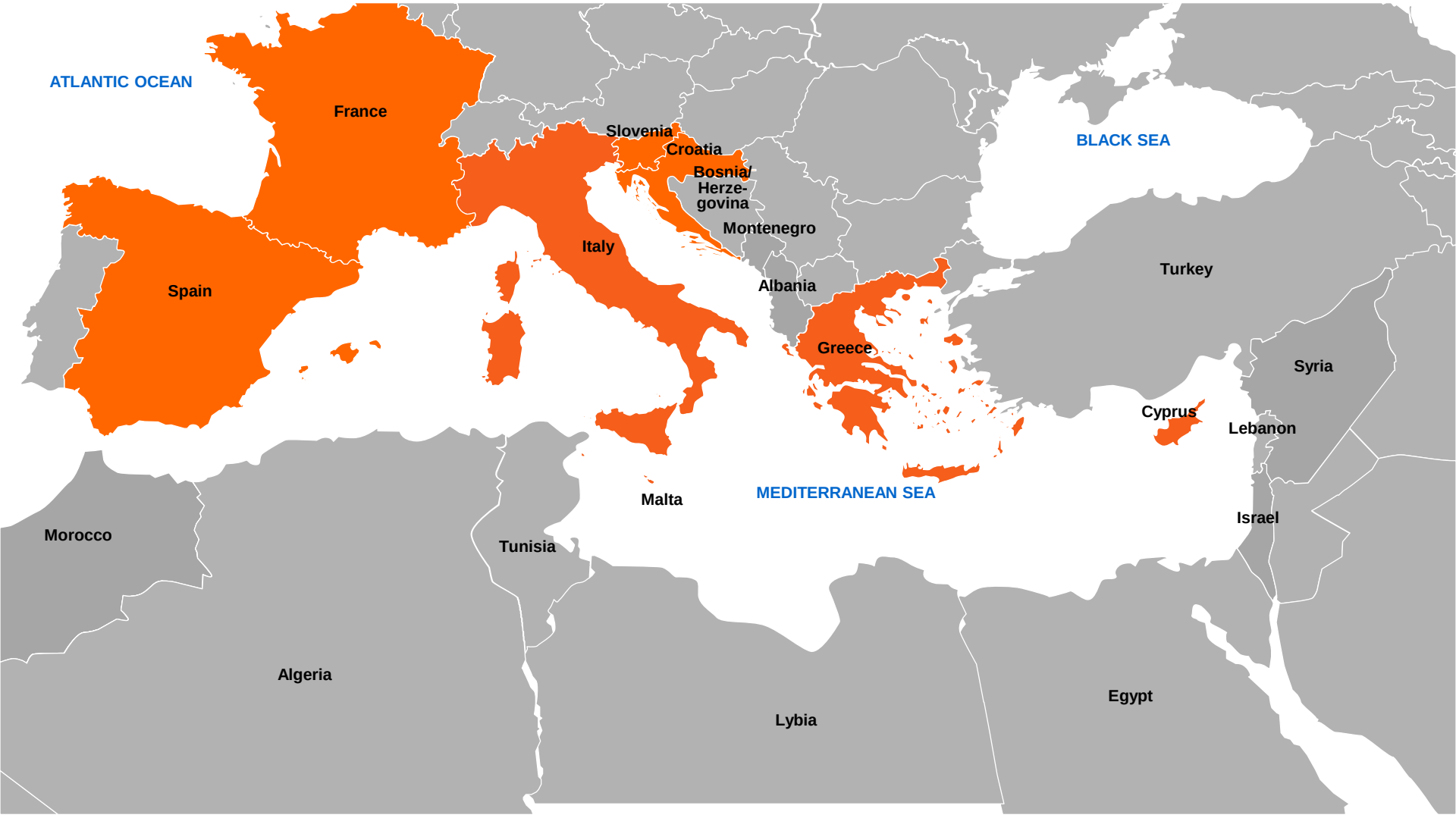
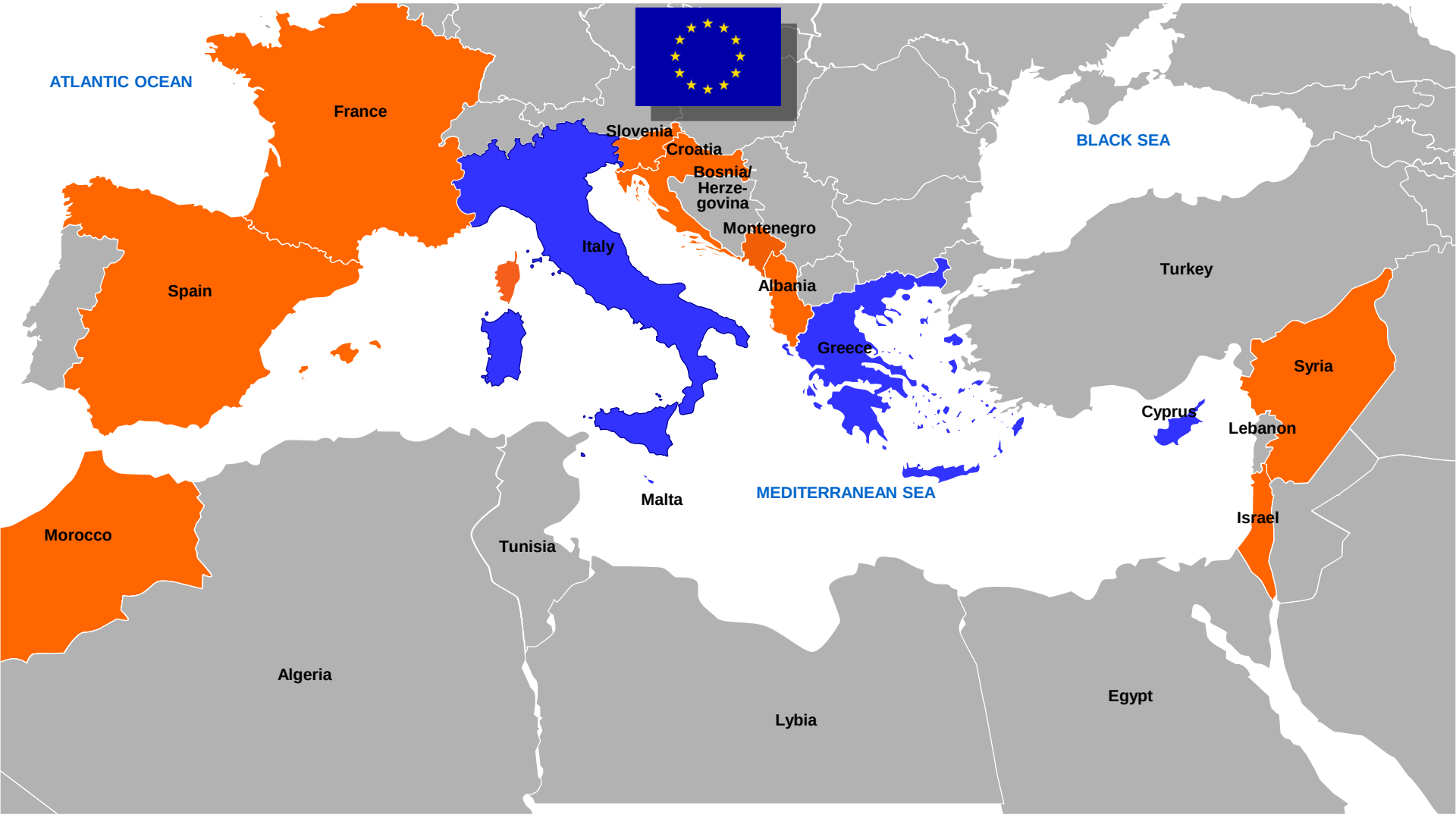
MSP
in the Mediterranean

Željka ŠKARIČIĆ
PAP/RAC Director

EU Directive on MSP



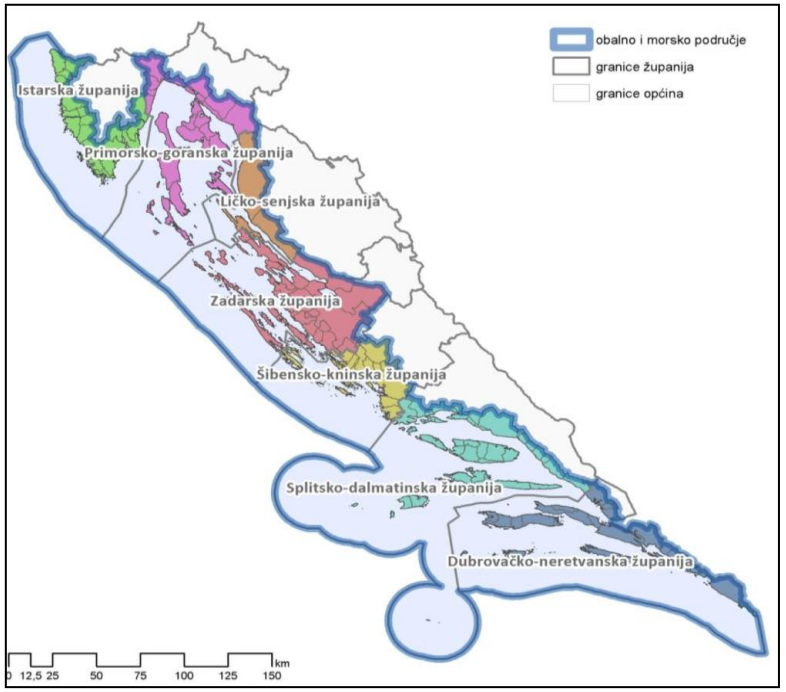
ICZM Protocol of the Barcelona Convention



✓ Definition of ICZM

ICZM means a dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, ***the maritime orientation of certain activities and uses and their impact on both the marine and land parts****.*

