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Working Commission

What conditions for the emergence of a “Blue Society”?

SYNTHESIS NOTE

Oceans are recognized as the guarantors of the natural balance of our planet. But today, various pollutions, unlimited exploitation of marine resources, destruction of biodiversity and marine habitats, are endangering the balance of this fundamental ecosystem. It is time to rely on innovations and new technologies of marine resources' exploitation, which will open access to new types of wealth while preserving this living space. In logic of co-construction, government, local authorities, companies and civil society have to think together the emergence of a new society, the "Blue Society", a society based on the sustainable and shared wealth of the oceans. This "Blue Society" should be organized around new economic, social, environmental and governance models, in order to improve the living conditions of populations and achieve a behavioral change to achieve a fair sharing of oceans' wealth. What are the conditions for the emergence of a true "Blue Society?"

Overview

Two hundred years ago, we created a new society in which industry was the driving force. Even though that revolution brought many benefits to humanity, our current economic model is on its last legs because it did not take into account the planet's finiteness and its limited resources. We could not have known it two hundred years ago, but today, amidst the current environmental, economic and social crisis, it is time to react and to transform the crisis into opportunity and reinvent a new future. Most of the components of the solution to this issue will arise from the sea through the invention of a new sustainable and peaceful governance of the marine richness where entrepreneurship will play a key part (innovations and biotechnologies from the marine habitat; industrial benefits of the ocean for the human society; socio-economic revolution that considers the ocean both as the key to the planetary balance and as a source of solutions for the future of humanity; social and cultural approaches making transition concrete and attractive...).

Oceans cover nearly three-quarters of the surface of the globe, surround approximately 550,000 km of coastlines. Ocean is the cradle of life, the foundation of the planet's natural balance. It is home to millions of species, from microorganisms to whales, as well as living and mineral resources essential to human beings. It regulates the climate, has a major role in the water cycle, produces half of the oxygen in the air and recycles the nutrients... it's the final frontier to be explored and discovered, an area with amazing potentials.

In the light of that situation and the resulting emergency for oceans and for humankind, five organizations, Green Cross, Nausicáa, SeaOrbiter, Tara Expeditions and the World Ocean Network came together to create the Alliance for the Seas and Oceans on June 22, 2012 in Rio. Its purpose is to put forth concrete elements in terms of the legislation on international waters, which make up 65% of the surface area of the oceans, as well as to promote an awareness of the core role of marine areas in preserving the planet's big natural equilibriums, particularly by developing awareness and education programs to the mainstream audience and to the youth. It also aims to promote the development of more sustainable practices in order to favor the durability of business activities compatible with the preservation of marine ecosystems.

During the Yeosu International Conference in South Korea on August 12, 2012, Ban Ki-Moon, Secretary General of the United Nations, launched a new initiative called "Oceans Compact" in order to protect the oceans and the people whose livelihood depends on the sea, and to federate the international community around this issue. An Ocean Advisory group will be created soon in order to draft an action plan, followed by fast implementations. By 2025, every country should have set goals to decrease contaminants disposals. At least 10% of the coastal and marine zones should be under protection measures. The initiative also calls for a strengthening of the fight against illegal fishing, the rebuilding of the fish stocks and the eradication of invasive species.

A new approach: creating the Blue Society by going beyond a simple resources preservation approach to value the potential of seas and oceans

The resources of the ocean are limited and those we currently utilize are already under serious threats, yet there are still resources that are not well-known and have a tremendous potential that is hard to imagine:

- The oceans' resources have been estimated at sixteen thousand billion Euros, which represents twice the inland resources' worth;
- 80% of the Earth's mineral resources are underwater;
- 50% of anti-cancer drugs come from the sea.

Blue Society stands for believing that oceans have a tremendous potentiality that provides us opportunities to improve our life by benefiting from its resources while preserving them. It means having faith in the imagination of men, as well as believing in experiences-sharing and in development. It also means believing in fairness, in the citizens' key role and in a common thinking named oceanity. Lastly, Blue Society means a renewed confidence in innovation and creativity, as the new revolution it prepares also relies on an industrial gamble and on new technological innovations.

Concretely, we wish to reconcile humankind and oceans, to put an end to the slow deterioration of marine habitats, and better still to make the oceans the solution to fix the planet and support humankind.

How? - Three directions

1. A genuine planning policy for coastal territories

Recommendation 1.1: management of the entire water cycle through an integrated approach by drainage basin, from the clouds to the oceans

Territories development policy should focus on three issues:

- Putting an end to the scattering of activities and locations by replacing countless intertwined sectoral approaches with a transversal approach of the drainage basin;
- Using the coastal line to establish a more fluid interface between land and sea;
- Anticipating the impacts of climate change, preparing and adapting to the environmental threats.

Such policy could not be designed without an integrated approach of the drainage basin akin to the entire water cycle process, from evaporation to clouds to streams, rivers, deltas, littoral and oceans.

