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Fishing livelihoods as key to marine protected areas: insights from the World Parks Congress

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ABSTRACT

1. Marine protected areas (MPAs) have become a widely used tool for marine conservation and fisheries management. In coastal areas, it has become clear that the success of MPAs, and the achievement of sustainable fishery production, requires a combination of effective management and conservation frameworks, maintenance of decent fisheries livelihoods, and a governance system that allows for effective participation of coastal communities, fishing people, and other ocean users in considering, designing and implementing MPAs. These ingredients are crucial to provide the social sustainability needed to achieve ecological sustainability, and in particular, to reconcile fisheries and marine conservation objectives, in light of the United Nations Sustainable Development Goals and Aichi targets of the Convention on Biological Diversity (CBD).

2. Since its inception in 1962, the series of World Parks Congresses (WPC) has focused on protected areas, in both terrestrial and marine domains. The 2014 WPC in Sydney reinforced the apparent movement, started at the Durban WPC of 2003, towards recognition of social and economic issues related to MPAs, including the importance of food security and livelihoods, and the crucial nature of interactions between MPAs and fisheries. Many discussions at the 2014 WPC focused on these human dimensions of MPAs, and the need to incorporate them into MPA decision-making.

3. This article examines the process and outcomes of the 2014 WPC, with emphasis on the role of people (in particular, fishers) in marine conservation, and particularly in coastal MPAs. In doing so, the article examines the process of producing a Marine Statement at the end of the WPC, as a component of the final 'Promise of Sydney' declaration. That process led to a range of concerns including (i) issues over transparency and inclusiveness in the statement's development, and (ii) content issues focused on representation of the social and economic conclusions, and advocacy of a specific MPA target for no-take areas. The article focuses on potential strategies for moving constructively beyond the still existing tensions between environment- and people-focused conservation and development.

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INTRODUCTION

Given the right empowerment and support, fishing people around the globe can be among the world's strongest conservationists (Cochrane *et al.,* 2014). Conservation, for fishers, is clearly a balancing act of taking enough now, using appropriate methods, while leaving enough for the future. Indeed, there is abundant evidence of fishing communities pursuing this balance – local-level 'sustainable development' – for millennia before the Brundtland Commission coined the term (WCED, 1987). In challenging situations of poverty and food insecurity, fishing may focus on short-term food and livelihoods, but otherwise, fishers want to be catching fish not only this year but for years to come. Furthermore, fishing communities are aware that their fisheries rely not only on the maintenance of the targeted stocks, but also on the ecosystem that supports these stocks. Thus conservation practices are essential to sustained human benefits, and traditional ecological knowledge (TEK) is an important ingredient for ecosystem-based management (Berkes *et al.,* 2000; Golden *et al.,* 2014).

Accordingly, a key lesson for those focusing on the goals of nature and biodiversity conservation is that having the support of fishing people – whose lives depend on the resources they use – may well make the difference between success and failure in meeting conservation objectives (McClanahan *et al*., 2006; Pomeroy *et al*., 2007; Ban *et al*., 2011). Indeed, if conservation initiatives are imposed without fisher support and involvement, the results can be very negative – both to conservation goals and to the wellbeing of fishers. The greatest opportunities for success will come when such fisher support and involvement is combined with comprehensive attention to the underlying causes of any overfishing and/or destructive fishing practices.

These lessons are crucial for marine protected areas (MPAs), which have been receiving increasing attention over recent decades (FAO, 2011; Weigel *et al*., 2014). Though initially viewed mainly as a tool for biodiversity conservation, the potential for MPAs as a means to improve fisheries management has also been postulated for some time (Ballantine, 2014). This should not be surprising given that MPAs are a form of spatial management, and spatial management measures are frequently used by fisheries managers (Charles and Sanders, 2007). There are, however, ongoing debates regarding: (i) how effective are MPAs (especially no-take closures) for improving fishery yields when established primarily to meet biodiversity conservation objectives; and (ii) whether MPAs can deliver social and economic benefits to local communities as well as positive conservation outcomes (FAO, 2011; Bennett and Dearden, 2014a). MPAs have been the subject of considerable discussions and reviews from these different perspectives within the journal literature, as well as by a range of organizations and in many conferences and meetings.

A key focal point for discussions of MPAs and other protected areas, and indeed the most important international legal instrument related to the establishment of MPAs, is the Convention on Biological Diversity (CBD), which includes objectives for both conservation of biological diversity and sustainable use of its components. Article 8 of the Convention refers specifically to protected areas and, in 2004, the CBD's decision-making body, the Conference of Parties (COP) agreed that 'marine and coastal protected areas are an essential tool for the conservation and sustainable use of marine and coastal biodiversity' (Decision VII/4). The Aichi Biodiversity Targets, agreed by governments in 2010, include, among other things, quantitative targets for 'equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures' (Aichi Target No 11). These targets also refer to fisheries and the need to avoid overfishing and to limit the negative impact of fisheries on stocks, species and ecosystems (Aichi Target No 6) (CBD*,* 2015).

The United Nations (UN) sustainable development goals (SDG), adopted by UN Member States in September 2015, also make specific reference to the oceans, in Goal 14, 'Conserve and sustainably use the oceans, seas and marine resources for sustainable development'. Protected areas arise in clause 14.5: 'By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information'. Together with its other targets, Goal 14 calls for a comprehensive approach for achieving sustainable oceans and emphasizes all three pillars of sustainability – environmental, economic and social – in line with the Rio+20 outcome document *The Future We Want* (UN, 2015; United Nations Department of Economic and Social Affairs, 2012).

In the fisheries arena, a corresponding emphasis on more explicit recognition of broader ecosystem aspects in fisheries management is evident through the increased attention to, and application of, ecosystem-based approaches (FAO, 1995, 2009; Charles, 2014) including the FAO-developed ecosystem approach to fisheries (EAF) (FAO, 2003). Combining fisheries management measures together with biodiversity conservation measures – such as MPAs – is increasingly recognized as an important advance. Indeed, this is becoming more common within the overall objective of fisheries management: sustainable utilization of fishery resources for the benefit of people, while maintaining biodiversity (FAO, 2011). The important role of fisheries, especially small-scale fisheries, for food and nutrition security and poverty eradication is also increasingly recognized (FAO, 2015).

Noting these developments, there seems to be a level of convergence between biodiversity conservation and fisheries management objectives (Charles, 2005; Garcia *et al.*, 2014) – objectives that in the past may have been treated more separately (Weigel *et al.*, 2014). Despite this convergence, there remains a clear tension between biodiversity conservation and fisheries management objectives.

This article examines these themes by focusing on interactions of MPAs with fisheries and fishing livelihoods, and more broadly on the range of perspectives regarding the role of people (in particular fishers) in marine conservation. The emphasis is on coastal fisheries and MPAs. With no single internationally agreed definition of MPAs, there is commonly confusion between MPAs established for conservation purposes and other spatial management tools designed specifically for fisheries management. This article focuses on conservation-oriented MPAs, according to the IUCN definition, i.e. ones in which conservation of biodiversity is a primary objective (Day *et al.*, 2012). Within this definition, multiple-use MPAs (IUCN categories V and VI) that can contain fisheries are included, but with a central objective of conservation.