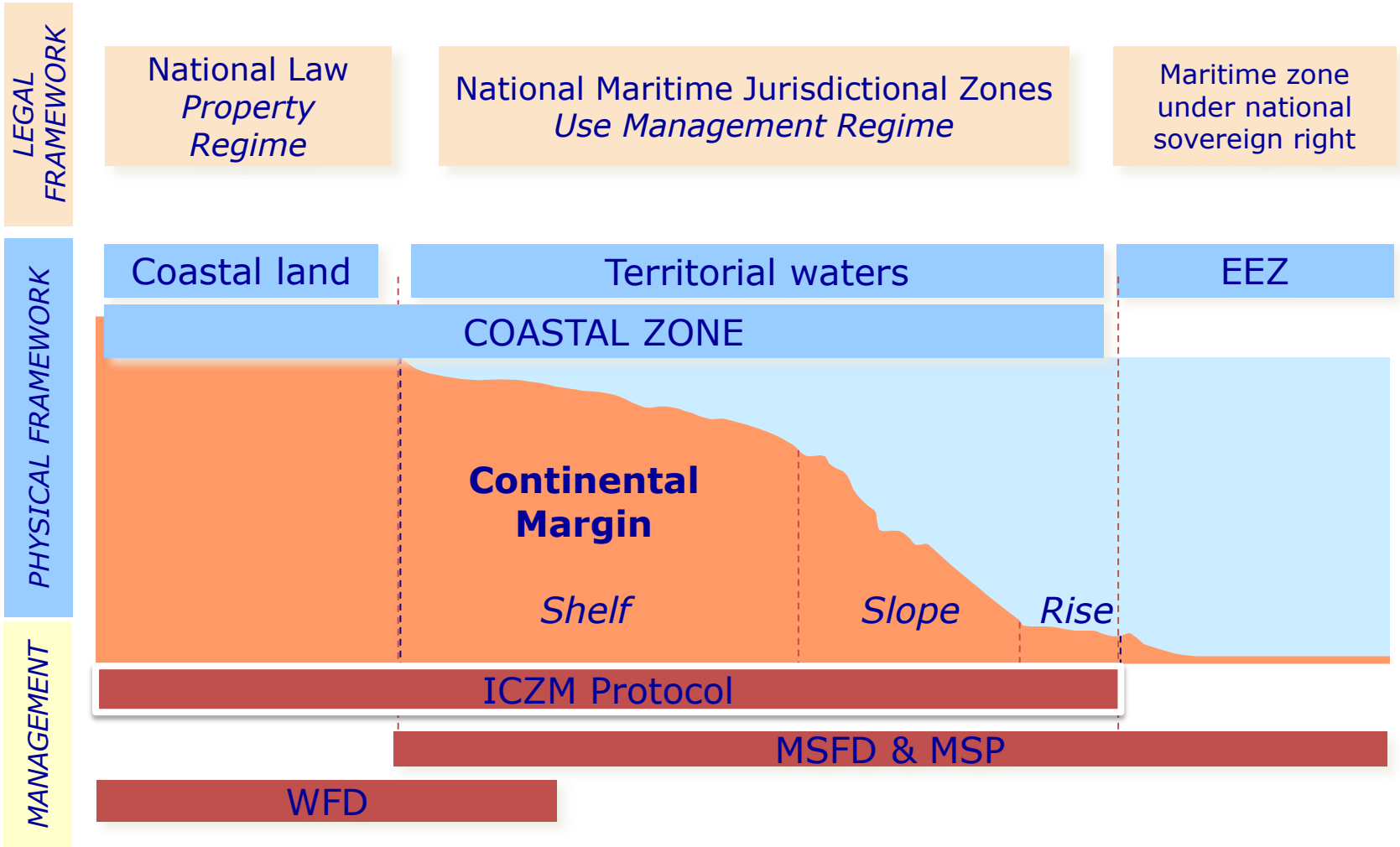
✓ Definition of coastal zone



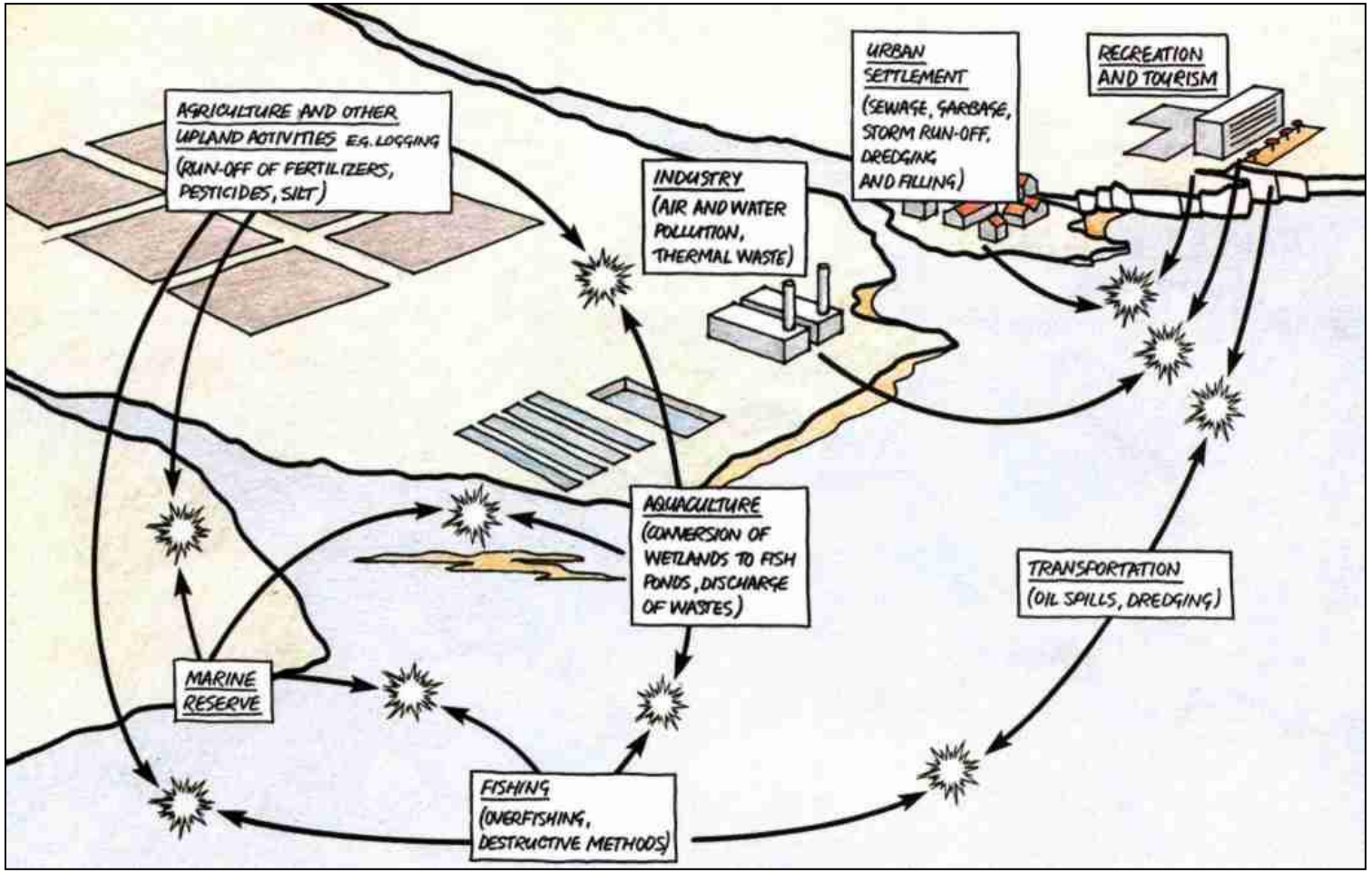
Art. 3: Geographical coverage

- Landward up to the limit of the competent coastal authority
- Seaward up to the external limit of territorial waters

Do we need MSP within the BC system? Yes!



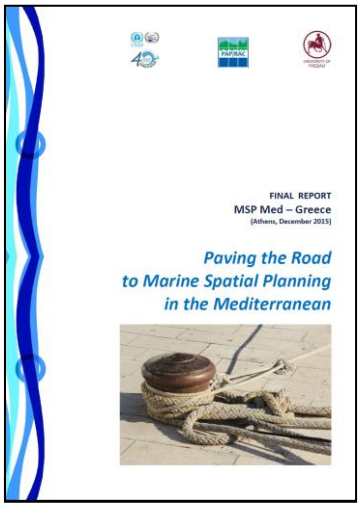
Yes!

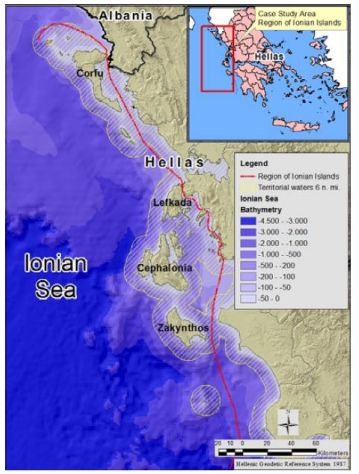

AGRICULTURE AND OTHER UPLAND ACTIVITIES E.G. LOGGING (RUN-OFF OF FERTILIZERS, PESTICIDES, SILT)
INDUSTRY (AIR AND WATER POLLUTION, THERMAL WASTE)
URBAN SETTLEMENT (SEWAGE, GARBAGE, STORM RUN-OFF, DREDGING AND FILLING)
RECREATION AND TOURISM
AQUACULTURE (CONVERSION OF WETLANDS TO FISH PONDS, DISCHARGE OF WASTES)
TRANSPORTATION (OIL SPILLS, DREDGING)
MARINE RESERVE
FISHING (OVERFISHING, DESTRUCTIVE METHODS)

Is MSP only about zoning? **No!**

MSP implies

- Administrative and legal aspects
- Taking into account major policies (Blue Economy, Marine Strategy, MPAs…)
- Governance aspects
- Cross-border issues
- Adequate methodologies
- Improved knowledge
- Integration with ***ICZM*** (governance mechanisms, principles, long-term planning perspective, land-sea interaction) and ***EcAp*** (linking uses & indicators, avoiding incompatibility with protected areas, using ecological criteria for definition of planning and management areas)

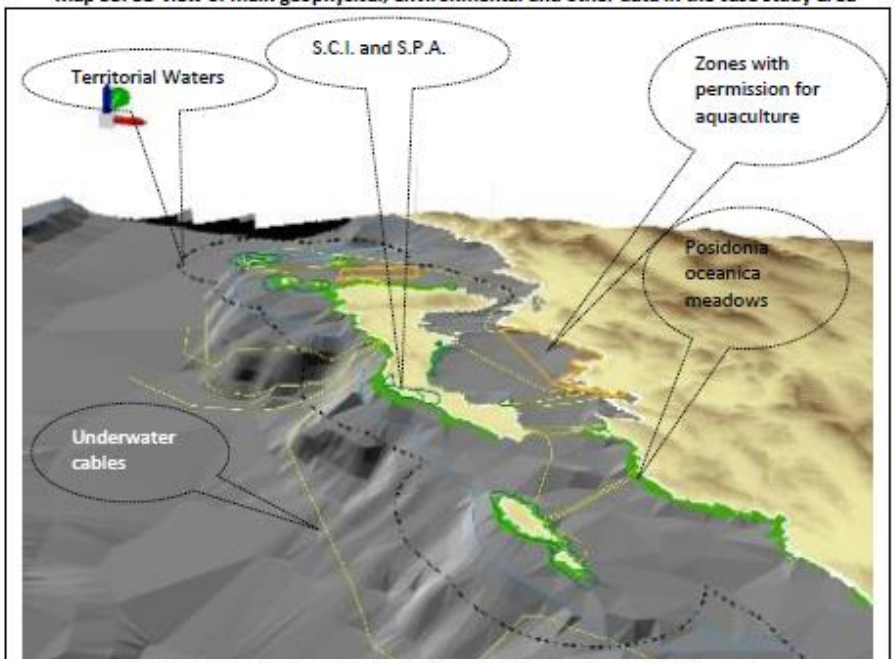




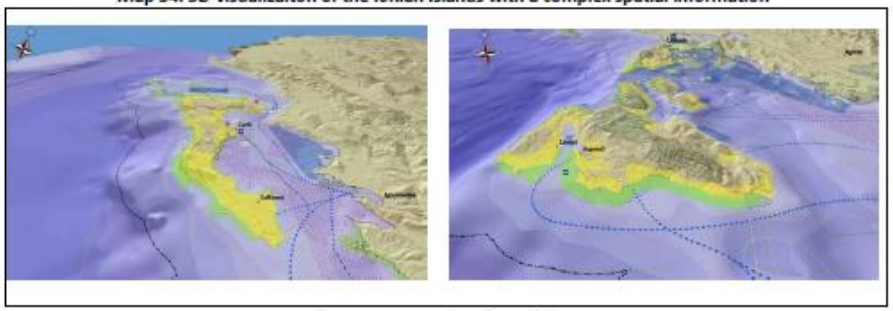
Map 2: The case study area (Region of Ionian Islands)

Data – Tools – Methods (1)

Map 33: 3D view of main geophysical, environmental and other data in the case study area

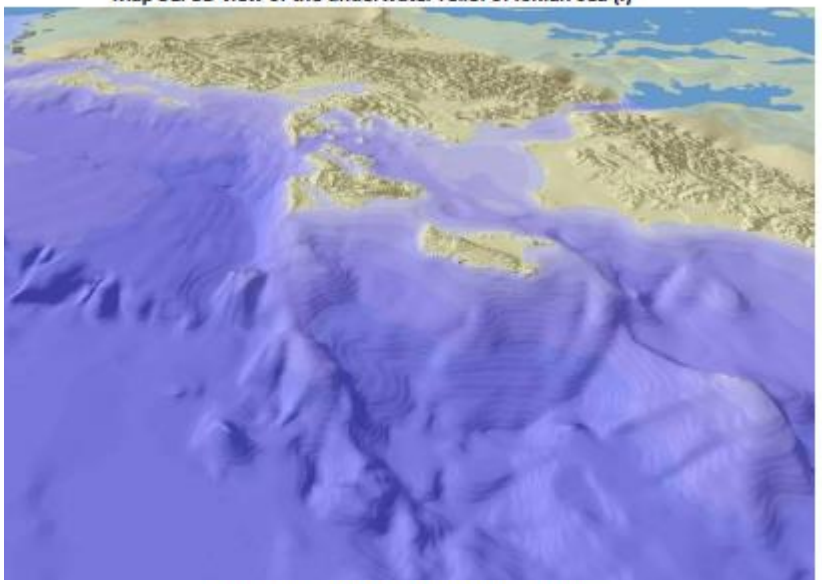


Map 34: 3D-visualizaiton of the Ionian Islands with a complex spatial information

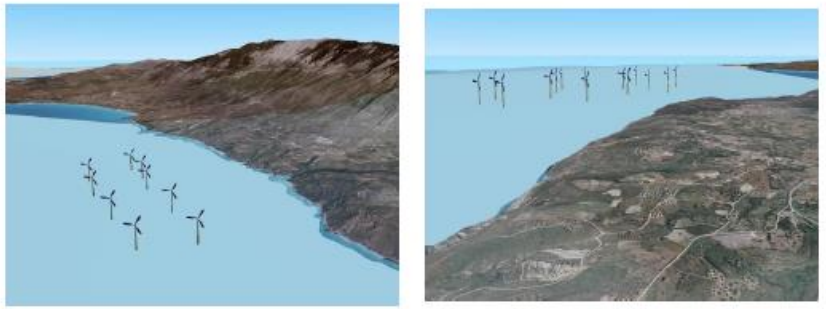


Source: processed by the authors

Map 31: 3D view of the underwater relief of Ionian Sea (I)