A drainage basin, or catchment area, can be defined as a territory that drains all its water bodies to a point of convergence - a watercourse or the sea - , until they reach the deep ocean currents¹.

Land-based pollution is a major cause of the ocean's global ecological crisis in these areas. Australia-sized floating plastic masses, nitrates deadly for the coastal ecosystems, pollution by hormone and other persistent pollutants all increasingly affect the sea. These pollutants discharged by man in large rivers and untreated sewage networks eventually reach the sea, and their effect on marine biodiversity is still largely underestimated.

Recommendation 1.2: developing the re-conquest of the ecosystems, starting from the estuaries

The fight against pollution should be carried out as much upstream as possible. Deltas or estuaries are areas where industrial, touristic and agricultural activities are intense, which lead to several issues that can hardly be reconciled. Euphrates, Rhône, Guadalquivir, Loire... these are all remarkable mouths, but also areas so damaged that they need to be rehabilitated. Elsewhere, usually at the far end of bays, the challenges include the treatment of ports mud and cleaning up harbor wastelands. All of these issues require fast, consensual and funded democratic responses. In France, the structured approaches by basin committees showed their appropriateness as regards the integrated management of rivers. The next step is to widen that management mode in order to set up a "blue agenda" for the coastal zones (maritime affairs and strategic facilities integrated to the basin commission).

Recommendation 1.3: Rethinking the land-sea interface on the long-term and by valorizing; its socio-economic potentiality

Beyond the recovery of the habitats, it is essential to reconsider the role of the land-sea interface in an extremely operational and forward-looking perspective. The purpose is to put the ports at the heart of the economic, social and human development and to restore the coastal line's ecologic qualities. It could be implemented for example by repositioning sea transport as a natural extension of the city, by connecting bus, trains, undergrounds, bike lanes, roads and transport by sea, by creating new freight area to smooth the land/sea logistics. Concrete initiatives are required, such as the Euroméditerranée project in Marseilles, which aims to put the sea at the heart of the city, and as shown by the Innovation Maritime Centre in Quebec, special research works must be conducted².

¹ http://www.futura-sciences.com/fr/definition/t/developpement-durable-2/d/bassin-versant_6628/

² The goal is to develop a shared interest in ship technologies, port equipments and facilities, as well as information technology.

<http://www.imar.ca/en/industry-sectors/port-management-and-marine-transport/>

Recommendation 1.4: co-constructing “territorial demonstrators”, innovative and replicable economic systems that bring new dynamics to coastal zones and are built on innovation and entrepreneurship

The transverse and integrated development policy for coastal territories described herein requires the use of demonstrators that will expand the scope of possibilities as well as synergic efforts from every party. It is particularly vital for the food industry as well as the energy and transportation sectors; it will also mould our ability to create virtuous cycle in urban areas and rural territories.

The Bay of Saint-Brieuc territory project, for example, which featured at the start the development of an offshore wind farm, is also rich in tourism, innovation and sea services opportunities. It is the result of a solid territorial dialogue focused on structuring economic initiatives born during the creation of the pioneering scallop industry as early as the 80s.

The scallop, nowadays endangered by the uncontrolled growth of green algae resulting from the high level of nitrates on beaches and polluted waters and originating from pig farming, is the symbol of a successful transition of the fishing industry of the area. The Bay of Saint-Brieuc is now in need of a new life, through a pioneering offshore wind farm project, as well as through the ecologic transition of its farming sector in order to clean the coast, and finally through an economic project focused on the territory. All these initiatives belong to an ecosystem of economic and ecologic activities of the bay area.

Recommendation 1.5: Developing experience-sharing and international benchmarking of best practices, particularly in risk prevention

It is also essential to take into account the risk prevention issues and establish international cooperation for the development of global innovations, mitigation and adaptation solutions.

The coral reef of Townsville (Australia) was subjected to massive discharges by the chemical industry, the heavy industry and the tourism sector³ for years. Once the extent of the damages was realized, measures were taken in several steps: protecting it from threats by prohibiting various activities, restricting the discharges and finally recovering the reef with an emphasis on its tourism potentiality. Eventually, all the stakeholders win when a territory is restored and recovered.

The same approach should be used in preparing the coast line in anticipation of the effects of climate change or the consequences of environmental threats: instead of reacting to environmental threats, the goal is to use smart coastal town planning to anticipate them. Should we keep using sea walls and dykes for 100 more years, and thus making the “natural” environment less and less natural, or restore wetlands, as a way to escape the wrath of nature, to act as buffer and areas of biodiversity?

³ <http://www.theaustralian.com.au/news/nation/report-undercuts-kevin-rudds-great-barrier-reef-wipeout/story-e6frg6nf-1225826128644>

The process requires that all stakeholders are consulted in order to build together the components of the answer to a problem which, often, is the result of past practices. The gulf of Morbihan situation illustrates that requirement: the gulf has a serious problem of harbours' mud, which were discharged into the sea, thereby harming the fishery resources. Local elected representatives try to coordinate with fishermen, tourism professionals and environmental associations in order to find a reasonable solution to the situation⁴.

