



THE 10X20 INITIATIVE

Conference on Marine Protected Areas: An Urgent Imperative A Dialogue Between Scientists and Policymakers

Scientists' Consensus Statement on Marine Protected Areas (MPAs): Characteristics, Governance, and Sustainable Financing Rome, Italy 9 March 2016

Sustainable Development Goal 14 of the United Nations, Target 5 states that “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.” The purpose of this consensus statement is to provide scientific and experience-based guidance on how to achieve the target of establishing 10% of the oceans as Marine Protected Areas (MPAs) by 2020. It was composed by a group of 25 MPA experts from all regions of the globe, who shared information and deliberated from March 7-8, 2016, at the 10 x 20 Conference held in Rome.

The 25 experts included both scientists and MPA practitioners, bringing together theoretical, research-based, and practical experience with MPAs. They drew upon a large and increasing body of knowledge that demonstrates the success of well-planned and implemented marine protected areas in conserving biodiversity and ecosystem functioning, and producing other ecological, social, cultural and economic benefits¹. MPAs can increase food security by recovering exploited populations, rebuilding their habitats, increasing reproductive output, increasing replenishment of surrounding fishing grounds, enhancing catches via spillover, reducing population fluctuations, maintaining genetic variability of stocks and increasing resilience to environmental fluctuations. These effects may also lead to greater resilience in the face of anthropogenic global change, improved climate adaptation, and increasing food security as fishers and fish adapt to a changing environment. Experts focused on three general questions during their deliberations:

- 1) What are the characteristics of MPAs that will make them most effective at conserving biodiversity and regenerating fish populations?
- 2) What governance structures might best support the successful implementation and management of MPAs?
- 3) How can MPAs be made financially self-sustaining?

¹ Pikitch, E. (2016) A primer on Marine Protected Areas, Background for the 10 x 20 conference. Herein Marine Protected Areas (MPAs) is an umbrella term that encompasses virtually any type of refuge that provides some level of protection.

This Consensus Statement outlines points of agreement in each of these topic areas by the experts who participated in the conference.

Consensus on MPA Characteristics (1-12)

SDG 14, Target 5 does not specify the characteristics (level of protection, etc.) of the MPAs contributing to the 10%, but the “best available science” is to be used. Therefore, in order to best achieve the intent of 10 x 20, we provide the following distillation of scientific knowledge and experience of how to design highly effective MPAs. This information could also be used for evaluation of existing MPAs with a view to upgrading those that are found to fall short of the standards necessary to perform effectively.

1. MPA establishment should be based on the best available science. MPAs should be established based on what we know now rather than delaying until more information is available, but we should use MPA creation as learning opportunities to better understand the oceans and the life in them, as well as people’s interactions and dependence on the sea. Such learning should include efforts to inventory natural capital, to define effective natural units of conservation needed to promote ecosystem functioning, and to refine the design of MPAs and networks.

2. Marine protected areas work best when they are fully protected from exploitation and other sources of harm. They do not work well when they receive only light protection. The delivery of benefits is tightly and positively linked to the level of protection given (assuming that MPAs are well-managed, see Governance section). Fully protected marine reserves² (i.e. places that prohibit all fishing and other extractive uses) are most effective. Strongly protected MPAs (limiting exploitation to well-managed subsistence or artisanal fishing and banning destructive gear types, promoting ecotourism etc.) can also be effective. **Therefore, in meeting the 10% MPA target, countries should seek to maximise the inclusion of fully or strongly protected MPAs** (IUCN categories, I and II), **including fully protected zones within large, multiple use MPAs.** It is important to recognize, however, that small amounts of fish extracted by large numbers of people can add up to substantial exploitation, hence the need for MPAs to be well-managed. While high levels of protection offer the greatest benefits to marine life, including fishers operating outside MPAs, such protection is not intended to exclude well-managed, non-consumptive uses from within and around MPAs. These uses, including tourism, can bring significant benefits such as recreation, inspiration and financing for protection (see Financing section).