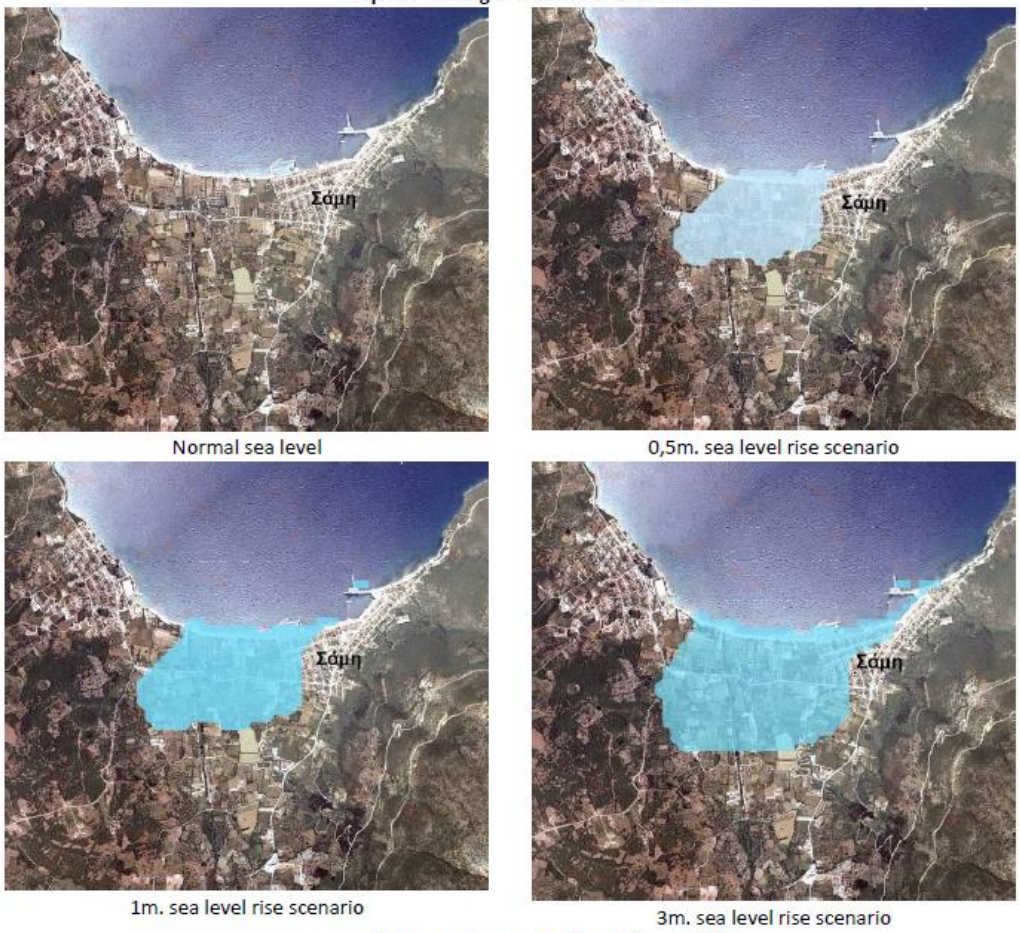
Map 35: Perspective view of an off-shore wind farm



Source: processed by the authors

Data – Tools – Methods (2)

Map 52: Testing of 3 S.L.R. scenarios



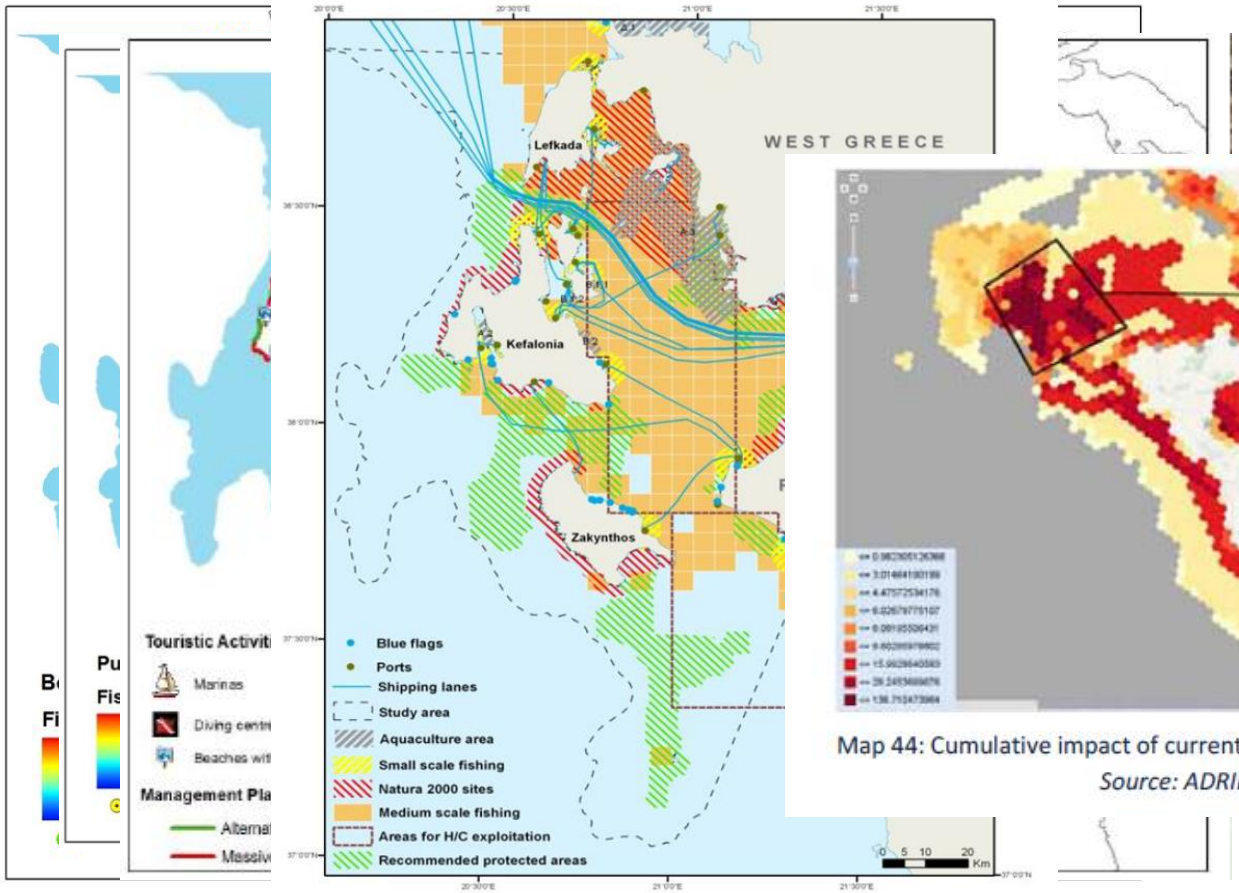
Normal sea level | 0,5m. sea level rise scenario

1m. sea level rise scenario | 3m. sea level rise scenario

Source: processed by the authors, 2015

Data – Tools – Methods (3)

Map 44: Existing and potential future human uses of the marine space within the case study area



Source: Krassanakis et al., 2015

Map 44: Cumulative impact of current activities on ecosystem components

Source: ADRIPLAN D3.1/7

Mapping of human activities

Data – Tools – Methods (4)

Figure 4: Cooperation with Stakeholders in the case study area

Stakeholder Groups
National Administrators
Regional / Municipal Administrators
End Users (Socio-economic groups)

Tools
Questionnaires
Stakeholder Meetings (in Athens & 4 islands)

Aim
Identification of
Conflicts/ Obstacles/Synergies/ Future Investments

Needs and Priorities for MSP

Table 19: Local stakeholders' estimation on conflicting sea uses and activities in the Ionian Sea

	Aquaculture	Fishing	Tourism	Navigation	Environmental Protection	Sea infrastructure	Residence
Aquaculture			6		1		
Fishing			5		2		
Tourism	6	5			10	1	1
Navigation					2		
Environmental Protection	1	2	10	2		2	
Sea infrastructure			1		2		
Residence			1				

Incompatible uses | Semi-compatible | Conditionally compatible | Compatible

Source: processed by the authors

Lessons learned

MSP = Vehicle for Sustainable Blue Development,
Regional/Territorial Cohesion and
Cross-Border Cooperation

MSFD / EcAp process  MSP

Regional Framework for ICZM
&
Conceptual Framework for MSP

Thank you for your attention!

United Nations Environment Programme
Mediterranean Action Plan
Priority Actions Programme
Regional Activity Centre (PAP/RAC)
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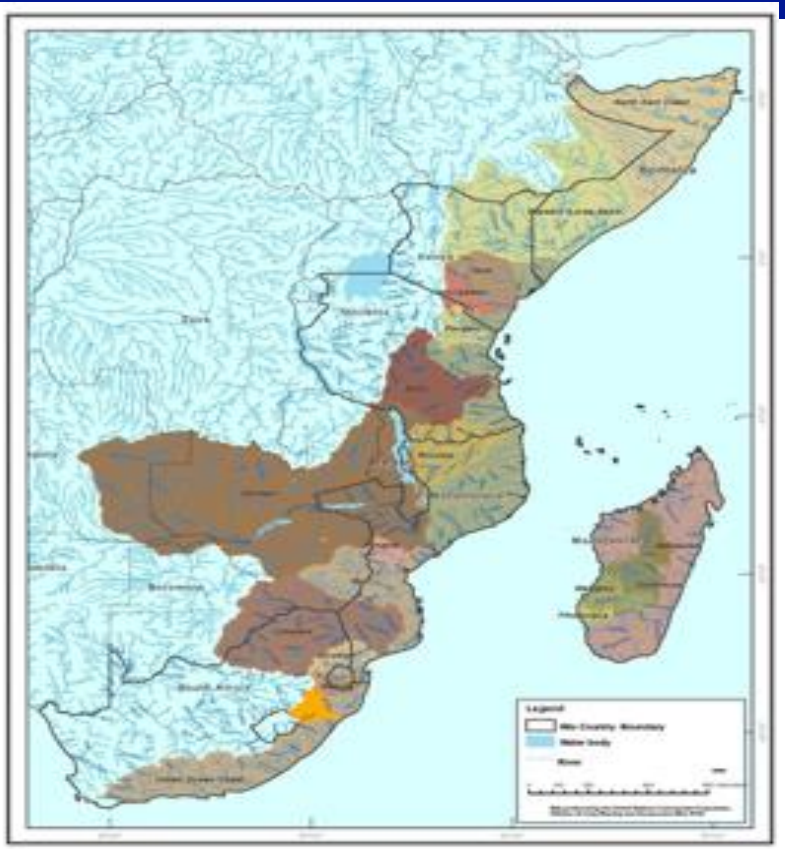
21000 Split, CROATIA
tel: (385) (21) 340470
fax: (385) (21) 340490
e-mail: pap@gradst.hr
http://www. pap-thecoastcentre.org

NAIROBI CONVENTION- EXTENT AND BROAD OBJECTIVES

Nairobi Convention



a) Legal framework and platform for regional collaboration between countries; NGOs and the private sector

MSP application at the Regional Scale - the Why
MSP Linkages with IZCM
MSP application at the the National Level

- Nairobi convention Program areas and links MSP
- Links to Blue economy

- Partnerships for MSP

Dixon Waruinge
Nairobi Convention Secretariat
Division of Environmental Policy Implementation(DEPI) United Nations Environment Programme (UNEP)
Gigiri Complex
P.O. Box 30552 Nairobi, Kenya.
Dixon.Waruinge@unep.org
http://www.unep.org/NairobiConvention

UNEP

WHY WIO REGION IS IMPORTANT ?

