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Marine spatial planning in the Middle East: Crossing the policy-planning divide

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ABSTRACT

Many countries have begun marine spatial planning (MSP) efforts in the past decade and much academic and professional literature reviews and analyzes these processes. Relevant research that can contribute greatly to new efforts at MSP compares efforts, both recent and historical, with ideals set for spatial planning processes. This research addresses the extent to which paradigms from the planning practice and the policy field can be relevant for the MSP context. It does so by analyzing the interim products of an MSP process addressing the Mediterranean Sea area in the waters adjacent to the State of Israel. Results emphasize the potential contribution of public policy analysis and planning to critique outcomes of the MSP process with the aim of improving outcomes and devising best practices. This type of analysis can inform MSP as it becomes an accepted practice as a mainstream tool in the field of environmental planning. The complexity and challenge of spatial planning when policy foundations are minimal is highlighted in the results.

1. Introduction

Ocean resources are a global public good and therefore their use, management and regulation are topics of interest within the field of public policy. These resources have been the subject of public policies dating back to Roman times, since issuance of the Institutes of Justinian[1] set forth the Public Trust Doctrine (PTD) [1,2]. The PTD holds that the air, the sea and the shore belong not to any one person but rather to the public at large; it is the states' duty, as trustee, to manage marine and coastal resources for the common good. Similarly, the Freedom of the Seas has been an accepted doctrine for centuries,[2] implying that marine areas belong to all.

As the near shore marine environment becomes increasingly crowded with uses, due to improved technologies for exploitation and less available area for many uses on land, use-use conflicts and use-environment conflicts have become commonplace in the sea [3,4]. As on land, conflicting uses often drive the development of laws, policies, and programs at sea. In areas of coastal state jurisdiction, these forces have led to a proliferation of marine spatial planning (MSP) initiatives [5].

MSP is the process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas "to achieve ecological, economic, and social objectives, usually specified through a political process" [6]. Some experts on marine policy have compared MSP with traditional planning and zoning that has taken place for decades on shore. Turnipseed et al. [7] refer to MSP as "analogous to land use planning in terrestrial settings". But in reality, MSP is quite different than land use planning. For one, because the marine environment is physically different from the terrestrial one [8], but for many other reasons as well.

This article presents the theoretical (and practical) basis for MSP and then it briefly discusses traditional terrestrial planning models and their connection to MSP. The case study is described followed by the methodology used for analysis. Results emphasize the potential contribution of public policy analysis and planning to critique interim outcomes of the MSP process with the aim of improving outcomes and devising best practices. This type of analysis can inform MSP as it becomes an accepted practice as a mainstream tool in the field of environmental planning.

2. MSP defined

In the past decade there has been a virtual explosion of academic articles on MSP. The results of a simple search for the term

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[1] Of the Roman Civil Law Digest (circa 500 AD). The PTD has developed into one of the most important doctrines in public property law in the United States.

[2] The notion of Freedom of the Seas, attributed to the writings of the Dutch jurist Hugo Grotius (1583–1645), would dominate ocean policy and regulation until the mid-twentieth century; it continues to be applied for much of the high seas and wields influence in all ocean waters, even though application of the concept is evolving just as the ocean environment itself changes.

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"marine spatial planning" in the journal *Marine Policy* show no publications on the subject in the year 2004, one publication in 2006 [9] and 22 articles on MSP in the year 2013 alone. But what exactly is MSP and what is the set of actions that, taken together, make up a MSP process or initiative?

While various definitions abound, a common description defines MSP as a process that aims to rationally organize the use of marine space and the interactions between its uses [5,10]. MSP is usually described as a process designed to balance demands for development with the need to protect marine ecosystems, and to achieve social and economic objectives. Even though the history of comprehensive and formalized MSP is relatively short, many believe that it has the potential to greatly improve management of the marine environment by helping address or avoiding conflict, reducing the loss of ecosystem services and creating economies of scale and efficiencies for enforcement and management [5,11–13].

One significant difference between marine and terrestrial planning is that from its inception, MSP has been considered a way to improve, enhance and protect the marine environment [6,17]. Coastal nations have a direct interest in the sustainable management of their coastal resource systems, which include the near shore marine environments within their territorial waters and Exclusive Economic Zones (EEZs)[3] [13,14]. Another difference has to do with the using of zoning. Historically, zoning is a tool of town planning [15].[4] An early publication considering the use of zoning in the oceans [16] points out that most terrestrial zoning provisions regulate uses of private property by imposing conditions according to zones. By and large the ocean and its treasures are public goods, so that taking zoning from its land-use applications directly to the sea may be inappropriate in many contexts.

