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Session Briefs

MORNING

SESSION 1 : Political Leaders discuss Marine Protected Areas

Moderator: CEO of Concordia 21 and former President of Costa Rica José Maria FIGUERES

SESSION 2 : Implementation and Benefits of Marine Protected Areas

Moderators: Enric SALA, National Geographic Fellow and marine ecologist and Pierre ERWES, President and Founder of BioMarine.

AFTERNOON

SESSION 1. "The Deep Ocean: an unknown biodiversity to be protected"

Moderator: Lisa SPEER, Director of the International Oceans Council of the *US Natural Resources Defense Council*

SESSION 2. "Large Marine Animals: keystone species crucial to ocean health"

Moderator: Philippe CURY, Director of the *Mediterranean and Tropical Halieutic Research Center of France's IFREMER*

 **The Context**

Nine years ago the UN Convention on Biological Diversity (CBD) and the World Summit on Sustainable Development pledged to establish Marine Protected Areas covering 10 per cent of the world's oceans by 2012. That deadline has now been pushed back to 2020. So far only an estimated 1.17 per cent of the world's oceans are protected, with just a fraction of those designated as "no-take" zones.

Obstacles to reaching marine protection goals range from the legislative and geopolitical to the economic and social. With the **MBI 2011 Mission Statement** as a basis for discussion, the panel and delegates addressed issues of development and management of MPAs from political, scientific, conservation and business perspectives.

MORNING

SESSION 1 : Political Leaders discuss Marine Protected Areas

Moderator: CEO of Concordia 21 and former President of Costa Rica José Maria FIGUERES

MBI initiator and passionate marine conservationist HSH Prince Albert II of Monaco framed the debate as “the struggle to ensure humanity’s future in a protected and productive environment.” While MPAs demonstrably help regeneration of fish and other commercially valuable ocean resources, they should not be viewed in a purely economic perspective, he said, but also as a means “to change man’s relationship to nature.”

The key questions of the day were how to increase MPAs’ coverage and operate them as a network with a global strategy, and to identify the resources and means by which to monitor and enforce them, Prince Albert stated.

Moroccan Environment Minister Amina BENKHADRA, noting that her country already cooperates on marine protection with Spain and Algeria, called for a coherent network of Mediterranean MPAs. While providing for integrated governance, the network would need to adapt to local specificities and social aspects, she said, as “each location has its own requirements.”

For instance, Morocco’s protection of the marine environment is closely tied to the country’s will “to develop sustainable fishing by protecting the resource,” she explained. A July 2010 national plan outlined a tool for regulating fishing and for conservation of threatened species and ecosystems, Ms. BENKHADRA noted, but “the challenges are far from having been met.”

Algerian Minister for Town Planning, Environment and Tourism Cherif RAHMANI pointed out that the Mediterranean was of environmental, but also of cultural significance as the cradle of so many civilizations. It is both a fragile marine ecosystem and a fragile balance generally, which today is experiencing “new social, economic and technological fractures,” he said.

The North-South divide extends to ecology, he noted, pointing out that the great majority of MPAs were off the Mediterranean’s northern coasts. Citing a knowledge deficit in the South, Mr. RAHMANI suggested turning the Monaco Blue Initiative into a permanent Mediterranean think-tank to promote the dissemination of scientific and practical expertise for the development of a Mediterranean-wide network of MPAs.

Slovenia has been very active in regional efforts to protect the Adriatic, said the country’s Minister of Environment and Spatial Planning Roko ZARNIC. In particular, it has established a legislative framework for integrated coastal zone management by sector of activity, he added, inviting participants to attend the June 2011 meeting his country is hosting of the Adriatic Commission.

Italy has 27 Marine Protected Areas covering some 220,000 hectares of sea and 700 kilometers of coastline, according to Senior Officer of the Italian Environment Ministry

Roberto GIANGRECO. These are highly diverse, ranging from the Pelagos Sanctuary for Mediterranean marine mammals – an international and largely high-seas MPA – to two underwater archaeological parks. The level of protection also varies, from no-take zones to those allowing low-impact, regulated fishing, he said.

Italy cooperates closely on the regional, European and international levels. For instance, France and Italy have jointly asked the International Maritime Organization to declare the Bonifacio Strait a “Particularly Sensitive Sea Area” as a step toward reducing the threat posed by shipping, Mr. GIANGRECO said. Implementing the new European Directive on Marine Strategy would lead to greater integration both in terms of interdependent MPAs and coastal zone management more generally, he noted.