- The Western Indian Ocean (WIO) generates fish catch 5 % of the global industrialized catch - 4 million tons of fish per year;
- 11,257 marine species are recorded from the WIO - about 13% are endemic to the WIO
- 2,200 species of fish found in the WIO represents some 83 % of all fish families known
- 65 million people live within 100 km of the coast in the wider Indian Ocean regi0n and depend on this resource base directly;

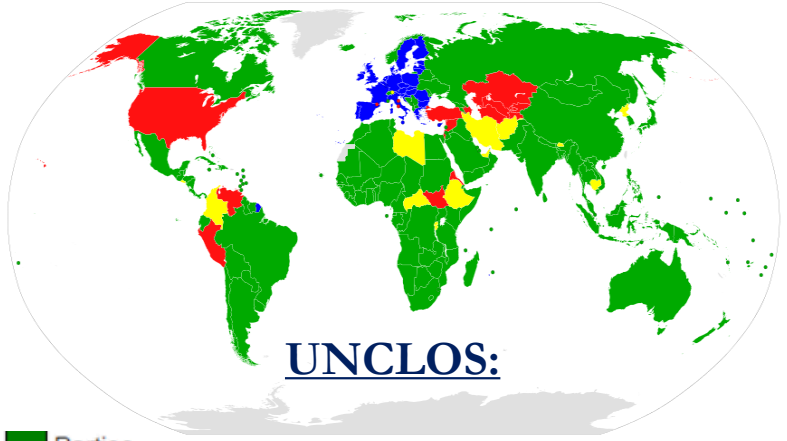
Nairobi Convention

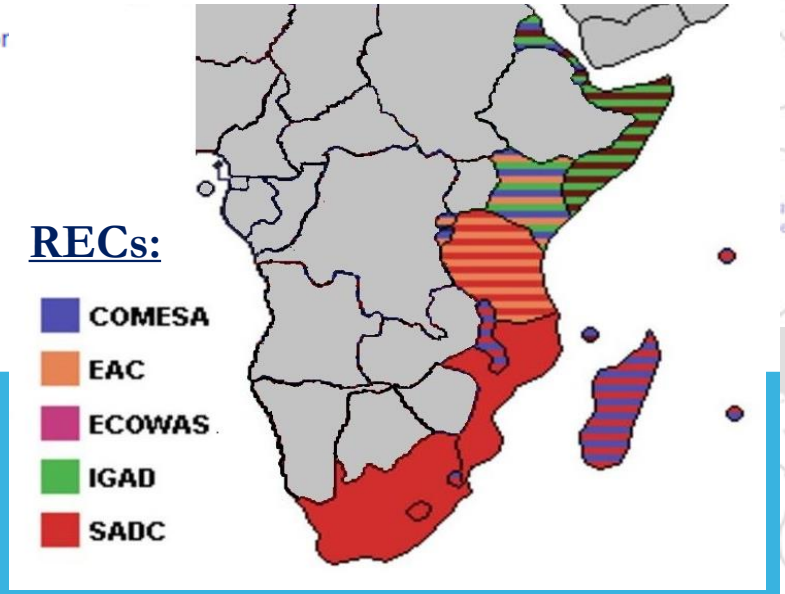
UNEP

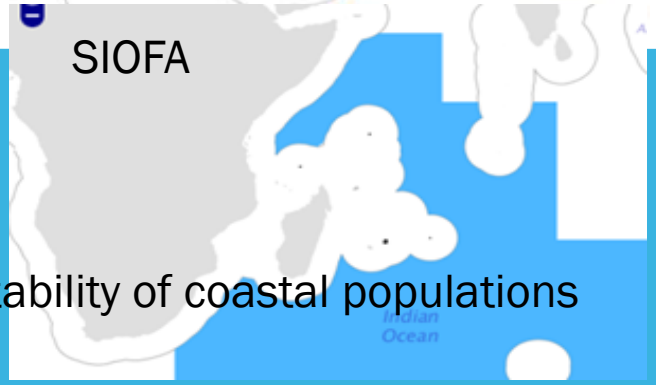
The Ocean Governance space for MSP – Regional

RFMOs

Nairobi Convention







Regional scale

The ecological processes that maintain biodiversity, natural resources and the stability of coastal populations occur at scales that extend far beyond the borders of the country.

UNEP

Policy frameworks for MSP in WIO

Global frameworks

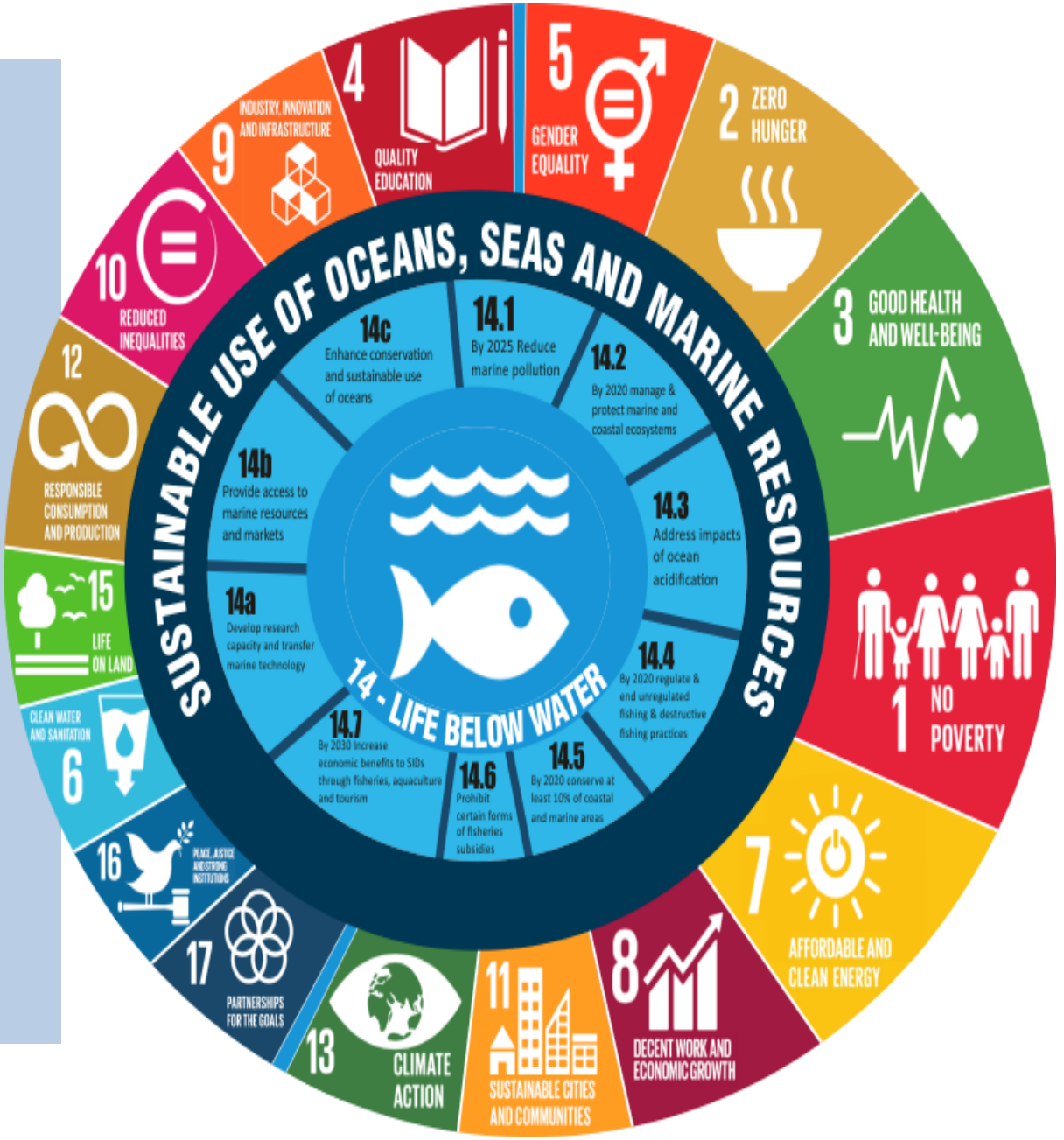
SDG and the CBD Aichi marine targets

- 6 – fisheries
- 10 – climate sensitive ecosystems
- 11 – Marine Protected Areas & management

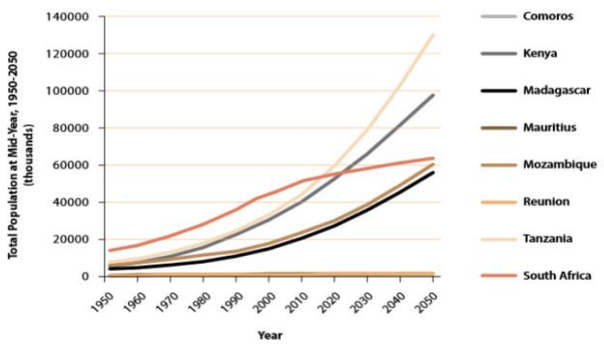
Regional Framework
a) Nairobi Convention
ICZM protocol

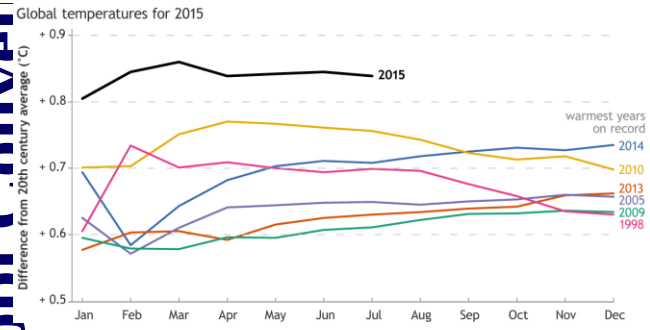
b) Programmes and projects
C) KEY Goals

BLUE ECONOMY
EBM
Climate change strategy



Threats to Sustainable management in the WIO Region and **MSP** Context for Planning



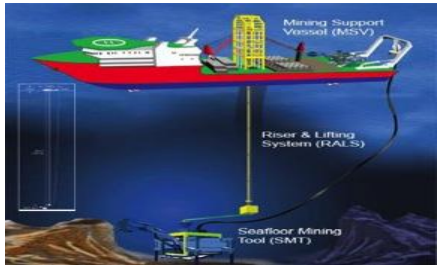


OIL & GAS

AQUACULTURE

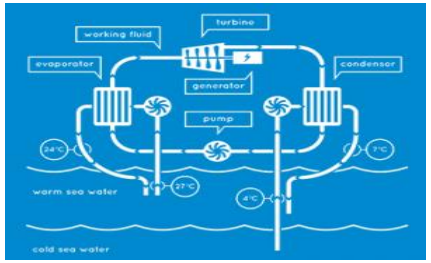
WIND ENERGY

Existing Development



DEEP-SEA MINING

LUXURY TOURISM



OCEAN THERMAL ENERGY CONVERSION

Possible Future Uses ar challenges

Nairobi Conven

Minimizing External Threats

Photo: AP (from movie "Captain Phillips")

