RESPONSEABLE

POLICY BRIEF

N°3, September 2016

The ResponSEAble project

ResponSEAble is a Horizon 2020 project on Ocean Literacy, which aims at supporting the emergence of an effective and dynamic European ocean knowledge system that contributes to raising awareness on everybody's (individual and collective, direct and indirect) responsibility and interest in a healthy and sustainable ocean. It has a regional focus in all European regional seas: the Baltic, Black, Mediterranean, North seas and the Atlantic ocean.

On board are experts from fifteen countries, representing various organizations, including researchers with expertise in marine sciences, environmental policy and communication, social-economic tools, artists, and multi-media.

Trim your sails to the wind!

Sailing in the six key stories

The policy briefs will allow following the project process and results for policy makers, and wider audience. Published every six months, ResponSEAble Policy Briefs will take you on a journey where you will explore with different regional issues and policies, follow testing of ocean literacy products and their efficiency to find the most cost effective ones and put them to practice.

In this policy brief of the ResponSEAble project we introduce our focus – six selected **Key stories, in which ResponSeable will work**.

Existing amount of knowledge around human activities and the ocean is a vast.

To sort through it and categorize it all would be impossible. It was therefore crucial that this project developed a method for narrowing down the types of activities that is needed to focus on, as well as the types of information that could best be used to help support literacy on these topics. By examining the focus of the recent Marine Strategy Framework Directive as well as the EU Blue Growth Strategies, it was possible to determine 6 high-level key topics that would be important to the citizens of the EU.

Selecting the „right" storylines proved to be challenging!

To select the right storylines that ResponSEAble will further investigate, we chose the following criteria:

1. Can a "change in behaviour" by one (or more) stakeholder groups influence the issue raised in this story?
2. Is this a relatively old or new issue raised? If it is an established story, how can the ResponSEAble team bring real added value to the story?
3. Is the issue seen as priority for one, or several, European regional seas?
4. Is this issue important from the perspective of the Ocean economy and blue growth?
5. Is there potential for ocean literacy innovation (education products, media, arts, etc.) in the issue that may affect behaviour of (all, some) stakeholders relevant to the issue?

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Six Key Storylines of ResponSEAble

The story of microplastic and cosmetics in the EU

The use of plastics in our world has become ubiquitous, and plastic pollution in the marine environment is a global challenge. ResponSEAble is therefore focusing on the use of microplastics in personal care and cosmetics products (PCCPs) as one of the project´s key stories.

The term "microplastic" has been introduced to describe small plastic debris that is less than 5 mm in diameter. These tiny pieces of plastic are increasingly entering and accumulating in the world's marine environment, and poses threats to both marine life and human well-being. One major concern is the plastic pellets ability to absorb and desorb chemicals in the marine environment. These chemical can possibly then bioaccumulate in the food chain, resulting in toxic impacts not only on the species ingesting them, but also possibly on human health through our seafood consumption. This story will have an EU-wide focus.

The story of eutrophication and agriculture

Eutrophication leads to the general alteration and degradation of the marine ecosystems and marine habitat. In some European seas, this has been a key environmental issue for decades, but there is a need to better understand and quantify the lead causes of eutrophication. ResponSEAble has therefore chosen to focus particularly on the role of agriculture as a cause of eutrophication.

Eutrophication can be defined as a process which is driven by enrichment of water by nitrogen and phosphorus nutrients. The nutrient inputs can derive from many different anthropogenic activities, but agriculture is identified as a major source of these inputs. The environmental impacts on the marine environment are severe, and it can alter the biogeochemical cycling of nutrients and changing the benthic community, pushing benthic habitats in a hypoxic regime. The reduced water quality, harmful algal blooms, hypoxic and anoxic zones also jeopardizes the socio-economic basis of fishery, aquaculture and tourism. The key story will have a Baltic Sea and Black Sea focus.

The story of sustainable fisheries

Fisheries are essential for the provisioning of food and food security, as well as the livelihoods of people across the world. Fish also provides essential functions in the marine environment, and has a broad impact on marine ecosystems, biological diversity and sea-floor integrity.