2. *An extended sea industry built on shipbuilding, ship disassembly, energy and transportation*

Recommendation 2.1: promoting of the development of a clean shipbuilding industry

“Clean shipbuilding” is the new challenge of that industry. It corresponds to a current expectation, and funding is available. There are still methods to develop, such as coming up with an industrial vision, the shipyard's equivalent of the Airbus program, or a vision for marine energies and its ecosystem of innovation, perhaps through the GICAN (Groupement des Industriels de la Construction et des Armements Navals), the French ship building organization? Military spending may also play a key role in developing this industry.

Recommendation 2.2: favoring the expansion of a genuine disassembly industry

Ship disassembly is gradually asserting itself as a promising industry. To kick-start the sector, we suggest to append to any ship sale contract a provision covering its end-of-life disassembly, with a percentage transferred to the user for rented ships. We also advise the establishment of European clusters serving this new market and consisting of big companies leaders in their fields and of specialized SME.

Beyond the IMO's International Ship Recycling Trust (ISRT)⁵, the initiative should aim to incorporate the ships' disassembly costs into their running costs so as to build sustainable solutions at the international level, particularly by cooperating with South Asian countries so as to ensure that they can benefit from the new system.

It is also essential to instigate a programme to dismantle or to renovate the obsolete harbour facilities (or wastelands) and to upgrade the existing grey-water and black-water treatment and processing systems to an appropriate level, since the ships are increasingly equipped with the proper equipments.

⁴ <http://www.hydroplus.info/presse/environnement/actualites/1712/golfe-du-morbihan/bataille-sur-le-devenir-des-boues-de-dragage>

⁵ <http://www.imo.org/ourwork/technicalcooperation/documents/brochure/english.pdf>

Recommendation 2.3: developing the marine industry's energy efficiency, starting from transportation

Energy efficiency is one of the main issues of the marine industry. Following the “Navires du futur” (Ships of the future) Call for Interest, a systematic use of the demonstrators will contribute significantly towards it. We also recommend that in France, Ifremer’s creation of a marine energy platform is continued, in cooperation with ADEME and the competitiveness centers.

Under such context, we believe it is essential that the use of specialized funding and private initiatives that might include innovative funding (particularly CEE) should be expanded and more widely used.

Recommendation 2.4: developing coastal economy through ambitious energy projects (Deconcentrated, Diversified, Carbon-free and Democratic)

Wind energy, which is not a marine energy but rather an offshore land energy, is an important component of the development of coastal economy, particularly through the creation of new equipments and reliable infrastructures; but the same efforts can also be applied to other promising forms of energy production: marine current energy, wave and tidal energy, thermal energy, biomass, algae fuel...

Island territories constitute perfect areas to launch innovative projects, try new techniques and adapt the current technologies. As such, off-shore wind farm projects are opportunities to launch a strong economic sector on the territories where they are built. The offshore requests for tender are an opportunity to promote new key players, who will operate internationally while keeping ties with their network of local suppliers. Put to good use, this will be a significant contribution to employment and innovation.

The Bay of Saint-Brieuc offshore wind farm project is a good example thanks to its high potentiality in terms of value creation, the result of a strong and gradually organized network of companies, a high awareness to the energy issues and the ability to incorporate the offshore wind energy into a territory project of ecological transition on a territory historically built upon food industry, farming and fishing industry.

3. A sustainable response to the food and health issues

The fishing industry is currently under serious threats worldwide, among which are the depletion of fish stocks, the exhaustion of the resource as well as the anticipated loss of food biodiversity if we do not change our dietary habits and the resulting market mechanisms.

Aquaculture is supposed to be an alternative to the depletion of the stock of wild fish, but it faces two serious restrictions, which effects intensify the impoverishment of the sea. Indeed, it is unable to implement appropriate food chains, and it can only handle carnivorous species at the top of the chain, even though the farming of these species requires a very high consumption of energy.

Recommendation 3.1: developing regulated aquaculture and fishing

The purpose of the *Blue Society* is to promote regulated sustainable fishing and aquaculture practices. The goal is not to prevent fishing altogether, but rather to transition it towards more sustainable forms. France has serious scientific, economic and geographical assets in this domain, mostly thanks to its overseas territories, and that could help him to become an industrial leader in terms of regulated aquaculture and fishing.

Therefore, a partial answer to tomorrow's food issues lies in our ability to create these new, sustainable and responsible sea farming technologies, like the drifting marine farms that take advantage of the principle of aggregation of living things that result in the natural phenomenon of the appearance of a small ecosystem and its associated food chain under a floating object, or the holothurian farms in Madagascar.

