



The concept of blue growth – and the EU vision for the marine sector

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JERICO-NEXT Malta Summer School 2018 Operational Oceanography for Blue Growth
University of Malta, 9th to 14th July 2018

**The Blue Growth
theme...challenges for
the near future**

Assumptions, Challenges and
Solutions

What needs to be done, how the
results of the research could
be taken up by policy etc.

The Bluemed CSA

Outline

**Policy-Science
Interface**

BlueMed Initiative

**Pressures and threats.
Policy Framework.**

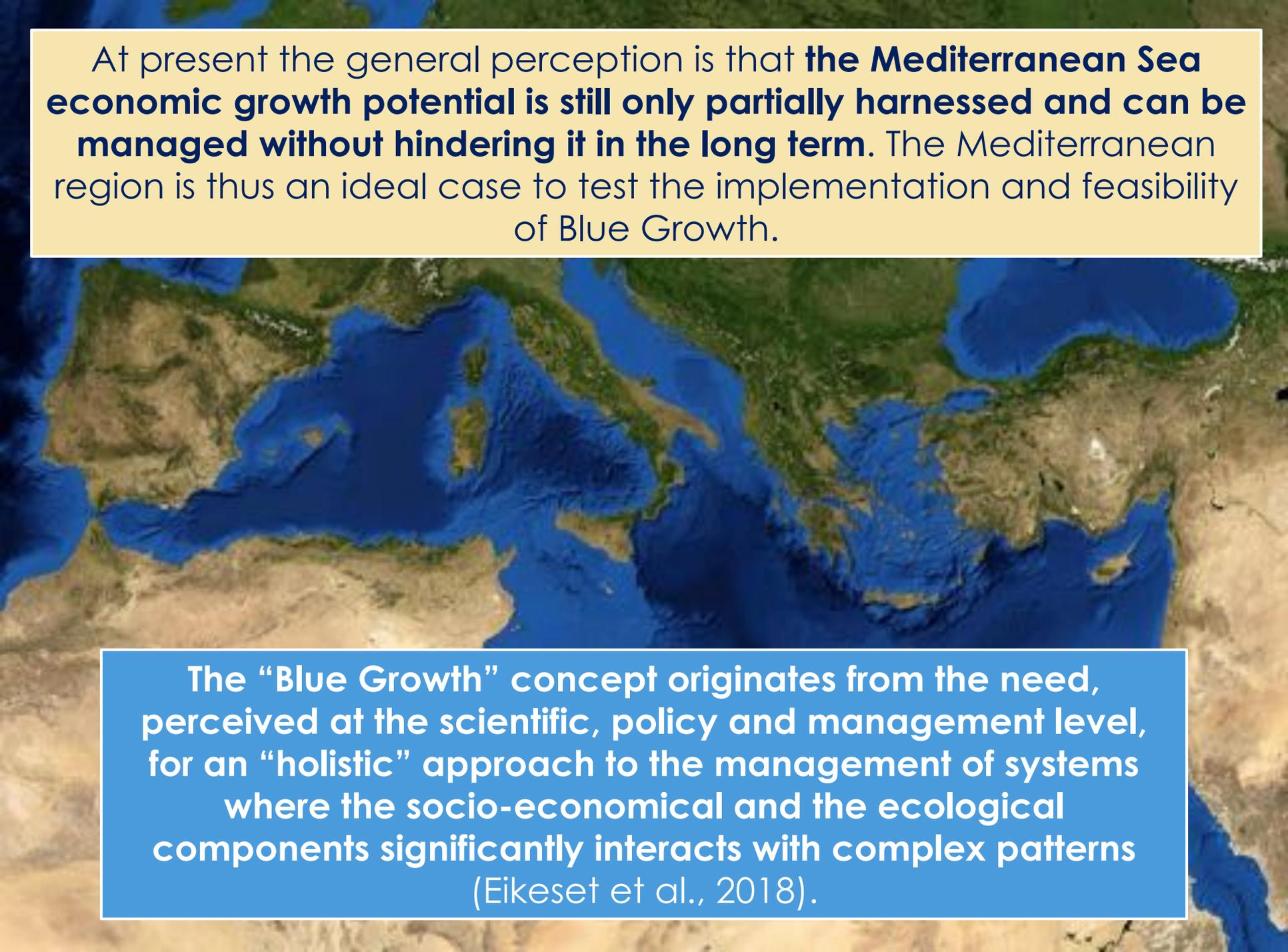
**The need for Scientific
knowledge**

The Mediterranean Sea. Complexity,
knowledge & Framework
Clean Seas 2020? What does the European
Union do for the marine environment?
Scientific knowledge addressing the gaps. Can
be understood? What do we need more?
Problems and gaps

BLUE GROWTH: CONCEPT

*knowledge driven quantum jump in the
exploitation of marine resources*

Blue Growth implies a drastic change in the attitude of operators from marine and maritime sectors towards a synergistic, non-conflicting and sustainable use of the sea, still allowing a significant growth. This is recognized as a global challenge, but felt **particularly relevant for the Mediterranean region**, given its long history of marine resources exploitation and increasing human pressure.

A satellite-style map of the Mediterranean region, showing the sea in a deep blue color and the surrounding landmasses in shades of green and brown. The map is centered on the Mediterranean Sea, with the Iberian Peninsula to the west, the Balkans and Greece to the north, and the Middle East and North Africa to the east and south.

At present the general perception is that **the Mediterranean Sea economic growth potential is still only partially harnessed and can be managed without hindering it in the long term.** The Mediterranean region is thus an ideal case to test the implementation and feasibility of Blue Growth.

The “Blue Growth” concept originates from the need, perceived at the scientific, policy and management level, for an “holistic” approach to the management of systems where the socio-economical and the ecological components significantly interacts with complex patterns (Eikeset et al., 2018).

The concept stems out (together with the “green growth” brother concept) from the quest (at theoretical and practical level) for the “sustainable development”, an idea endorsed at the highest (UN) international level since the 70’s and lately reaffirmed at the Rio+20 conference (UN, 2012). **The Sustainable Development concept can be essentially summarized by stating that exploitation of natural resources “should meet the need of the present without compromising the ability of future generations to meet their own needs”** (Bruntland and Khalid, 1987).

It is therefore evident that the problem of achieving environmental sustainability is characterised by **three fundamental dimensions** interacting at a wide range of spatial and temporal scales: **environmental, economic and social** (Giovannoni and Fabietti, 2014)



The blue/green growth concept is articulated along the same three dimensions, but also includes a step forward by implying, in addition to the “**conservation for future generation**” issue, that **the sustainable use of natural resources can foster economic growth and development** (<http://www.oecd.org/greengrowth/>).

Eikeset et al. (2018) states that the Blue Growth concept has not yet achieved a generally agreed definition, and that its meaning depends heavily on “the social context in which it is used”. As such, the “potential for miscommunication is large”.



Blue Growth Scope

to enlarge and intensify the exploitation of marine (blue) resources to favour economic growth and social wellbeing.

Blue Growth Key message

marine realm has been so far underexploited, therefore its unused or partially used resources may become a mean to solve the problems of slow growth and recurrent underemployment in several countries, including EU member states.

This clarifies that the primary scope of the Blue growth is the economic growth.

Nevertheless, the accompanying recommendation is that the design and implementation of actions/activities in different marine and maritime sectors should be framed in a context of greater efficiency and sustainability, to create new “blue” jobs and foster the transit from “old” unsustainable economies to “blue” economies.

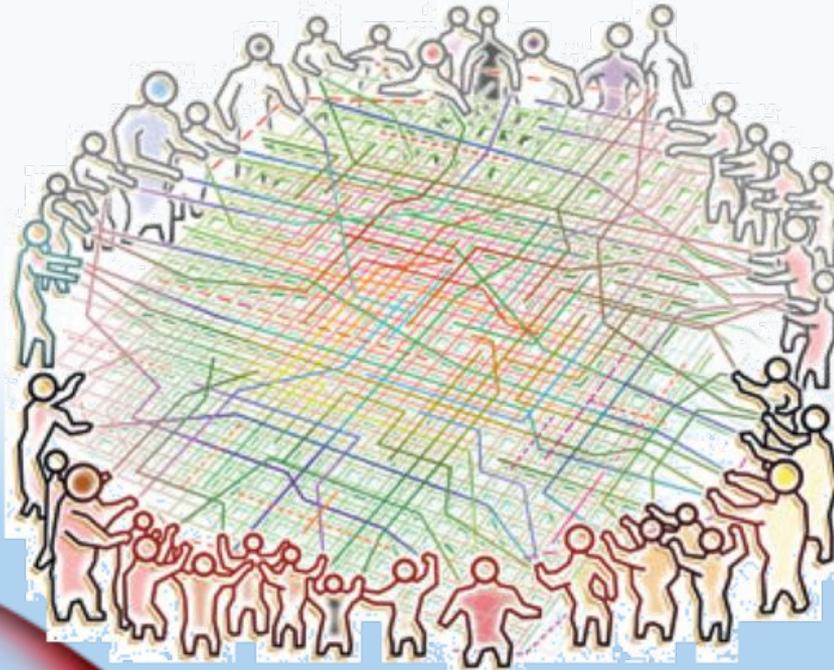


The European Parliament and the European Commission listed **18 economical activities** constituting a base for the Blue Growth.

Many of these are interdependent or potentially competing for the same resource. Such interdependency implies that none can be dealt separately from the others, and that they should be treated as acting in a general economic equilibrium, e.g.³, where the gain and losses of each sector depend on the gain and losses of the others.

Besides the internal costs (capital and labour), **the gains and losses of each activity, whatever the sector, depend on the “ecosystem services” provided by the sea (Costanza et al. 1997), for which none of the operators pays a cost, but whose utilization by different operators impacts on the utilization of the others (and on the environment itself)**

A resource not taken into account in the costs of an activity is often defined as an externality. The problem of conflicting use of a shared resource and the negative consequences is often referred to as “**The tragedy of commons**”.



Different solutions have been explored to deal with those problems, including punitive measures. A general discussion can be found in the book by the Nobel laureate Elinor Ostrom⁸

The geopolitical complexity of the Mediterranean area, whose countries from three different continents strongly depend on blue activities, challenges the sustainability of the marine environment. Multiple stakeholders with diverse and often contrasting interests compete for the use of the same resource and space.



VISION

In order to ensure a sustainable future, it is crucial to:

reduce fragmentation and facilitate cooperation between people;

engage EU and non-EU countries for a global Mediterranean Basin;

foster innovative multidisciplinary research and innovation activities addressing the relevant Mediterranean challenges;

coordinate planning and programming of relevant research and innovation activities;

connect research investments and public policies at regional, national, European and Mediterranean level;

provide knowledge-based support for the implementation of relevant policies;

develop innovative marine-based technologies, methodologies and approaches with a view to boosting the sustainable economic growth of the EU maritime sectors and the conservation and upgrading of the marine environment, resources and cultural heritage;

advocate public understanding of the value of the blue economy;

create an interoperable, fully integrated observing and forecasting system based on open data structures;

train a new generation of scientists, professionals, technicians and entrepreneurs thus creating new and qualified 'sea-based' jobs.