Fisheries that are considered to be sustainable or labelled as sustainable should not involve fishing activity that overtly exerts pressures on the ecosystem. Heavy fishing pressures can have negative environmental impacts, resulting in the loss of significant potential yield of the stocks being fished and can even precede severe stock depletion and fisheries collapse. It is therefore essential to both people and environment that fisheries are healthy and sustainable. This story will focus on the Atlantic region.

The story of marine renewable energy

Marine renewable energy (MRE) will play a key role in the EUs commitment to energy and climatic goals for 2030, and it is one of EU´s fastest growing sectors of Blue Growth.

Marine renewable energy includes both offshore wind and ocean energy. From tidal power to wave power, it is increasingly important to understand how marine renewable energy impacts the environment. Similar to other physical changes, the placement of marine renewable energy often has an impact on the local ecosystem, both benthic as well as pelagic. These impacts may include positive impacts such as an increase in habitats due to additional structures on the seafloor, but they may also include negative impacts such as loss of local biodiversity and change in migration patterns for fish or marine mammals. The story is a EU-wide/Atlantic story

The story of Invasive Alien Species and Ballast Water/ Hull Fouling

The introduction of invasive alien species (IAS) is a leading cause of biodiversity loss in Europe and across the globe. While the reasons for the introduction of non-indigenous species (NIS) and the occurrence of invasive alien species are numerous, a key transfer cause is the shipping methods of ballast water and hull fouling cleaning.

Ballast water is a 140 years old method of shipping that provides stability and maneuverability for the vessels during voyage, but it also leads to an exchange of waters across regions. Hull fouling (HF, biofouling) refers to the undesirable accumulation of microorganisms to ships' hulls, which are often released in the ocean during the cleaning processes of the ships. These methods introduce new biological materials to a marine environment and can lead to the introduction of non-indigenous species. Under certain circumstances these non-indigenous species form aggressive, viable and fast-reproducing populations that often out-competes local flora or fauna, i.e. invasive alien species. This can cause extensive ecological and economic damage to aquatic ecosystems and human-wellbeing. This story will focus on three regional seas, the Baltic Sea, the Black Sea and the Mediterranean Sea.

The story of coastal tourism

Tourism and development in coastal areas are common features around the world, but there are few places where this has been more visible than in Mediterranean region. For decades, the Mediterranean Sea region has been a massively popular tourist destination, which also has put pressure on the marine environment. ResponSEAble is focusing on coastal tourism and changes to the marine habitat in the Mediterranean Sea region as a key story.

From docks and piers that need to be built to accommodate shipping needs to the mining of gravel as substrate, these physical changes all have an impact on the species that inhabit the local region. These impacts result in lethal or sub-lethal effects and may result in the reduction in diversity (of genes, species, communities and habitats) or they may manifest as a general decline in species, or an increase in opportunistic taxa at the expense of others.

What knowledge is there?

A Knowledge Base (KB) is being developed to include the knowledge for each of the key storylines, where knowledge is gathered.

The Knowledge Base will:

