



Marine Protected Areas Networks and Climate Change: a Political Advocacy

A healthy ocean will allow better ecosystems resilience to climate change, and consequently a reinforcement of ecosystem services crucial to the planet's viability. In light of growing pressure on the ocean, which has to include the development of new human activities, political issues must combine CO₂ emissions reduction with biodiversity conservation issues. Out of 10,000 Marine Protected Areas worldwide, many only exist on paper. Twenty maritime countries cover 80% of the surface of all Marine Protected Areas. Governance and joint management between public stakeholders, professionals and sea users are major obstacles for MPA networks operations. In order to ensure a viable climate for humanity, international and governmental policies should acquire an adaptation and mitigation logic, and include the ocean as a nature-based solution against climate change.

Knowledge on the functioning of marine ecosystems has greatly improved in the last years, in particular regarding the knowledge of systemic interrelationships with climate. This increase in marine ecosystem knowledge has allowed a raise in awareness among policymakers and accelerated their decision-making regarding ocean conservation because of the urgency of the climate situation and in view of the ocean's role as a climate regulator. Decisions taken during the United Nations Framework Convention on Climate Change COP21 and the Paris Agreement have led the way for others. The political development toward a better consideration of ocean conservation in climate policy must continue and be carried out via this knowledge improvement.

Conservation of marine ecosystems may reduce the effects of climate change; consequently the ocean is part of the nature-based solutions to climate change. Healthy marine habitats also allow marine species to adapt better to climate change.

Based on the scientific evidence that ecosystem services must be functioning properly in order to benefit the viability of the planet, including in terms of

climate, governments must adopt new climate policies built on nature-based solutions. They must link these policies to the CO₂ emissions reduction policy and merge the biodiversity conservation issue with the climate issue. Marine biodiversity conservation is part of this strategy because of Marine Protected Areas.

Marine habitat conservation policies have become especially vital as blue growth increases anthropogenic impacts on the ocean. The impacts due to new maritime activities add to the increase in impacts on the sea caused by land-based human activities. These deterioration factors gradually damage marine ecosystems. Consequently, the acceleration of marine ecosystem deterioration reduces the ocean's ability to reduce climate change. It also jeopardizes coastal populations' physical, food and economic safety, in particular for Small Island Developing States.

An ambitious national strategy implies the establishment of a national body dedicated to the good management of maritime activities, capable of restoring deteriorated marine environment, and acting for the remediation of the sea. This body is essential to create, manage efficiently and lead a consistent



and resilient national network of Marine Protected Areas and cooperate with countries sharing common regional seas.

In order to be efficient in relation to a joint biodiversity and climate policy, the Marine Protected Areas' policy must prioritize a strict protection of key areas for biodiversity and ecosystem services. It must aim at absolute conservation of vulnerable marine habitats of high ecological and biological value with high carbon sequestration capacity associated biomass, including coral reefs, mangroves, seagrass beds, salt marshes and estuaries. This conservation must be extended to the High Seas' deep waters, canyons and seamounts as part of the policy to be implemented within the Regional Seas Conventions. Conservation is not limited to Exclusive Economic Zones. Ecologically and Biologically Significant Marine Areas (EBSAs) prove that ecosystems overlap between waters under national jurisdiction and the High Seas. Finally, the role of Marine Protected Areas is to ensure biological and ecological connectivity which reinforces marine ecosystems' resilience. Therefore, they must be representative and consistently distributed to contribute to climate change resilience.

The concept of establishment of a global resilient network of Marine Protected Areas requires a wide range of conservation tools which fall under various sector-wide approaches. From the smallest community marine area for local fishery or ecotourism purposes (LMMA – Locally-Managed Marine Area) to great marine protected areas (LMA – Large Marine Areas), it is necessary to cross-reference and connect objectives which fall under all the ocean conservation sectorial tools. Particularly, Sensitive Sea Areas acknowledged and designated by the International Maritime Organization (IMO PSSAs) or the FAO Vulnerable Marine Areas (VME) are also part of building a global resilient network of Marine Protected Areas for climate. This integration could give consistency to the global network of Marine Protected Areas in relation to climate change. This could also facilitate ocean governance. This cross-sector approach of ocean conservation for climate can be facilitated with regional policy practices. The protocols of contracting parties to the Regional Seas Conventions must adjust

their biodiversity and ecosystems conservation goals to those against climate change. In this matter, regional fisheries organisations must collaborate with the Regional Seas Conventions to develop common strategies, for instance the OSPAR Convention, which enabled the designation and the proposal of marine protected areas in high seas of the North East Atlantic. New alliances should be established in particular, to build cross-sector collaborations in the field of research on the functioning of marine ecosystems.