This article explores the relative importance given, in the objectives and the governance of MPAs, to generating livelihoods and food security benefits. The analysis is carried out by examining the discussions and specific outcomes (i.e. closing statements and sets of recommendations) produced at the World Parks Congress (WPC) held in Sydney, Australia, in 2014. That event was one of a WPC series organized by the IUCN every 10 years, as major gatherings for those interested in protected areas – including scientists, practitioners and other stakeholders concerned with land- and/or water-based protected areas.

This analysis of the WPC 2014 focuses on: (i) the interactions between fisheries and MPAs and the extent that the human dimension was covered in the sessions and outcomes; (ii) the relative extent of marine-based sessions compared with those having an emphasis on land-based protected areas; and (iii) the applicability of the marine synthesis statement produced as part of the 'Promise of Sydney' outputs from the Congress. Also discussed are some of the challenges and opportunities involved in increasing the effectiveness of MPAs, in regard to better meeting both biodiversity and fisheries livelihoods objectives.

MPAs for sustainable livelihoods and food security

In considering the effects of MPAs on fishing for food security and livelihoods, the focus should naturally be on coastal small-scale fisheries and fishing people because, with a majority of the human population globally living near the coast, this is where dependence on fisheries is greatest and where fisheries contribute most to food security. The classic statistic is that 90% of the world's fishing people (capture fisheries) are in small-scale fisheries (Mills *et al.,* 2011; World Bank, 2012). Livelihood issues are crucial to such fisheries, with small-scale fishing providing food for others, and ensuring food security for fishery-based communities themselves. Consequently, there is a widespread aspiration for coastal waters that are productive, diverse and healthy.

This aspiration requires dealing with the significant impacts and threats from such ‘external’ factors as inland and coastal industrialization, rural and agricultural activities, population growth and demographic shifts, climate change, and global economic policies (Tuler *et al.*, 2008; FAO, 2013; Bennett *et al.*, 2015a). There have also been, in some cases, ‘internal’ pressures in the form of overfishing or other unsustainable practices, which have often resulted from a decay, over the past century, in local fishery management systems, often due to the above ‘external’ factors. Attention to restoring or reinforcing effective participatory governance is seen as an essential element, since, as noted above, experience from around the world demonstrates that engagement of people on the coast is crucial as a means to effectively protect the coastal marine environment. There is a potential for cooperation between conservation and fishing sectors at the community level illustrated through shared stewardship efforts by coastal communities and ocean users, working together with governments and others toward environmental, economic and social sustainability (Pomeroy and Rivera-Guieb, 2005). These local stewardship initiatives can benefit, especially when coastal communities ‘possess their own self-governance structures that show significant conservation value’ (Garcia *et al.*, 2014).

These insights can be usefully applied in addressing the shortcomings in current MPA and other marine conservation processes. Among the crucial determinants of success for coastal MPAs (Christie *et al.*, 2005; Charles and Wilson, 2009; Bennett and Dearden, 2014b; Rossiter and Levine, 2014), particularly notable is the need for: (i) a suitably clear and well-defined purpose; and (ii) proper engagement with coastal communities and small-scale fishers, including suitable participatory governance arrangements, with community-based or related forms of co-management. The latter can build on arrangements often used in small-scale fisheries (Kooiman *et al.*, 2005; Charles and Wilson, 2009; McConney and Charles, 2009). The relevant stakeholders must be involved from the start, i.e. in deciding whether creating an MPA to solve a specific fishery problem is even appropriate, or if some other management approach would better fit in their situation.

A full appreciation of the effect of MPAs on fisheries, livelihoods and food security, and of their potential in fisheries management, requires more holistic assessment protocols than those used up to now. A comprehensive assessment might seek to understand not only the resources but also the people and their social and economic conditions, within a territory encompassing the MPA and all the space around it affected by resource migrations, transfers of fishing effort, modification of fishing patterns, trade flows, etc. The actual impact can be positive, neutral or negative, depending on the context and the manner of MPA establishment and implementation. Indeed the High Level Panel of Experts on Food Security and Nutrition (HLPE) statement on MPAs and food security noted that there is no clear causal link between MPAs and food security, with MPAs being neither uniformly good nor bad (HLPE, 2014). This situation seems analogous to the links between fisheries and food security (Bene *et al.*, 2016). In both cases, it would seem that the complexity of the social–ecological systems involved – with multiple non-linear cause–effect relations and feedback loops – significantly reduces the predictability of management outcomes as well as their stability over time. This reinforces the need to systematically identify specific vulnerable ecosystems, human communities and food security scenarios, and to consider these in relation to overall management objective(s), in order to assess whether MPAs will be effective in any given circumstance and to improve their contribution to meeting relevant objectives. The inherent uncertainty in the outcomes also highlights the importance of maintaining a capacity to adapt, as experience grows and knowledge improves.

In exploring the links of MPAs with fisheries, livelihoods and food security, consider first the hundreds of Locally Managed Marine Areas

(LMMA) that are actively managed in the Pacific Islands, South-east Asia and the Western Indian Ocean (Govan *et al.*, 2009; Rocliffe *et al.*, 2014). This constitutes a success story in designing protected areas that are locally driven and achieving positive fishery and conservation results. In the Pacific, conservation is closely linked to sustainable use. In Fiji, for example, where 79% of inshore fishery areas are in LMMAs, both food security and conservation goals are being achieved (FLMMA, 2014; Jupiter *et al.,* 2014). With LMMAs having 'been established with sustainable livelihoods as the major driver' (p.73, Govan and Jupiter, 2013), the only doubts arise over whether these areas are accepted as MPAs in accordance with IUCN definitions.

Contrasting with the LMMA approach are MPAs that focus on strong biodiversity conservation objectives and on no-take zones (NTZ) in which fishing is prohibited. These NTZ can potentially improve biodiversity and provide long-term fishery benefits through 'spillover' (Halpern *et al.*, 2009), but they also can have negative impacts. First, they can lead to reallocation of access away from fisheries to other users (e.g. the tourism sector). Second, even if fishers maintain access in areas around a no-take MPA, having a higher biomass inside the NTZ will not increase recruitment of fish unless, (a) the area closed is a major reproduction area, and (b) outside the area, there is both a shortage of recruitment and a lack of effective fisheries management (leading to overfishing). Furthermore, the bigger the closure is relative to the species distribution area, the less spillover there will be (Hilborn *et al.*, 2004; Walters *et al.*, 2007; Buxton *et al.*, 2014). These points reflect the reality that fishers may or may not gain from no-take MPAs, depending on many ecological and socio-economic considerations related to the system in which the protected area and its impact range will be operating. While increased yields may occur in fisheries that surround no-take zones, if those areas were heavily exploited (Kerwath *et al.*, 2013), no-take zones may generate a drop in total catch either with some increase in catch per unit effort (Boncoeur and Alban, 2013) or with no increase, in areas that were not heavily exploited (Fletcher *et al.*, 2015).