Recommendation 3.2: disclosing the health and food potential of microorganisms

Identifying marine microorganisms such as microalgae or cyanobacteria is a path to the mass manufacturing of food proteins (food supplements). Since predatory fish, often at the top of the food chain, is becoming scarcer worldwide, these proteins will be a good replacement while also being available to a greater number of people.

The discovery of spirulina alone, which is by now massively farmed across the world, gave birth to a lucrative food supplement market, but also fulfilled the basic needs of hundreds of thousands of refugees or malnourished people.

Countless similar organisms are waiting to be discovered and exploited. Plankton and algae are known, for example, as having outstanding properties as anticoagulant, anticancer drug and antiseptic... There is an estimated pool of 10 to 100 billion of organisms making up 98% of the marine biosphere. It has a remarkable genetic diversity that is extremely promising for the aforementioned domains, and generally speaking on the domain of marine biotechnology (chemicals, energy, nanotechnology...)

Microorganisms play therefore a significant role in the food autonomy issues of the coastal territories, in terms of quantity and quality alike, since sea products have an important and yet to be tapped into nutritional potential.

Recommendation 3.3: promoting symbiotic farming and multi-species aquaculture

Diversity is a required condition for Nature's resilience, strength and agility, inland and under the seas alike.

For that reason, we suggest a massive development of multi-species aquaculture that reconciles respect of ecosystems and quick and high intensity capabilities.

Many examples have been highlighted in the natural equilibrium, but to date, few have been industrialized. The semi-closed Baltic Sea is an interesting case: three species make up most of its fishing. Cod, herring and sprat represented 94% of the total catch of 2010. The Baltic Sea is an almost

closed area where the three species interacts with each other: juvenile cods eat sprats; adult cods eat sprats and herrings; sprats and herrings eat cod eggs and larvae. Preserving such delicate balance is therefore extremely important, as the proliferation of one of them would harm the two others. That gave birth to the idea to draft a multi-species multi-year plan, expected to be presented in mid-2012 and that has to date received favourable reviews from the stakeholders of the Baltic Sea fishing ecosystem.

Multi-species aquaculture ⁶ is also implemented under the CRISP ⁷ project (Coral Reef Initiatives for the Pacific). Postlarvae are caught in the coral reef using plankton nets, put in a hatchery and sold to aquarists worldwide, without disrupting the environment.

The same technique is in use in agriculture. Having ducks and crayfishes together on paddy fields is one of the most effective ways to optimize the fields' yield. This technique, created and made popular by Takao Furuno in Japan and highlighted in Jean Paul Jaud's documentary "Severn", allows the farmer to take advantage of having several products to sell, and at the same time provides a much superior yield compared to the traditional techniques.

Multi-species aquaculture, the result of a thousand year of obviously partial observation has not been extensively researched and assessed yet. Amongst the pioneering initiatives are the works of CIRAD's UMR Intrépid⁸ in France, a few symposiums organized by Ifremer⁹, as well as the industrial-size demonstrators in the Bay of Fundy in Canada (salmons, blue mussel) by the University of New Brunswick¹⁰, with the help of the Federal government and the industry.

Recommendation 3.4: steering the Fishing Policy towards selective fishing, using innovation to promote and value sustainable practices

The Common Fisheries Policy (CFP) is in dire need of modernization because of the depletion of resources and the necessity to provide clear directions to the fishing industry.

Innovation now gives the ability to perform a more selective fishing, by choosing the fishing vessel, the fishing area and period, the species, or using personal identification. The increasing price of fuel as well as the depletion of stocks legitimate from an economic standpoint these methods that were previously seen as obsolete and neglected by innovation. A more selective fishing requires more flexible rules that would allow these sustainable fishing techniques to become widespread instead of the automatic punishment of any "bad" practice. The most appropriate way would be to use payment mechanisms for the services provided by or to the oceans (innovative funding). By modifying these kinds of practices, fishing will also be less demanding and less dangerous for fishermen and their work conditions will improve.

⁶ SPC Live Reef Fish Information Bulletin #10 – June 2002

http://www2008.spc.int/DigitalLibrary/Doc/FAME/InfoBull/LRF_VF/10/LRF10VF.pdf#page=27

⁷ <http://www.crisponline.net>

⁸ <http://www.cirad.fr/nos-recherches/unites-de-recherche/intensification-raisonnee-et-ecologique-pour-une-pisciculture-durable>

⁹ <http://archimer.ifremer.fr/doc/00001/11222/7729.pdf>

¹⁰ <http://www.mar.dfo-mpo.gc.ca/f0012208>

Recommendation 3.5: preventing conflicts related to loss of resources

The purpose of the suggestion of a plan to use the seas wisely when it comes to human activities is also to anticipate the conflicts related to the depletion of marine resources. The link between the impoverishment of Somali fishermen, whose fishery resources have been exhausted by industrial and international fishing, and the rise of piracy in the Gulf of Aden has for example been evidenced. The fight against piracy alone is therefore inadequate, it must be combined with the restoration of ecosystems and an effort to promote handicraft activities. The military call this approach “global approach” and it is part of the European recommendations regarding maritime security.