The solution to climate change of establishing networks of Marine Protected Areas will be improved if the cumulative effects of stress factors are reduced. The networks of Marine Protected Areas will respond better to climate change and other stress factors if they are effectively handled. Management must be adaptive yet reinforced by regulations. Administrators must also have access to logistical and technical means to complete their mission including scientific monitoring of climate impacts.

Unfortunately, the majority of countries are far from meeting these requirements. The current global network of Marine Protected Areas covers only 4% of oceans. This situation does not tally with the States' commitments agreed upon at the 2010 Nagoya 10th Conference of the Convention on Biological Diversity which set a 10% goal by 2020. Especially as scientists and NGOs, gathered in Sydney in 2014 for the World Parks Congress, advised the strict conservation of 30% of marine habitats in their full diversity and distribution.

There is a qualitative problem, in addition to this rather incomplete quantitative assessment. Most Marine Protected Areas do not have sufficient material and human resources to implement actual management and conservation measures; that is research and scientific follow-up, activity regulations, pollution reduction, monitoring, hosting and informing the general public. Out of the 10,000 worldwide Marine Protected Areas, seldom have a high protection status where samplings are prohibited. A large number of Marine Protected Areas around the world are Marine Protected Areas on paper only. In addition to this disqualifying situation to acquire legitimacy, there is spatial disparity. Twenty maritime countries cover



80% of the entire Marine Protected Areas surface in the ocean. These areas are geographically and spatially concentrated. In fact, there is competition for the title of largest Marine Protected Area in the Pacific Ocean, where anthropogenic stress is minor. It represents figures for statistics but doesn't address the issue of the creation of a large consistent network of Marine Protected Areas at a global level, which is representative and resilient and which involves over 150 maritime countries worldwide.

Government policies for the conservation of marine habitats must deal with the difficulties linked to the establishment of Marine Protected Areas, including governance and joint management of Marine Protected Areas between public stakeholders, professional sectors and ocean users. Experiences and feedback have proven that the most efficient Marine Protected Areas are those which include social-economic actors, in particular fisheries, in the process of defining ocean conservation regulations and measures. New participatory governance mechanisms must be implemented and need to embrace climate issues. This is all the more crucial as the concept of ocean conservation differs largely from the notions selected for the conservation of terrestrial habitats. Sea management based on ecosystems is an operational scientific approach which acknowledges the complexity of marine ecosystems and the existence of interconnections between their physical and biological elements to connect with very scattered and heterogeneous human activities at sea.

The use of climate issues to reinforce Marine Protected Areas establishment and management policies could enable the consideration of connections between the major elements of ecosystems and maritime social-economics, to outline marine activity spatial planning on a cross-disciplinary basis. A social-ecological approach based on knowledge, consultation and collaboration of stakeholders, policymakers and stakeholders' awareness, leads to adaptive management. Adaptive management addresses a repetitive process which consists of assessing the efficiency of management and including new scientific knowledge to adjust and apply management

regimes. This process could continue to promote the achievement of ocean conservation goals, as well as those of climate in the context of blue growth.

Marine habitats conservation governmental policies have to organize virtuous circles based on maritime social-ecology and on the ecosystem approach to sea management. The spatial planning measures and ecosystem-based management will join these circles to address the adaptation to climate change issues. The political answer to ocean conservation for climate relies on the organisation of ocean governance systems, allowing a fair balance in marine spatial planning, which takes into consideration the concerns of ocean stakeholders and those of a viable climate for humanity. This marine spatial planning must be, in this regard, the converging point of "bottom up – top down" joint approaches of ocean conservation.

States with significant marine heritage and integrated maritime policies must lead the way. They must act as an incentive for other States to take governmental measures for integrated coastal management and ocean conservation. This also requires that all maritime States adopt national marine environment policies based on solid legislative and regulatory clauses and on governance and integrated management tools based on marine ecosystem conservation.

Governments must reconsider global, regional and national marine habitat conservation strategies by cross-referencing marine biodiversity issues with those of climate change and they must also address those of the ocean sustainable development goals (SDG14). International and governmental marine habitat conservation policies must join this logic of adaptation and mitigation of climate change impacts policies. United Nations environmental programs and policies must develop in this direction. The Convention on Climate Change and the Convention on Biological Diversity have gone separate ways for too long now. The consideration of a systemic relationship between marine ecosystems and climate could most certainly allow these two United Nations Conventions to converge towards a joint approach of their goals.