

COAST Bordeaux 2017

An objective: knowledge for management
Two events to respond

The first event is an international symposium on:

"Systemic and biodiversity evolution of marine coastal environments under the pressure of climate change and natural and anthropogenic local factors".

Identification and analysis of environmental stressors.

Coastal and estuarine environments are highly productive ecosystems that are interconnected and constrained by more oceanic (sea basin) and more continental (watershed) environments, which are themselves subject to the pressure of global climate change and influences of local and regional anthropogenic factors. One of the topics of the symposium will be the identification, quantification and analysis of pressure factors, from global to local level, and assessment of their individual and potential combination effects.

Impacts on socio-ecosystems and biological resources

Due to sea-level rise, the occurrence of extreme events (storms, tsunamis), and human activities, coastal areas are extremely vulnerable to erosion. On the other hand, coastal ecosystems undergo warming and modification of physical, chemical and biological characteristics of waters (warming, marine intrusion, acidification). Furthermore, they are often the receptacle of many sources of chemical and biological pollution which, in addition to global and regional pressures, degrade them and significantly reduce their resilience and ecological functions, based on a very high density and diversity of marine organisms. Another topic will be the analysis and quantification of impacts at different scales of time and space and at different levels of complexity on the biological resources and socio-ecosystems that depend on them.

Vulnerability of coastal ecosystems and risk exposure.

In a context of rapid change, human societies are questioning their future actions in terms of mitigation, that is, by reducing the pressure and / or adaptation factors by integrating the constraint of the impacts suffered. It is therefore particularly crucial to identify and better understand the relationships between factors of environmental pressure accumulated at different scales of space and time and their current or potential impacts. Factors to be analyzed in terms of probabilities of hazards, vulnerability, and risks, both on biodiversity and on the socio-ecosystems that depend on it.

Integrated approaches and communities restoration processes.

Some EU Framework Directives such as the WFD (Water Framework Directive), the MSFD (Marine Strategy Framework Directive) and the recent SMPD (Framework Directive for the Spatial Marine Planning) make it possible to evaluate the good state of inshore, estuarine and coastal water masses, to measure the impacts of anthropogenic pressures and to establish co-habitation policies for coastal marine uses up to the limit of the Exclusive Economic Zone (EEZ). These guidelines are based on transdisciplinary scientific studies, in an integrated ecosystem approach, foreshadowing what might be

a coastal and operational oceanography, aimed at feeding the Integrated Sea and Coastal Management (ISCM) approach and political decisions that relate to it.

The second event a Forum on the theme:

"Vulnerability to climate change, natural hazards and anthropogenic pressures".

It is underpinned, though not exclusively, by the strong cooperation between the French and Japanese scientific and professional communities led by, among others, the French-Japanese Oceanographic Societies.

Four main questions to build upon:

Question 1: How can today's socio-ecosystems be resilient to adapt tomorrow not only to coastline changes, but also to natural disasters increasing frequency and strength on the coast?

Coastal areas are, in general, heavily exploited ecosystems. They account for about 2% of the Earth's land surface but are home to 10% of the world's population in low-lying areas, resulting in a very high vulnerability to natural hazards: tsunamis, floods, marine intrusions, cyclones that caused considerable material damage and thousands of casualties, with large-scale environmental, social and economic repercussions. Japan, one of the world's leading seafood producers, surrounded by particularly productive seas despite a highly urbanized coastline, and faced with particularly frequent natural cataclysms, has nevertheless managed to safeguard an important part of its coastal maritime economy and, as such, is a privileged interlocutor for exchanging and undertaking joint research with French and European scientific and professional actors in the maritime sector.

Question 2: How to implement an integrated management approach at those interfaces and land-sea transition areas in order to minimize impacts synergy from different uses and better adapt to factors of change?

The temperature rise combined with the organic enrichment of coastal waters (and bay sheltered areas) can reduce species productivity constituting one of the important economic resources of inshore fishing activity, an increase in the frequency of epizootics detrimental to the development of aquaculture or tourism activities. Acidification of marine waters may also have a direct impact on the development of shellfish species or crustaceans and more broadly on the specific composition of trophic chains.

Question 3: How to ensure uses co-existence and safeguard the resilience of traditional activities such as fishing and shellfish farming in the face of new activities within the maritime space in a context of global change. For this purpose, how to put in place a process of dialogue between stakeholders (including decision-makers) in the frame of an integrated ecosystem-based management approach including maritime spatial planning ?

Blue energy development in France or more widely in Europe, within the framework of the energy transition policy, is also another way of occupying space and enhancing ecosystem services. The establishment of marine protected areas, the objective of which is to preserve both the environment and resources, is reflected in the creation of marine parks such as those in New Aquitania, the Bassin d'Arcachon, Estuary of the Gironde-Mer des Pertuis, contributing to the implementation of the Marine Strategy Framework Directive (DCSMM).

Question 4: How can traditional community management methods be used to co-build an integrated maritime and coastal management approach as part of an integrated maritime strategy?

The development of integrated approaches and large-scale habitat restoration programs that integrate all actors is a long-standing concept for Japan, based on local development. This is evidenced by the concept of "Sato-Umi" (sea and man in harmony), itself derived from the much older "Sato-Yama" (mountain and man in harmony). These two concepts evoke a very strong link between nature and culture on which the sustainable exploitation of an environment that is an integral part of the nourishing but also cultural heritage is founded. In Europe, and particularly in France, there are still a number of similar traditional practices, particularly in the field of small-scale fisheries.