Identify needs of marine and maritime communities and align relevant programmes;

Increase the accessibility of opportunities, funding and facilities;

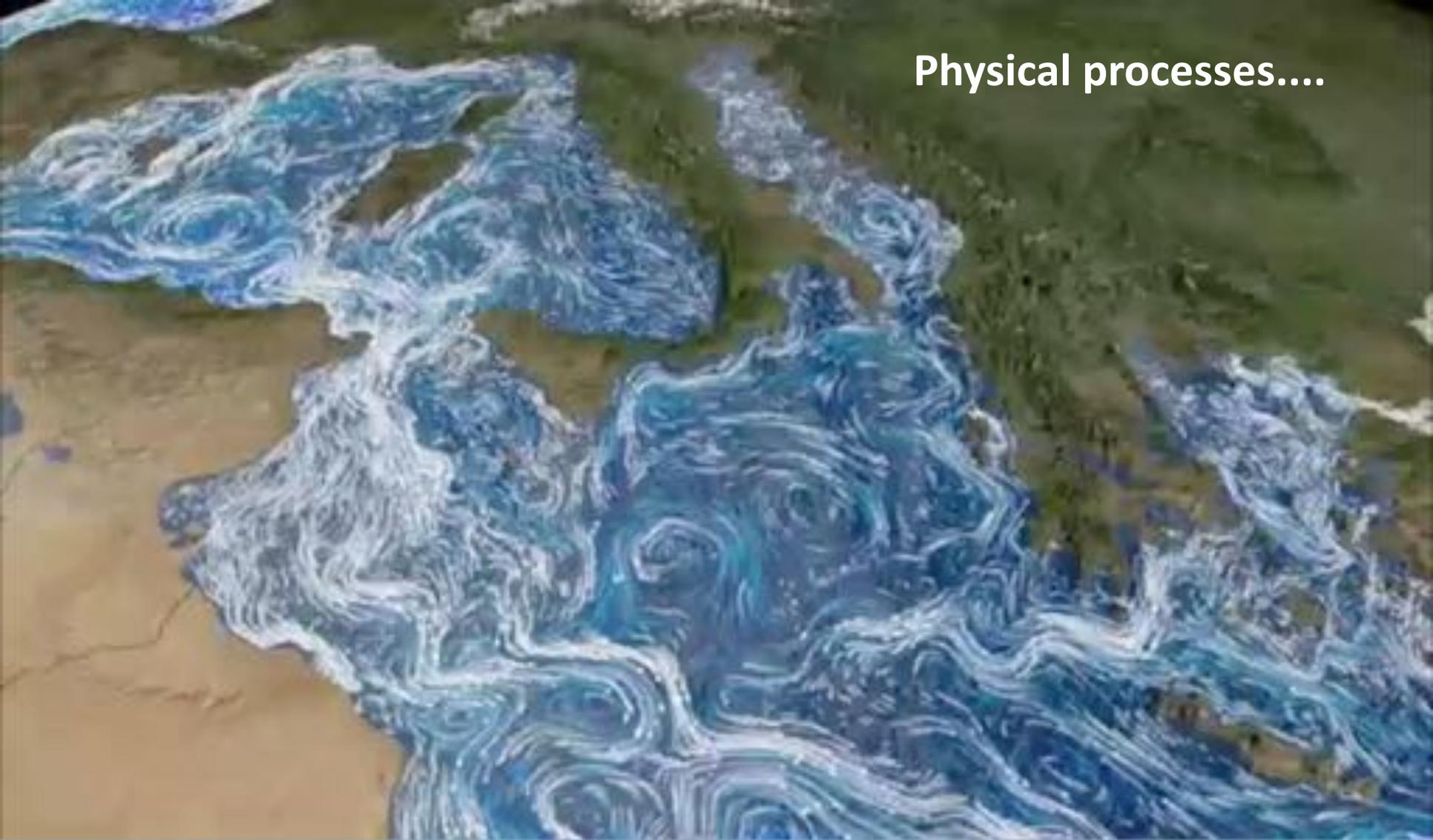
Develop joint actions by aligning, planning and programming research and innovation activities at multiple level;

Engage different stakeholders;

Fine-tune data, knowledge, capacities and projects;

Maximise leverage effects of research investments and their influence on public policy;

Physical processes....



*Credits to : NASA/Goddard Space Flight Center Scientific Visualization Studio
Greg Shirah (NASA/GSFC), Lead Animator, Horace Mitchell (NASA/GSFC), Animator
Dimitris Menemenlis (NASA/JPL CalTech), Scientist, Hong Zhang (UCLA), Scientist
Eric Sokolowsky (GST), Project Support*

Pressures, Hazards and Threats

Climate change

Agricultural pollution

Tourism

HABs

.....

Overfishing

Industrial and
chemical pollution

Urban pollution

Maritime transport

Marine Litter

Aquaculture

Exploration of
resources

Biodiversity &
habitat loss

Renewable energy

Alien species

Oil pollution

Population explosion

Coastal erosion

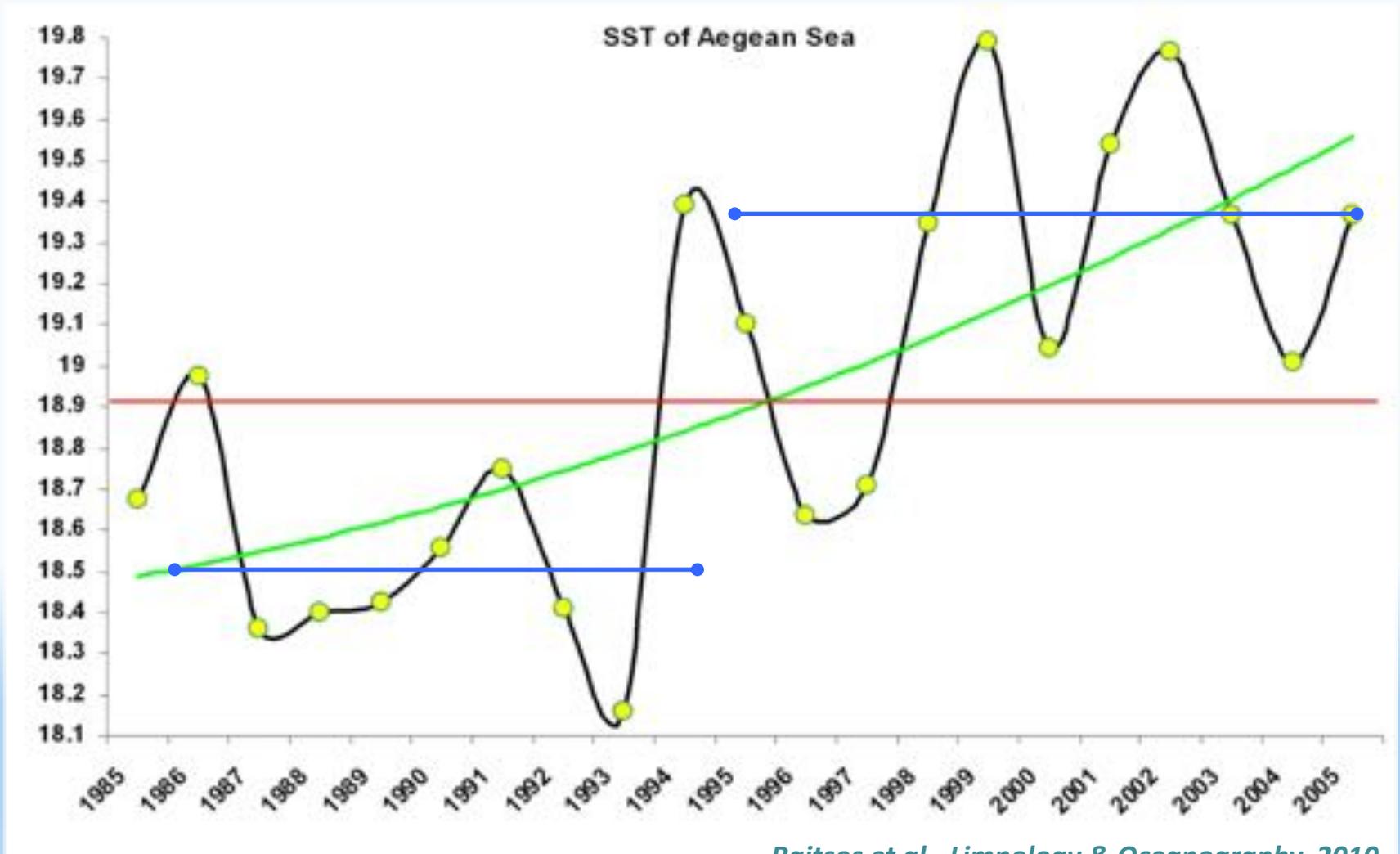
>150M people live on the Med
coast (X2 during Summer!)



The economic activities
are growing

Stresses in the SES are shown sooner than the world ocean

Increase of Temperature $\sim 1^{\circ}\text{C}$



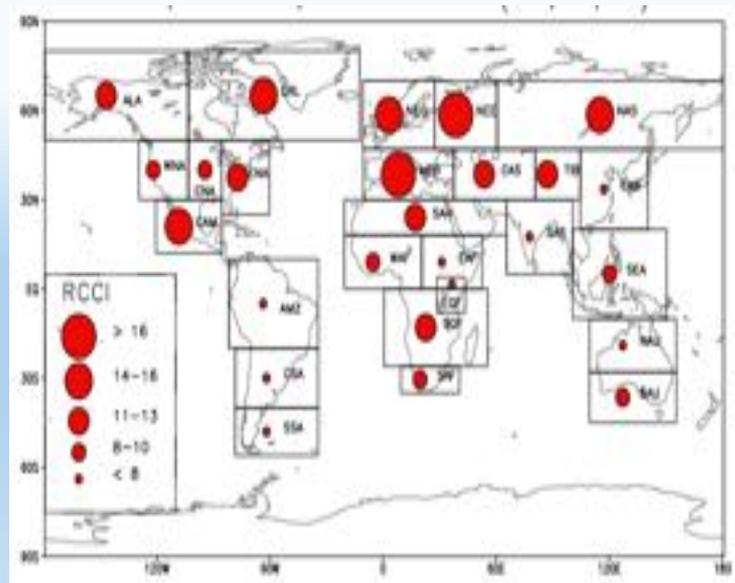
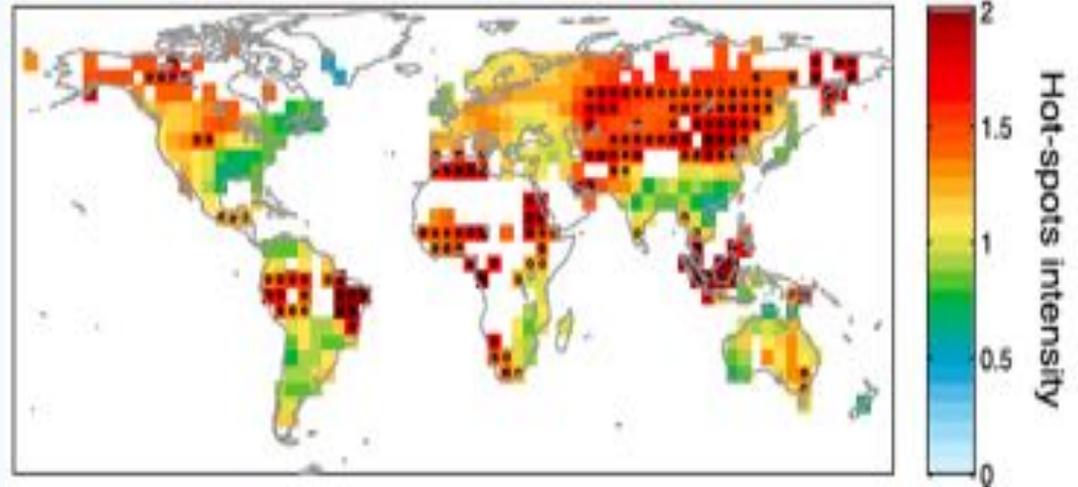
Raitsos et al., Limnology & Oceanography, 2010

Challenges *The Mediterranean is a climate hot spot*

Regional Climate Change Index (RCCI)

The Mediterranean area represents **one of the main climatic hotspots** at the global level, taking into account the projections of both temperature and precipitation trends

(F. Giorgi, 2006)

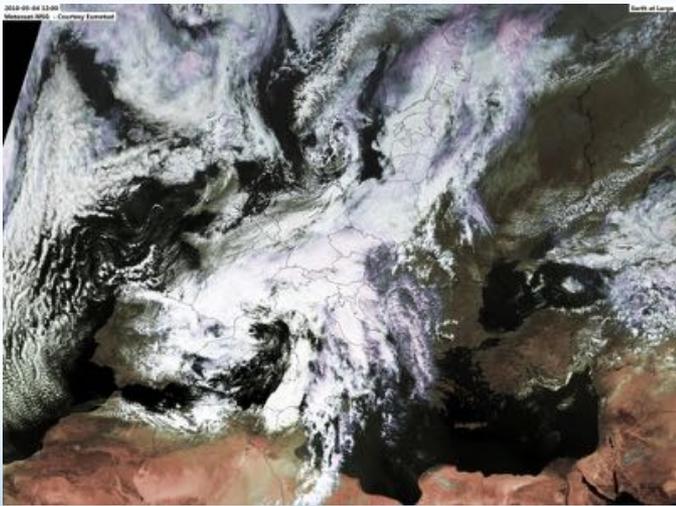


Global observations:
(M. Turco et al., GRL 2015)