PIRACY

© BusinessKorea

ILLEGAL FISHING

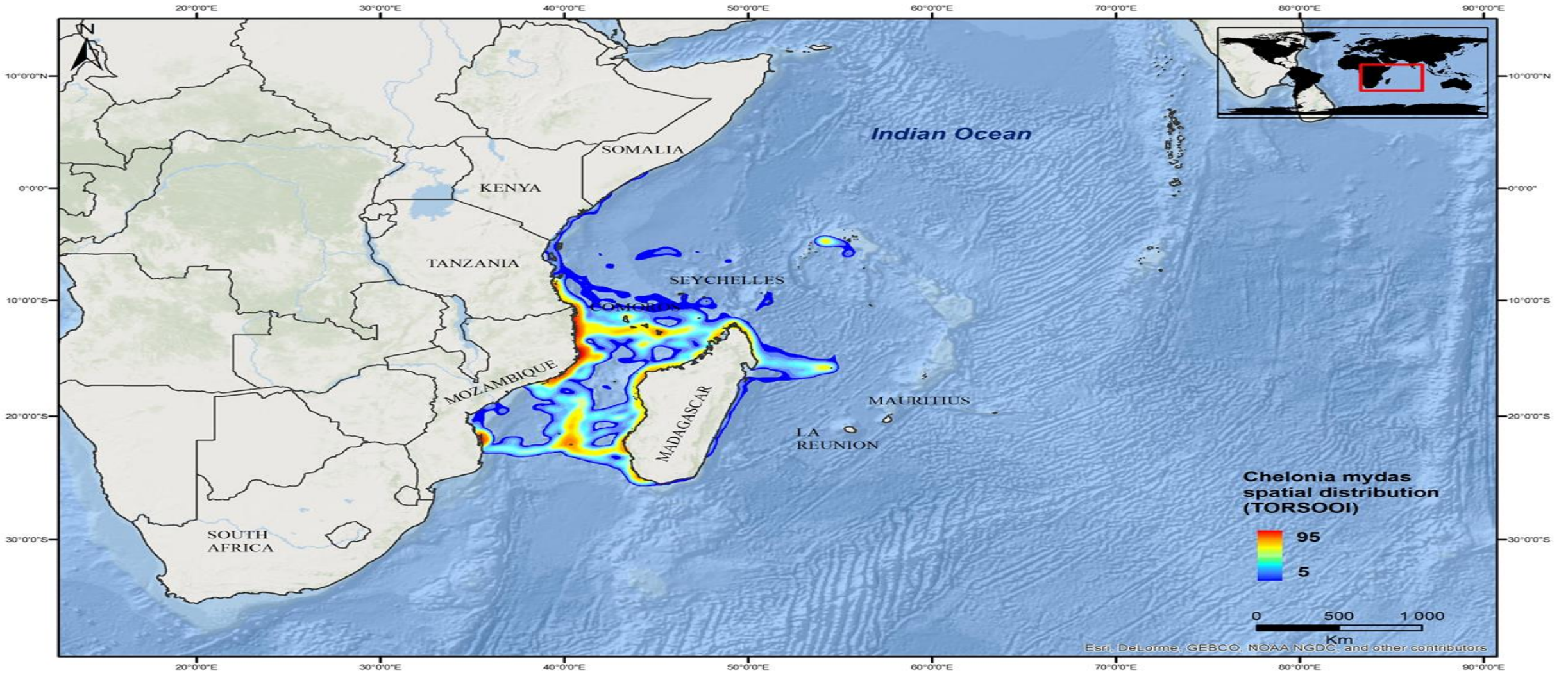
UNEP

THE DUALISM ; SOVEREIGN RIGHTS + FREEDOM OF ACCESS = CHALLENGES FOR EBM AND ABNJ GOVERNANCE

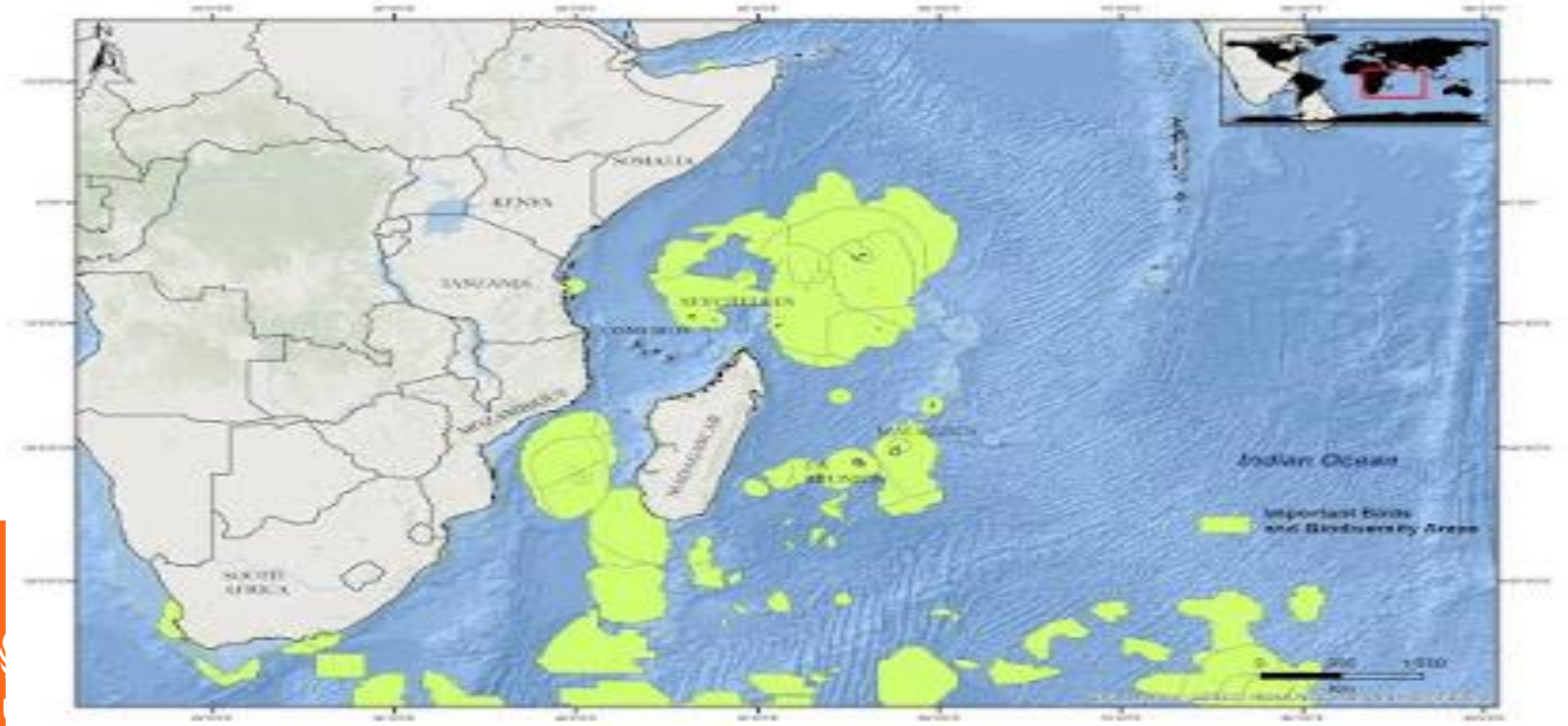
Nairobi Convention

UNEP

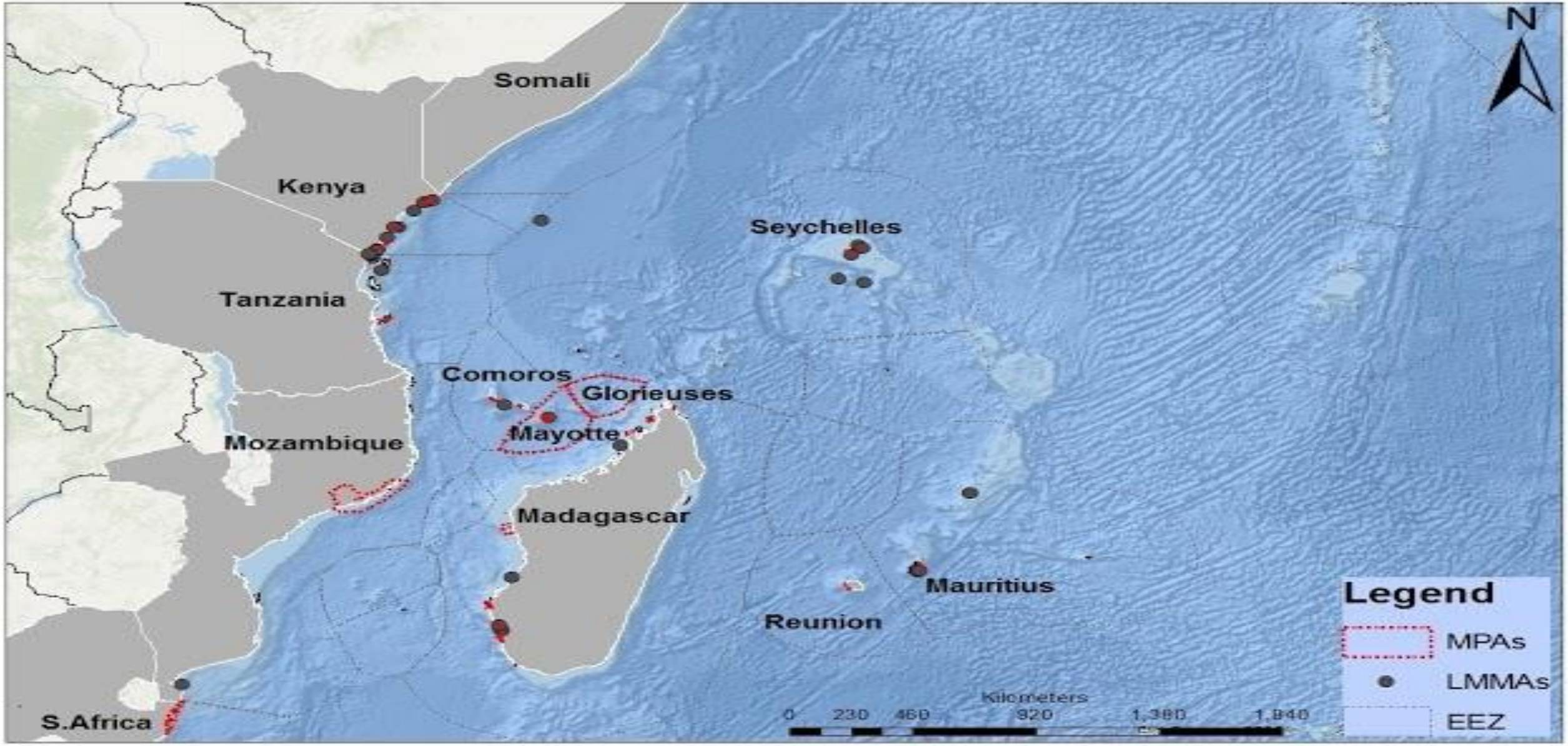
Partnerships for Regional Application of MSP –Turtle density -



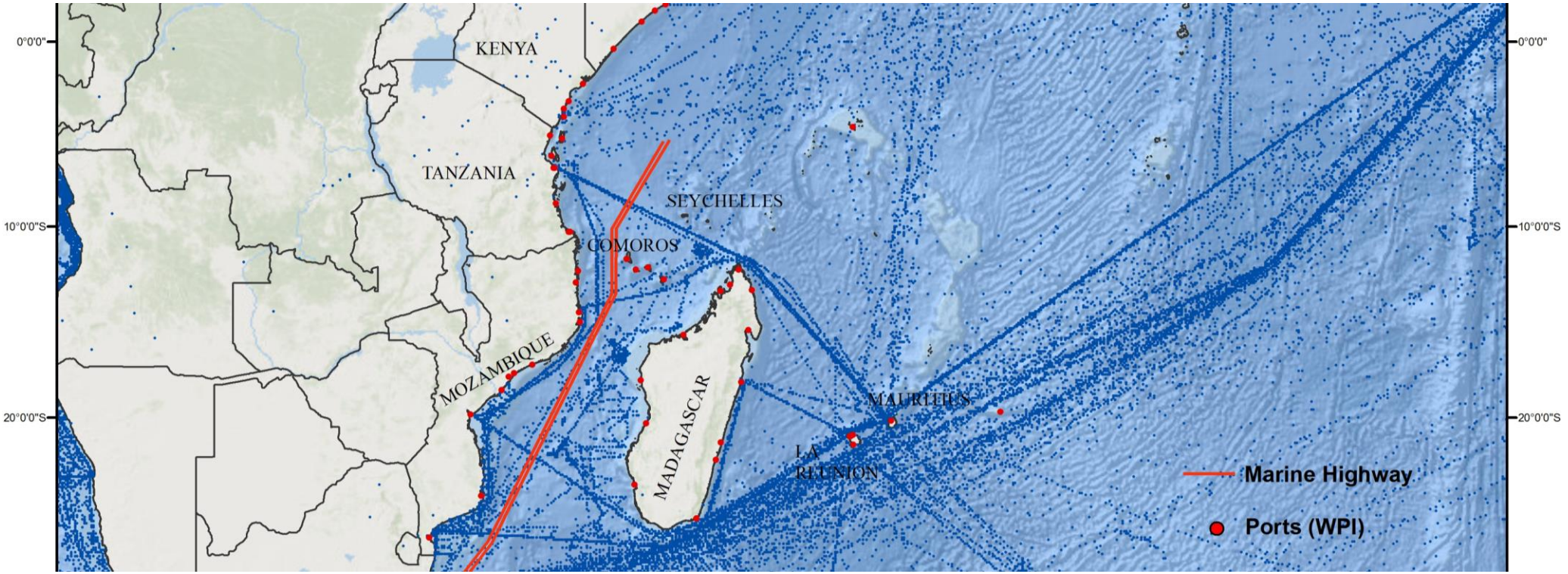
Important Birds Areas density



MPAs LMMAs


N
Somali
Kenya
Tanzania
Mozambique
Comoros
Glorieuses
Mayotte
Madagascar
Seychelles
Mauritius
Reunion
S.Africa
Legend
MPAs
LMMAs
EEZ
Kilometers
0 230 460 920 1,380 1,840