Overall, the range of approaches, from LMMAs to no-take MPAs, demonstrates, on the one hand, the wide diversity of space-based protected areas that could be called MPAs, and on the other hand, the diversity of impacts that may arise on fishers, livelihoods and food security. From a fishery perspective, management may use many spatial and other regulatory methods; it is crucial to find the most appropriate set of management measures, to achieve the desired outcomes for a given situation. An outcome-based process is needed, in which all forms of management-based closures and other types of management measures or approaches are considered in order to reach specified goals (Cochrane and Garcia, 2009). This can build on existing systematic frameworks for assessing MPAs (Pomeroy *et al.*, 2005). By focusing on outcomes, an evaluation of the full suite of fishery and conservation management tools, including spatial measures, should be undertaken. This may lead to the use of various types of space-based management measures, including MPAs, within the mix of management tools. For example, while the prohibition of one type of gear in an area may not be sufficient to consider that area as an MPA, in many cases fishery-based management arrangements (e.g. closing areas to all destructive forms of fishing to protect critical habitats) are consistent with IUCN Protected Area Categories 4, 5 and 6. Despite this, there is some uncertainty about the recognition of such measures as MPAs by international bodies such as the CBD and IUCN.

In order to understand the effects of MPAs on food security and livelihoods, it is important to consider their impacts on fish stocks and fisheries over the entirety of their area (e.g. the EEZ) and beyond (in nested ecosystems of various magnitudes). Few studies look at and evaluate the wider impact of MPAs, e.g. at the broader regional level, although this may change with the growing importance given to MPA functional networks and ecoregions. As a result, there is a need for holistic management, looking beyond the fishery to take into account interactions (e.g. run-off from land affecting reefs), and coordinating across sectors of government and economic sectors (i.e. bringing all the relevant groups together). The impact of ongoing climate change on MPA performance and of MPAs as adaptation instruments for climate change is a case in point. However, such multi-agency, multi-objective systems, in which MPAs are part of a holistic system of management, are hard to generate (NSW MEMA, 2013; Cochrane *et al.*, 2014).

Finally, as noted earlier, it is important to examine governance and decision-making approaches related to MPAs, and the effect these have on the allocation of access to fisheries resources. The United Nations identifies four components of food security: (1) availability of food (e.g. fish), (2) access, (3) utilization, i.e. the ability to prepare and consume the food, and 4) the stability of the food base (UNDG, 2011). Clearly effective governance of MPAs plays an essential role in all of these components. Indeed, food *insecurity*, which has become recognized as a major global challenge, is now seen as resulting not only from crop failure or fishery collapse, but also from governance failure (Sen, 1981; HLPE, 2014). Designating MPAs through poor governance processes, without considering wider social and economic outcomes, especially in developing countries, has been described by Bennett *et al.* (2015b) as a form of 'Ocean Grab'. How decisions are made, and the priorities involved in decision making, are thus crucial issues to address.

Some key lessons from experience in terms of how decisions should be made with regard to MPAs, and in particular how to link people and MPAs, are already well known (Charles and Wilson, 2009; Lowry *et al.*, 2009; Ban *et al.*, 2011; Garcia *et al.*, 2013; Bennett and Dearden, 2014b; Weigel *et al.*, 2014). This includes the importance of properly dealing with rights (Capistrano and Charles, 2012), with distribution of costs and benefits, and with displacement of people from MPAs (and the corresponding need for alternative livelihoods, compensation or other measures). Overall, success depends especially on how the MPA is instituted in the first place (Pomeroy *et al.*, 2005; Charles and Sanders, 2007; Chuenpagdee *et al.*, 2013). Outcomes can be expected to be especially different through a bottom-up (community-based or fisher-created) compared with a top-down process (with the latter having led to serious conflicts in some countries).

The analysis, in this section, of the interaction of MPAs with sustainable livelihoods and food security forms the basis for an analysis below of the 2014 World Parks Congress and its discussions of marine conservation and MPAs.

A brief history of the World Parks Congress

Since their beginning in 1962, there have been a total of six WPCs. Each was a major 'congress' that provided an open forum in which a diversity of views were expressed, but with no mandate for decision-making. The WPC does not include the kinds of controls one would find in international decision-making bodies, with no due process to set priorities, to obtain 'the best scientific advice', to reach consensus, or to make binding decisions. Despite these realities, the WPC series has been an important forum for future thinking with regard to protected areas and their role in conservation and sustainable use. Collectively the Congresses were at the origin of many of the important concepts and changes that have affected the role of protected areas on land and at sea. Indeed, the previous WPC, held in 2003 in Durban, South Africa, was influential in that its resulting action plan was adopted by the COP of the CBD as its Programme of Work on Protected Areas (IUCN/WPC, 2015).

Reviewing the main themes and resulting outcomes of the complete set of congresses provides an idea of how the focus has evolved (IUCN/WPC, 2015):

- 1962 – Seattle, USA: 'Definitions and standards for representative systems leading to the United Nations list of protected areas';
- 1972 – Yellowstone/Grand Teton National Park, USA: 'Conservation of ecosystems, genesis of World Heritage and Wetlands Conventions';
- 1982 – Bali, Indonesia: 'Protected areas in sustainable development, development assistance in protected areas';
- 1992 – Caracas, Venezuela: 'Global change and protected areas; protected area categories and management effectiveness';
- 2003 – Durban, South Africa: 'Governance, sustainable finance, capacity development, linkages in the landscape and seascape, equity and benefit sharing';

- 2014 – Sydney, Australia: 'Parks, people, planet: inspiring solutions'.

From the perspective of how resource use (as with fisheries) and protected areas (MPAs) interact, and especially in relation to the consideration of human dimensions, there appears to have been an expanding emphasis on the social and economic aspects of protected area establishment and management. However, despite a perception that the 2003 WPC in Durban had many sessions that reflected on the human dimensions of protected areas and a sense by many participating local and indigenous people that they were finally placed centre stage, the emphasis of the final outcomes was more biocentric. The latter reflected the directions provided by the congress steering committee (*cf*. Terborgh, 2004). This disconnect between the major narratives of the WPC and their final outcomes are considered further, when discussing the 2014 WPC.

Concerns about protected area effectiveness date back at least to the third WPC (Bali, 1982), although little was done to develop systems for assessing management effectiveness until after the 4th WPC (held in Caracas, 1992) (Hockings *et al*., 2004) These themes were evident in the Durban WPC of 2003, which dealt with evaluation and improvement of management effectiveness and governance of protected areas both within its sessions and among its recommendations. Other key recommendations included enhancing communication and education efforts; empowering youth to become involved in conservation; establishing a global system of protected areas that link landscapes and seascapes; recognizing indigenous peoples; mobilizing peoples and local community rights as related to biodiversity conservation; and utilizing partnerships to generate support for protected areas (IUCN, 2004).