Montenegro’s Minister of Sustainable Development and Tourism Predrag SEKULIC thanked Italy for providing valuable assistance to his small Adriatic country in the marine protection field.

Lebanese Presidential Representative Mustapha EL-SOLH said Lebanon is currently implementing a 2006 national action plan for protected areas in key sites on land and in the sea, partly to develop ecotourism. A lack of financial resources, expertise and up-to-date information impedes progress; increased public-private partnerships and international cooperation are needed, he suggested. Mr. EL-SOLH said his country hoped the Monaco Blue Initiative would become a major partner in MPA development.

Excellency Dessima WILLIAMS, Chairperson of the Alliance of Small Island States and Grenada’s Permanent Representative to the UN, urged that MPAs be expanded rapidly and with greater inclusion of diverse actors at the policy level. Reiterating a point she made at last year’s Monaco Blue Initiative, she added that “sustainability and equity must be at the heart of the debate.” The principle of equity is of particular relevance to small island states, which are by definition highly dependent on marine resources, she said.

Such states have ambitious targets for reducing carbon emissions, adopting more sustainable fishing practices and expanding MPAs. Considering global production and consumption patterns and their impact on the environment, “we look forward to more ambitious levels of commitment from the developed world,” Ms. WILLIAMS said.

French Minister of Environment, Sustainable Development and Transport Nathalie KOSCIUSKO-MORIZET agreed: “This is one of the major challenges of the 21st Century and we are far from meeting it,” she said. France has recently taken steps to define a truly integrated maritime strategy in broad consultation with diverse stakeholders. Several new marine parks have been created as a result, including the recently voted Calanques park near Marseille, which covers both land and sea. France’s success with public-private partnerships in establishing protected wetlands has been “remarkable,” Ms. KOSCIUSKO-MORIZET said, which could serve as an example for MPAs.

She deplored the lack of a legal framework for establishing MPAs in international waters, noting that while many conventions have been ratified, oversight and coordination are lacking. Ms. KOSCIUSKO-MORIZET suggested creating a World Environment Organization by 2012 to structure international environmental governance. Alongside it should be a “Green Fund” to help address the North-South economic imbalance.

Delegates then offered comments inspired by the political representatives' remarks. Executive Director of the European Environment Agency Jacqueline McGLADE suggested that expanding MPAs would require a scientific shift. "What changed the debate on climate change was the calculation of the cost of inaction," she said. "The science of MPAs is just not material enough. Legislation needs evidence."

Scientist Antje BOETIUS took a different view, arguing that the precautionary principle on biodiversity was sufficient grounds for action. "We must overcome this idea that we have to wait for the science," she argued. As head of a research group on Deep Sea Ecology and Technology at the Alfred Wegener Institute for Polar and Marine Research, Ms. Boetius is an expert on deep-sea biology, microbial ecology and ocean biogeochemistry. Her experience has convinced her that delaying marine protection may cause the extinction of potentially life-changing organisms. "This could be the next antibiotic, or fuel source, or cancer drug," she said, pointing out that apart from their potential benefits to humanity, "they would be worth billions."

Oceanographer Sylvia EARLE, National Geographic Explorer-in-Residence and founder of SEAlliance, spoke with the clarity and passion of a woman who has been exploring the ocean depths for over 50 years, and has witnessed their degradation. "We are protecting only 1% of what sustains our planet," she said. "We still have half the coral. We still have ice at the poles... On our watch, in our time, we have a chance – maybe the last chance – to get it right."



SESSION 2 : Implementation and Benefits of Marine Protected Areas

Moderators: Enric SALA, National Geographic Fellow and marine ecologist and Pierre ERWES, President and Founder of BioMarine.

After a brief presentation by Dr. SALA demonstrating statistically significant ecosystem benefits of MPAs, he and Mr. Erwes invited delegates to explore them from different perspectives, ranging from conservation science to a profit-driven business orientation.

Marine Vice Chair IUCN's World Commission on Protected Areas Dan LAFOLLEY affirmed that MPAs could help mitigate the impact of climate change. Coastal zones such as mangrove and estuaries absorb large amounts of carbon dioxide – much more than forests, he said, suggesting that this could be monetized. "We've been missing a massive issue," he argued, adding that surfing on public alarm about climate change and communicating about MPAs' capacity as "carbon sinks" could be one way to scale up their development.