SHIPPING PORTS



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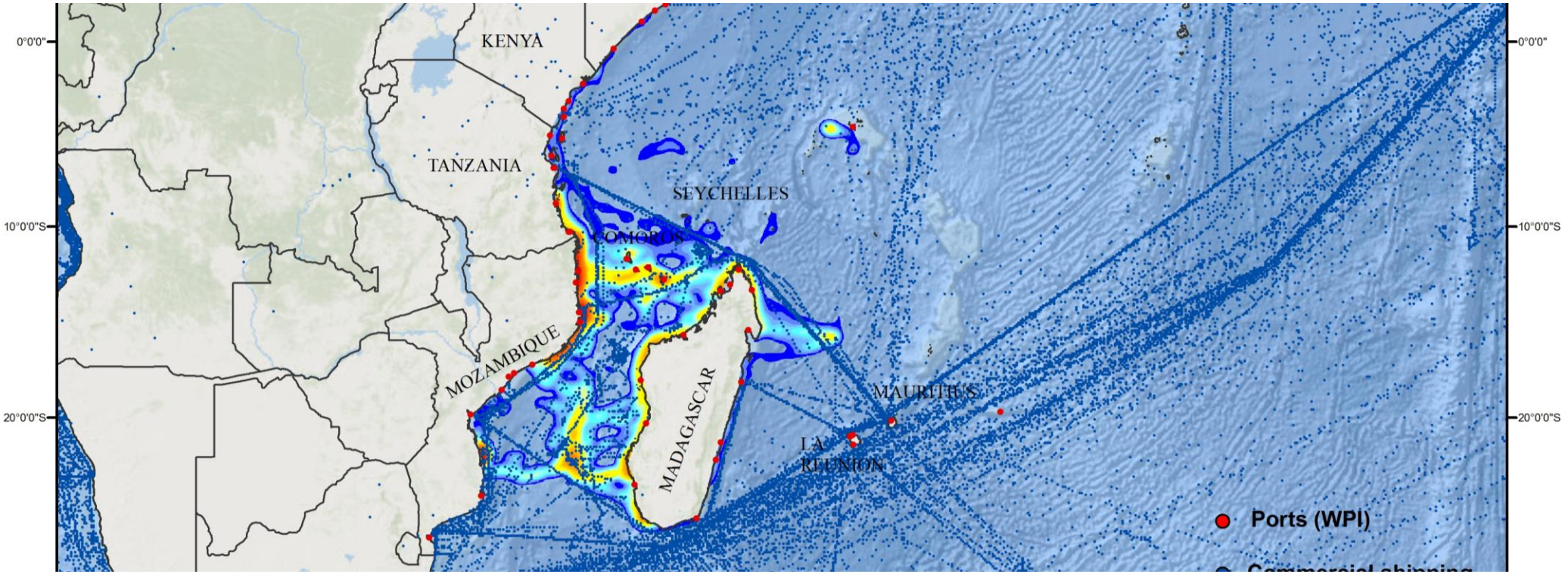
2 LAYERS - SHIPPING AND TURTLES



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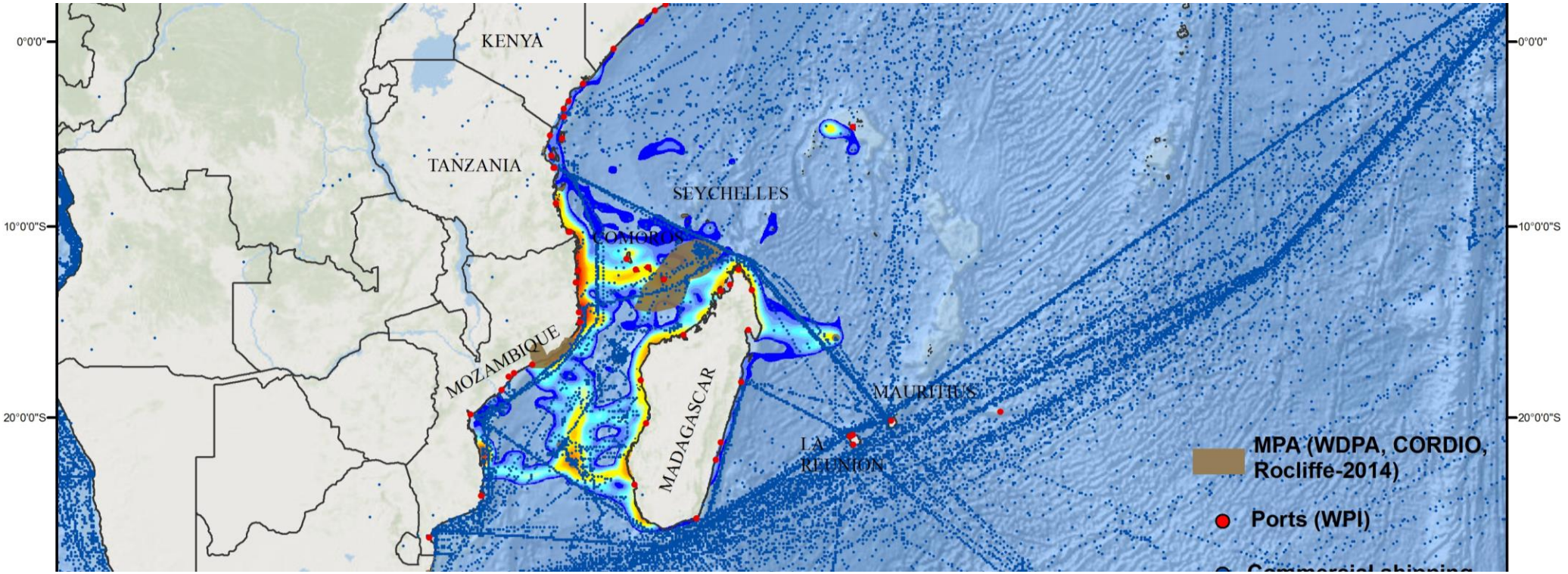
3 LAYERS _



Nairobi Convention

UNEP

After 3 layers are in place - NM Channel becomes an important consideration

MSP AT THE NATIONAL LEVEL AND BLUE ECONOMY

Nairobi Convention

There are three main focus areas for the blue economy:

- to maintain the flow of benefits from renewable resources; restoring ecosystem health and lost habitats, investments in renewable energy and investing in adaptation to climate change.

- to capture the benefits from non-renewable resources so that the flow of benefits extends long after the depletion of mineral and extractive resources.
- to ensure equity in the distribution of benefits, in particular the use of revenues from non-renewable resources.

Marine transport and manufacturing

Offshore oil and gas exploration

Aquaculture

UNEP

BLUE ECONOMY FOR RSA- FOUR GROWTH AREAS

South Africa

•Establishing MSP is a target in Operation Phakisa of South Africa and aims to deliver national and sub-nationa