...How –emergency measures also!

Measure no.1: fighting more efficiently against pollution through early identification, strict control and best practices sharing

Four types of measures may be implemented immediately:

- **Controlling pollution, particularly on coasts** (80% of sea pollution are land-based), but also on the open sea. Jean-Michel Cousteau has been advocating a strengthened international legal framework¹¹ for chemical pollution for many years. Thanks to the REACH directive on chemicals that ensured a better traceability, it is possible to require individuals and corporations to pay discharge fees. OECD also suggests the creation of tradeable discharge permits along the lines of the CO2 emissions permits. Subsidies and/or soft loans may also be granted to organizations actively fighting against pollution¹².
- **Establishing surveillance mechanisms for coastal zones of fragile states or countries**, in order to restrict illegal storage of toxic wastes.
The sea is used as storage area for some incinerated chemicals and as dumping place for nuclear fuel, even though the sea’s assimilative capacity is still unclear. The London Convention of 1972 was amended in 1996 by a Protocol prohibiting the storage of nuclear fuel¹³. New surveys regarding the effects of these pollutions as well as decontamination and reprocessing solutions should thus be conducted.
- **Preventing of pollutions at their point of origin through an approach per drainage basin.**
Coastal pollutions on closed and semi-closed seas lead to cross-border tensions, hence the necessity of a better coordination between national and regional policies and of cross-border legislations, particularly in closed and semi-closed seas. The Tehran Convention of 2011,

¹¹ <http://www.oceanfutures.org/action/toxic-flame-retardants/how-you-can-help>

¹² OECD Development Assistance Committee, Guidelines on Aid and Development, no.8
<http://www.oecd.org/dac/environmentanddevelopment/1887756.pdf>

¹³ EPA, July 2012, *Implementation of Marine pollution treaties and International Agreements*,
<http://www.epa.gov/oia/water/marine/treaties.html#ocean>

launched by the 5 nations surrounding the Caspian Sea, for example, laid down the guidelines to strengthen the fight against oil discharges and to improve the monitoring of pollution sources¹⁴.

- **Promotion of international cooperation and mutual help between countries** in order to help the most fragile to increase their capacity to monitor their maritime and coastal zones.

Measure no.2: Developing specific knowledge on diffuse pollutions

Diffuse pollution is the pollution of waters resulting from contaminants that leach from the land surface and affects waters in an indirect way, through the soil or through waters from rainfalls or irrigation¹⁵. Diffuse pollution is a side effect of several types of activities and several waste/pollutant discharge sources that cannot be distinguished¹⁶, such as oil and other fuel leaks, agricultural nutriment by-products, industrial wastes and even noise¹⁷.

80%¹⁸ of sea pollution originates from inland, and most of it from agriculture. Other sources include marine traffic, recreational activities, fishing, food, transportation, industry or drugs. An example of such pollutions is the explosion of green algae in Brittany resulting from pig farms nitrogen wastes.

In France, the new law of December 2006 on water and aquatic habitats (Law no. 2006-117, JO of Dec 31, 2006)¹⁹, addressing the goals of the European Water framework directive of achieving good qualitative and quantitative status of all water bodies by 2015, contains tools against diffuse pollutions, particularly with the support of the water agencies.

This kind of policy needs to be developed and extended to coastal zones, using tools that promote actual efforts and concrete results (the recovery of the Senegal River should be an inspiration on that matter).

Measure no.3: Establishing a legal framework controlling the prospecting and extracting industry and based on the precautionary principle, the prevention principle and the polluter-pays principle

Sea extraction/mining isn't governed by regulations similar to land extraction, and yet human activities conducted on sea bed or water column, whether inside exclusive economic zones or in high seas, might be detrimental to the well-being of people living in the coasts and beyond. The extracting

¹⁴ UN, August 15, 2011, *Caspian Sea States take further steps against oil pollution under UN-backed treaty*, <http://www.un.org/apps/news/story.asp?NewsID=39296>

¹⁵ http://www.dictionnaire-environnement.com/pollution_diffuse_ID1031.html

¹⁶ European Environment Agency, Diffuse pollution, Environmental Terminology and Discovery Service, http://glossary.eea.europa.eu/EEAGlossary/D/diffuse_pollution

¹⁷ Ibid

¹⁸ The National Academies, 2007, Pollution in the Ocean, Ocean Sciences Series, <http://dels.nas.edu/resources/static-assets/osb/miscellaneous/osb-pollution-in-ocean.pdf>

¹⁹ Journal Officiel, 31 décembre 2006, Edition n°0303, Loi n°2006-1772 sur l'eau et les milieux aquatiques, <http://www.journal-officiel.gouv.fr/frameset.html>

companies must therefore be made more accountable, all while complying with the maritime laws' specific nature.