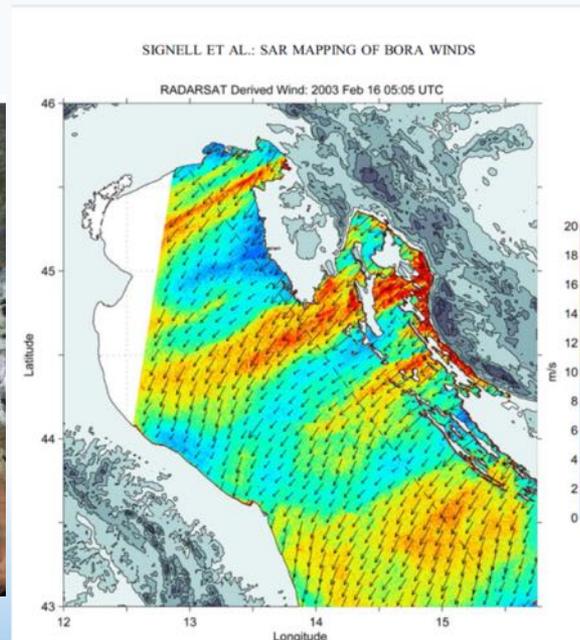
Models:
(F. Giorgi, JGR 2006)

Challenges *Major consequences of climate change in the Mediterranean hotspot: three examples*

Severe cyclogeneses, MEDICANES



Wind storms



Flash Flood

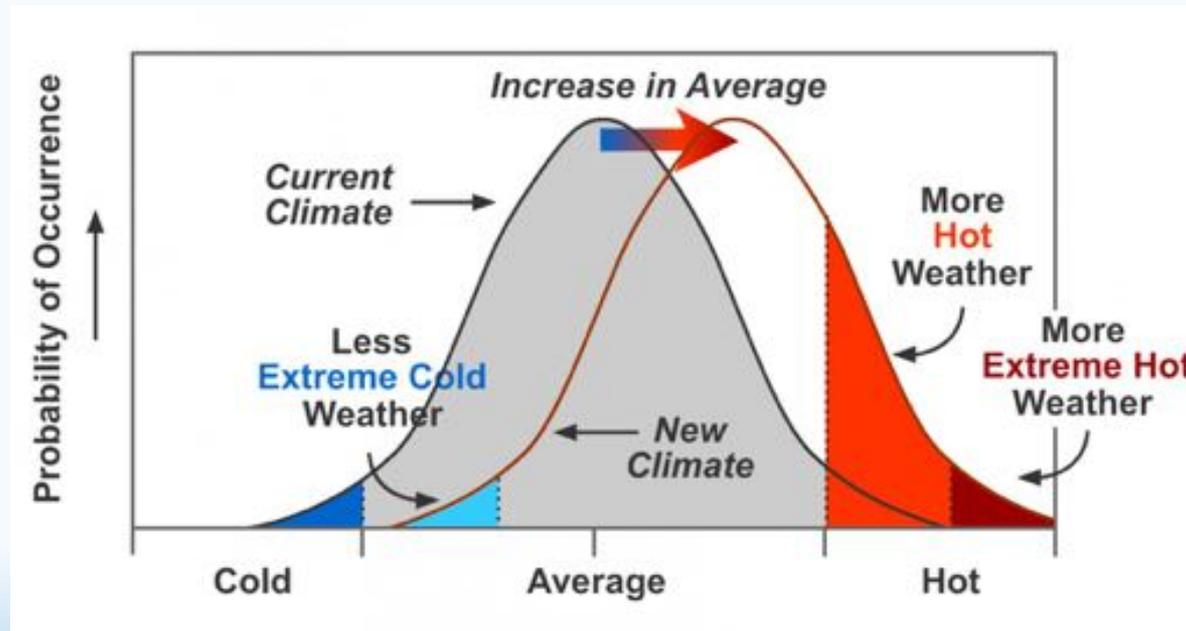
Heavy Precipitation



1. More severe weather in the Mediterranean

- Temperature will increase, precipitation will decrease but with more extreme events
- Climate change scenarios are still very uncertain. A warmer Mediterranean however may lead to an intensification of events

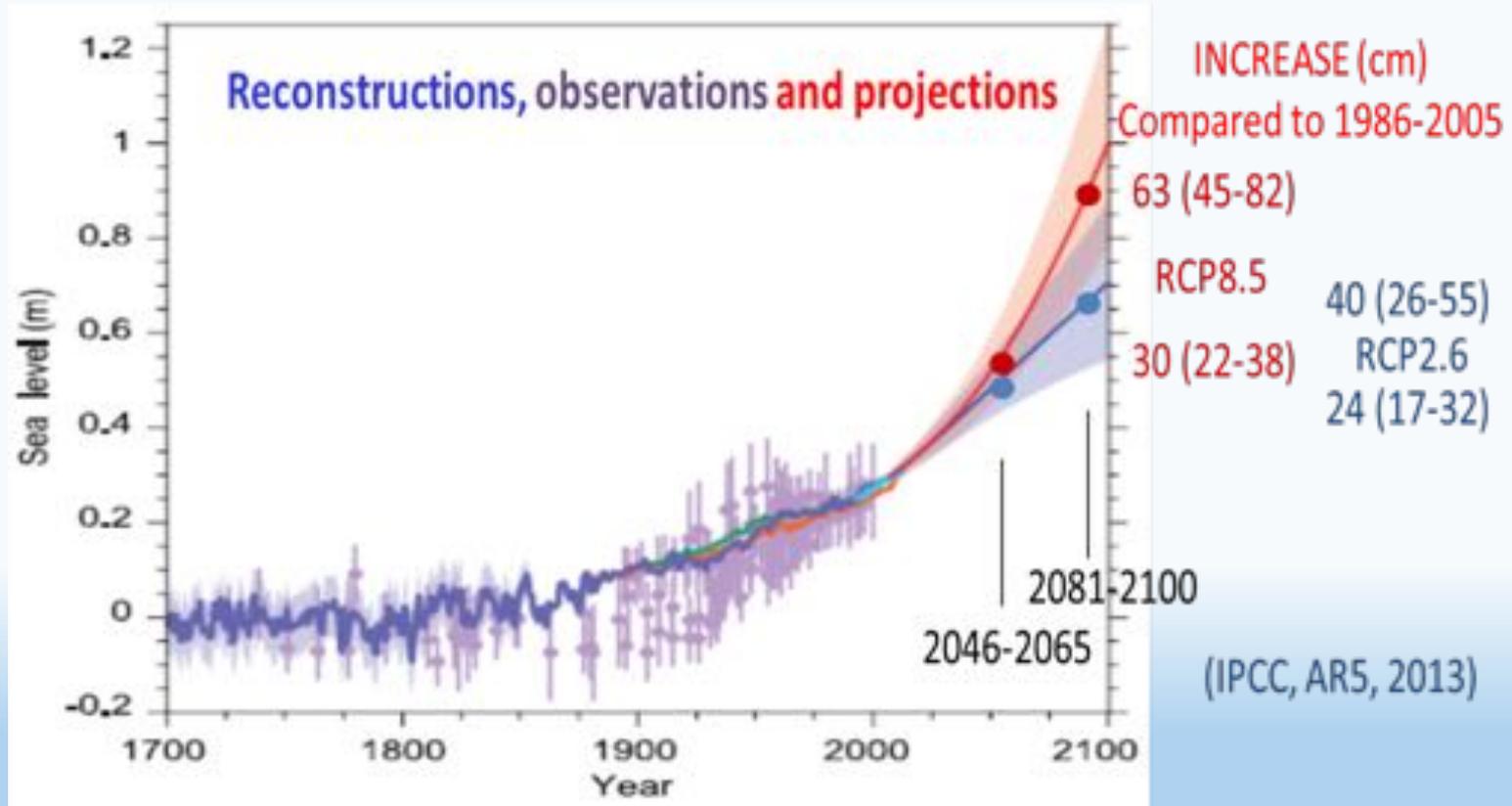
Challenges *Major consequences of climate change in the Mediterranean hotspot: three examples*



2. Marine Heat Waves are predicted to increase

- The Mediterranean region is experiencing several long-lasting extreme heat events (“Marine Heat Waves”)
- In 2003 one of the strongest ever caused several mass-mortality events (Garrabou et al., GCB 2009)

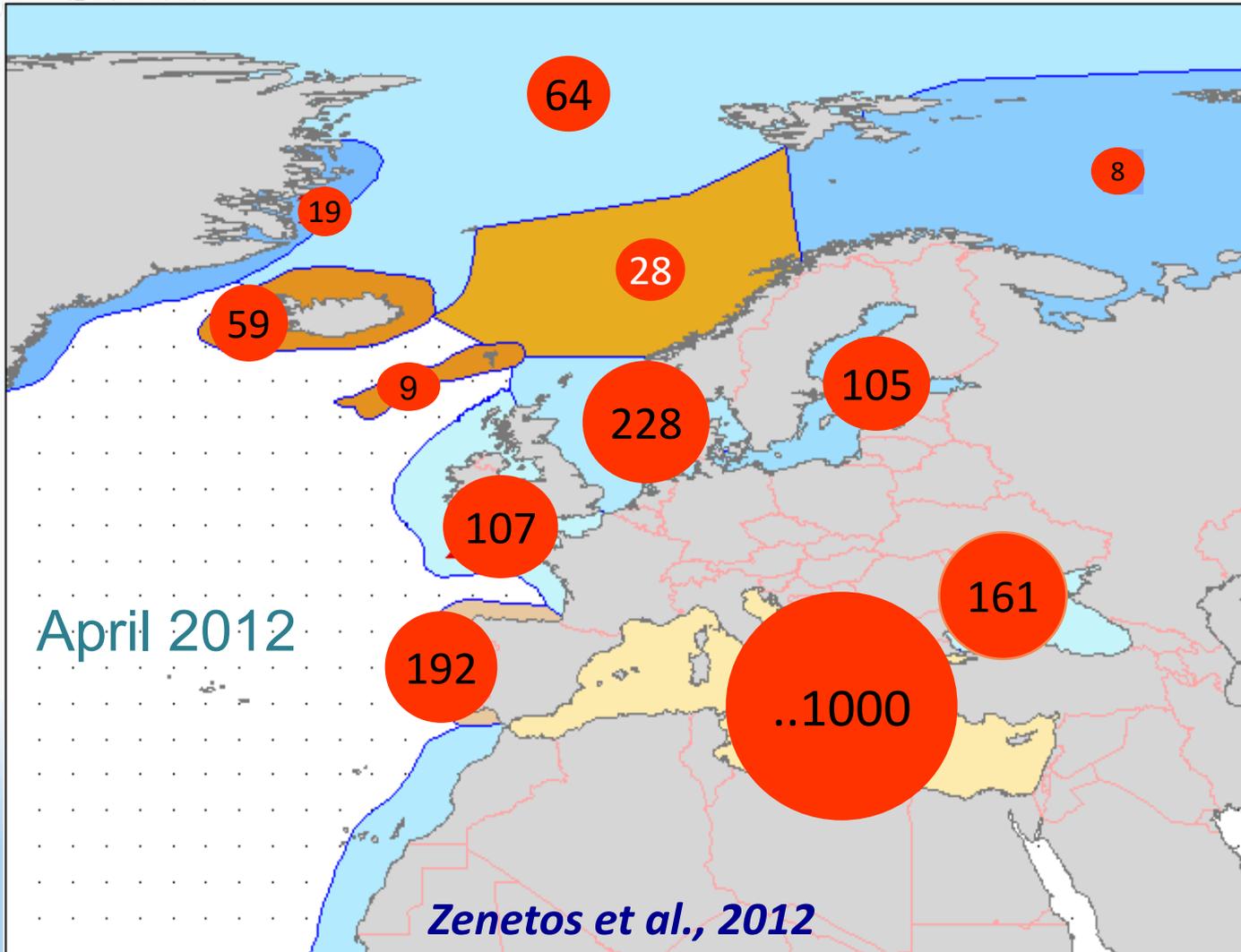
Challenges *Major consequences of climate change in the Mediterranean hotspot: three examples*



