Ocean & Coastal Management 95 (2014) 93–106

Contents lists available at ScienceDirect

Ocean & Coastal Management

journal homepage: www.elsevier.com/locate/ocecoaman

The effectiveness of sectoral integration between marine protected area and fisheries agencies: An Australian case study

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ARTICLE INFO

Article history:
Available online 28 April 2014

ABSTRACT

In order to manage Marine Protected Areas (MPAs) effectively, cooperative coordination arrangements between MPA and fisheries agencies are essential, but are recognised as very difficult to achieve. Barriers to, and benefits of, developing partnerships between these agencies have been reviewed and a comprehensive list of 46 specific performance indicators to evaluate MPA and fisheries agency partnership effectiveness has been compiled. These indicators have been linked to the USAID Policy and Coordination Program's partnership assessment framework that applies three evaluation domains, namely: strategic values and capacity to implement, operational processes and resultant impact of a partnership. In a case study designed to test the methodology, the IUCN MPA assessment guidelines and these performance indicators were used as the basis for an evaluation of the effectiveness of an Australian MPA and fisheries inter-agency partnership. This provided a rapid, qualitative evaluation methodology, which indicated that the partnership investigated had resulted in positive impacts in respect to MPA management objectives. However, the evaluation process also identified areas that could be improved, particularly in respect to the agencies' shared values and operational processes. For example, community and stakeholder communication and engagement is an important objective in MPA management, which needs mutual support from both agencies, but this activity scored lowly in the evaluation. As a result, it was recommended that MPA and fisheries agencies should develop formal agreements, such as Memorandums of Understanding (MOUs), and that these agreements should include shared objectives and targets, incentives for both agencies, co-ordinated communication processes and a risk management strategy.

1. Introduction

Ensuring the effective management of Marine Protected Areas (MPAs) is equally, if not more important to their establishment. Internationally, there is acceptance of the fact that without effective management (for example, adequate compliance, and regulations), MPA objectives will not be achieved and the high order goal of global marine biodiversity conservation and maintenance of ecological processes will not be realised (Agardy et al., 2003; Edgar et al., 2014). In order to manage MPAs effectively, it is also recognised that cooperation, coordination and collaboration between institutions with mandates over activities in the ocean are essential. Such partnerships are essential not only for consistency, but also to ensure the comprehensive protection of the marine environment as part of sustainable development (FAO Fishery Development Planing Service, 1996; Kjell, 2003; Roff, 2005; International Seabed Authority, 2012). Central to the success of MPAs is that they are not managed in isolation, but implemented within the larger framework of ecosystem-based management (EBM), and integrated with fisheries management (Allison et al., 1998; White et al., 2014). However, MPAs around the globe have been, and continue to be, implemented without the level of integration[1] that is required to meet their conservation and ecological sustainability goals, particularly in terms of fisheries management (Kelleher and Recchia, 1998; Ehler, 2003; Hockings and Giligan, 2009; Yates et al., 2013; Van Trung Ho et al., 2014). It has even been suggested that the long-term failure of conservation and fisheries institutions to integrate their efforts to address the governance of preservation, conservation and sustainable

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[1] For the purposes of this paper, integration is defined as the cooperation, co-ordination and collaboration of government institutions (Keast, 2007; Ehler, 2005).

http://dx.doi.org/10.1016/j.ocecoaman.2014.04.014
0964-5691/

management of the marine environment remains as one of the key barriers to EBM and MPA objectives being realised (Kelleher, 1999; Ehler, 2005). Fisheries management agencies have a tendency not to give adequate regard to MPA management needs, and the same is true for MPA (or nature conservation) agencies in regard to fisheries management interests (Baelde, 2005). It is arguable that this non-alignment is derived from their legislative objectives. Generally, MPA agencies have an overriding objective of protecting all components of marine biodiversity and ecosystems (especially threatened species) with their spatial design based on ecosystem representation. Fisheries agencies on the other hand, though responsible for aspects of biodiversity conservation, have a clear focus on developing fisheries and achieving optimal and sustainable utilisation of fish as a harvestable resource (Fletcher et al., 2010; Food and Agriculture Organisation of the United Nations, 2011). In many regions of the world, and also historically, this core difference in legislative objectives has led to considerable public and stakeholder confusion, particularly when fishery agencies establish "fishing closures or fish refuges" (and sometimes also called MPAs), but which usually have management objectives that differ significantly from MPAs that are established by a nature conservation agency (Ward et al., 2001). As a consequence, their respective management principles, performance criteria, and their optimal designs are different. For example, the effectiveness of a fishing closure would be dependent on their benefit to a fishery by improving sustainability and harvest rates, and its overall integration with other fishery management tools (Baelde, 2005). If the criterion for conserving an area, however, was based on broader biodiversity conservation objectives and/or threatened species, the measure of effectiveness would be quite different from that of a fisheries management measurement. This may seem obvious, yet it is an on-going issue that is often incorrectly perceived by both the public and management authorities (including politicians), with ecological, social and political consequences. Despite these differences being a barrier to integration, addressing the confusion between fisheries and MPA objectives is a very desirable outcome of an integrated approach (Guidetti et al., 2008).