3. MPA objectives should take into account and seek to reverse historical decline and degradation in marine ecosystems.

4. The most effective MPAs target protection to the ecosystem level, encompassing a wide spectrum of biodiversity, rather than a few species. Many existing MPAs seek to protect the seabed without protecting the water column or vice versa. Such an approach runs contrary to the ecosystem approach and MPAs that make this distinction are not as effective as those that afford protection to the entire water column. Depth limited protective measures often fall short in another way. For example, many coral reefs and other biogenic systems are protected only to approximately 30 m deep, but such systems may extend much deeper. Depth limited protection risks the problem that we could meet the SDG 14 10% MPA target by

² In this document we follow the definitions of Lubchenco and Grorud-Colvert (2015): lightly protected MPAs are places where some protection exists but significant extractive activity is allowed; strongly protected MPAs prohibit all commercial activity with only light recreational and subsistence fishing allowed, while in fully protected MPAs no extractive activities are allowed (also called “marine reserves”). The term Marine Protected Area (MPA) encompasses all three categories. Lubchenco, J. and Grorurd-Colvert, K. (2015) Making waves: The science and politics of ocean protection. *Science*, 350, 382-383

area but fall far short in terms of the volume of the sea protected. Therefore, **sea surface to seabed protection should be the default position for effective MPAs.**

5. Marine protected areas require a long-term commitment. Benefits are often apparent within a few years of establishment and continue to build for decades. Benefits can be lost within weeks or months if protections are lifted. Hence, at the point of establishment, the default assumption should be that an MPA is to be permanent.

6. MPAs should be as large as possible, appropriate to the location. Large MPAs generally yield greater benefits than small MPAs. They sustain larger populations of protected species resulting in lower extinction risk and have higher resilience to environmental fluctuations and change. They are less susceptible to ‘edge effects’ where human impacts spread into the protected area from outside. However, small, well managed MPAs or zones within larger multiple-use MPAs can produce significant benefits too and can be particularly valuable in intensively used settings where the options for large MPAs are limited, calling for the establishment of networked MPAs.

7. The benefits of MPAs are proportional to their coverage. Scientific evidence to date indicates that many of the desired benefits of MPAs will only be secured by MPA coverage in the region of several tens of percent of the oceans³. The World Parks Congress of 2014 in Sydney recommended that countries aim for 30% coverage of strictly protected MPAs (i.e. equivalent to fully protected). This is strongly supported by scientific evidence. A target of 30% by 2030 is gaining momentum among scientists and conservation interests. **The SDG 14 MPA target says countries should establish “at least 10% MPAs” and 10% should therefore be viewed as an important waypoint rather than the endpoint for ocean protection.**

8. MPAs are best established in strategically designed networks to produce greater overall benefits. Networked MPAs represent a wider diversity of species and habitats than individual MPAs. While individual MPAs may not support self-sustaining populations of all species, networked MPAs can achieve viability at the large scale through connectivity of populations and protection of places important to their multiple life stages.

Good networking principles include:

- a. Represent the full spectrum of habitats, ecosystems and species, although initially consider giving greater priority to the most vulnerable and threatened, or the most intact. To date, MPA selection in many places has favoured charismatic species and habitats, aesthetic qualities over ecological function, and remote places. **Effective MPA networks must include the full ecological portfolio that extends protection to all of biodiversity and ecosystem function.**
- b. Use of MPA size and spacing rules to maximise long-term viable populations inside individual MPAs and collectively across the network. Recommendations vary but typically suggest MPAs of 5-20 km in minimum dimension spaced 20-80 km apart.
- c. Replication of habitats in at least 3-4 MPAs per biogeographic region.
- d. Inclusion of places important to the life cycles of commercially important species.
- e. Inclusion of networks of interdependent habitats, such as mangroves, seagrasses, coral reefs, and linkages between water column and seabed habitats, and other oceanographic features.
- f. Inclusion of places likely to be more resistant and/or resilient to climate change.
- g. Isolation has been positively linked to MPA effectiveness and may be a useful criterion for MPA selection.

³ O’Leary, B.C., Winther-Janson, M., Bainbridge, J.M., Aitken, J., Hawkins, J.P., Roberts, C.M. (in press) Effective coverage targets for ocean protection. Conservation Letters.

- h. Enhancing benefits for local communities.
- i. While strategic design is most efficient, we should always be open to opportunities when they present themselves.