The WPC 2014: the human dimension and the marine theme

The 2014 WPC was organized around eight 'streams' together with four cross-cutting themes (including the 'marine theme') (Table 1). Here, these components of the 2014 WPC are examined in order to assess two key aspects: (i) the presence of human dimensions in considering protected areas, both terrestrial and marine; and (ii) the presence of marine-related sessions across the various streams of the WPC. These two elements are considered together to examine the interaction of human dimensions and marine conservation (including MPAs) at the WPC.

On the first of these topics, the 'people side' of conservation was very prominent in the formal structure of WPC, and indeed in the majority of the streams and themes. There was remarkable consistency across these groupings in how their final statements emphasized the importance of involving people, and particularly resource-dependent communities, in conservation initiatives. Notable in this regard are 'Improving health and well-being' (Stream 3), 'Supporting human life' (Stream 4), 'Reconciling development challenges' (Stream 5), 'Enhancing the diversity and quality of governance' (Stream 6), 'Respecting indigenous and traditional knowledge and culture' (Stream 7) and 'Inspiring a new generation' (Stream 8), as well as the themes 'World Heritage', 'Capacity development' and 'New social compact' (focused on how humans interact with and use the natural world). In contrast, 'Reaching conservation goals' (Stream 1) had the least recognition of human dimensions. Tables 2 and

Table 1. The eight 'streams' and four cross-cutting themes of the 2014 World Parks Congress

Streams	Cross-cutting themes
1.Reaching conservation goals	**Marine**
2.Responding to climate change	**World Heritage**
3.Improving health and well-being	**Capacity development**
4.Supporting human life	**New social compact**
5.Reconciling development challenges	
6.Enhancing the diversity and quality of governance	
7.Respecting indigenous and traditional knowledge and culture	
8.Inspiring a new generation	

Table 2. Participation messages in final stream/theme statements from the 2014 World Parks Congress

Stream 2. Responding to climate change
'Protected areas must actively engage new thinking in planning and management to ensure equitable participation from society, including youth, women and indigenous and local communities, building on traditional knowledge …' (IUCN, 2014b, p.2).
Stream 3. Improving health and well-being
'Learn from indigenous and local communities, which have multi-dimensional approaches to health and well-being including connection to country and spiritual and traditional knowledge and practices' (IUCN, 2014c, p.2).
Stream 4. Supporting human life
'Sustainable hunting and fishing should be supported as a viable aspect of protected area planning and management to support livelihoods and cultures, increase food security, generate income, maintain populations within the ecological and societal carrying capacity of the environment, and build crucial support for the conservation of biological diversity and habitats' (IUCN, 2014d, December, p.3). 'Governments, NGOs and other actors should … systematically put people in the centre when planning and managing aquatic and terrestrial protected areas' (IUCN, 2014d, p.3).
Stream 5. Reconciling development challenges
'Protected areas agencies need to update the design, management and governance of protected areas to consider a wide array of social and economic benefits such as jobs, livelihoods, community safety nets, and social and environmental resilience in order to build constituency and political will for protected areas' (IUCN, 2014e, p.3).
Stream 6. Enhancing the diversity and quality of governance
'It is crucial that existing traditional knowledge, customary laws, institutions and wisdom for conservation – currently neglected or even repressed in some countries – be fully valued and integrated…' (IUCN, 2014f, p.3).
Stream 7. Respecting indigenous and traditional knowledge and culture
'… not enough has been done to put people at the centre of the protected area movement. Indigenous Peoples and local communities have not yet been fully recognized as equal partners in conservation efforts and their traditional knowledge, cultural practices and governance are not being fully harnessed in ecosystem management' (IUCN, 2014g, p.2).
Marine conservation theme
'Design and manage MPAs for human as well as ecological benefits, through committed partnerships and engagement with indigenous and local coastal communities, resource users and other stakeholders, as well as new partnerships with humanitarian, development and human rights organizations' (IUCN, 2014h, p.2).

3 provide examples of how human dimensions – in particular, the need for participation of natural resource users in conservation decision-making, and issues of governance, respectively – are reflected in the final statements of some of the various streams and themes.

Turning to the marine theme at the 2014 WPC, this built substantially on the 2003 (Durban) WPC, which also had a marine cross-cutting theme (as well as various people-focused themes such as ties between natural and cultural heritage conservation, and community and equity issues). Importantly, the 2003 WPC noted that the marine environment is under-represented in existing protected areas (IUCN, 2004). The marine presence at the 2014 WPC also benefited from the series of international marine protected areas congresses (IMPAC) that take place under the IUCN banner, looking at the role of MPAs in conservation and sustainable development of oceans. The third of these (IMPAC3) took place in 2013, specifically examining strategies to meet CBD Aichi Target 11[1] under the Strategic Plan for Biodiversity 2011–2020.

The 2014 Sydney WPC had the potential to build on the results of the 2003 Durban WPC and IMPAC3. This discussion will examine how, in particular, the 2014 WPC drew on IMPAC3 conclusions concerning: (i) the potential contribution of MPAs to food security and

[1] *By 2020, at least … 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes (*https://www.cbd.int/sp/targets)

Table 3. Governance messages in final stream/theme statements from the 2014 World Parks Congress

Stream 1. Achieving conservation goals

'Conservation goals will require a broad system of governance types. Privately protected areas and indigenous and community conserved areas are increasingly recognized for their key contributions to reaching conservation goals' (IUCN, 2014a, p.2).

Stream 4. Supporting human life

'Governments, NGOs and other actors should focus on local solutions that can accommodate different governance mechanisms, including community-owned, community-managed and co-managed areas and systematically put people in the centre when planning and managing aquatic and terrestrial protected areas' (IUCN, 2014d, December, p.3). Need 'equitable and secure access to natural resources and formal recognition of legitimate tenure rights', especially 'for small-scale fishers, hunters and farmers in developing countries where food security and sustainable livelihoods tend to be critical concerns' (IUCN, 2014d, p.3).

Stream 5. Reconciling Development Challenges

'Protected areas agencies need to update the design, management and governance of protected areas to consider a wide array of social and economic benefits such as jobs, livelihoods, community safety nets, and social and environmental resilience in order to build constituency and political will for protected areas' (IUCN, 2014e, p.3).

Stream 6. Enhancing the diversity and quality of governance

'Territories and areas voluntarily conserved by indigenous peoples, local communities and private landowners are still largely unrecognised and unsupported' (IUCN, 2014f, December, p.2). 'recognise and secure …the collective land and resource rights and responsibilities of indigenous peoples and traditional peasant, forest, herder and fishing communities… This will strengthen their commitment to sustainable livelihoods and foster their engagement in conserving nature' (IUCN, 2014f, p.4).

Stream 7. Respecting indigenous and traditional knowledge and culture

'A large task remains to equip mainstream protected area and resource managers to recognize the centrality of Indigenous and community lands to the future of global conservation and support rights-based approaches to achieving conservation outcomes' (IUCN, 2014g, p.2).