11

- Marine transport and manufacturing

2

- Offshore oil and gas exploration

3

- Aquaculture

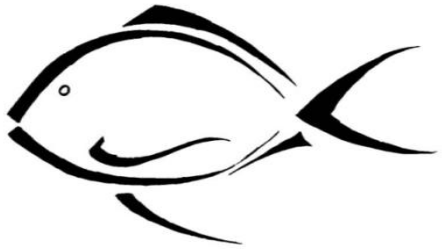
4

- Marine protection services and governance

SEYCHELLES BLUE ECONOMY

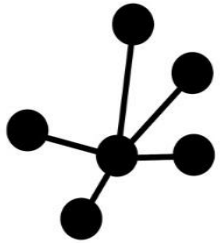
Maritime Security

Fisheries



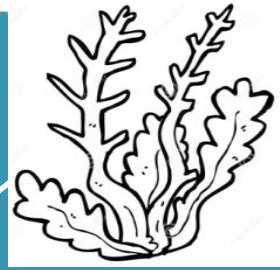
Aquaculture

Hydrocarbons



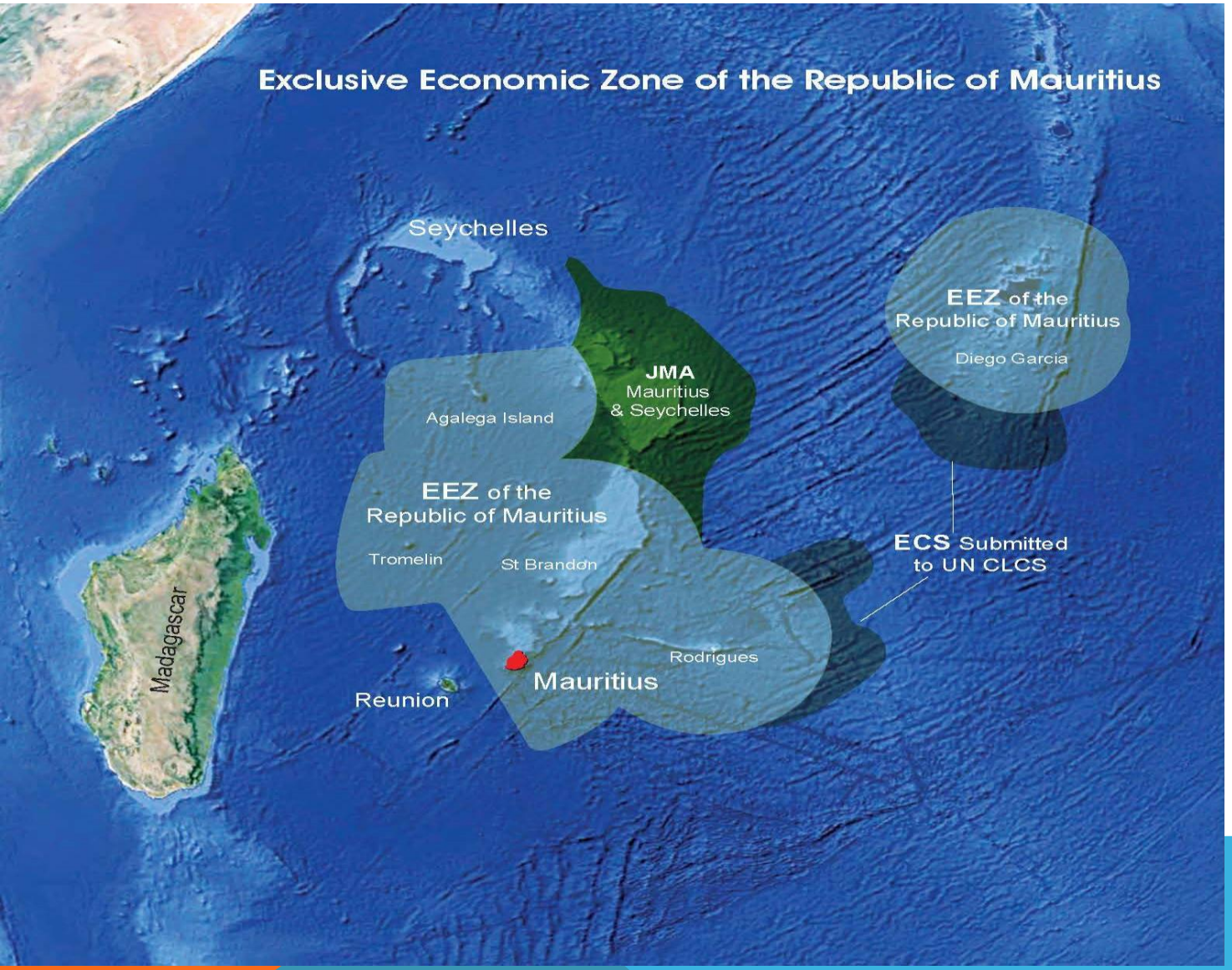
Tourism

Mariculture



Port Development

Mineral Exploration



MAURITIUS

THE OCEAN ECONOMY

Main clusters identified

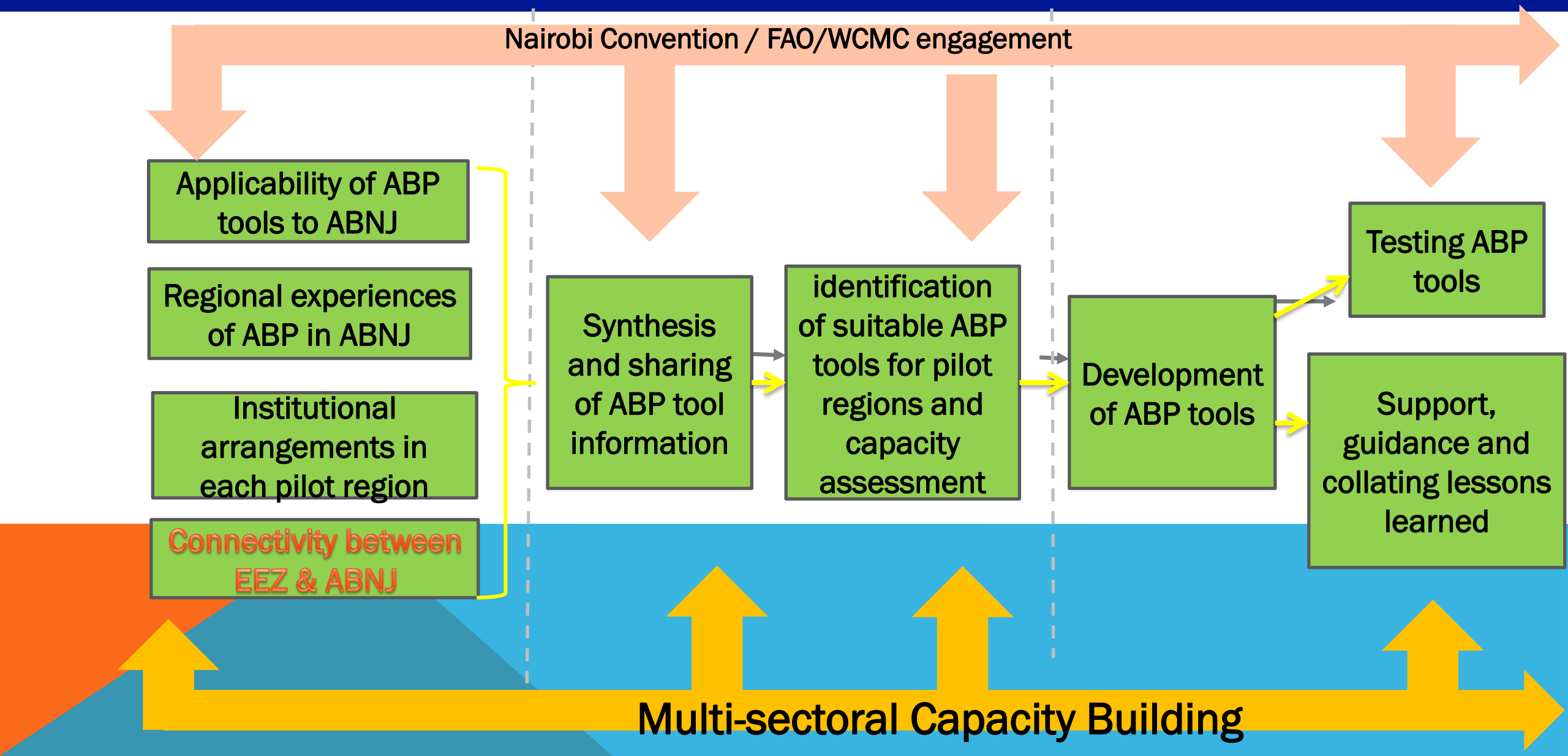
1. Seabed Exploration for Hydrocarbon & Minerals
2. Fishing, Seafood Processing and Aquaculture
3. Deep Ocean Water Applications (DOWA)
4. Marine Services:
5. Seaport-related Activities
6. Marine Renewable Energies
7. Ocean Knowledge

BUILDING PARTNERSHIP FOR MSP

Building capacity for ocean governance, managing the governance space and expertise

- IAAS – implementation of SDG 14
- IDDRI – on Ocean Governance and implementation of SDG 14
- WCMC – OIL AN GAS GUIDELINES FOR DEVELOPMENT IN THE WIO REGION AND DVELOPMENT OF AREA BASED PLANNING TOOLS
- GRID ARENDAL – DEVELOPMENT OF STRATEGIC ENVIRONMENT ASSESMENT FOR OIL AND GAS
- WIO-C –Cooperative engagement in all marine programs by all regional NGOs
- Indian Ocean Commission – Cooperative agreement on Management of marine related projects in the Region
- Western Indian Ocean marine scientist association (WIOMSA) expert pool and preparation of state of Coast reports

The Area based planning tools –testing the tools and building capacity – WCMC, FAO, UNEP



MSP PROJECT ACTIVITIES 2016-2020

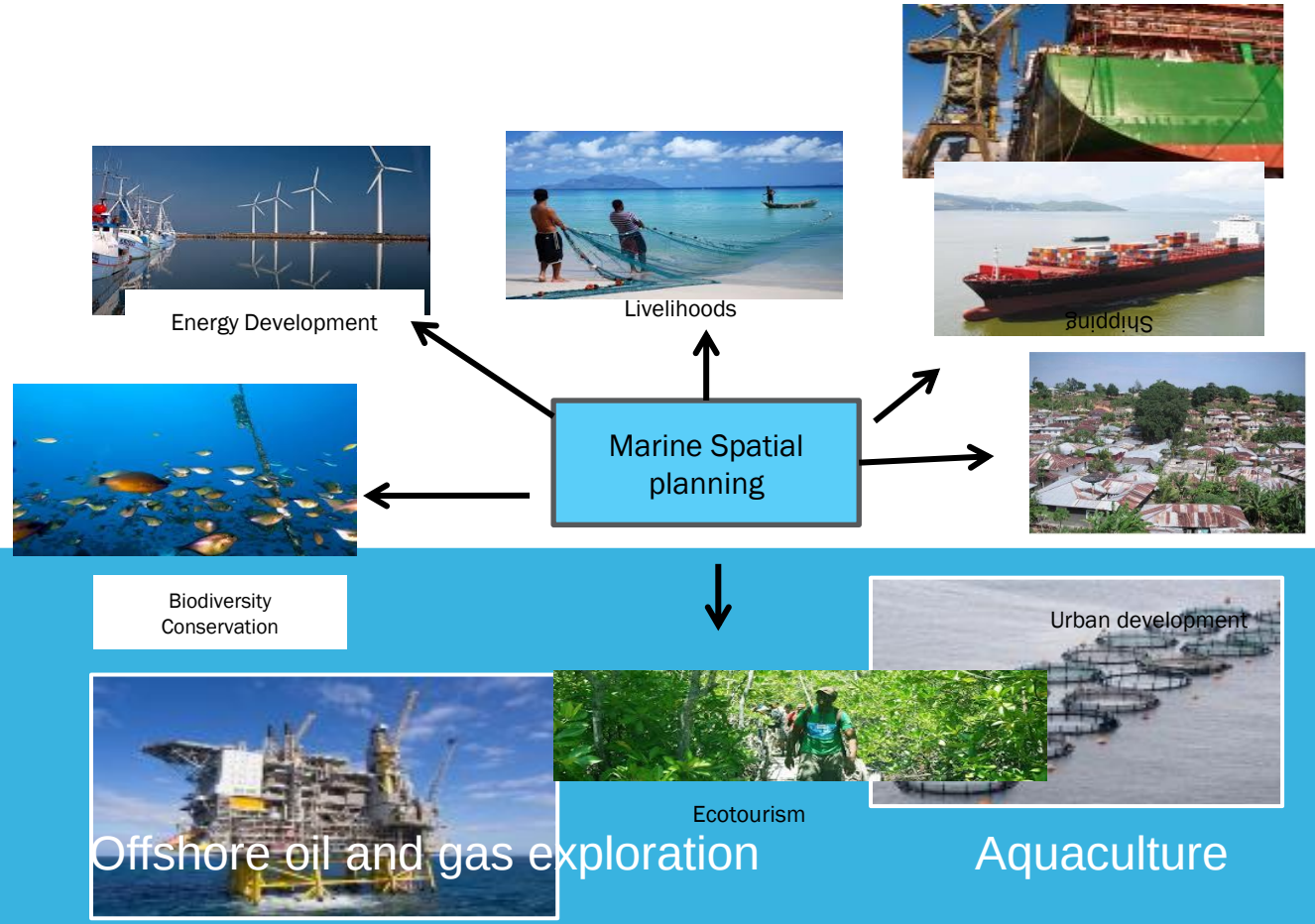
Nairobi Convention

ASCLME

a) Co-develop and co-implement a regional methodology for Marine Spatial Planning .

b) Idemonstrating localized community MSP linked to Local Economic Development and develop and adopt a community-based 'Blue Economy' management plan based on MSP

C) Development of marine spatial plans for at least 5 priority sites and associated capacity building



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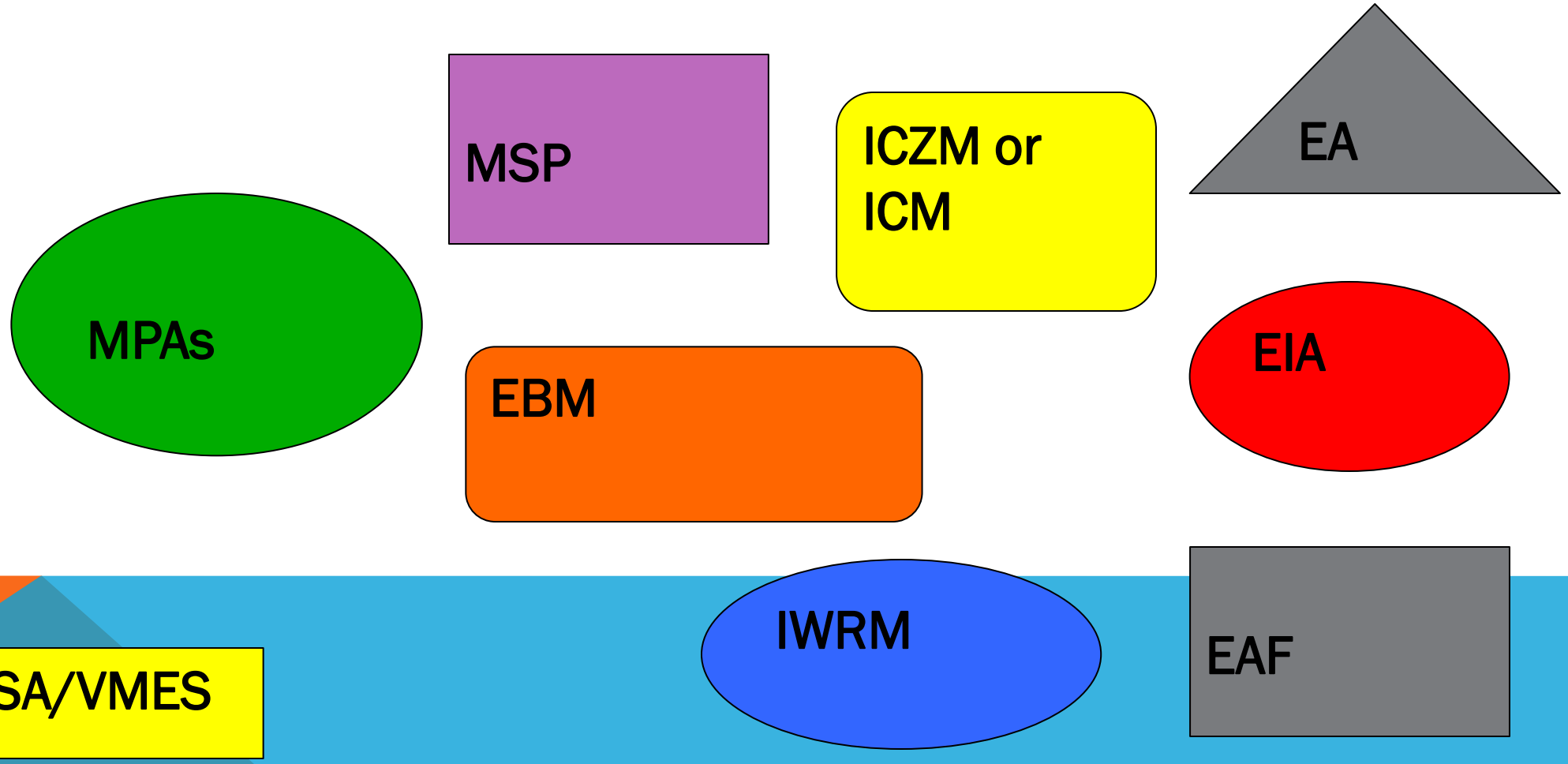
LINKING MSP TO ICZM)

Nairobi Convention



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Adoption of the ICM protocol - PROVIDE POLICY ANCHOR FOR “alphabet soup” of a

Nairobi Convention

UNEP

BLUE SOLUTIONS

The Blue Solutions Initiative

6th conference on Maritime Spatial Planning Worldwide (MSP)

MSP around the world – experiences from the EU and the rest of the world

23-24 June 2016, Azores, Portugal

BLUE SOLUTIONS

giz GRID ARENDAL IUCN UNEP

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of the Federal Republic of Germany

A **five year global cooperation project** on marine and coastal biodiversity and development implemented by **GIZ** in a partnership with **GRID-Arendal**, **IUCN** and **UNEP**.

BLUE SOLUTIONS

giz GRID ARENDAL IUCN UNEP

A contribution to the implementation of the **Aichi Biodiversity Targets of the CBD** in marine and coastal environments.