Such objective will not be achieved quickly and in a concrete manner using the traditional approach. The Montego Bay convention took 15 years to be ratified, and an international legislation usually enters into force after 10 years. The issues related to marine resources exploration and extraction need quick responses in order to avert major environmental disasters (Deepwater Horizon in the Gulf of Mexico, Elgin Franklin in the North Sea...). It is therefore interesting to notice that Brazil considers incorporating the threats of subsoil mineral extractions and seabed exploitations into its body of criminal laws²⁰.

We believe that the first step to accountability on all infrastructures may be a transparency requirement, such as what the Robin des Bois association calls a facility "ID" that would include the key dates of its existence, the depth of the water, the depth of the drilling in the ocean subsoil, the flag, the name of the companies involved (owners, operators, subcontractors...), the accidents that happened on the site (fire, oil spill...) and the nature of the main discharged materials²¹. The resulting knowledge base should be shared at the European level, and it should apply to any project within the European area or involving European companies, in the same way the REACH directive has been applied to chemicals.

France, which has the second largest publicly-owned coastal zone in the world (97% of which is overseas) should be a pioneer on this topic, particularly through the creation of an agency or authority that will be in charge of all the functions that are currently scattered elsewhere.

Measure no.4: informing, raising awareness and promoting sustainable and responsible fishing labels

Since negotiations between states on matters of fishing and aquaculture are at a standstill, the alternative is to promote actions from the civil society to establish a social and environmental code of conduct on a voluntary basis. Consumers should be made aware of the characteristics of the sea food sold to them and be able to make sense of all the existing labels, particularly the self-certified ones.

The credibility of labels should rely on strict control and traceability mechanisms conducted by third-parties and satisfying several conditions: products lifecycle, guarantee of collective consultation and development, free access, transparency, frequent reviews of the requirements, third-party certification.

The environmental and social standards represented by the labels should be harmonized on the basis of the existing strictest criteria, for example by supporting the efforts of the ISEAL Alliance

²⁰ <http://www.zegreenweb.com/sinformer/le-bresil-ne-veut-pas-d%E2%80%99un-autre-scandale-bp,12300>

²¹ <http://www.marine-oceans.com/environnement/3113-plus-de-transparence-pour-loffshore->

(International Social and Environmental Accreditation and Labelling). A European environmental label for Sea products might also be created. The certification fee for such label would then be calculated on the basis of the total sales, including non-certified products. That would make the certification more affordable and attract more attractive to companies.

Several reliable sustainable fishing ecolabels already exist, such as MSC (Marine Stewardship Council)²² or Marine Ecolabel Japan (MEL Japan)²³. These labels are however not widespread and recognized enough in France, even more so because they are only found on frozen, semi-preserved and preserved products.

Consumers must also take a more active role in preserving the marine resources, thanks to initiatives such as the Mr. Goodfish programme²⁴ launched in March of 2010 in order to inform the consumers and inventory the seasonal fishes which stock are at healthy levels in order to positively affect the consumers' buying habits.

The retail sector should also promote labels by adopting a responsible approach, favouring sustainable sourcing, selecting and supporting certified suppliers, contributing to the certification costs of small fishing companies and dividing fairly the costs and profits in the entire industry's value chain.

Government has also an important part to play by organizing tax incentives for the most exemplary companies, by conditioning public funding to environment-friendly projects and by favouring labelled product for its purchases.

Labels should also start taking into account the rise of artisanal and sustainable fisheries, as well as the changing dietary habits towards fishes located lower in the food chain.

Measure no.5: monitoring the health of the plankton and healing the planet

Not only Plankton is the lung of the Earth, it is also an early indicator of the state of the sea.

The oceanic plankton ecosystem generates 50% of the oxygen in the atmosphere and is probably responsible for capturing an identical proportion of atmospheric CO₂. It is the foundation of the marine food chain and an important source of protein. The plankton ecosystem is made up of various organisms such as microalgae, viruses, bacteria, larvae and even small animals.

Plankton is the only planetary and unbroken ecosystem and has not been subjected to extensive scientific study yet. Since it is involved in several processes that are essential to life on the planet, it is obvious that anything that affects it negatively could bring serious disruptions, not only on the

²² MSC website: <http://www.msc.org/>

²³ MEL Japan website: <http://www.melj.jp/eng/index.cfm>

²⁴ Mr. Goodfish website: <http://mrgoodfish.com/>

climate level, but also for humanity itself. We are still quite unable to predict how the plankton ecosystem will evolve in light of the current and future changes. Monitoring the health of the plankton is also checking the pulse of our planet.