Whether MSP includes zoning or not, there are different terms referring to what has come to be commonly called MSP – maritime spatial planning, coastal and marine spatial planning, integrated ocean management, marine use planning, and integrated marine planning. These terms are frequently used interchangeably although how the MSP process is actually executed will be highly context dependent – sometimes emphasizing ecosystem-based management (EBM), sometimes the allocation of space for a particular use (i.e., renewable energy [see [5]]), sometimes questions of equity and fairness [12].

The widely-used UNESCO handbook definition of MSP [6] emphasizes the public aspect of the planning process. According to the handbook's definition of MSP, it ultimately aims to achieve objectives that have been already set through a prior political process. Mengerink et al. [17] define MSP as a "proactive means of regulating, managing and protecting the marine environment in a sustainable manner". This definition emphasizes marine protection through spatially explicit designations. There is an assumption here (and in other descriptions of MSP goals [see [10]]) that marine protection and sustainable use of the ocean is the main principle of MSP. However, by contrast, in the MSP definition put forth in Coleman et al. [18], the role of scientific and geo-spatial information in decision-making for planning is considered paramount.

Ocean policies that articulate management needs are operationalized through MSP and they can have various context-dependent emphases. Policy determined by political process (or otherwise) will determine context and thus emphases. But what if a clear national or regional ocean policy has not yet been articulated? This research posits that in many marine spatial plans, policy making is part and parcel of the planning process.

[3] According to international law the (the U.N. Convention on the Law of the Sea), the EEZ can extend up to 200 nautical miles from shore.

[4] Zoning's original purpose was to protect home-owners in residential areas from devaluation by new industrial and apartment made possible by new modes of transportation (e.g. trucks and buses) by around 1910–20 [15].

3. Planning as a policy tool

Policy links action to consequences [19]. As alluded to in its definition(s), MSP leads to actions designed to achieve goals "usually specified through a political process" [6]. These actions are by and large the allocation of space, but not only. Policy development can be part of planning. The consequences of a planning process are dependent on the articulation of overarching goals and therefore planning often begins with this stage [20–23]. For MSP, Collie et al. [5] provide the following examples of conceptual objectives: conserve marine biodiversity, sustain fisheries, sustainable economic development. Such objectives are articulated at the level of goals.

As indicated by the Ehler and Douvere [6], goals become progressively more operational as the MSP process advances through 10-stages. Such an approach (i.e., action items derived from objectives derived from goals) has been part of most types of planning (terrestrial, coastal and otherwise) for decades and have led to planning for improved sustainability and ecosystem conservation, considered to underpin most MSP efforts today [24,25]. Similarly, the planning profession emerged out of series of crises starting in the mid-19th century, such as health crises that lead to epidemics, social crises that led to riots and strikes and other crises resulting from man-made and natural hazards such as fire and floods [26]. Progressive intellectuals envisioned healthy cities much as environmentalists today envision healthy ecosystems. An analogy can be drawn to the interest in MSP as a way to further ideals of marine conservation [5,10,25].

Based on these similarities, planning tools and approaches, such as incremental planning and participatory planning, can inform MSP (see Table 1). Despite the clear common ground, conceptual planning models have only recently found their way into applications relevant for the marine environment, among them most notably for marine conservation [27,28].

These conceptual planning models underlie aspects of MSP processes. A review of these models helps understand the basic structure of MSP, how it differs from terrestrial planning and what aspects of MSP processes are suited to particular contexts. Other than the basic, traditional *comprehensive rational planning* described first, the most relevant planning process approaches for MSP are *participatory* and *adaptive planning* as explained below.

Comprehensive rational (synoptic) planning was for a long time the predominant planning model [31]. It is based on instrumental rationality used for analyzing and making decisions [30] and it assumes that there is a right way to develop. In a positivistic view, this model assumes that it is possible to find one best way to allocate space and resources. Otherwise it is based on the notions that (1) scientific knowledge and modern technologies can control the environment; (2) common public interest is identifiable and clear; and (3) change is engineered from the top [32].

This research considers *participatory planning* and *adaptive planning* as highly relevant for MSP due to the emphasis on: (1) the public participation process in MSP practices [25] and the public nature of marine resources; and (2) the adaptive approaches recommended for both MSP [6] and for EBM [11,17]. Participatory planning strives to involve the entire community in the strategic management process. It contrasts with the rational planning process for which there is little or no role for the people affected by the planning [30]. The notion of adaptive planning is fundamental to any EBM framework. It enables planners and managers to be flexible [11], recognizing that plans will be modified as more information becomes available and as planners learn about the behavior of the system, gain more experience, or as a result of external changes in circumstances [33].

Incremental planning is the most widely noted alternative to comprehensive rational planning [see [31]]. It is based on