9. The global system of MPAs is uneven and gaps must be filled. A sizeable fraction of MPAs are in the USA, Australia and European waters (including overseas territories). A significant increase in the rate of creation is needed in Africa, Latin America and the Caribbean, South and East Asia and Small Island states where coastal economies, livelihoods and food security are more dependent upon healthy functioning marine ecosystems. Polar regions are also under-represented. The majority of the existing area of MPAs (but not numbers) lies in remote places. However, more MPAs are also needed in areas closer to human population centers so that communities in such areas may achieve the stability and quantity of food security, conservation, climate change resilience and socio-economic benefits they need.

10. In selecting sites for MPAs, some places have enormous global significance that transcends local importance and should be protected as a matter of priority under any national or international selection scheme. For others human pressures, including climate change, may be such that protection cannot deliver all of the benefits expected in less stressed regions. Nonetheless, marine life and the people that depend on it will in the long-term fare better with good protection and management than without, whatever the future holds. Many of the benefits of MPAs are delivered locally, so those who live nearby gain most. This also holds for places close to population centers where MPAs may offer significant benefits to local people despite not reaching levels of performance seen for more remote sites. Furthermore, low diversity sites should not be ignored in selection processes. They may be especially vulnerable to the loss of important ecosystem goods and services that benefit local people. Therefore, in the long run **we should adopt the principle that no places should be excluded from consideration in the establishment of MPAs.**

11. The biggest gap in the global MPA system is on the high seas, beyond the limits of national jurisdiction. There is a pressing need for countries to support ongoing efforts to develop an implementing agreement for Biodiversity Protection Beyond National Jurisdiction that includes MPAs. **Given current constraints on creating MPAs beyond national jurisdiction, however, a greater percent coverage (i.e 24%⁴ vs. 10%) within Exclusive Economic Zones (EEZs) will be needed to meet the 10% of the overall ocean by 2020 goal.** Such a goal would bring coverage of MPAs in EEZs up to levels commensurate with those needed to achieve multiple goals. High Seas MPAs will be needed to meet larger targets (e.g. 30% by 2030) and achieve full ocean biodiversity representation and support for ecosystem functioning. In the interim, we should consider closing parts of the high seas that are most vulnerable to overfishing and habitat destruction, including places that are not under the mandate of existing Regional Fisheries Management Organisations (as agreed under UNGA Resolution 61/105 of 2006), and establishing representative networks of MPAs protected from other damaging activities and sources of harm, including deep sea mining, marine litter and noise.

12) MPAs and MPA networks will only be fully effective when embedded within a holistic framework of integrated ocean and coastal management, incorporated into wider marine spatial planning and applying the Ecosystem Approach to ensure that human activities are well managed over all of the seas.

It should be recognized that **MPAs are a necessary but not sufficient part of overall sustainable management of seas and oceans.** For example, poor water quality, runoff, and other impacts, can prevent effective ecological recovery or lead to declines. Effective management, based on sound ecological principles and practices is required outside of MPAs. Similarly, climate change effects will have an

⁴ 42% of oceans and seas lie within Exclusive Economic Zones. Therefore achieving 10% of the oceans as a whole within MPAs would require $(10/42) \times 100 = 24\%$ coverage of EEZs.

increasing influence on what happens in and around MPAs and we need to develop MPA design and implementation strategies to accommodate to climate change.

Consensus on MPA Governance (13-24)

13. MPAs must have the governance capacity to influence the behavior of people to build on common interests, address conflicts and reduce use impacts to levels that promote the effective achievement of conservation objectives.

14. MPA governance must ensure effectiveness in achieving conservation objectives and equity in fairly distributing the costs and benefits of effectiveness.

15. Recognize that “diversity is the key to resilience, both of species in ecosystems and incentives in governance systems”, i.e. a combination of incentives is crucial for effective and equitable governance⁵. Governance frameworks need to be appropriate to the specific MPA context and the incentives should be integrated with each other. MPA governance cannot be based solely on a single governance approach, i.e. an MPA that is solely reliant on local participation (community-based), economic incentives (market-based) or legal regulation (law-based) will not be sustainably effective.

16. Legal incentives and the capacity to enforce them are particularly important to achieve both effectiveness and equity, and sufficient political will to agree and apply appropriate laws and regulations is essential for MPAs. They are the elements that reinforce the governance framework.

17. The existence of regulations, and awareness of them, can be sufficient to promote the willingness of the majority of MPA users to comply and cooperate.