3. Global Sea Level Rise

Will enhance coastal erosion and salt-wedge penetration (desertification of coastal areas)

Number of Marine non-indigenous species in European Seas



Mediterranean: A region of great biodiversity
Lot of species but... few individuals

88% of fish stocks overfished in the Mediterranean*
Overfishing of big pelagic fish (blue fin tuna, swordfish etc.) is an ecosystem problem

Commission to the Council and European Parliament, 20.2.2014 COM(2014) 97 final



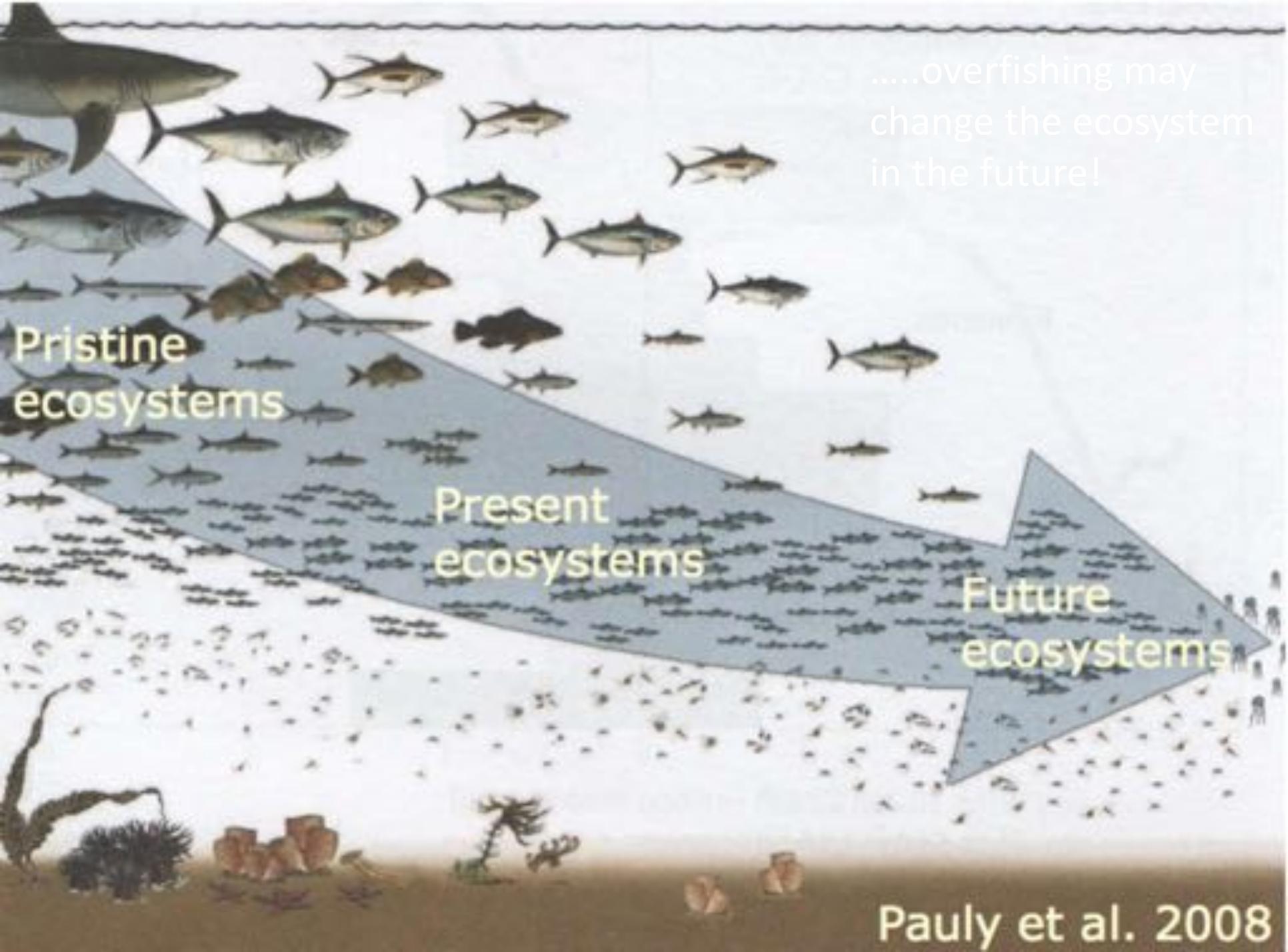
....overfishing may
change the ecosystem
in the future!

Pristine
ecosystems

Present
ecosystems

Future
ecosystems

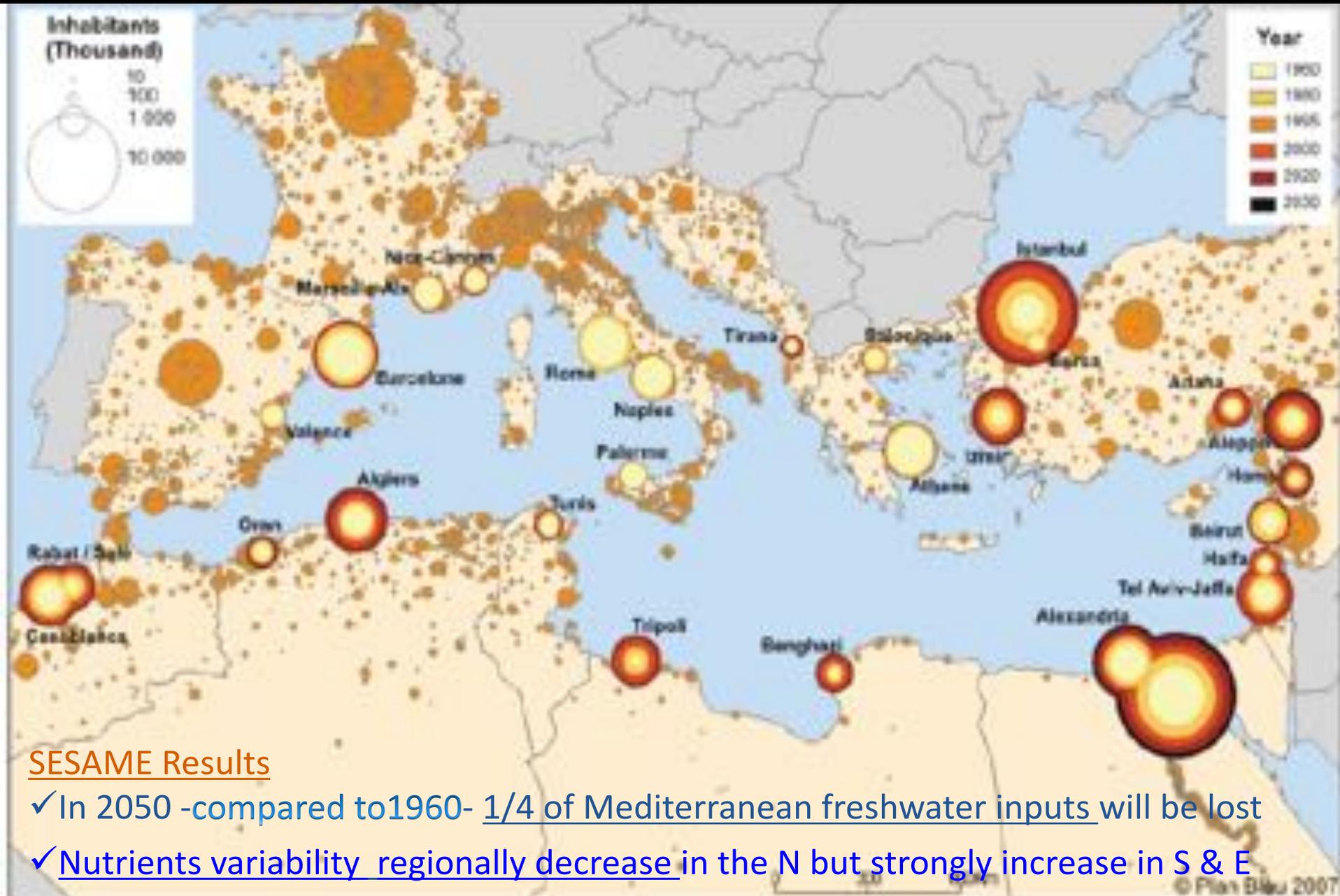
Pauly et al. 2008



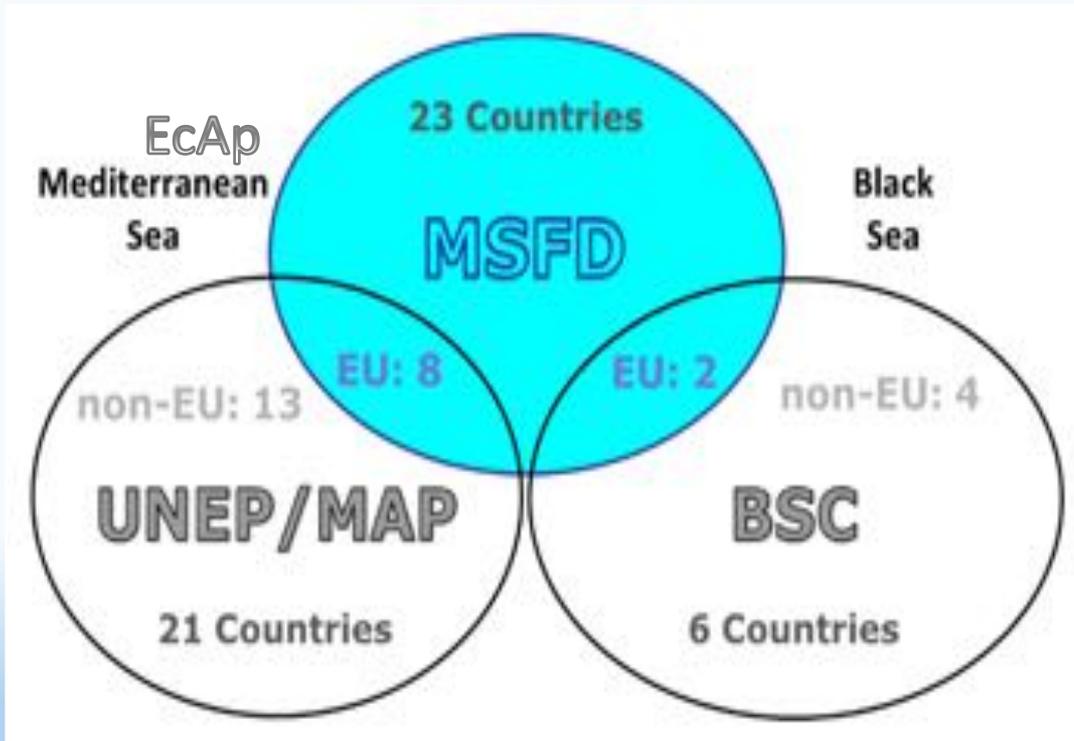
Marine Ecosystem Functioning
a shift from fish to jellyfish?



Population changes in different Mediterranean Cities in 2030



Overarching Policy Frameworks



- Almost same scientific principles in all
- Basis for coordinated monitoring and the implementation of measures in support of GES in the Med and BS
- Support decisions and implementation

- Multiple dimensions of many issues, close linkage between the policy frameworks harmonization of their strategies
- Still miss the interaction among the ecosystem elements, including the impacts from external pressures

ECOSYSTEM APPROACH (ECAP) - DEFINITIONS

“The ecosystem approach is a strategy for the integrated management of land, water and living resources that provides sustainable delivery of ecosystem services in an equitable way.”

•Source: UNEP Ecosystem Management Programme

“In ecosystem-based management, the associated human population and economic/social systems are seen as integral parts of the ecosystem. Most importantly, ecosystem-based management is concerned with the processes of change within living systems and sustaining the services that healthy ecosystems produce.

Ecosystem-based management is therefore designed and executed as an adaptive, learning-based process that applies the principles of the scientific method to the processes of management.”