Dr. SALA agreed that communication must improve if UN marine protection goals are to have a chance. Local communities, including fishermen, experience real economic gains from MPAs within a few years, becoming powerful advocates, he noted. He cited the example of the Philippines, where local communities created 300 MPAs through public-private partnerships after seeing the benefits of two older protected areas.

Dr. SALA views two areas as requiring reform: international maritime law, and fishing subsidies. Reforming the latter "would easily fund a global network" of MPAs, he said.

World Commission on Protected Areas (WCPA) Mediterranean Coordinator Giuseppe NOTARBARTOLO DI SCIARA said the lack of a legislative framework for areas beyond national

jurisdiction had hobbled the Pelagos Sanctuary for Marine Mammals, the world's first high-seas international MPA enacted in 2002. The nearly 90,000-square-kilometer area off the Mediterranean coasts of France, Monaco and Italy had thus far failed in its goal of conserving cetaceans, he said.

Victor Ariel GALLARDO, Vice Chairman of the Scientific Steering Committee of the Census for Marine Life, drew attention to Chile's establishment late last year of the Sala y Gomez Marine Park. The 150,000-square-kilometer Pacific Ocean reserve will be protected from all extractive activities, including fishing. "This is a success," he said. With Sala y Gomez, Chile will have placed 4.41% of its territorial waters under protection.

Terry GARCIA, Executive Vice President for Mission Programs of the United States' National Geographic Society told delegates that while the US had an extensive system of MPAs, numbering 1,600 and covering some 36% of territorial waters, only 1% of these are no-take zones.

"The designation of a no-take area can be very controversial in the US," he said. This seems to be changing as stakeholders see the benefits of longer-standing MPAs, as witnessed by the Florida Keys Sanctuary, Mr. GARCIA noted. The fishing community was intensely opposed initially, but "has since discovered it's essentially a savings bank for future fish stocks," he said. "They are now among [the sanctuary's] biggest proponents. This is a major reversal."

Frédéric BRIAND, Managing Director of the Mediterranean Science Commission, pointed out that fish are only the most visible aspect of MPAs, and that marine bacteria are largely overlooked, despite representing "the drugstore of humanity." The difficulty in the Mediterranean in particular is its size and geopolitics. "You immediately run into other countries' sovereign waters," he noted.

Mr. BRIAND's organization is spearheading creation of a coast-to-coast Mediterranean network of eight large Marine Peace Parks integrating contiguous coastal and open-sea habitats and creating "connecting corridors" for larger, migrating marine animals. As the network was conceived from the start as a coherent system, it would allow for a "continuum of measures" among adjacent countries, he said.

Private-sector delegates also offered their perspective and experience on the MPA question. As a producer of organic farmed fish in the Mediterranean, Founder of Cannes Aquaculture and Mayotte Aquaculture Sylvie CHARVOZ strongly supports MPAs.

"Organic products are the only ones able to maintain their prices today," and protected waters are not a hindrance but a help in this regard, she said. Her company in the French Indian Ocean territory of Mayotte participated in establishing an MPA there in which its fish will be farmed.

Vice President of International Brand Development of La Prairie luxury cosmetics Nadia MILLER admitted that it is a challenge for her company to find sources of sustainable high-quality marine ingredients, although it makes every effort to do so. "Everything is so regulated," she said. "I have more legal and paralegal staff in my R & D department than scientists."

As a scientist, Antje BOETIUS sees opportunities for partnerships with industry, for instance in CO₂ storage. Her organization is currently studying the effects of CO₂ on deep-sea organisms to see if “burying” carbon in the sea might be a possible tool – and a lucrative business - in combating climate change, she said.

Jean-Yves de CHAISEMARTIN sees MPAs as an effective way to reconcile diverse interests. He wears multiple hats, as a marine entrepreneur in algae farming and as mayor of the coastal Brittany town of Paimpol, where he has developed offshore wind and marine energy projects with French utility company EDF. To him, one role of elected officials is to act quickly on industrial projects of public value, whether on- or offshore. “I refuse to indulge in the guilt-trip. The sea is the future of the earth,” he said.