18. To address the activities of a non-compliant minority, enforcement must proactively consider three elements in order to promote effectiveness and equity:

- a. The capacity to **detect** illegal activities in a timely manner through surveillance, patrols, etc.
- b. The capacity to identify and, where necessary, charge and even **detain** people engaged in illegal activities in a timely manner, including gaining sufficient evidence,
- c. The capacity to apply sufficient penalties (warnings, fines, license restrictions, confiscations, etc.) in a timely manner to actually **deter** them and others who may engage in illegal activity.

19. Enforcement capacity must be applied proportionally, justly and equitably, recognizing that enforcement needs may increase over time as the value of the protected natural resources builds up, thereby increasing the potential rewards from poaching.

20. Involve stakeholders, including local communities⁶, in the designation and governance of MPAs in order to ensure local stewardship, the protection/creation of livelihoods, effectiveness and sustainability.

⁵ Drawing on all five categories: economic incentives, interpretative incentives, knowledge incentives, legal incentives and participative incentives. After Jones, P.J.S. (2014) *Governing Marine Protected Areas: resilience through diversity*. Routledge.

⁶ Without community support, implementation and enforcement will be difficult; people need to be aware of the problems and the role of MPAs in addressing them before the solution is forced upon them. Benefiting from and partnering with communities, their knowledge and their practices, is beneficial. Trust built among community members can be built upon when initiating or implementing MPAs.

21. Monitoring and reporting on the degree to which MPA objectives have been achieved is critical for evaluation, adaptive management and demonstration of MPA effectiveness.

22. Recognize that MPA governance frameworks take time to evolve on an adaptive “learning by doing” basis.⁷

23. Cross-jurisdictional coordination between different sectoral agencies is important to ensure integration between conservation, fisheries, management, land-based pollution control, development planning, etc. Hierarchical obligations, and the political will to fulfil them, can be particularly important to achieve this.

24. As MPAs are scaled up from individual designations to networks, governance frameworks also need to be scaled up to promote coordination and integration, including transboundary integration where appropriate.

Consensus on MPA Sustainable Financing (25 - 34)

25. MPAs are critical to sustainable development. MPAs are a powerful mechanism for delivering sustainable development objectives for coastal marine ecosystems at varying scales, including food security, livelihoods, climate change and disaster risk reduction.

Expenditures to meet the SDG 14 Target 5 should be recognised as part of wider investment needs for achieving sustainable development in the context of the SDGs.

26. Meeting SDG 14 Target 5 will deliver substantial benefits to people and the global economy. It is widely established through numerous studies and peer-reviewed publications that the social and economic benefits of establishing and operating MPAs sizeably exceed their costs, from 3:1 for 10% protection, up to 20:1 for 30% protection⁸. Governments need to raise awareness of this very positive ‘rate of return’ on investing in MPAs at all levels, to promote and catalyse action on MPAs at local, municipal, provincial and national levels.

27. There is a need to increase investments substantially to bridge financing gaps. Current funding of MPAs is insufficient and not sustainable. Funding to cover transition costs, monitoring etc., needs to be increased substantially.

28. MPAs contribute to climate change adaptation and to some extent mitigation. Investing in MPAs can reduce community, national and global vulnerability by increasing resilience and reducing risk. It can support adaptation efforts against climate-related impacts at various scales, and contribute somewhat to climate change mitigation via the maintenance of healthy oceans.

Investments in MPAs can provide direct adaptation benefits including coastal protection (e.g. from the protection or restoration of mangroves and coral reefs). These investments will enhance resilience by protecting food security and securing livelihoods options. This will be increasingly important in helping communities adapt to climate change and in minimising damages and losses.

⁷ Thinking long term is an opportunity, not a problem. Starting simple, with existing resources and a framework for the future, expanding via adaptive management, is a good thing.

⁸ Brander, L., Baulcomb, C., van der Lelij, J. A. C., Eppink, F., McVittie, A., Nijsten, L., van Beukering, P. (2015) The benefits to people of expanding Marine Protected Areas. VU University, Amsterdam, The Netherlands.

29. Investments in MPAs can strengthen the provision of marine ecosystem services on which vulnerable communities depend. As marine biodiversity loss disproportionately affects vulnerable populations, investments in MPAs, by helping to protect biodiversity, will help secure the long-term provisioning of key services and access to essential marine resources that support food security, economic opportunities and human well-being of the world's income poor populations.