•Source: UNEP (2006) Ecosystem-based Management – Markers for Assessing Progress

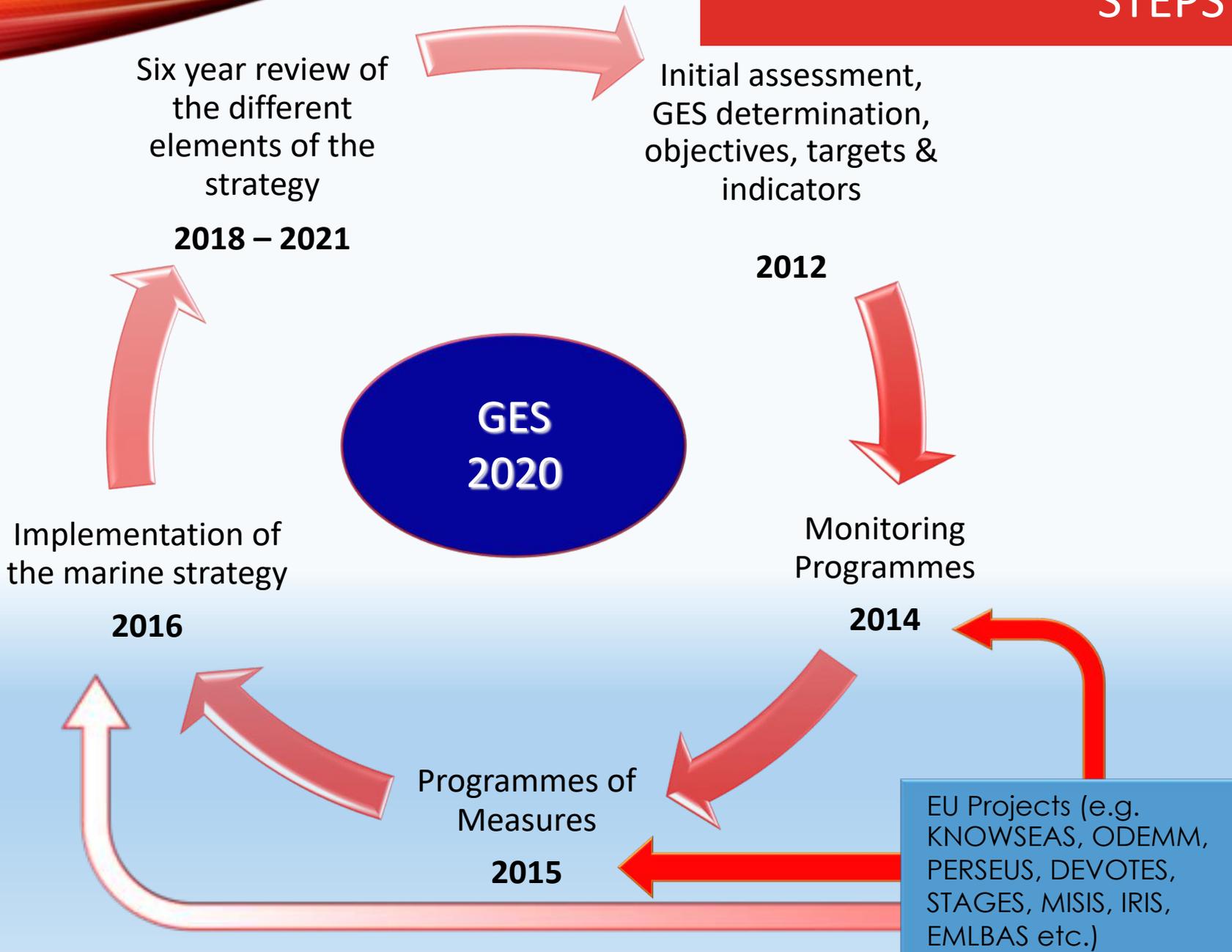
WHAT DOES THE EU DO FOR THE MARINE ENVIRONMENT? MARINE STRATEGY FRAMEWORK DIRECTIVE FOR 2020

- The "Marine Strategy Framework Directive" (MSFD), ratified by the member states in 2008
- Refers to the protection and preservation of the marine environment and requires the design and implementation of management plans and monitoring their implementation
- The Science in the Service of Policy

Common principles for Member States that should:

- 1. Assess their needs in their marine areas**
- 2. Implement management plans in each region**
- 3. Develop their strategies and monitoring programs**

IMPLEMENTATION STEPS



STATE OF THE EUROPEAN SEAS IN 2014

Initial reports, in 2014, of the Member States confirm that the European seas are not in 'good environmental status' ... *

- 39% of stocks in the Northeast Atlantic and 88% in the Mediterranean and Black Seas are still overfished and the situation is improving only slowly.
- Pollution in the marine environment has decreased in some places but levels of nutrients and certain hazardous substances are overall still above acceptable limits.
- Oxygen depletion, as a result of nutrient pollution, is particularly serious in the Baltic and Black seas.
- Marine litter, mostly plastic, is a growing issue globally and in the EU. The impacts of this increasing problem are manifold and their magnitude not yet fully known.
- Climate change, though not directly assessed under the MSFD, also contributes to the further degradation of marine ecosystems.

** Report from the EC to the Council and the European Parliament, 20.2.2014 COM(2014) 97 final*

- Data: Lack of time series information ...
- Contaminants: processes, effects and 'impact' is unknown
- Biodiversity: Significant gaps
- Productivity: Sudden changes (as a result of anthropogenic nutrient loads)  adaptive policies
- Coastal zone: Problems with erosion, human pressures and microbial pollution associated with urban wastewater. ICZM?
- Assessment of pollution effects : Identification. Biological effects of long-range and emerging pollutants
- Ecological indicators: Absence (complex coastal systems)
- Observing Systems: Improvement/Integration of continuous monitoring (connection with Sea Technology)

THE NEED FOR SCIENTIFIC KNOWLEDGE

- **A major challenge:** attain the necessary scientific knowledge of the elements that define the state of the marine environment in the MED (e.g. processes, biodiversity, food web....)
- **A substantial need:** develop additional scientific understanding (mentioned also in policy documents e.g. MSFD)
- **Scientific knowledge:** Needs to be increased on the marine environment, especially for the MED, and turn the Knowledge to “Wisdom”, especially for policy makers

(Data → Information → Knowledge → “Wisdom”)



17 mooring platforms were reported

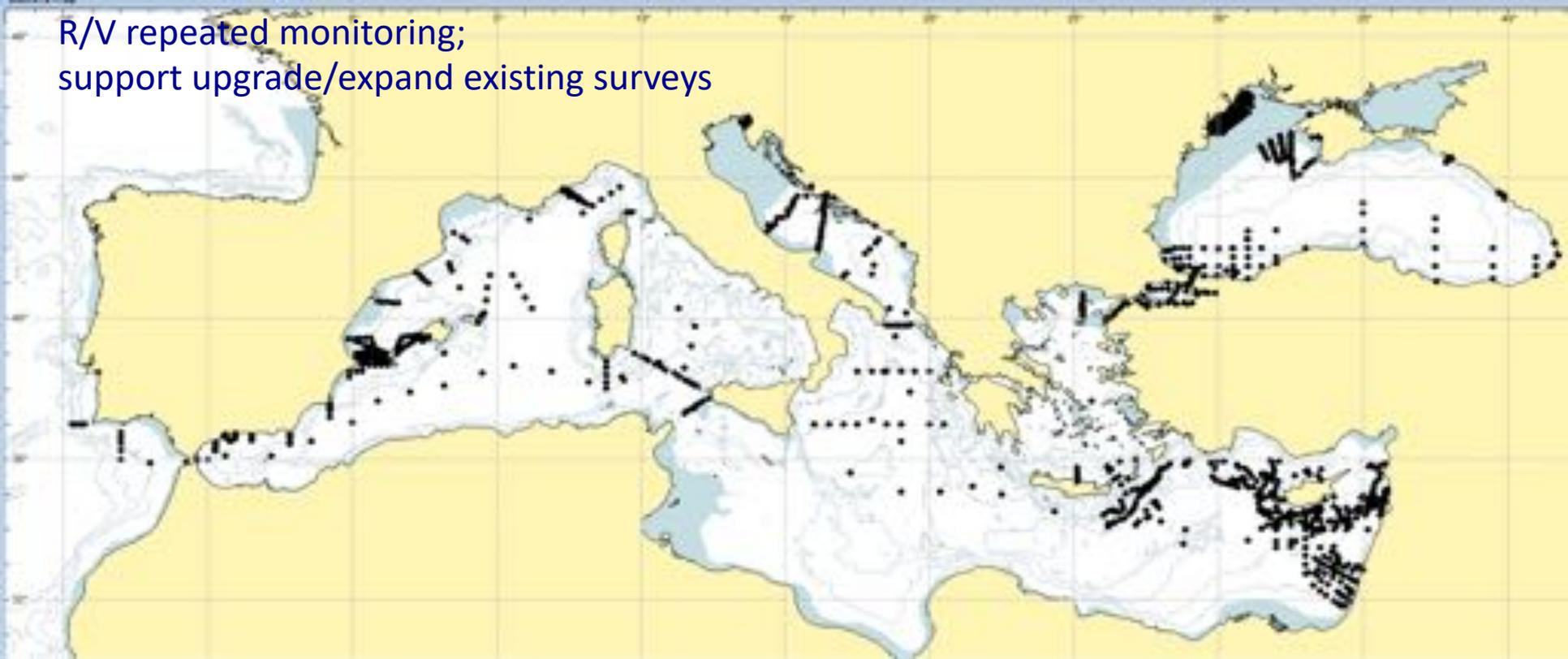
Multi-parametric moorings



New sensors, upgraded and expanded



R/V repeated monitoring; support upgrade/expand existing surveys



October

CNRS-MOOSE one-day monthly cruises	42.5	43.3	7.8	3.32	Téthys, Nereis
HCMR one-day monthly cruises	35.35	35.76	25.09	25.16	IOLKOS or FILIA or AEGEO
IEO RADMED 1014 cruise (15/10-05/11)	36.25	41.32	-4.75	4.58	F.P. NAVARRO
SIO RAS one-day cruise	44.49	44.58	37.95	38.07	Ashamba
OC-UCY-CYCO	34.59	34.60	33.05	33.062	GORG0

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November

CNRS-MOOSE one-day monthly cruises	42.5	43.3	7.8	3.32	Téthys, Nereis
HCMR one-day monthly cruises	35.35	35.76	25.09	25.16	IOLKOS or FILIA or AEGEO
SOCIB_Canales 4 day cruise	38	40.5	-0.5	4.5	Balearic Basin

