

Málaga (Mediterranean Sea) - SOPHIE Workshop, October 14th, 2019

The SOPHIE team from RIVM organised a workshop on October 14th 2019 as a side event during the PANACeA conference regarding “Ecosystem-Based Adaptation: A pulse for transformative changes in the Mediterranean Sea” held in Málaga. A group of twelve stakeholders concerning the Mediterranean Sea, representing various disciplines (marine ecology, economy, environmental policy and management, coastal management and planning and marine biology), participated.. The aim of this workshop was to explore the relationship between human health and the sea in the Mediterranean sea basin, with special focus on the Málaga area, in order to collect input for the Strategic Research Agenda for the SOPHIE project.

In order to get acquainted with the subject the workshop started with an introduction on the aim of SOPHIE and of its work-package on future scenarios and research gaps. Being an interactive workshop, the participants were asked to form a pair with other participants previously unknown to each other and exchange views about the Mediterranean Sea and health, using the following questions:

-  Where are you from?
-  What is your view on the current situation in *the Mediterranean Sea*?
-  Is there a focus on a healthy water system and the effects on health?
-  Are the opportunities and threats for health known?

The outcomes of these rounds were then gathered and discussed.

After this introductory round, the prepared DESTEP poster for Málaga was presented, listing the most relevant trends regarding Demographic, Economic, Social-cultural, Technology, Ecology & climate, Political and institutional developments in the Mediterranean Sea:

- Population growing and progressively ageing;
- Large differences between neighbourhoods in average incomes, high unemployment rates since 2007;
- Harbour and cruise ships as a source of employment, economic growth and contamination;
- Climate change will increase storm water and flooding, but also create more and longer heatwaves and periods of drought;
- Multiple frameworks focussing on ecosystems management, sustainable tourism, and protection and conservation in the Mediterranean are installed.

This overview of relevant DESTEP trends prepared the participants to consider the wide range of interdependent trends that affect the relationship between human health and the sea. Firstly, participants were asked to select the five future trends they consider to be the most relevant for the relationship between public health and the sea. In a second round, the participants scored the same selection of trends for their uncertainty.

In general the most relevant trends according to the participants were:

1. Climate change (9)
2. Loss of biodiversity (8)
3. Aquaculture (3)
4. Increasing individualization (3)
5. More recreational use of blue spaces (3)
6. Towards healthy living (3)

In general the most uncertain trends according to the participants were:

1. Urbanisation (5)
2. Migration (4)
3. Consumer Food Preference (4)
4. Unstable political situation create difficulties for cooperation within the sea basin (4)

The remainder of the workshop was spent on discussing how these trends may affect the relationship between human health and the sea and on the identification of what research gaps. The group was asked to elaborate on the three trends that were scored as most relevant trends for the Mediterranean. The results can be found in the **Appendix: Impacts and research gaps of most relevant trends**.

Community

<https://sophie2020.eu/activities/community-platform/>

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Appendix: Impacts and research gaps of most relevant trends

Trend: CLIMATE CHANGE

Impact	Research gaps
<p><u>Ecological</u></p> <ul style="list-style-type: none"> • Disruption of ecosystem structures, dynamics of ecosystems are changing → eventually leading to regime changes that we cannot turn around anymore • Increased flood and erosion risks at coastal areas • Acidification • Strong changes in marine biodiversity • Rising temperatures will make it possible for invasive species to settle • Water level will rise • Loss of species and habitats <p><u>Governance</u></p> <ul style="list-style-type: none"> • Impacts are not the same along the basin <p><u>Social-cultural</u></p> <ul style="list-style-type: none"> • Climate change (CC) will affect future generations <p><u>Economical</u></p> <ul style="list-style-type: none"> • The rise of sea level can create corrosion of infrastructure 	<p><u>Knowledge</u></p> <ul style="list-style-type: none"> • we know about increase of mass mortalities and diseases as well as blooms of organisms • Answers for mitigation, restoration of ecosystems, adaptive management • Climate change and the issue of multiple stressors: we know a lot about single stressors, but how do these exacerbate / influence each other. A more integral way of looking at multiple stressors is needed • We need more data and information on what the thresholds of our ecosystems are. What are the points of no return? • Present knowledge on impacts of climate change is not equal along the basin and different regions need different knowledge • monitoring in a standardized way may help to understand the phenomenon better • a global pressure needs a global solution <p><u>Governance</u></p> <ul style="list-style-type: none"> • Including the consideration of CC into policies (we are now planning the present without considering the future), for example in existing frameworks

 **Trend: LOSS OF BIODIVERSITY**

Impact	Research gaps
<p><u>Ecological</u></p> <ul style="list-style-type: none"> • loss of ecosystem services and ecological functions —> <ul style="list-style-type: none"> • impact on food availability and fish production, • coastal protection • carbon sinks • socioeconomic, etc. • mass mortalities • regime shifts • invasive species • Overfishing • Pollution • Loss of biodiversity and other ecological impacts are not the same for the Med sea basin • Strong changes in ecology of the marine environment <p><u>Economical</u></p> <ul style="list-style-type: none"> • Food availability 	<p><u>Knowledge</u></p> <ul style="list-style-type: none"> • What are the thresholds to take into account? • main key ecosystems many SPA (Special Protected Area) status • answers through transboundary approaches • restoration and protection • ecosystem based management • totally unexpected results.... • The knowledge on impacts is not the same along the basin, for example on alien species.

 **Trend: More tourism and recreational use of blue spaces**

Impact	Research gaps
<p><u>Ecological</u></p> <ul style="list-style-type: none"> • Destruction of coastal ecosystems, including key ones for natural resources renovation • Negative impacts on marine coastal environments 	<p><u>Knowledge</u></p> <ul style="list-style-type: none"> • Mitigation measures needed • Blue Growth as an opportunity, but also a big risk (considering the role of multiple stressors). Often too much focus on the economic benefits and not enough on the negative ecological

	<p>impacts. Green Growth as an example takes natural impacts more into consideration.</p> <ul style="list-style-type: none">• Marine spatial planning should clearly focus on the protection of marine environments. Important to include conservation targets. This would mean a change of the policy focus in the MPA framework.• Marine Protected Areas as a possible (local) solution?
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