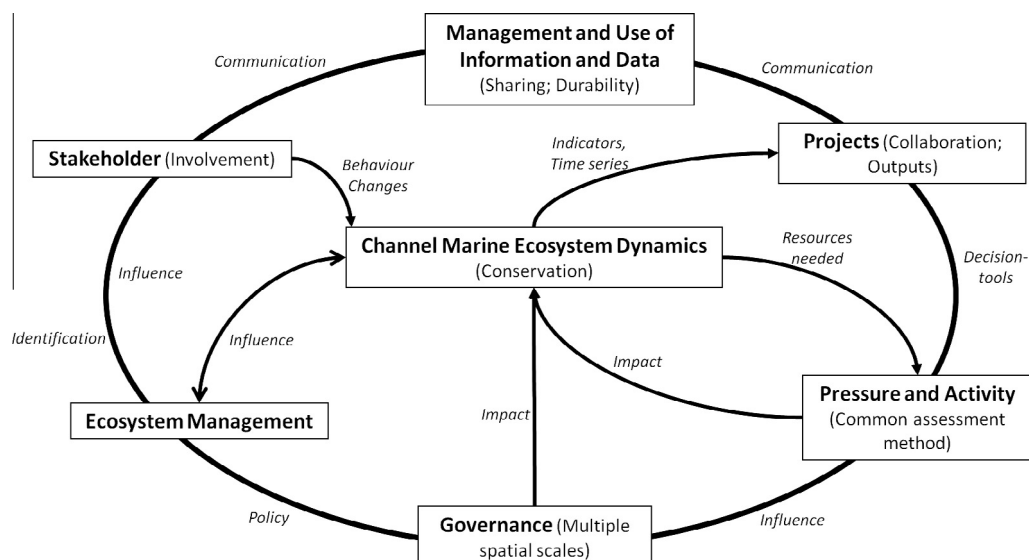

Fig. 1. Forum workshop themes and pathways of influence. The workshop themes are in the boxes while the arrows represent the influence that each component/theme has over another one.