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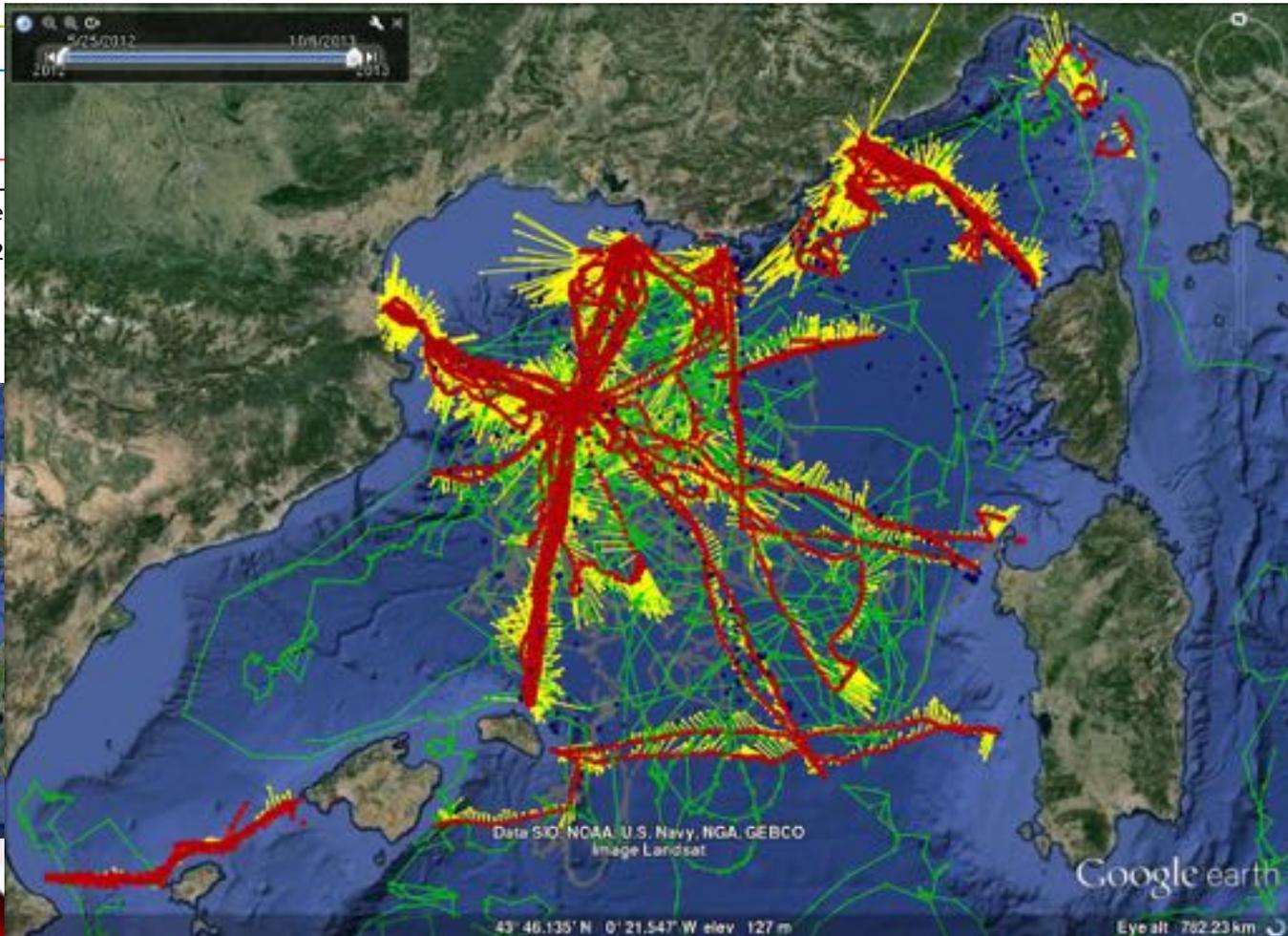
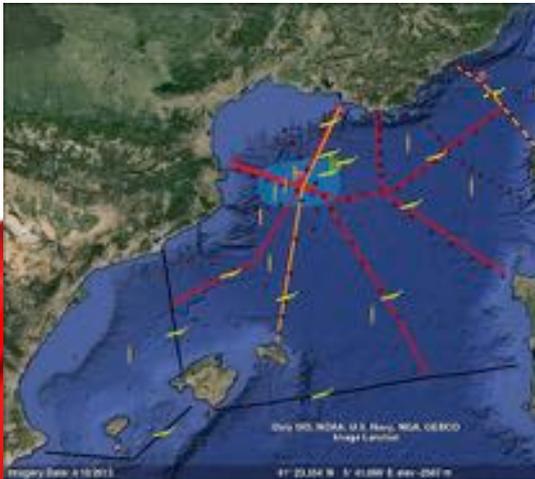
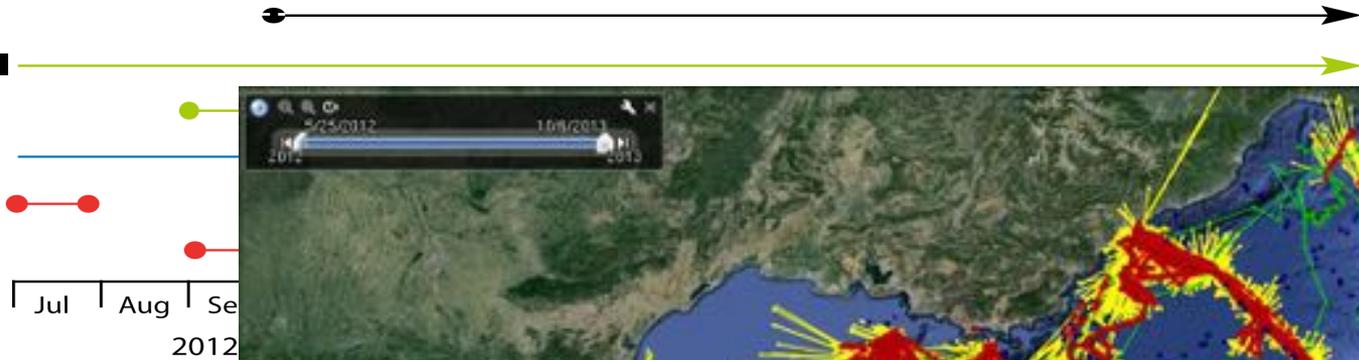
December

CNRS-MOOSE one-day monthly cruises	42.5	43.3	7.8	3.32	Téthys, Nereis
HCMR one-day monthly cruises	35.35	35.76	25.09	25.16	IOLKOS or FILIA or AEGEO
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Multi-platform experiment: Continuous description over the water column at the basin/meso/submeso scales over a year

- profiling floats
- LOP gliders
- EOP gliders
- MOOSE moorings
- MOOSE cruises
- D(E/O)WEX cruises





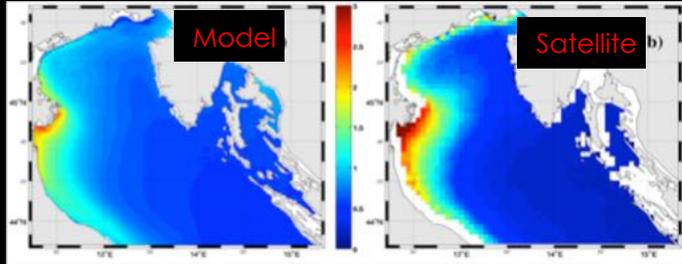
Εισαγωγή

Assessment of the state of Marine ecosystems

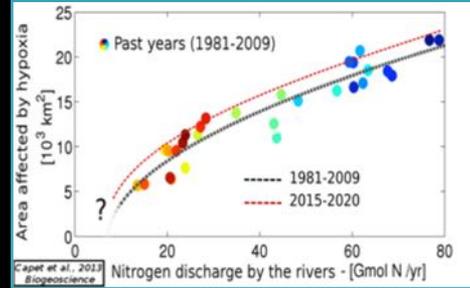


...An ecosystem "end to end" approach

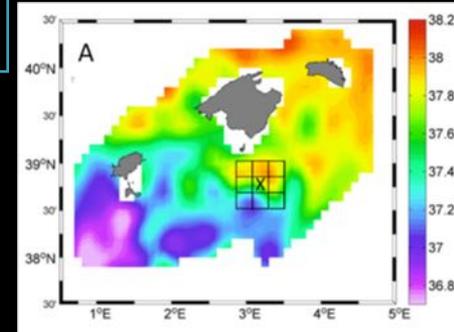
GPP



Gross primary production



Scenarios for anoxia Development in the Coastal Black Sea

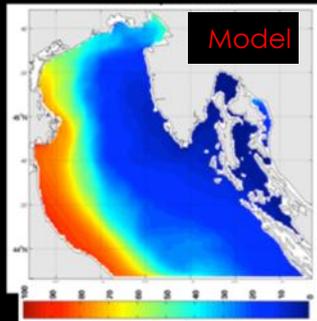


Blue Tuna

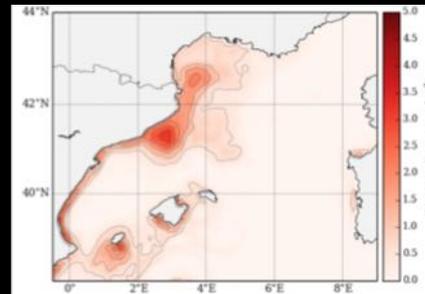
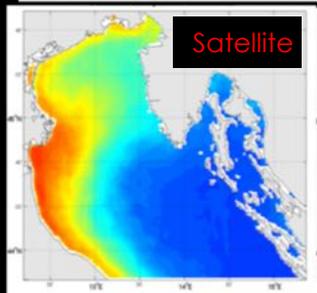
From phytoplankton to fish with a fully coupled (Physics + Biogeochemistry) approach

Model-based assessments Spawning areas

Diatoms

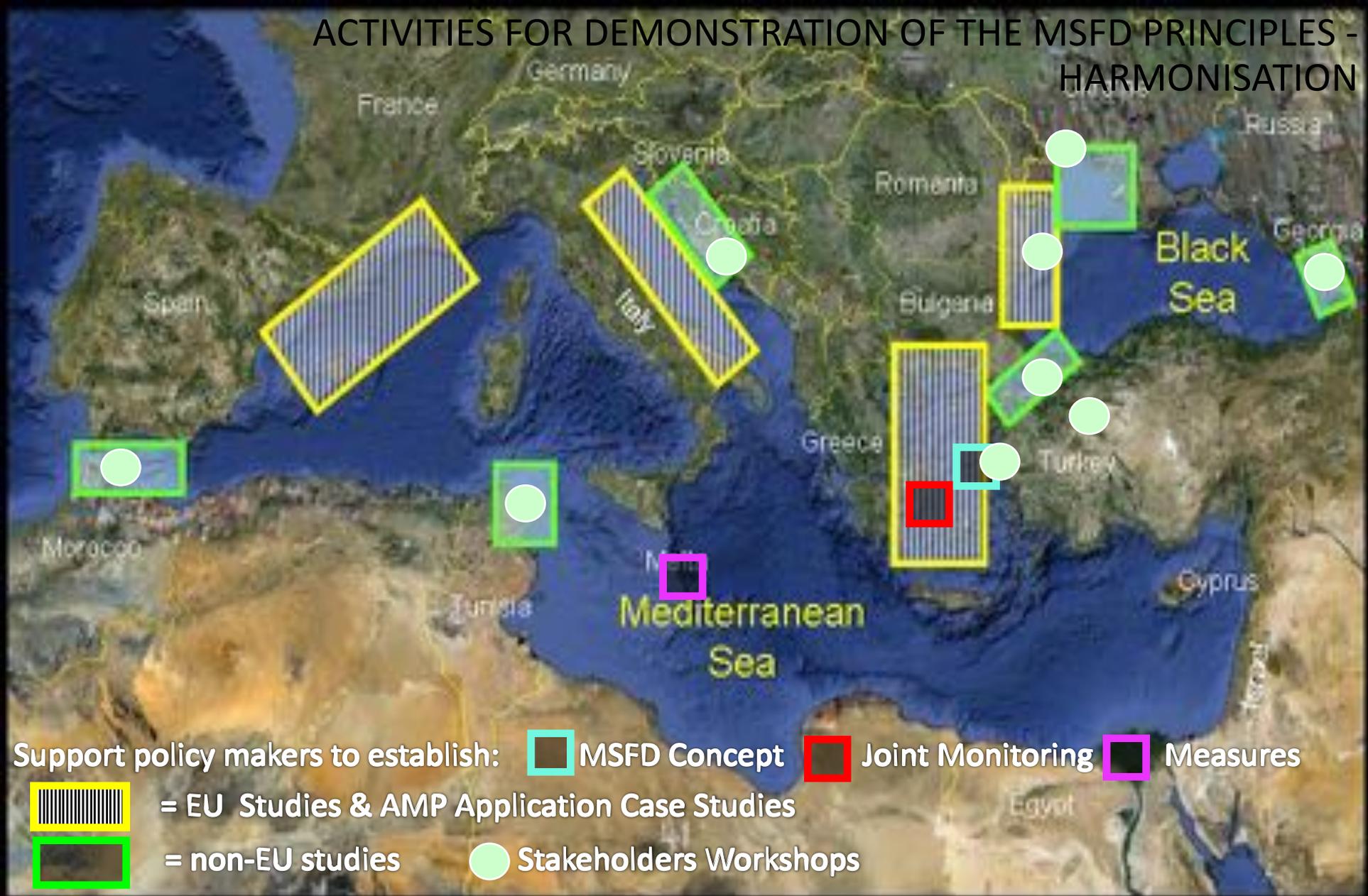


Phytoplankton Population structure



Anchovies

ACTIVITIES FOR DEMONSTRATION OF THE MSFD PRINCIPLES - HARMONISATION



- Overview of methods for assessment of environmental status for all MSFD
- Support harmonization of assessments by using compatible methodologies

The Vision...