Marine conservation theme

'Strengthen support for marine conservation actions by (a) scaling up the many effective and inspiring solutions being undertaken by coastal communities and resource user groups around the world…' (IUCN, 2014h, p.2).

New social compact theme

Need to strengthen 'protected and conserved areas as well as improve social justice, equity and rights of governance and management' (IUCN, 2014i, December, p.1). 'IUCN must go further in enhancing diversity, quality and vitality of governance systems; sustainable economies; and the valorization of indigenous and traditional knowledge systems and values' (IUCN, 2014i, p.1-2).

livelihoods and their utility as a fisheries management toolbox; (ii) the tension between their costs and benefits for fishing communities, along with the distribution of these costs and benefits in time and space; and (iii) the need for 'good governance' with a dual fisheries and conservation mandate, and effective participation in design and implementation of MPAs (Weigel *et al.*, 2014).

An impressive achievement of the 2014 WPC was the high level of energy created around the marine theme. This was particularly the result of the 'Ocean+ Pavilion', set up by IUCN's marine programme. The Pavilion hosted a wide-ranging series of marine presentations, and most importantly, successfully served as a hub and meeting place for marine participants. The more formal marine-related discussions were held in the various streams of the WPC, and the extent to which these discussions were explicitly highlighted varied across the different streams. Drawing on the WPC programme, in which Congress

Table 4. For each WPC stream, the percentage of its sessions labelled in the WPC programme as having a marine aspect

Stream	Total sessions	Marine-related	Percentage marine
1 Conservation goals	49	14	29%
2 Climate change	49	5	10%
3 Health / wellbeing	43	5	12%
4 Support human life	44	4	9%
5 Development	44	2	5%
6 Governance	44	5	11%
7 Indigenous	47	5	11%
8 New generation	39	8	21%
Total	**359**	**48**	**13%**

organizers labelled each of the hundreds of sessions and events according to whether it dealt with each cross-cutting theme, Table 4 shows the percentage of the sessions in each stream labelled as having a marine aspect. Note that while this labelling was an a priori assessment, based on what was proposed for each session, rather than the discussion that actually happened, it does enable the analysis to be consistent across streams.

While the ‘Reaching conservation goals’ Stream (#1) had a relatively high portion of sessions labelled as ‘marine’ (29%), the fraction of marine-labelled sessions was much lower for those streams that focused on human aspects (especially Streams 4–7, as noted above). Understanding this structure can help to inform the interaction of marine conservation, and specifically MPA, discussions with that on fisheries, livelihoods and food security.

To examine whether these lower percentages actually reflected the reality of what was contained in the sessions, three representative streams were chosen. While only 11% of the Governance stream was labelled as marine-related, examining the presentations listed within sessions of the Governance stream indicates that a high percentage of presentations were relevant to governance of small-scale fisheries (together with other small-scale resource sectors). Furthermore, these sessions had considerable involvement of marine participants. Sessions in the Supporting Human Life stream (#4) were supposedly only 9% marine-related, but in fact this stream was co-organized by FAO (including both fisheries, and forestry and agriculture components) and as a result, not surprisingly had fisheries (marine and inland) well represented, along with agriculture, as human uses of the environment, with which protected areas interact. Finally, examination of the sessions in Stream 5, on Development challenges, demonstrates that while only two sessions (5%) were indicated as having a marine connection, in fact, considerably more than that explicitly included a fishery or marine presentation as part of the session. Table 5 illustrates the presence of marine content within the more people-centred streams, providing listings of selected sessions, with brief descriptions, within Streams 4, 6, and 7.

Table 5. Sample of WPC sessions, from three of the Congress’ thematic streams, that link MPAs with fisheries, food and livelihoods. Session titles (in italics) and excerpts from corresponding session descriptions (in quotes) have been obtained from IUCN (2014j)

Stream 4: Supporting Human Life	
Marine protected areas and sustainable livelihoods	‘case studies of how MPAs can positively or negatively affect livelihoods… best practices with regard to MPA governance and support needed for ensuring positive livelihoods outcomes’.
Marine protected areas and community livelihood: sharing experiences on participatory management	‘sharing experiences on how [MPAs] improve the livelihoods of the communities associated with them, as well as how community participation in the management of [MPAs] improves the likelihood of success in conservation’.
Marine protected areas as a tool for food security	‘How can MPAs have positive outcomes for both conservation and food security? …the importance of local governance, engagement of communities, and consideration of how costs and benefits created by MPAs are distributed’.
Marine protected areas as solutions for resilience	‘the role that MPAs play in increasing resilience for livelihoods, food security, disaster risk reduction and healthy watersheds’.
Stream 6: Enhancing the Diversity and Quality of Governance	
Effective and equitable governance of the seascape	‘challenges and successes in addressing power imbalances, promoting equity, and engaging policy makers, the private sector, communities’.
Inspiring solutions – better governed seascapes as models for sustainable living.	‘Can effective governance bridge spatial scales, draw lessons from traditional, indigenous and local models of governance and implement inspiring solutions for sustainability?’
Stream 7: Respecting Indigenous and Traditional Knowledge and Culture	
Locally managed marine areas providing ecological, social and economic benefits at multiple scales	‘Local marine management undertaken by communities has often achieved benefits that may have eluded top-down MPAs… LMMAs in the Pacific are implemented by over 600 communities spanning 17 independent countries and territories’.
Indigenous sustainable uses and rights in marine protected areas	‘The sea country of the Great Barrier Reef has been traditionally managed by Aboriginal and Torres Strait Islander Traditional Owners groups for many thousands of years.’
Traditional marine management systems & international policies and targets	‘traditional and local marine management, its contribution to international policies and targets, and potential solutions to conflicts that can result between conservation approaches, such as MPAs, and sustainable uses by communities.’.
Migratory Indigenous Peoples, livelihoods and marine protected areas	‘migratory or semi-nomadic maritime Indigenous groups in insular Southeast Asia… are important resource users and vital actors in developing sustainable management strategies.’

The reality therefore seems to be **not** that marine content was less prevalent within sessions of streams focusing on human aspects, but rather that errors arose in the labelling of WPC sessions. Specifically, the fact that many human-oriented sessions with a strong marine element were not labelled as 'marine' may have reflected a lack of understanding of what is involved in discussing topics of governance, development, 'supporting human life', indigenous issues, etc. – as opposed, say, to the more ecosystem-focused discussions of the 'Reaching conservation goals' stream. This is consistent with the common disciplinary differences in classifying activities into themes. Greater care is needed in the future to ensure proper recognition of the diversity of approaches to issues, and of participants themselves.

