INCREASING USE INTENSITY IN MARINE AREAS - CURRENT DEVELOPMENTS, NEW PERSPECTIVES AND CHALLENGES FOR MARINE PLANNING AND MANAGEMENT

ANDREAS KANNEN

Helmholtz-Zentrum Geesthacht, Dept. Human Dimensions of Coastal Areas, Chair ICES Working Group Marine Planning and Coastal Zone Management (WGMPCZM), andreas.kannen@hzg.de

ABSTRACT

Oceans and continental shelves play a major role in global climate and ecosystem processes. However, human activities in marine areas are increasing in number and intensity, and patterns of sea use are changing as a result of political, economic and societal developments. Due to multiple anthropogenic pressures such as overfishing, eutrophication, habitat fragmentations and others, many marine environments have undergone large-scale changes and experienced ecosystem reorganizations during the past decades. Often the ecosystem response to these multiple pressures is nonlinear, resulting in unexpected ecosystem reactions, for example in the Black Sea. Therefore, in a global and regional context, society is challenged to find an informed way of balancing between protection and tradeoffs in the often conflicting and accelerating uses of marine areas.

This need for balancing, planning and management applies to traditional uses such as expanding oil and gas exploitation or fishing as well as to emerging efforts aiming towards adaptation to global and climate change. Marine areas are one of society’s priority frontiers when new concepts such as carbon capture and storage (CCS), and renewable energy generation are evaluated and pilot activities developed. While large scale offshore CCS developments, tidal, wave and osmotic energy production are still pretty much scenarios for the future, offshore wind farm developments have entered much more concrete levels of socio-political discourse and entrepreneurial strategy. This becomes visible in the North Sea, where offshore wind farming has turned into a major agent of change, resulting in conflicts with other sea uses and in particular the cumulative impacts still being unknown.

How to bridge between human pressure and ecosystem change with planning and management? Associated to the multitude of issues and sea uses today are fragmented policy frameworks, not only divided by sectors but also between environmental policy regimes and the approach of Marine/Maritime Spatial Planning. The implementation of resulting management plans is hampered by the potentially conflicting policy objectives and differing jurisdictions at various levels of government including the international arena. Furthermore, neither long-term climate change impacts nor future socio-economic and cultural developments can be precisely predicted and put in definite numbers which offer a definitive guide for policy development. Planning under these circumstances can be characterized with the term “planning under uncertainty” and requires a move towards continuous planning processes reacting upon changing contexts, instead of mainly data driven decisions.

The presentation describes marine areas as social-ecological systems, illustrates the developments sketched above and highlights some of the resulting challenges for planning and management based on discussions in the ICES Working Group on Marine Planning and Coastal Zone Management (WGMPCZM) and results of several research projects, in particular the EU project KnowSeas.

KEYWORDS: marine areas, ecosystems, anthropogenic pressures, spatial planning