30. MPAs provide insurance and protection from risk. MPAs as the 'conservative' part of our ocean portfolio serve as insurance against our mistakes in management. Investments in MPAs can provide insurance against uncertain and accelerating future marine ecosystem change, and maintain and enhance future development options. Investments made now will reduce future costs and preserve opportunities for current and future generations.

31. Enhancing synergies and promoting alignments across sectoral policies are needed for effective implementation of SDG 14 Target 5 and can be a major source of resource mobilization. Creating and implementing mutually supportive policies and activities across sectors of the economy, and increasing efforts to manage trade-offs are all important steps for achieving SDG 14, Target 5, which will deliver co-benefits and develop cost-effective pathways towards a sustainable society. This will help to identify co-funding opportunities and to secure contributions to meeting the SDG 14, Target 5 from a wide range of sources across economies and societies.

It is important to mainstream MPAs into wider policy agendas, plans and budgets. This will offer significant opportunities for more efficient policy-making, and thereby generate co-funding.

32. Countries need to invest in institutions and policy frameworks, incentives and economic instruments for MPA implementation. Well-designed institutions and effective policy frameworks are a prerequisite for effective and efficient MPA financing. A "bottom-up" assessment of investment needs to be aligned with domestic and international sources of funding. Investing in policy frameworks and general enabling conditions is critical for MPA action in many countries, and especially in less developed parts of Africa, Asia, Latin America and the Caribbean, and Eastern Europe.

Actions to raise awareness, build capacity, develop the knowledge base and establish the necessary legal structures, institutions and governance frameworks are necessary for effective delivery of SDG 14 Target 5 as well as contributing directly to other SDG Targets.

33. Design and implementation of appropriate economic and policy instruments is essential for meeting SDG 14 Target 5. Achieving SDG 14 Target 5 at least-cost is crucial and will require more efficient use of public budgets, together with the application of a wider range of economic instruments and incentives. It will also require involving stakeholders, the use of modern technology, invoking social norms and cultural sanctions and encouraging integrated regional use of existing funding.

Much can be gained by phasing-out perverse incentives and unsustainable practices, and extending good marine planning and the development of sound fiscal policies. The elimination of environmentally harmful and market-distorting subsidies such as capacity-enhancing fisheries subsidies, if well managed, would reduce negative impacts on marine biodiversity while freeing up resources that could be used for other investments in marine protection.

34. MPA financing should be sought from a wide variety of sources. Revenue from MPA management (user fees, fines, taxes, etc.) should, to the maximum extent possible, be reinvested into MPA management activities to ensure near and longer-term financial sustainability of MPAs.

Transnational MPAs should be considered as they can add value such as size and resilience, increased diversity of funding base, and make use of each countries' comparative advantages (monitoring, enforcement, etc.).

Increased focus on developing innovative partnerships between a wide range of actors – local and national government, civil society, NGOs, UN, multi-lateral funds, IFIs, academia, and the private sector is needed.

A significant fraction of the private sector, from tourism to fisheries to aquaculture, utilizes and relies on healthy marine ecosystems in their business operations. For long-term MPA sustainability, these private sector stakeholders need to be effectively engaged in MPA design, financing, cost recovery and management.

There are a wide range of potential public and private sources of funding for MPAs, from multi-lateral funds (GEF, GCF, and other Adaptation Funds) to bi-laterals to foundations. Countries need to increase awareness and knowledge of these funds (through mechanisms such as the Biodiversity Finance Initiative (www.biodiversityfinance.net) and need capacity building assistance to enable them to access, combine and sequence necessary financing from all available sources⁹.

The overall envelope for MPA financing almost certainly remains below the level required to achieve 10x20. In addition, country demand for MPA financing from financial mechanisms such as the GEF has been very modest in comparison to that for terrestrial protected areas. As such, if use of such funds towards 10x20 is to be optimized, beneficiary countries need to increase prioritization of MPAs in their internal dialogue on accessing such funding, and donor countries need to increase the prioritization and level of MPA financing support for developing countries going forward.

⁹ The Convention on Biological Diversity's High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 has issued detailed reports of how to finance the implementation of all 20 Aichi Targets, including 10% MPA coverage by 2020 (see <https://www.cbd.int/financial/hlp.shtml>).