Two key conclusions can be drawn from this analysis. First, many sessions at the WPC examined interactions of protected areas with food and livelihoods, and of these, a large number related to the use of natural resources, definitely including fisheries. Specifically, since many streams were people-centred, and included substantial marine components, it is concluded that there was strong incorporation of human dimensions in the coverage of MPAs within sessions of the WPC. Second, and related to this, the need to involve fishing people (and other ocean users and coastal communities) in considering, designing and implementing MPAs was covered at the WPC in many streams (and themes). In most cases, this coverage was not specific to the marine environment, but more about involving users of the natural environment in all aspects of protected areas. Indeed, that necessity is more longstanding in its recognition within terrestrial environments than in marine settings – one of the features distinguishing the current reality of marine versus terrestrial protected areas. The extent to which these two fundamental conclusions were reflected in the final WPC outcomes is discussed below.

The WPC 2014 marine statement

The key written output from the WPC was the 'Promise of Sydney', a statement developed by core WPC organizers and supporters. Associated with the 'Promise' were a series of statements from each of the WPC themes and streams. These statements are not directly connected to any formal policy processes, though they do provide a series of goals for the IUCN community. Furthermore, they may well appear, in one form or another, at the 2016 IUCN World Conservation Congress, where IUCN members and other stakeholders guide the IUCN work plan for the next four years. It must be stressed that while not mandatory or binding in any way, the statements of the WPC have substantially influenced environmental policies in the decade after each congress, including in non-environmental organizations. As already mentioned, the outcomes of the 2003 Durban 2003 were adopted by the COP of the CBD as its Programme of Work on Protected Areas.

The Marine Statement for the 2014 WPC, entitled 'A strategy of innovative approaches and recommendations to enhance implementation of marine conservation in the next decade', began as an initial draft, developed prior to the WPC by a steering committee of the marine theme. A revised version of the Marine Statement was released near the end of the Congress, and after the WPC, work on the Marine Statement continued, until it was eventually finalized on 22 December 2014. The final Marine Statement contains a description of the current state and future potential of the world's oceans, followed by a set of 10 recommendations. These include aspects relating to the target extent of MPAs globally, increased effectiveness and integration with other conservation tools, generating benefits for people, creating partnerships and funding arrangements, and specific points about the high seas and about illegal fishing.

Although some efforts were made at the 2014 WPC to facilitate interaction among the various streams and themes, it is not clear whether the end results incorporate sufficient cross-pollination of thinking during the Congress or merging of ideas and insights afterwards. This is reflected in the outputs of the Marine theme, in which the human dimensions of MPAs, including the links between people and conservation, do not appear to an extent commensurate with their overwhelming importance in the various discussions of WPC streams such as those dealing with 'Supporting human life', 'Reconciling development challenges' and 'Respecting indigenous and traditional knowledge and culture'. Similarly, while effective governance lies at the heart of MPA success, the extensive insights from the stream 'Enhancing the diversity and quality of governance' are only somewhat covered in the Marine Statement.

Nevertheless, there is certainly some presence of human dimensions in the Marine Statement. First, these aspects appear in the preamble, which notes that MPAs 'must reflect indigenous, local community and other stakeholder needs, aspirations and knowledge' and 'must be complemented by … community empowerment and capacity building'. Second, as indicated in Tables 2 and 3, the Statement contains two recommendations (numbers 8 and 9) that – while not prominent (placed near the end of the list of ten recommendations) – do provide important coverage of: (i) how communities and ocean resource users interact with and support marine conservation; and (ii) the importance of participation in conservation decision-making, and MPAs in particular.

Recommendation 8 states:

> Design and manage MPAs for human as well as ecological benefits, through committed partnerships and engagement with indigenous and local coastal communities, resource users and other stakeholders, as well as new partnerships with humanitarian, development and human rights organizations.

Recommendation 9 states, in part:

> Strengthen support for marine conservation actions by (a) scaling up the many effective and inspiring solutions being undertaken by coastal communities and resource user groups around the world…

These recommendations reflect the spirit of the people-focused marine discussions at the 2014 WPC, and represent important directions for MPAs. Despite these positive elements, there are, within the Statement, indications of ongoing tensions over MPAs within the marine conservation community.

Protected area coverage targets and effective marine conservation

At the end of the Congress, the 'Reaching conservation goals' stream (#1) issued a call for 30% of the oceans to be devoted to MPAs, later specified as no-take MPAs. That call was then quickly supported by IUCN's World Commission on Protected Areas (WCPA) marine leadership. Despite reflecting only one of the WPC's 12 streams/themes (and one which was less people-centred), this numerical target was treated by media as if reflecting a WPC consensus.

While some marine participants at WPC celebrated the high level of media interest around that target, considering this to have made the Marine theme 'one of the big winners' at the WPC, many were very concerned over this development. The concerns arose notably from participants seeking targets that are well founded and that aim to support both livelihood and conservation goals – including, for example, many MPA practitioners in the developing world. The controversy over the 30% no-take MPA target thus highlights tensions between the biodiversity conservation and the people-oriented objectives of MPAs. In particular, it points to a dichotomy between two different approaches – one broadly based around advocacy of the 30% target, the other considering that target to be ill-advised.

The first group saw the 30% target as building on the recommendation of marine participants at the previous WPC, in Durban, 2003, which called for systems of MPAs that 'should be extensive and include strictly protected areas that amount to at least 20–30% of each habitat'. In other words, for this group, the hope seemed to be to shift to the upper end of the '20–30%' range coming out of Durban. The target of 30% no-take MPAs is higher than that agreed at Durban and certainly much higher than the 10% coverage, for all types of MPAs together, agreed internationally at the CBD under Aichi Target 11. The latter states that 'by 2020 …10% of coastal and marine areas…are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures'.

The second group considered the target as likely to damage the progress achieved in many coastal areas in gaining buy-in and cooperation from coastal communities for increasing MPA coverage. They argued that strategically, it would be better to bring coastal people and ocean users together collaboratively, through phased-in, feasible targets, rather than risk negative impacts of what was feared to be a frighteningly high 'aspirational' target, the consequence of which, in densely populated areas in developing countries, would be very serious in terms of livelihoods loss, social strife and political stability. It was argued that such a target may provoke negative reactions from the global community of marine resource users, which seeks people-centred rather than top-down marine conservation. As a result, MPA initiatives might actually lose credibility with those stakeholders directly impacted, which in turn could even result in undermining marine conservation. Indeed, some staff of national governments and of NGOs involved in promoting MPAs in densely populated areas in the developing world (e.g. West Africa) expressed discomfort with the target, considering that it would negatively affect their past efforts and achievements in convincing coastal populations that a collaborative solution was possible. A concern was also expressed that a call for 30% no-take MPAs in every habitat was not feasible, given that: (i) at present the less than 1% no-take areas globally are mostly in very large, little-populated regions; while (ii) a high density of MPAs in densely populated coastal areas probably could not be obtained without significant loss of livelihoods.