Scientist, conservation activist and diplomat Patrick VAN KLAVEREN, Monaco’s permanent delegate to international scientific, environmental and humanitarian organizations, offers a financial metaphor for ocean conservation. “We must distinguish between the capital of the marine environment and the interest to be earned by it,” he said. “The challenge is not to confuse drawing down interest and squandering our capital, which is why we need to develop ways to exploit it in a sustainable way.”

Algeria’s Cherif RAHMANI said his country welcomed not just technical advice on marine conservation, but also business investment in sustainable maritime development. Algeria plans to pursue such development together with the Thalocea Fund, the first European investment Fund dedicated to the maritime and marine economy, its co-founder and Business Development Manager Aline PAJOLEC told the gathering.

French Parliament Deputy and Head of the French MPA Agency Jérôme BIGNON said he sensed a new shift towards more effective building of consensus among stakeholders in MPAs. He concluded on an inspiring note. “As Jules Verne put it, ‘Nothing gets done without exaggerated hope,’” Mr. BIGNON said. “May we have this exaggerated hope.”

AFTERNOON

The afternoon was devoted to an update on the Monaco Blue Initiative’s 2010 Conference themes - Deep Seas and Large Marine Predators - discussed this year as domains of application for Marine Protected Areas.



SESSION 1. "The Deep Ocean: an unknown biodiversity to be protected"

Moderator: Lisa SPEER, Director of the International Oceans Council of the *US Natural Resources Defense Council*

One key deep-seas environment is the Arctic, where ice melt due to climate change is having a profound ecological impact while opening up a pristine environment to exploitation. Gas

and oil, fishing and shipping interests will all be moving into the area, Ms. SPEER said, and “our preparation ranges from bad to nonexistent.”

No international standards currently regulate gas and oil exploration in the Arctic, and no framework exists for establishing MPAs nor for assessing the impact of human activity, she added. At the same time, the Arctic represents an opportunity to implement ecosystem-based management from the start, Ms. SPEER and other participants agreed.

Scientists have identified areas particularly important to the Arctic ecosystem’s resilience, and next May’s ministerial-level meeting of the 8-state Arctic Council “may be the best chance to put in place management of future activities,” according to Ms. SPEER. There is widespread support for the process but one question is Russia, whose political will is not clear, she said.

Robert CALCAGNO, Managing Director of Monaco’s Oceanographic Institute, outlined another opportunity which grew out of last year’s MBI - the planned international scientific symposium on deep seas to be held at the Paris branch of the Oceanographic Institute in October 2011. Gathering representatives from the scientific, industrial, economic, legal and political fields, it will address the current state of, and threats to, the deep seas as well as the outlook for exploitation, policies and governance. The symposium should also help raise public awareness of the issues, Mr. CALCAGNO noted.

Participants agreed that tackling the spiny question of areas beyond national jurisdiction constitutes a precondition for meaningful protective efforts such as MPAs in deep-sea ecosystems. The UN has a task force dealing with marine biodiversity beyond national jurisdiction, pointed out Biliana CICIN-SAIN, co-Chair of the Global Forum on Oceans, Coasts and Islands. The task force’s working group is to meet in June. Increasing regional experimentation to generate case studies would be helpful, because “when you have concrete examples, global discussion becomes easier,” she said.

One obstacle to gaining such experience in the deep seas is technology, warned Sylvia EARLE, National Geographic Explorer-in-Residence and founder of SEAlliance. Only five submersibles worldwide are able to visit the depths, and they can only go half-way to the deepest ocean floor. Only one has gone to the bottom, and that was 60 years ago, she pointed out, whereas “there is life all the way down.”

“We’re trying to make decisions about exploiting the unknown. That’s not acceptable. We must seriously commit to the technology enabling exploration,” and until then exercise the precautionary principle, she said.

Despite the legislative and technological hurdles, the deep seas also represent an opportunity for the development of MPAs, Ms. EARLE suggested, because the areas involved, such as the Arctic, mostly situated far from nations’ borders, offer the chance to shift toward much larger protected areas.

Dan LAFOLLEY called the Arctic “an opportunity and a concern wrapped up in one.” To him, the biggest threat to the Arctic sea is acidification, which he estimates will affect a major percentage of those waters within 10 years, causing them to become corrosive to organisms. The challenge will be to bridge the gap between the science on acidification, and protection, which requires working with local communities and political leaders, he said.