THE MEDITERRANEAN SRA

“By 2020 the Mediterranean Marine Science should be able to contribute with New Knowledge to efficient Policy Making and sustainable growth of Maritime Economy in response to the societal challenges for Food, Energy, Wellbeing, and a Healthy marine environment following the principles of Ecosystem Approach to Management of Natural Resources”

High level objectives, countries' involvement

- Produce **new knowledge** – promote excellence
- Support **sustainable economic growth**; innovation; bridge gaps between research and
- Support **knowledge-based policy making** (environment, climate, fisheries, ..). Data access
- Increase and develop new **capacities** and promote **convergence** between Mediterranean countries



FEATURES FOR CONSIDERATION IN THE MED...

- Very sensitive area, highly stressed ecosystems complicated hydrography and chemistry and very high species diversity
- Changes in biodiversity may affect the ecosystem functioning, even in the case of invasions by a single species
- Effects of anthropogenic impacts (e.g. eutrophication, environmental stressors & climate changes and/or micro pollutants) on structural and functional aspects of the Med ecosystems
- The potential of microbial-molecular parameters is being tested; classical taxonomy could benefit from these techniques
- Capacities to be extended to the whole Med as all countries should be involved

We have to....

- **Think basin-wise but need to act locally; “big picture” has been gradually created**



SCIENCE - POLICY INTERFACE



INVOLVE STAKEHOLDERS

AND



CHALLENGES

CHALLENGES

MAIN

Knowledge up to now

What we accomplished so far at EU and national level (starting level)

Future Research

Design in the best way the future research. **Funding?**

Participation of stakeholders

Solutions

Synthesis of the current findings. (happening through the EU Med Initiative)

National research strategy
(Strategy  Funds)
Structural Funds, EU calls. Align the funding

From the beginning; from the inception of the research action

MAIN CHALLENGES

Convince policy makers

Have **common** language, agreed on the problems and arrive to **common** solutions

Participation on common(?) joint, projects in the SES

SOLUTIONS

Scientific results to be understood (be simple not simplistic...) and answering the questions. Missing information to work on. Valuation of policy actions. Build trust

Discuss, discuss, discuss; BE & WORK TOGETHER

Coordination of research to be adopted based **on a common strategy**. Co-ownership. Seas-Era SRA could be a good start. Not far....

MAIN CHALLENGES

Trust and understanding; to be gained between different groups

Ocean literacy and capacity building (should be increased)

Whatever is done should be based on **Excellent science, industrial involvement and society needs** (like H2020)

Non-EU countries involvement

SOLUTIONS

Prerequisite! Gain trust through the work done; scientific deliverables to be understood and used....

Dedicated groups to translate and disseminate the knowledge (different levels and combinations)

Integrated approach based on Strategies

Be involved through projects; work together (two basins). Momentum should be increased

MAIN CHALLENGES

Clear questions from Industry and policy to scientists

Scientists to reply "to the point" asked...

Scientists to combine excellent science with innovation

SOLUTIONS

Increase the “stream” of collaboration from industry to science; look for long lasting solutions/relations; **long-term investment through clusters**

Knowledge maybe not enough....**Wisdom should be behind the answers**

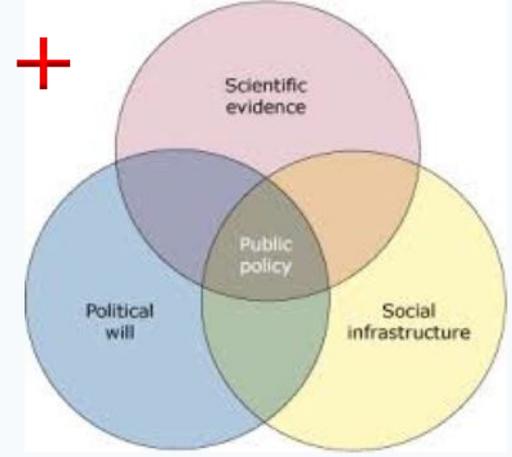
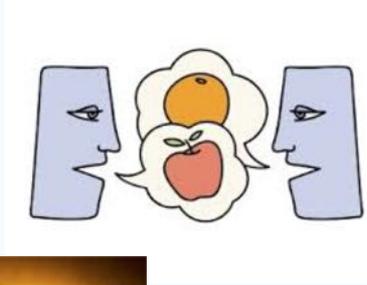
Innovative solutions; not only innovation technology

We all, SOMEHOW, have to see the SAMEBIG picture

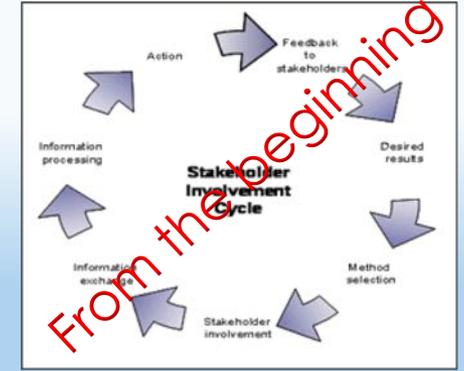


When Science meets Policy..... Necessity! Some Progress was made

Prerequisites:



“Translate” the Scientific results for Society; Public awareness



Knowledge at basin level is required (gradually there...)
Knowledge-based actions to be made at national/local level



Focus on the Mediterranean -The BLUEMED CSA experience

Mario Sprovieri, IAMC-CNR, Italy

JERICO-NEXT Malta Summer School 2018 Operational Oceanography for Blue Growth
University of Malta, 9th to 14th July 2018

THE BLUEMED PROCESS AND ORIGIN

Needs & Gaps

- **May 2014:** Set up of the initiative and roadmap
- **June-July 2014:** Mapping of R&I projects (about 900!) and stakeholders consultation at national level
- **August 2014:** Merging of information to identify R&I needs & gaps, opportunities and boundary conditions for their implementation

Vision

- **September - December 2014:** Consultation with scientific communities & industry associations at EU level; finalization of a **Vision Document**; endorsement by the Italian Presidency of the EU Council via its presentation during the Competitiveness Council of 04-05 December 2014.

SRIA

- **February 2015:** Key challenges goals & actions for *boosting blue jobs and growth and improve knowledge transfer and SMEs participation*; exploration of interregional perspective/opportunities within the EU Cohesion policy
- **March 2015:** Improvement of the effectiveness and finalization of the **BLUEMED Strategic Research and Innovation Agenda (SRIA)**

WHY THE BLUEMED?

- **A unique Basin** in terms of biotic and abiotic characteristics and how they are interconnected with human activities
- **Med is relevant for EU economy** with 30% of global sea-borne trade and 25% of worldwide sea-borne oil traffic, more than 450 ports, and half of the EU's fishing fleet
- **A populated Basin** > 150 M inhabitants on coasts, who double during the tourist season also for the unique cultural heritage >400 UNESCO sites
- **A challenging Mediterranean** where the ecosystem is at risk, considering the increasing pollution and costal degradation due to the overexploitation of space and resources
- **A Basin of opportunities** to be sustainably exploited

BLUEMED : WHY DOES IT MATTER?

- Tries to exploit the potential of marine and maritime sectors to create new 'blue' jobs, promote social cohesion and improve the environmental status and citizens' wellness
- Has an integrated approach across different sectors and disciplines and a long-term oriented, strategic coordination of R&I activities
- Provides added value to regional, national and EU investment, avoid duplication and reduce fragmentation by having synergies and complementarities between sectors & countries
- Countries could play a major role.... a more stable research and innovation strategy will be provided
- Example (way of thinking) for the future for other areas

WHAT DO WE NEED MORE?

- Increase the potential of the BG; could represent a significant share of the countries' growth in the SES
- Countries take a coordinated action, prioritise and have clear objectives
- Tackle, collectively, economic, social, scientific & environmental challenges
- Align EU and National funding for common goals
- Involve stakeholders at multidisciplinary level having an integrated cross-sectorial approach
- Data sharing for wider use
- New and emerging knowledge and technologies to build on
- Apply services (e.g. Safety, MLResources, Coastal & Marine applications etc.- *Copernicus* is a good example)
- New tools (from projects?) to helping the scientific community to create more accurate and dynamic forecasting of possible risk scenarios

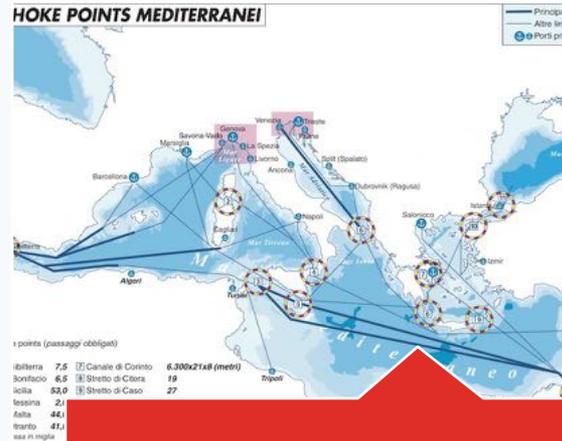
STRATEGY TO BE FOLLOWED/ SCIENCE & INNOVATION TOGETHER WITH POLICY & INDUSTRY

- Involve all groups of stakeholders from the beginning
- Make (as many as needed) open forum discussions with all groups involved and discuss the future strategy
- **Marine Science needs** to deal with marine and maritime economy and provide knowledge, education and literacy, technological innovation and scientific diplomacy
- **Policy makers need** to understand the results of their actions. Valuation & Responsibility
- **Industry needs** to be actively involved and have long-term investment, asking for solutions
- “Useful” research can be contacted and address problems
- Connection with jobs and society needs to be improved. Do scientists know what does it mean?

BLUEMED is the Research and Innovation Initiative for promoting the blue economy in the Mediterranean Basin through cooperation and alignment of programmes. It is the strategy of reference to work together for a better known, healthy, safe and productive Mediterranean Sea



- 30% of global sea-borne trade by volume and 1/4 oil traffic
- 450 ports and terminals
- 2nd largest market for cruise ships



- Geopolitical complexity
- Safety and security issues
- Coastal pressure
- Resources over-exploitation



- Unique biodiversity
- 400 UNESCO sites and 236 Marine Protected Areas
- Culture of environmental healthy life

The BLUEMED Coordination and Support Action

51

11 PARTNERS, COORDINATED
BY CNR (IT)
9 COUNTRIES
4 YEARS (from 1st Oct 2016)
2,998 K€ EC FUNDS



Dec 2014 >>
Priority of the
Programme of
the Italian
Presidency of
the EU Council

Oct 2016
>>
BLUEMED
CSA begins

Oct 2015 >> Venice
Declaration
endorsed by 10 EU
Member States and
launch of the
BLUEMED Strategic
R&I Agenda

April-May 2017 >>
BLUEMED Conference
under Malta Presidency
of EU Council, SRIA
update, and Valletta
Declaration signed by the
Union for Mediterranean
and EU Member States

The BLUEMED Initiative is coordinated by a Strategic Board chaired by Italy, together with EC DG RTD and DG MARE, and composed by state representatives of Cyprus, Croatia, France, Greece, Malta, Slovenia, Spain, Portugal, and Belgium. Recently, Montenegro joined it. The Strategic Board counts on the CSA BLUEMED for the implementation of some strategic actions as well as on experts, including from JPI Oceans and some of the other R&I initiatives in place in the Mediterranean area.