Those opposing the 30% target were concerned not only about the number itself, but also the strong focus on no-take areas. This was seen to be downplaying the over two-thirds of MPAs that are open to certain extractive uses, and achieve benefits for both nature and coastal communities. This group noted that each habitat, and indeed each national and subnational situation, will have not only its own appropriate target for protected areas, but also its own optimum tools for management. In particular, some approaches are more likely than others to achieve success in local and sometimes crowded, multiple-use contexts. Referring to the discussion above on MPAs for sustainable livelihoods and food security, the successful use of MPAs in the context of fisheries is complex and can at best only be part of the required management mix. Therefore, only in some cases would strict no-take areas be the best environmental, let alone societal, choice. Thus a concern about a single numerical target is that it treated all cases 'with the same medicine' – almost certainly distracting from, and limiting strategies for, achieving 100% sustainable management, and to a large extent disregarding the overwhelming dominance of 'paper parks' in the global MPA landscape.

Debates continued after the WPC, and eventually when the Marine Statement was finalized, its first recommendation read as follows:

> Urgently increase the ocean area that is effectively and equitably managed in ecologically representative and well-connected systems of MPAs or other effective conservation measures. This network should target protection of both biodiversity and ecosystem services and should include at least 30% of each marine habitat. The ultimate aim is to create a fully sustainable ocean, at least 30% of which has no-extractive activities.

As is evident, the 30% target is included in the Statement, and indeed the number appears twice, in different ways – 30% coverage of each marine habitat, and 30% no-take overall. Despite the reality that the 30% target is merely a recommendation arising from the WPC, not a binding agreement in any official way, the Marine Statement's focus on the 30% target has received abundant publicity, and may influence practice. This could be problematic, for several reasons. First, its scale would create short- to medium-term negative impacts on food security and livelihoods in States, the majority of which have no social security safety nets. Second, there are well-known problems involved in applying a coverage target to conservation; this remains a subject of controversy, particularly when management performance is poor or large new areas are established in areas with no threats to biodiversity (*cf*. Spalding *et al*., 2013). However, two aspects of the recommendation's wording may reduce potential negative impacts. First, it recognizes the validity not only of MPAs but also 'other effective conservation measures' such as multi-use MPAs (or LMMAs) – e.g. in the Philippines, Western Indian Ocean and Pacific Islands (Govan *et al*., 2009; Lowry *et al*., 2009; Jupiter *et al*., 2014;

Rocliffe *et al.*, 2014). Ocean users and managers may find such alternatives more suitable, especially in heavily-used coastal areas. Second, the call for 30% of ocean space globally to be no-take has no time frame attached (instead being stated as an 'ultimate aim'), and does not apply to every country or coastal area individually. These aspects provide some flexibility for individual nations to choose a timing and an approach that best fit the context at hand.

Unfortunately, the 30% target was put forward without proper review and discussion of social, economic, governance and implementation issues. With greater consultation, there may have been better approaches determined to significantly contribute to a sustainably managed marine environment. Such issues of process are examined below.

Process

Much of the preceding discussion over the labelling of 'marine' sessions at the WPC, the development of summary marine highlights from the Congress, and most notably the drafting of a final Marine Statement leads to a recognition of the need to examine process issues arising in the context of the WPC (and perhaps conservation decision making more broadly). First, while there were some mechanisms for participation and interaction within the individual streams and themes, the overall WPC process of producing final statements was non-transparent and non-participative. Although the small sets of actors that debated the wording of final statements were undoubtedly well-intentioned people, the process was contrary to basic principles of good governance, and the results could not match the illusion that they were actually recommendations to the world from the whole Congress. Second, in addition to the stated outcomes not being formally agreed by participants in a representative mechanism, they were not transparently related to the science presented at the WPC. This contrasts with other international fora – such as the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and expert consultations of the FAO – that have established mechanisms for incorporating science into recommendations, which can then be accepted or not by politicians, within transparent, recorded processes. Hence, while the WPC has shown its strengths as a means to assemble ideas, provoke discussions and point to potential future directions in conservation science and management, a major challenge lies in the disconnect between the aspirational goal of representative decision-making and the actual reality.

This seems to have produced a situation in which, as noted earlier, what is offered as WPC outcomes may be narrower, in some cases, than the discussion space covered under each topic during a congress (Terborgh, 2004). In particular, at the 2014 Sydney WPC, it is not clear that the wide range of backgrounds and interests represented among marine participants was adequately reflected in the Marine Statement drafting process. This arose notably in terms of the overall balance between biodiversity conservation and sustainable resource use interests.

An illustration of this arose at the end of the Congress, when, in a full plenary, the major conclusions of the marine theme were presented. Five 'highlights' were given, the choice of which surprised many marine-oriented participants at the Congress, for two major reasons. First, the substantive points raised were solely focused on parts of the ocean where few if any people live (such as the high seas). This contrasted with the major emphasis of many marine sessions on coastal areas, where most people live and where one finds the greatest pressures on oceans. Second, as a related concern, the 'highlights' missed the biggest message of many marine sessions: the crucial role in marine conservation of coastal communities and those who depend on the ocean for their livelihoods. From a process perspective, this choice of highlights also failed to reflect the work of, and thus inadvertently marginalized, the numerous participants at the WPC who focused their efforts at the Congress on the 'people side' of marine conservation.

More inclusivity and collaboration throughout the process would have helped to ensure that the final Marine Statement reflected, as best possible, the diversity of marine-oriented WPC participants, along with their experience, perspectives and potential solutions. Indeed, future events could benefit from scheduling a substantial meeting near the end of the event at which those who are drafting conclusions or a final statement could meet with representatives of the corresponding sessions (i.e. convenors of all marine-oriented sessions, in this case), and/or with a broader audience, to engage in a detailed and fully participatory discussion of the outputs. Achieving a more diversified outcome, better reflecting the range of realities and tensions, including potential solutions (each with their pros and cons) would be more demanding, but also more appropriate for a gathering such as the WPC that has only the broad mandate of informing and advising IUCN. It must be left to the World Conservation Congress, and national and international decision-makers, to take responsibility to make the difficult decisions.

DISCUSSION AND CONCLUSIONS

A large component of the world's conservation community accepts that supporting sustainable uses of nature and ensuring involvement of local people and communities in decision-making is essential if conservation outcomes are to be achieved (Pomeroy and Rivera-Guieb, 2005; Charles and Wilson, 2009; Bennett and Dearden, 2014b; Sowman *et al.*, 2014). While participatory governance does not guarantee that these conservation outcomes will be generated, failure is much more likely without it. Indeed, in the fisheries arena, the need to consult with relevant parties was included in the Code of Conduct for Responsible Fishing (FAO, 1995) and the benefits of using participatory approaches are now widely recognized. Co-management has therefore been promoted, especially in small-scale fisheries where generally more holistic sustainability perspectives (such as the Ecosystem Approach to Fisheries) are being pursued (FAO, 2003; Fletcher and Bianchi, 2014). The *Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication* (FAO, 2015), adopted by FAO Member States in 2014, build on this trend, by taking a human rights based approach to development and explicitly linking the sustainable use of resources with social and economic development.