SESSION 2. "Large Marine Animals: keystone species crucial to ocean health"

Moderator: Philippe CURY, Director of the *Mediterranean and Tropical Halieutic Research Center of France's IFREMER*

This session focused on strategies for using marine protected areas to assist recovery of large marine animal populations. Large marine species migrate over huge distances, making MPAs, which tend to be small, necessary but insufficient, participants agreed. Other measures such as fishing restrictions are needed, accompanied by effective, continuous enforcement, Mr. CURY said, noting the sobering example of the moratorium on big-eye tuna fishing in the Gulf of Guinea, which collapsed when fishermen became aware that they could infringe it with impunity.

Dan LAFOLLEY said that given large marine species' range, it was a question of MPA "connectivity" – of viewing networks of MPAs as "stepping stones and corridors" for these migrating creatures, linking up seas as distant as those of Hawaii and Russia, for instance. Protection must be coherent: it would be a tragedy if, having protected whales and dolphins for most of the year in one area, they were then exposed to devastating levels of underwater sound somewhere else. All of this requires better management and sharing of science and databases, he said.

WCPA Mediterranean and Black Seas Marine Coordinator Giuseppe NOTARBARTOLO DI SCIARA said that the impact of climate change on large marine animals makes it even more important to reduce other threats. Such efforts are hindered by a lack of communication and coordination in maritime activities.

"A major military exercise is underway right now in the Mediterranean involving extensive use of sonar right over an important underwater shelf," he noted. "We know this is dangerous! We could provide indications on where to do this with less harm, but there's no communication," he lamented.

Olivier LAROUSSINIE, Director of the Agency for French Marine Protected Areas, suggested combining MPAs, which can protect key feeding, migration or reproduction zones, with measures to limit bycatch by the fishing industry, collisions with ships and sonic pollution. Furthermore, given that large marine animals' habitats are international, actions must be, as well. Effective action requires knowledge of the species but also of the effects of interaction with human activity, he suggested. The difficulty lies in the fact that zones of greatest interaction and harm to species tend to be those where economic interests are strongest.

Measures must be accompanied by a monitoring system to evaluate effectiveness, and such a system must be ocean-wide, not just limited to MPAs. Such systems exist, he said, citing SCAN in the Atlantic Ocean, France's REMMOA and the ACCOBAMS SURVEY project in the Mediterranean. They are costly but only such programs can provide us with the information necessary to adapt systems of protection, he argued, adding that technological innovation should make them less expensive in the future.

Finally, communication is essential, said Mr. LAROUSSINIE. "Politicians care about what interests the general public," he noted. He suggested a documentary approach gathering old photographs and film footage as well as accounts of elder fishermen and sea-divers to show that "the baseline isn't the current state of affairs but an ocean in which large fish were abundant."

Sebastian TROËNG, Vice President in charge of Marine Conservation at Conservation International, explained that MPAs were crucial in protecting the most sensitive stages of marine animals' life cycles, such as aggregation and reproduction. Networks of marine protected areas that protect several of the life stages for individual species are even more effective. The Eastern Tropical Pacific, where multiple shark species move between sites in Costa Rica, Colombia and the Galapagos in Ecuador has demonstrated that intelligent networks of MPAs "can reduce mortality of large marine animals to sustainable levels," he noted. This is sufficient to allow marine animal populations to recover and prosper, Mr. TROËNG explained, adding that "we don't have to be perfect."

Global databases are indeed crucial tools to help define indicators of success regarding MPAs and to guide their creation, he agreed. He singled out two existing ones - the Society for the Conservation of Reef Fish Aggregations' database on spawning aggregations and the State of the World's Sea Turtles (SWoT) database on sea turtle nesting beaches - as particularly useful.

Regional MPA design builds networks that enhance species protection but also yields economies of scale, Mr. TROËNG pointed out. This is why most of CI's marine conservation investments in recent years have gone into large regions called "Seascapes," which represent 43 of the 53 new marine protected areas CI and its partners have catalyzed in that period, he said.

He agreed that in addition to MPAs, other conservation measures were needed to protect large marine animals. Restricting international trade in endangered species is important. "Adding the blue fin tuna to CITES would be one such measure and I commend the Principality of Monaco for its global leadership in promoting such a listing," he said.