Aims

The BLUEMED Initiative will contribute to the creation of new 'blue' jobs, social wellbeing and a sustainable growth in the marine and maritime sectors through the implementation of the Strategic Research and Innovation Agenda, the



BLUEMED SRIA



12 key challenges, actions and goals



- Key enabling knowledge for the Med (ecosystems, dynamics, coastal areas...)
- Key sectoral enablers in the Med (tourism, clusters, MSP, bioresources ...)
- Enabling technology and capacity creation for the Med (transport, observing systems, off-shore platforms, cultural heritage)

Responses *Identify priorities and potentials: the Strategic Research and Innovation Agenda (SRIA)*

Key enabling knowledge for the Mediterranean

- *Mediterranean Sea ecosystems: services, resources, vulnerability and resilience to natural and anthropogenic pressures*
- *Mediterranean Sea dynamics: developing services in the field of sustainable adaptation and to climate change and plans for mitigation;*
- *Hazards and protection of coastal areas in the Mediterranean*

Key sectorial enablers in the Mediterranean

- *Innovative business based on marine bio-resources in the Mediterranean*
- *Ecosystem-based management of Mediterranean aquaculture and fisheries*
- *Sustainable tourism in the Mediterranean*
- *Maritime clusters in the Mediterranean*
- *Maritime Spatial Planning & Integrated Coastal Zone Management in the Mediterranean*

Enabling technology and capacity creation for the Mediterranean

- *Smart, greener maritime transport and facilities in the Mediterranean*
- *Observing systems and operational oceanography capacities in the Mediterranean*
- *Multi-purpose off-shore platforms in the Mediterranean*
- *Marine and coastal cultural heritage in the Mediterranean: discovering, protecting and valuing*

- ✓ *Healthy Marine and Coastal Environments*
- ✓ *Ocean Governance*
- ✓ *Circular Economy*
- ✓ *Food from the Sea*
- ✓ *Energy Transition*
- ✓ *Blue Biotechnologies*
- ✓ *Marine Data and Marine Knowledge*
- ✓ *Human Resources and Skills*
- ✓ *Maritime Clusters*
- ✓ *International Cooperation among EU Countries and between EU and non EU Countries*

EXPECTED ACHIEVEMENTS

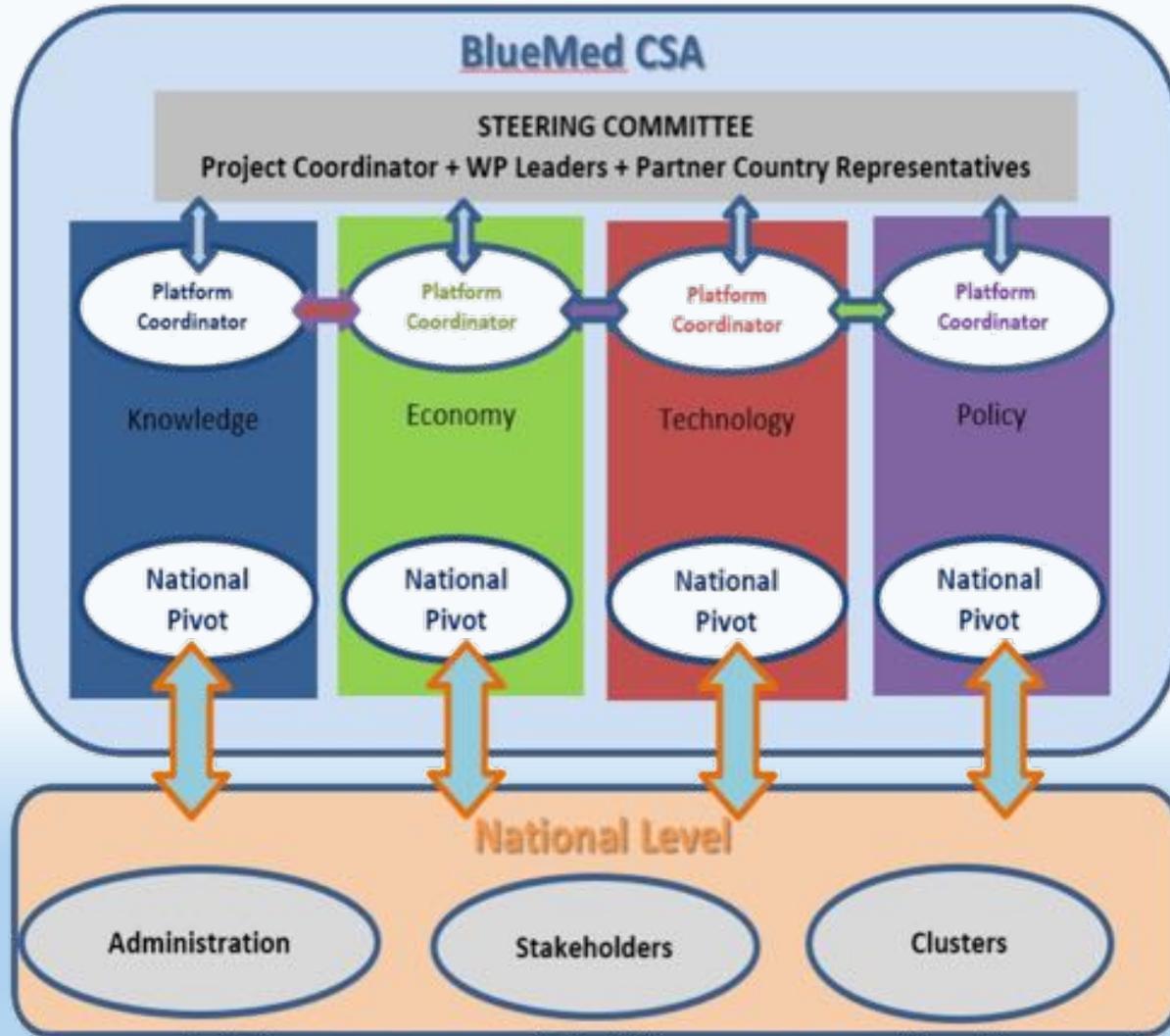
- ❑ BLUEMED SRIA yearly update through cooperation across the Med
- ❑ 1 Implementation Plan
- ❑ **4 Platforms running**
- ❑ 1 Network of funders and key players
- ❑ 3 to 5 Start-up actions
- ❑ n+1 people in the Community
- ❑ 5 BLUEMED Ambassadors



BLUEMED PLATFORMS

A TOOL FOR STAKEHOLDERS' CONSULTATION AND ENGAGEMENT

Setting the frame for the effective coordination of research and innovation activities, consolidating networks and establishing mechanisms that will remain and be further developed after the conclusion of the project



**thematic, transnational,
interconnected, open, flexible**

- Support to the organization of the BLUEMED Conference *A Basin of Research and Sustainable Growth* under the Maltese Presidency of the EU Council (**April 2017**)
- Set-up of 4 platforms to update and consolidate the SRIA, and launch of the survey (**on-going**)
- Development of a set of indicators and assessment of relevant research infrastructures, data policies and skills to underpin the BLUEMED research and innovation actions (**on-going**)
- Support to the **engagement of non-EU countries** in collaboration with the Union for Mediterranean (UfM) >> organization of the workshop *BLUEMED - Building a shared research and innovation agenda for blue jobs and growth across the Mediterranean* within [UfM Regional Stakeholders' Conference](#), Naples, **29-30 November 2017**
- And more key activities to come to involve projects and initiatives, convey potential funders and committers towards the update of the SRIA and its implementation, and launch of Start-up Actions (**first half of 2018**)

blueMed

BLUEMED Survey, share your view on the Research and Innovation agenda for the Med!

Are you a researcher, a policy maker, an entrepreneur, or a representative of the civil society interested in the Mediterranean Blue Economy? Share your inputs to review the list of challenges, goals and actions of the BLUEMED agenda (http://www.blued-med-initiative.eu/wp-content/uploads/2017/09/BLUEMED-SRIA_Update_final.pdf) and analyse the key barriers and bottlenecks!

This survey is aimed at gathering expert and stakeholder views on key issues of the Mediterranean region, from all the possible perspectives, ecological, economical, technological, social, to help designing strategies for a sustainable development of the region in the specific framework of Blue Growth with the final scope of the well-being of region inhabitants.

BlueMed already identified several challenges and goals, presently described in the BLUEMED Strategic and Innovation Agenda (SRIA), which are now being refined and improved. To make this possible, your contribution and your suggestions are essential.

www.blued-med-initiative.eu/blued-med-survey/

Narrowing priorities from societal/economic macro drivers (e.g. tourism, transport, energy, food, ..) to “blue” thematic objectives.

Survey on-going to refine and improve the BLUEMED SRIA by reviewing the list of challenges, goals and actions. The analysis of results will feed national position papers to be discussed at Platforms' level and finally bring - through a multi disciplinary and cross platform approach - to a shared position.

Change the mindset for growing blue in the Med Area envisioning the Med Basin as a spot for innovation



- Overcoming of key innovation bottlenecks
- Creation>improvement>valorisation of national and local experiences in line with the BLUEMED Vision
- Implementation of effective participatory mechanisms
- Increased innovation capacity and competitiveness
- Alignment of programmes and maximization of fund streamlines
- Development of research/industry/policy/society virtuous relationship...and the environment
- Enhanced mechanisms for knowledge based policy decisions

Burgas Vision Paper

A Blue Growth Initiative for Research and Innovation in the Black Sea

Burgas, 31 May 2018

We, experts from the Black Sea coastal countries, namely the Republic of Bulgaria, Georgia, Romania, the Russian Federation, the Republic of Turkey and Ukraine, as well as the Republic of Moldova, in cooperation with marine experts from leading European marine institutes and organisations, and with the support of the European Commission, aim to advance a shared vision for a productive, healthy, resilient, sustainable and better valued Black Sea by 2030. We believe that through our work we will help to deeper connect Black Sea societies through a bridge of new knowledge, technologies and services. We aim to foster human and infrastructures capacity building in coastal, marine and maritime sectors in view of unlocking unique opportunities for a sustainable and environmental friendly blue growth in the Black Sea.

DISSEMINATION & OUTREACH

bluemed-initiative.eu

bluemed-initiative.eu/the-project/

project/

@BlueMedEU

BlueMedProject

Newsletter sign-up!



Organization of BLUEMED national and international events, science café, and support to the participation to relevant high-level conferences



Communication toolkit and publications available on-line

Tuesday, September 4, 2018



THANKS FOR YOUR ATTENTION!

JERICO-NEXT Malta Summer School 2018 Operational Oceanography for Blue Growth
University of Malta, 9th to 14th July 2018



**PRIORITIES FOR THE BLUEMED
SRIA: AN EXERCISE FROM THE
JERICO COMMUNITY**

PILLARS OF BLUEMED

BLUEMED identifies a set of challenges under three pillars, (i) 'key enabling knowledge', (ii) 'key sectoral enablers', and (iii) 'enabling technology and capacity creation'

KNOWLEDGE ENABLERS

CHALLENGE A. Mediterranean Sea ecosystems: characterize present dynamics, services, resources, vulnerability and resilience to natural and anthropogenic pressures

GOAL

ACTION

A1.
Understanding
the
functioning of
the
Mediterranean
Sea ecosystem

Develop theoretical and operational tools for data analytics towards an end-to-end conceptual and numerical model

Identify the origin of invasive or alien species (including bacteria) and the routes of invasions, the environmental conditions conducive to invasions and their main effects and impacts on local habitats, species and ecosystems and study natural connectivity patterns from basin open boundaries and commercial maritime routes

Assess inputs from atmosphere-land-sea nexus and the effects of natural events and anthropogenic pressures leading to change in marine and coastal ecosystems

Fill gaps in understanding the Mediterranean Sea dynamics, biogeographic patterns, biodiversity, and ecosystem functions (including fishing resources) using novel monitoring, e.g. satellite, molecular/genetic tools to develop new end-to-end models forecasting the carrying capacity of the Mediterranean ecosystems

How to rate the different SRIA actions?

Grades for each action will be given at national level from a range between 1 and 10 defining the following bands of importance:

- 1-3 low priority
- 4-6 medium priority
- 7-9 high priority
- 10 very high priority

Once all actions have been rated by the different countries, the average grade will be calculated from all given national grades. In this simple way, a SRIA ranking of priority actions will emerge in this first step. Possibly several actions will get nevertheless equal grades.

For a given action A in the Bluemed SRIA:

$$A = \text{AVG} (A_{\text{Croatia}} + A_{\text{Spain}} + A_{\text{Italy}} + A_{\text{Portugal}} + A_{\text{Greece}} + A_{\text{Slovenia}} + A_{\text{Cyprus}} + A_{\text{Malta}})$$

$$A_{\text{Country}} = (A_{\text{short-term}} + A_{\text{long-term}}) \div 2$$

For the **3 Actions** with the highest scores, please provide 1-2 lines of reasons

Explore **THE FIRST CHALLENGE/FIRST GOAL** from each Pillar



30 minutes and then
rapporteurs present the
results for each pillar

Please, work on an xls file

Enjoy!