Such moves in fisheries are compatible with what is already an understanding, at the highest levels of international discussions, that the different dimensions of sustainability are complementary, so that a sustainable future will only be built by the integration of environmental, economic and social considerations – as reflected, for example, in the UN Conference on Sustainable Development in 2012 (Rio+20). Heads of states and governments committed to 'ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations' (United Nations Department of Economic and Social Affairs, 2012). The subsequently agreed Sustainable Development Goals confirm this perspective and in particular, Goal 14, referring to the oceans, includes targets spanning the three dimensions of sustainability (UN, 2015).

The sustainability of all benefits to humans within the marine environment will depend on ensuring that governance arrangements maintain human use activities, such as fishing, while engaging in additional conservation initiatives, such as MPAs. Establishing the case that an MPA is the best way to achieve multiple sustainability dimensions within any specific location should be no different from assessing the relative benefits of applying any other type of management tool. In all cases, the focus of such assessments must be on meeting the set of policy objectives, including fisheries management and biodiversity conservation outcomes, rather than promoting one tool, such as MPAs, based solely (or even largely) on meeting a nominal global target. In such cases, inclusion of the human dimension must be an essential part of any evaluation of the set of management arrangements because many policy tools, including MPAs, can directly and significantly affect the local livelihoods of fishing communities.

The development of the portfolio of management arrangements for any region or country must recognize that there are some synergies and interdependencies across sustainability dimensions, but the fundamental conflicts and related trade-offs also have to be recognized. Many of these are rooted in differences in management outcomes sought by the two interacting governance streams of fisheries management and biodiversity conservation, often with little mutual consideration of each other (Garcia *et al.*, 2014). Unless these conflicts and related trade-offs are recognized and openly stated and the underlying reasons for any divide are discussed, it will be difficult to find the strategies that are needed to better harmonize actions in pursuing these multiple objectives (Rice *et al.*, 2012).

The important role of spatial management systems, including MPAs, as part of the efforts to safeguard our oceans is widely recognized. Important high-level political commitments have been made for continuing the use of this type of tool for both biodiversity conservation and fisheries management. Hence, conservation-MPAs as well as fishery-closures will continue to be part of the coastal zone cross-sectoral management framework. A key challenge is to ensure that they work together in the best possible way to ensure environmental, economic and social sustainability. There are practical and policy-level approaches already available to develop synergies, ones that are mutually supportive of marine conservation (such as through MPAs) and of resource use (i.e. fishing for food and livelihoods). This includes co-management arrangements, marine spatial planning and the ecosystem approach to fisheries – within which MPAs are recognized as one of the possible instruments (CBD, 2000; FAO, 2003; SCBD/STAP, 2012). However, more effective linkages of conservation-MPAs and fishery-closures, within the realm of spatial management systems, will require better recognition by the conservation community of the important role of fishery-based closures as a tool of marine conservation.

Furthermore, non-spatial management measures can be equally important for the protection of the marine ecosystem. The key to the choice of management measures is the need to understand and take into account local conditions and the characteristics of each situation. In particular, it is important to draw a distinction between coastal areas and their fisheries, and the open ocean and their associated fisheries. Different approaches to MPAs and other synergistic management measures will be needed in these different realms, reflecting differing ecological systems, tensions between objectives, approaches to governance and consequences for people. It is also vital to understand the different challenges faced by developing nations, where, for example, basic environmental management systems may be vital to develop before tools such as MPAs can be effectively utilized.

Examples of synergies and successful results were presented at various sessions of the WPC, such as those dealing with the role of MPAs in ‘supporting human life’ (Stream 4), resolving development challenges (Stream 5), and improving governance (Stream 6), as well as in relation to indigenous communities (Stream 7). Some of the synergies were reflected in Table 5. These include cases where protected areas – when used in a suitable context, i.e. under appropriate bio-ecological and socio-economic circumstances, and when designed and implemented properly – can make fisheries more sustainable and support, not hurt, livelihoods and food security. These examples tend to be at the local level, and care has to be taken when trying to draw conclusions at a global scale. Still, by learning from successful results, in particular with regard to effective processes and approaches, important gains could be made.

In order to better acknowledge all of the environmental, economic and social dimensions of sustainability, as well as their interdependence, a significant departure from current practices used to develop MPAs is required. Especially in coastal areas, protected areas should be developed with human objectives at least as prominent as biodiversity conservation ones. This would require a reshaping of the policy positions and processes currently used, in order to link more closely the consideration of MPAs and fisheries management, within an overarching framework of space-based management. Their interactions (e.g. within cross-sectoral integrated management frameworks) should include explicit recognition of the trade-offs required in pursuing both human and ecosystem objectives. This reorientation has several implications. First, instead of seeking the ‘ideal’ MPA for the preservation of specific undisturbed areas, it may be more effective to choose the best supported and ‘embraced’ model – perhaps one oriented toward spreading an 'acceptable level of impact' across the entire ecosystem and meshing well with other appropriate management tools. Second, a parallel focus on human and biodiversity objectives may well lead to a greater focus on multi-zoned MPAs, perhaps with nesting of small no-take zones within spatially larger management and planning frames, to help in distributing costs more broadly and equitably. Third, an appreciation of multiple objectives also implies the need to consider equity concerns, and particularly the possibility of compensation to local communities by the global community in cases when the costs of maintaining ecosystem services is borne locally while the benefits of those services are enjoyed externally (or in the future).

While the preceding analysis in this section has focused on drawing lessons to help in bridging the multiple goals of marine use and conservation, and particularly in connecting MPAs and fisheries management, there are also lessons arising in terms of processes to be followed in the future. In particular, the experience with the Marine Statement of the WPC 2014 highlights the importance of moving to a more comprehensive consideration of the relative costs and benefits of MPAs, with these costs and benefits being examined within an environment of transparency and collaboration that encourages a full range of perspectives. Such a process could be followed at the next WPC to produce a scientifically-presented set of options reflecting the full range of discussions, and including areas both of agreement and of disagreement. In this way, proposals from sub-groups of the meeting (such as the 30% NTZ target) would be presented as proposals to the full set of participants, along with potential costs and benefits, plus the uncertainties in both the short and long-term. As a related aspect of process, efforts should be made to ensure that in discussion of MPA within future fora, analysis of benefits and costs in terms of biodiversity conservation and sustainable fisheries are better integrated with equivalent analysis relating to livelihoods and food security. It will be important to ensure that this takes into account the impact of the MPA not only within but also beyond its boundaries.

Events like the WPC play an extremely important role in bringing people together to trade ideas and share experiences. While not a formal decision-making process, the WPC certainly has a degree of authority in terms of conveying messages and influencing public opinion, not only within the IUCN but more broadly. With that comes the responsibility to ensure transparent and participatory processes that may best encourage synergies between local and global efforts and interests towards a sustainable planet. Indeed, the process-focused lessons learned concerning MPA implementation itself can be applied to processes followed in international gatherings such as World Parks Congresses. By learning from experience, such gatherings can provide major opportunities to find the right mutually supportive policies, management approaches and implementation processes, for marine conservation and for MPAs specifically, and to communicate to the world how MPAs contribute to sustainability in a true multi-dimensional sense – involving people and the planet.

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