Measure no.6: understanding and industrializing marine bio-resources while respecting the ecosystems in order to quickly capture carbon and more easily generate core raw materials

Nature is a source of inspiration for the invention of tomorrow's industrial processes, yet it is still very little used. Photosynthesis and marine energy have been in use for several million years. Research have shown, rather recently, that several marine bio-ressources have largely untapped potentials for energy, therapeutic molecules or chemicals. Nature's toolbox is for example able to synthesize glass at almost 0°C temperature, thanks to diatoms, a unicellular organism! Such a perfect example of efficiency is not unique, as there are also similar potentials in drugs and medicines.

It might even be possible to imagine microalgae reactors that would be able to capture atmospheric CO₂ by photosynthesis and mineralize carbon to turn it into raw material. Even the possible storage of carbon by itself in order to quickly reach a satisfactory atmospheric level legitimates microalgae research. We suggest that photosynthesis should be examined, understood and reproduced in several deconcentrated and confined reactors across the entire territory; the resulting algae would then be collected and transformed into carbon. That carbon will be a new precious substance for various industries.

Measure no.7: developing information, research, training and innovation

Countless complex, integrated and multiple mechanisms take place in the sea. Thus, we will achieve a peaceful coexistence with it only by better understanding it. The goal is to inspire and to give concrete expression. Then it will be possible to inform people about the research and science jobs, to educate them on the global ecologic equilibrium, to support technological innovation through architecture, design, engineering... The final goal is to inspire people to build a better word and the tools to achieve it.

All the potential of the sea will remain untapped unless a significant investment is done in terms of **information, research, training and innovation**. The issues at stake require the complete involvement of every player: local authorities, local business networks and organizations, joint organizations, companies and innovation networks. They also call for the establishment of transition and/or equalization funding and innovative funding.

The focus should be on the following priority topics:

- Harbour development under a policy of urban renovation and restriction of man-made changes to the land and the sea, as well as an integration of mobility and activities and the development of a new form of urbanism.
- Eco-vessels, new propulsion methods, optimization of exploitation (particularly in terms of new methods of selective fishing and an optimization of the transportation logistics).

- Sustainable water sports and recreational activities.
- Assessment of the environmental challenges we face and the progress made to date.
- The micro/nano level and its proprieties.
- Marine energy and sea-based energy.
- The energy/transportation coupling.

These research fields will be developed through examples, demonstrators and actual symbols. National as well as local cooperations should therefore be established around specific or multidisciplinary issues. Through awareness policy as well as more specialized trainings, the goal is also to assemble the players in competence clusters, in order to organize and target a specific research towards industrial issues, as well as favouring the emergence of innovations, promoting initiatives and federating energies.

At the onset, these initiatives should also be designed in relation to the major source of employment in order to establish redeployment bridges towards new jobs.

The IPANEMA²⁵ initiative for marine energies is a perfect example that should be strengthened and widely replicated. An innovation centre would help to seize opportunities and promote these promising industries by virtue of technology watch.

...How - a governance to built

According to the international law, “High Sea” refers to bodies of water that are outside of national jurisdictions. The Montego Bay Convention on the Law of the Sea declares high sea as a “global public good” that covers almost the half of the planet’s surface area and nearly 65% of sea and oceans. Freedom of navigation applies in high sea.

A new legal framework is needed urgently as oceans and high seas are currently under countless threats. The current laws are fragmented, non-specialized and far from being comprehensive, there are a vast number of players involved. For us, establishing a new international **organization** is not an appropriate solution as that would only lead to delays, complexity and funding issues.

Initiative A: towards a special and binding legal status for high seas

High seas should have a special and binding legal status that would allow for international appeals, result in the unification of the existing agencies and organizations and be in line with the directions set by Nagoya, Rio+20 and Ocean Compact. The coordination of the existing agencies may be carried out under the purview of the United Nations Convention on the Law of the Sea, and the entity in charge should be clearly indicated.

²⁵ <http://www.ipanema2008.fr/>

Thirty years ago, 162 countries met in Montego Bay, Jamaica, for a conference which outcome was the most important agreement in history regarding the global management of oceans and high sea²⁶.

The legal framework for the international management of straits and oceanic areas beyond the 200-miles of the EEZ (exclusive economic zone) was created thirty years ago. Montego Bay is a historic agreement, and yet there is still no sustainable management of international waters.

Furthermore, new issues are at stake in addition to those identified during Montego Bay: besides pollution, overfishing or poorly regulated sea transport, there is now increasing urbanization of the coastal zone, diffuse pollution, population increase, effects of climate change, acidification of the oceans, proliferation of oceanic deserts, ocean stratification or coral bleaching. These issues require a global awareness and highlight the need for a new “Montego Bay” with a redefined perimeter.

Such an agreement would be unattainable without a drastic change of approach. The appropriate response should not only be up to the environmental challenges at stake, but also economically relevant, quick to implement and enforceable to everyone. Illegal fisheries, non-transparent mining operations, illegal trafficking, ballast water discharge, oil discharge and oil spills: all of these major issues directly affects the state of the sea and results in immediate and long-term economic and social costs. The goal here is not to “save” so and so marine species, but to “save” ourselves.