Integration efforts between fisheries agencies and MPA agencies, however, are blemished with poorly designed and/or poorly implemented partnership arrangements, which is the focus of this paper. Successful integration between MPA and fisheries agencies, in particular the success of their partnerships and outcomes of these arrangements, are critically important to ensure improvement in the integration of their sectoral services over time and delivery of ecosystem based fisheries management and MPA outcomes (Food and Agriculture Organisation of the United Nations, 2011). This paper revisits the reasons why fisheries and MPA agency partnerships are beneficial and necessary, and the complex barriers against achieving successful integration. It also discusses International and Australian examples of formal partnership agreements between these institutions, and provides an assessment framework and suggested criteria for evaluating partnerships specific to these agencies, which in turn have application use in other economically developed countries, with similar institutional situations, such as experienced in Ireland, the United Kingdom and Canada (Heck et al., 2012; Salomon and Dross, 2013; Yates et al., 2013). The framework may also be of assistance for developing countries with MPA and fisheries institutional cooperation issues, such as those experienced in the Philippines and South-east Asia, to improve integration and the quality of institutional relationships (Horigue et al., 2012; Bennett and Dearden, 2014; Van Trung Ho et al., 2014). As a test of the assessment framework, a case study is presented that discusses the effectiveness of the partnership in place between fisheries and MPA agencies in New South Wales (NSW), Australia.

1.1. Need, benefits and the barriers of fisheries and MPA management integration

The need for, and benefits of, integration between MPAs and fisheries management has been well documented (Rowley, 1992b; Kelleher and Recchia, 1998; Cicin-Sain and Belfiore, 2005; Jentoft et al., 2007; Rauschmayer et al., 2008). The *World Summit for Sustainable Development* (WSSD) held in Johannesburg in 2002 promoted MPAs as a key part of the solution to marine conservation, but recognised that MPAs cannot be effective in isolation, and must be incorporated within the broader framework of integrated management (Spalding et al., 2013). The conservation of marine biodiversity and future ecosystem service benefits is dependent not only on the effectiveness of MPA management, but also on the management of their surrounding environments. As a result, the successful integration of MPAs into the wider seascape hinges on collaboration with fisheries and other marine management agencies. The poor levels of integration being documented in current literature all illustrate that the need to integrate fisheries and MPA management is of global significance. For example, Salomon and Dross (2013) concluded that the agreed European Natura 2000 network of MPAs (by European Commission) would not be achieved until disparate sectoral responsibilities and objectives were resolved. Analysis of MPA management in British Columbia by Heck et al. (2012) concluded that there was a great need for improved intergovernmental collaboration, with the management of fisheries being associated MPA performance in 15% of those MPAs assessed. Complex governance structure and lack of interdepartmental co-operation are considered by Yates et al. (2013) to be severely hindering Northern Ireland's ability to meet Ecosystem Based Management (EBM) commitments. They argue that fisheries management needs to incorporate wider ecological considerations and that cooperation between relevant government departments is required. Tension between approaches to nature conservation and fisheries management also exist in other parts of Europe (De Santo, 2013). This tension is highlighted when addressing the conservation of habitats and species, which are under threat from fishing activities. De Santo (2013) believes that the "bifurcation" between fisheries management and nature conservation poses a "significant challenge" for European Union (EU) States to effectively govern their offshore marine environment. Likewise, in South Brazil conflicts in fisheries management is listed in the top three threats for the Baleia Franca Environmental Protection Area; and institutional partnerships to deal with these conflicts are considered to be very important to cope with the limitations of the environmental agency (Macedo et al., 2013). Jones et al. (2013) has also argued that improving cross-sectoral integration is needed for MPA resilience, referring to the major challenge of cross-sectoral and cross-jurisdictional integration in the US, as illustrated by the management of the National Marine Sanctuary System. Examples of fisheries-conservation agency tensions exist worldwide, and include: the Bahamas where regional issues have highlighted the tenuous linkages between fisheries and conservation agencies (Wise, 2014); Hawaii, where the slow pace of agency's bureaucracy is viewed to be a serious hurdle for responding quickly to marine resource issues (Rossiter and Levine, 2014); Japan, where MPAs managed by the Ministry of the Environment need an increased coordination effort from fisheries agencies to increase the network of the MPAs (Yagi et al., 2010); and, in Canada, where a recent internal review of the Department of Fisheries and Oceans found that a persistent disconnect existed between the fisheries and oceans mandates (Fisheries and Oceans Canada, 2012).

Ward (2002) has listed over 50 attributes of MPAs that could provide beneficial outcomes for fisheries. Of particular significance, MPAs have the potential to act as baselines to measure harvesting