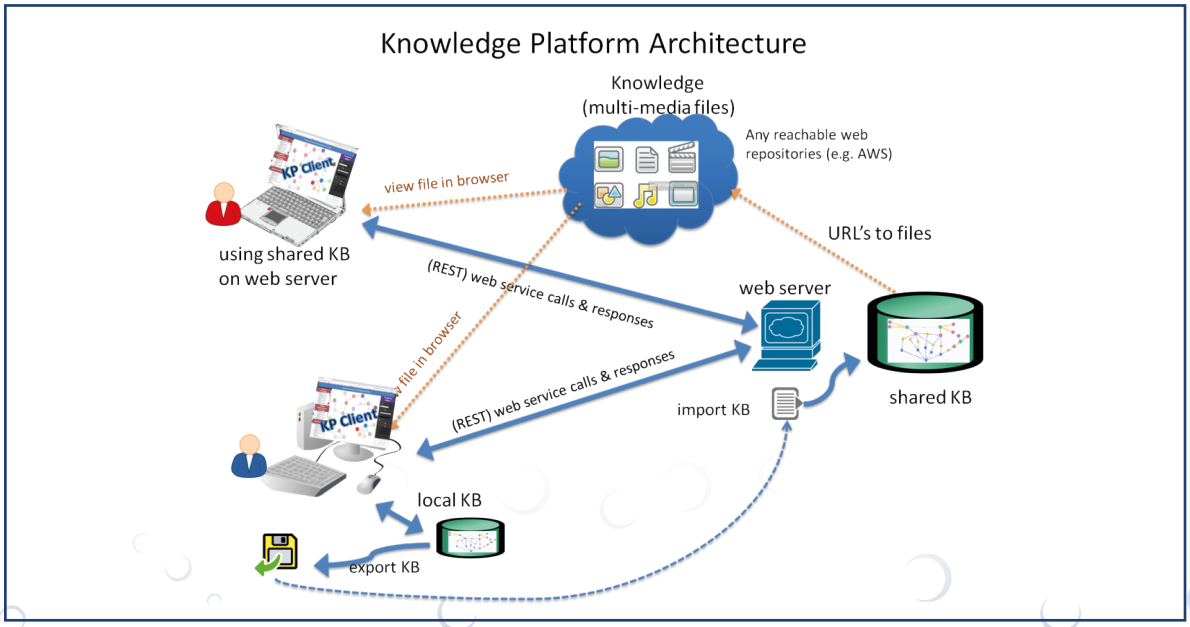
- Allow marine scientists, ocean literacy experts, domain experts in general, to create rich integrated models representing the human-ocean relationship, ocean economy and related knowledge on ocean literacy.
- Support the incorporation of the DPSIR and ESS frameworks into the models (as it will follow DAPSI(W)R.
- Build complex models of specific marine topics, incorporating links to knowledge (evidence) associated with particular topics or causal links.
- Search for available knowledge on the human-ocean relationships that can help developing "ocean literacy" products
- In the short term, KB will be used by ResponSEAble partners for developing the Key Stories, understanding the current state of knowledge, developing specific Ocean Literacy products.

In the longer term it is envisaged that the KB will be used as a resource by:

- Those wishing to continue the work of developing key stories using the DAPSI(W)R framework, and attaching relevant knowledge in order to build out the scope and depth of the knowledge base.
- By developers of Ocean Literacy tools
- Researchers investigating topics or stories within the knowledge base.
- Future development of the Knowledge Base should consider how we can make this "live"? i.e. that any new knowledge produced in Europe on the human-ocean relation can be "integrated", or even automatically trawled from the internet, research libraries etc., and incorporated into the knowledge base.

Who knows what?

ResponSEAble seeks to move forward towards an increase of knowledge on the human-ocean relationship accompanied with a support of behaviour changing attitudes. It therefore aims at innovative approaches to communicate knowledge in appropriate channels, and in a way that allows its target groups to assign it to their own areas of influence, be they individual, social, or professional. Lots of information on the human-ocean relation is being produced and disseminated, with different objectives, to different target groups using different media genres, as WP3 is charting using the developed classification system. ResponSEAble focuses on the development of knowledge and information disseminated via appropriate media genres and structured in a way that provides starting points for a subjective understanding of one's own connection to the sea, to one's capacity to act, and to one's own responsibility, may it be directly or mediated by society. Beyond understanding, ResponSEAble also aims to trigger behaviour change.



In order to produce effective information that triggers behaviour change in favour of the state of the marine environment, one needs to understand how people perceive the oceans and more importantly specific features of the human-ocean relationship, and what aspects of communication trigger perceptions and behaviour change

How Ocean literacy strategies can contribute to the delivery of European marine priorities (and the international commitments to which European countries have signed up, such as the sustainable development goals, Aichi targets, etc)? In each key story we explore the link!

Ocean Literacy and policies: it is about behavior change!

Link between ocean literacy and policy shows us a very compelling answer why behaviour change is an important topic to study and invest in. For example key story on microplastics shows us how we ocean literacy and policy goes hand in hand. Finding the actors, who have the area for maneuvre in changing their behaviors (be it a cosmetic industry, fisherman or consumer, can shed the light on what could be a innovative political response. Another example is fishiries: traditionally it is looked ata s a problem of overfishing, but going down tot he value chain and consumers it is possible to identify more innovative policies which can help to deal with the most complicated issues of our oceans.

Follow our journey with the next policy briefs

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