Furthermore, a recent study from the New Economic Foundation²⁷, show that over 3 billion Euros are lost every year because of the overfishing of known fish stocks. Such loss could fund more than 100,000 industry jobs and be a welcome injection of fresh money in a haemorrhaging country.

Initiative B: expanding the competences of the International Seabed Authority to water columns and giving it the means to carry out its missions in an operational way

This would be an important first step towards the international regulation of the protection of biodiversity on high seas. The ISA should have the means and proper funding to carry out its law-enforcement mission, while favouring mediation processes that may be under the purview of the United Nations. Rio+20 makes that first step possible, but it would require a gradual and progressive approach.

Initiative C: creating of a worldwide network of marine protected areas

The basis of this initiative is the Johannesburg Plan of Implementation of 2002 through which the member countries agreed to create a worldwide network of marine protected areas, as well as the decisions made during the 2010 Conference of Parties of the Convention on Biological Diversity in Nagoya during which the goal to list 10% of marine and coastal zones, including in high sea, as Marine Protected Areas was adopted.

²⁶ Called UNCLOS (United Nations Convention on the Law of the Sea) agreement, it was only ratified in 1994.

²⁷ “Jobs lost at sea, Overfishing and the jobs that never were”, New Economics Foundation, Feb 2012

There is still a long way to go to reach that goal since to date less than 1% of oceans are listed as marine protected areas. Establishing a Blue Society requires to go even further than the decisions taken during the conference.

Hence, we recommend a proportion of 20% of marine protected areas by 2020, the purpose being sustainable resource management rather than mere protection. As such, we appeal the European Union to undertake a major role for the achievement of that goal by taking the lead and listing many of its maritime zones as Marine Protected Areas by 2015.

To that effect, the 3rd International Marine Protected Areas Congress in France (Marseilles and Ajaccio) in October 2013 should act as catalyst towards the achievement of that goal by:

- benchmarking the various marine protected areas management methods in order to gather the best replicable practices,
- applying the concentric zone model already in use in natural parks to marine protected areas so that the latter go beyond their environmental protection mission to also encompass economic, social and cultural development,
- implementing decentralized cooperation and solidarity mechanisms, particularly for coastal zones, through the use of innovative funding (“green and blue funds”, standardized aquatic restoration operations...), starting for example with CO₂ capture, multispecies aquaculture and sea-based energy.

Initiative D: transforming the Arctic into a laboratory for the previous initiatives (legal status, extended ISA power, marine protected areas)

Most of the Arctic Ocean is under the sovereignty of five countries (Canada, Denmark - through Greenland, United States, Norway and Russia), through their EEZ and borders that are still challenged.

At a time where the sea ice shrinks progressively and where its melting releases significant quantities of methane gas into the atmosphere, and where the area is coveted for its oil and gas reserves (20% of the planet’s reserves) as well as for its other natural resources (minerals and non-minerals riches, tremendous fish stocks), it is time for a quiet governance.

The current Arctic Council is an intergovernmental forum addressing the issues of cooperation, coordination and interactions between Arctic countries, but it is an organization without coercive powers, or even a permanent secretariat.

We believe that the Arctic should not be under a special status. We recommend instead turning it into a model of the form of international governance that should apply to marine habitats, as much as possible in an ambitious and voluntarist way, with the support of all the stakeholders of the area.

Initiative E: revitalizing and reinventing the wonders of the oceans

The surface of the ocean is the only system that would allow a massive capture and storage of the excess of greenhouse gases in the atmosphere, if we were even capable of discovering how to do it. Oceans already do that job very effectively by capturing 70% of the carbon dioxide by photosynthesis.

We believe that it may be possible to make use of plankton or microalgae to achieve a significant level of capture of carbon and decrease the atmospheric levels satisfactorily, but that requires a serious effort as emphasized in our measure no.5.

Once that result has been achieved and once the measures and initiatives above mentioned have produced their first results, we believe (and would like to measure it) that the health of the ocean will progressively improve.

Thus, we would go from insufficient legal framework and non-transparent management to quiet and peaceful governance that does not require possession, a shared and transparent, peaceful and democratic management of a rare, rich and wonderful common good.

It will be an exceptional case of collective intelligence and co-construction. Our better grasp of marine habitats and their restoration will likely be just as enchanting and moving as the quality of that common construction and the discoveries, innovations and social construction resulting from the new mechanism.

Consequently, we collectively wish to start working and sharing our efforts on revitalizing and reinventing the wonders of the sea.

LIST OF THE WORKING COMMISSION MEMBERS

Experts involved:

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-**Mrs. Sylvia EARLE**, Oceanographer; Explorer-in-Residence, National Geographic Society; Founder, The SEAlliance and Mission Blue; Former Chief Scientist, NOAA (United States)

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