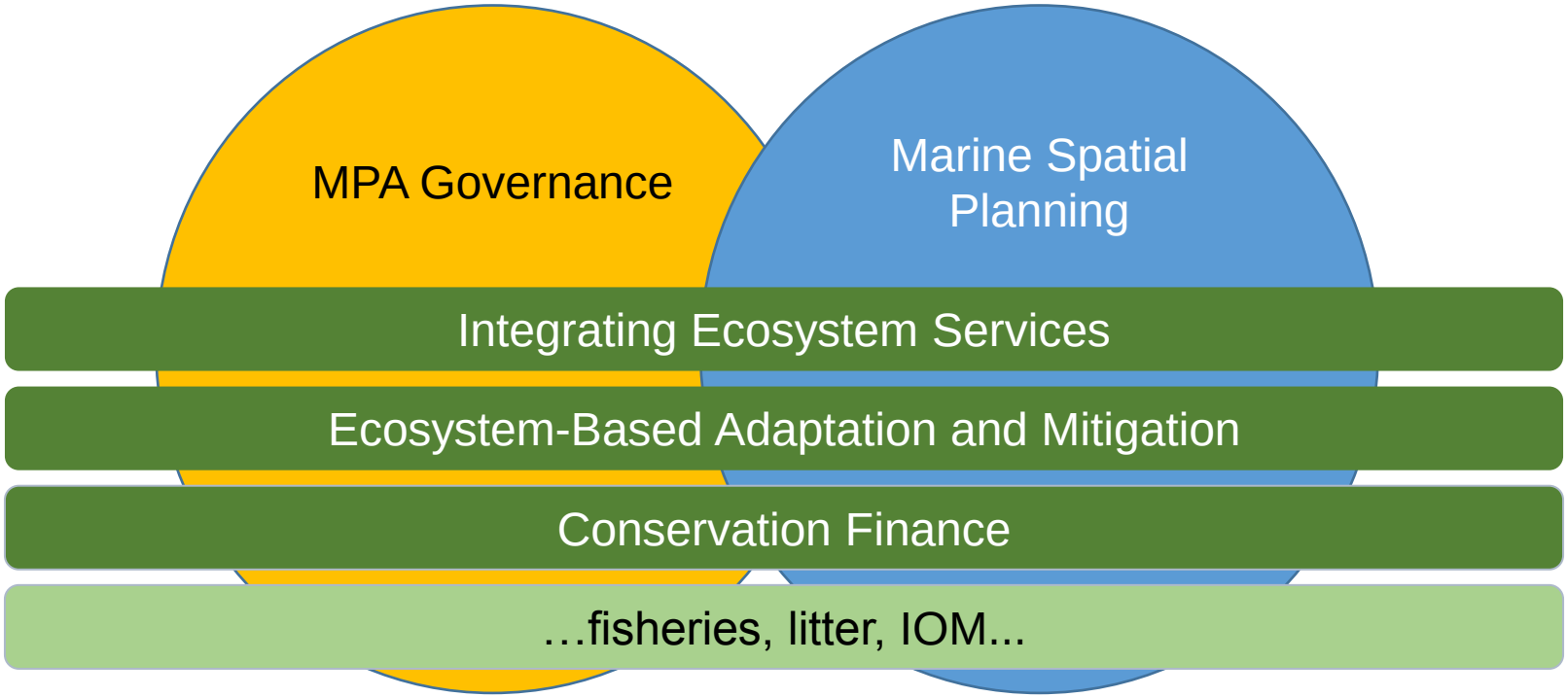
BLUE SOLUTIONS

giz GRID ARENDAL IUCN UNEP

Works in **close collaboration with bilateral, regional and global projects** by the four implementing partners and other interested organisations.

BLUE SOLUTIONS

Blue Solutions Themes



BLUE SOLUTIONS

Blue Solutions Goals

- **Collate and share knowledge** on proven, replicable solutions

- **Enhance capacities** for scaling up success

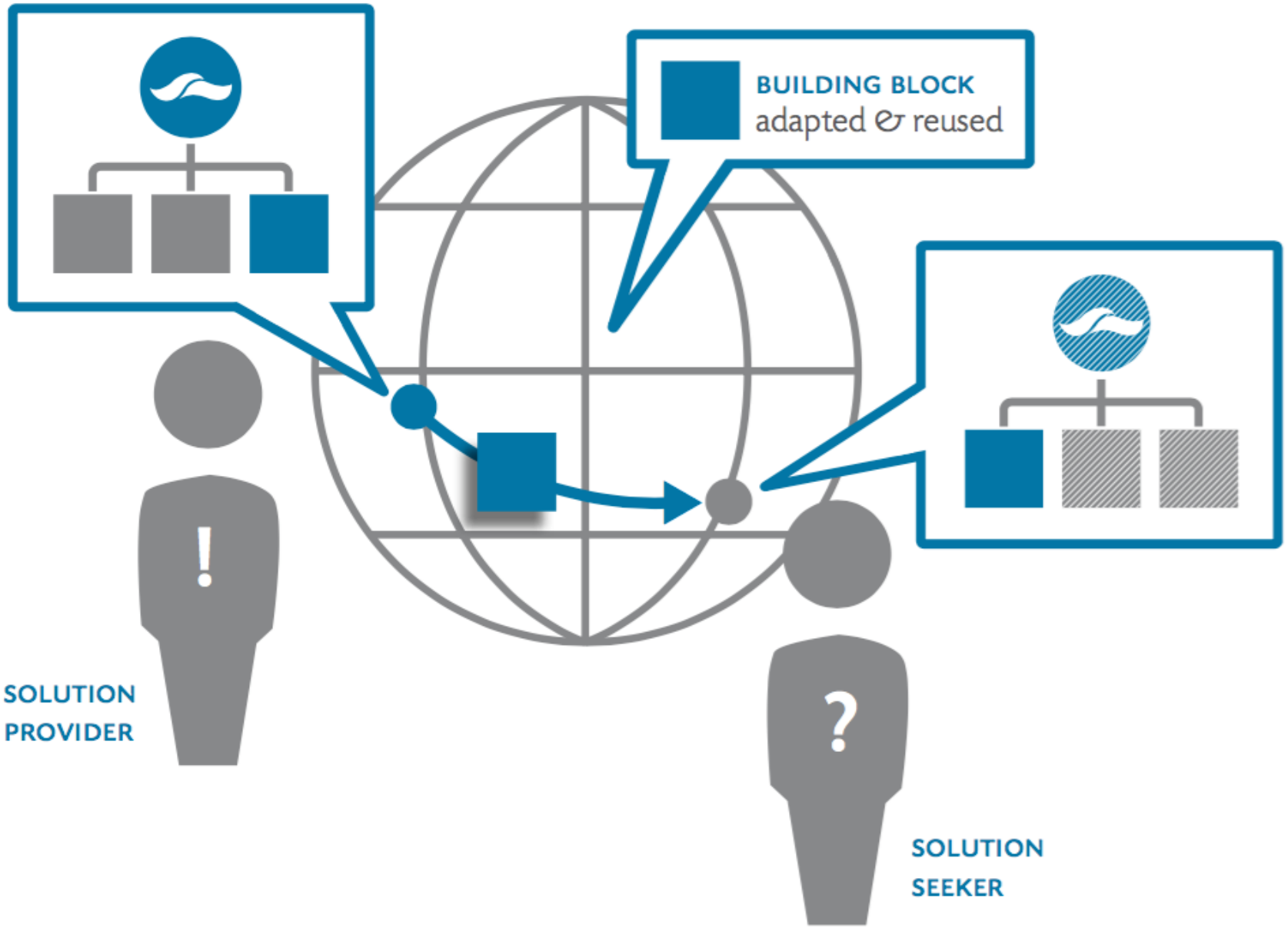
BLUE SOLUTIONS

‘Blue Solutions’ are…

…successful concepts and practical approaches that inspire and **facilitate action** towards healthy and productive marine and coastal ecosystems

- Support sustainable development
- Have a proven impact
- Are replicable or up-scalable

BLUE SOLUTIONS



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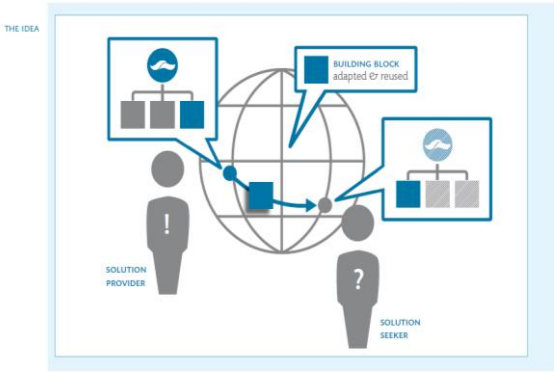
PANORAMA

Inspiring Protected Area Solutions

BLUE SOLUTIONS



Examples of Blue Solutions related to MSP and/or Blue Economy available on Platform

- Implementation of Integrated Coastal and Marine Spatial Planning of Bontang – **Indonesia**
- Interactive and transparent approach in marine spatial planning – **Israel**
- Grenadines Marine Resource Space-use Information System (MarSIS) - **Grenada**
- Public participation to strengthen and legitimize planning processes - **Australia**
- Mapping and Valuing Ecosystem Services for Integrated Management – **Belize**
- Sustainable governance of marine and coastal resources and territories – **Mauretania**
- …

Belize

Mapping and Valuing Ecosystem Services for Integrated Management

Multi-sectorial Advisory Committees

Scenario Development

Communicating Ecosystem Services Information

This solution addresses conflicts between competing interests and minimizes the risks to natural habitats in coastal Belize for coastal land owners, fisherfolk, industrial and tourism sector and indigenous populations

Australian Government
Great Barrier Reef Marine Park Authority

ARC Centre of Excellence Coral Reef Studies

Australia

Sound legislative governance framework for spatial planning and management processes

Cross-jurisdictional agreements

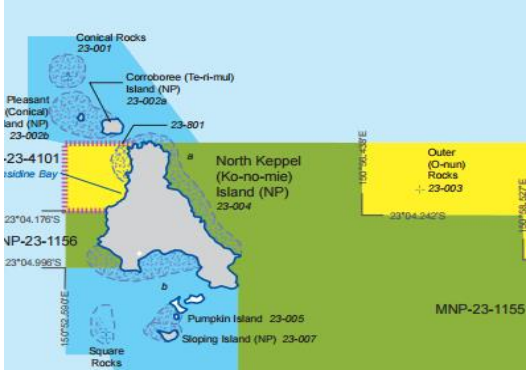
Complementary legislation (federal, regional, statutory and non-statutory plans)

Compliance to international conventions in governance (e.g. World Heritage)

Multi-sectoral advisory Committees

Co-managing with Indigenous Traditional Owners

This solution addresses the complexities of having multiple jurisdictions and interests involved in co-managing a very large and diverse area. Today complementary management and planning provisions apply in all marine waters within the GBR, irrespective of the jurisdictional responsibility.



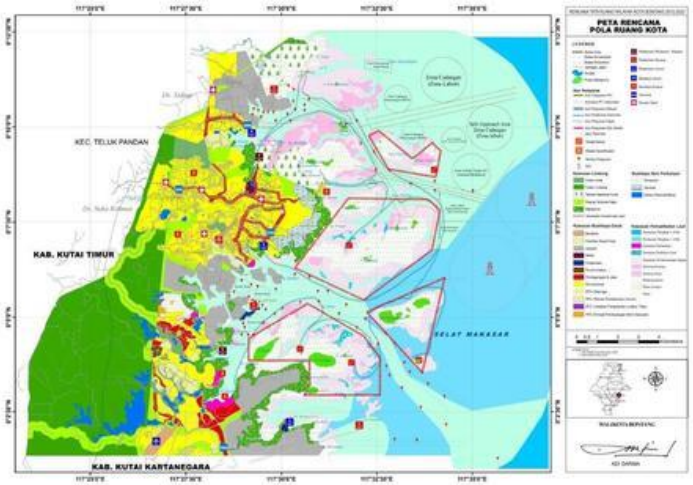
Indonesia

Implementation of Integrated Coastal and Marine Spatial Planning of Bontang

Multi-sectorial Stakeholder Committee

Ecosystem-based Spatial Analysis and Planning

This solution addresses inefficient spatial planning, degradation of ecosystems and conflicts between stakeholders in Bontang City, Indonesia for local fishermen and shrimpfarmers, transportation and industrial sector and the government.



BLUE SOLUTIONS

Some findings of “MSP in Practice Study”

Technical Report FINAL DRAFT 15 January 2016

UNEP

STAP gef UNEP
Scientific and Technical Advisory Panel
Of the Global Environmental Facility

Convention on Biological Diversity

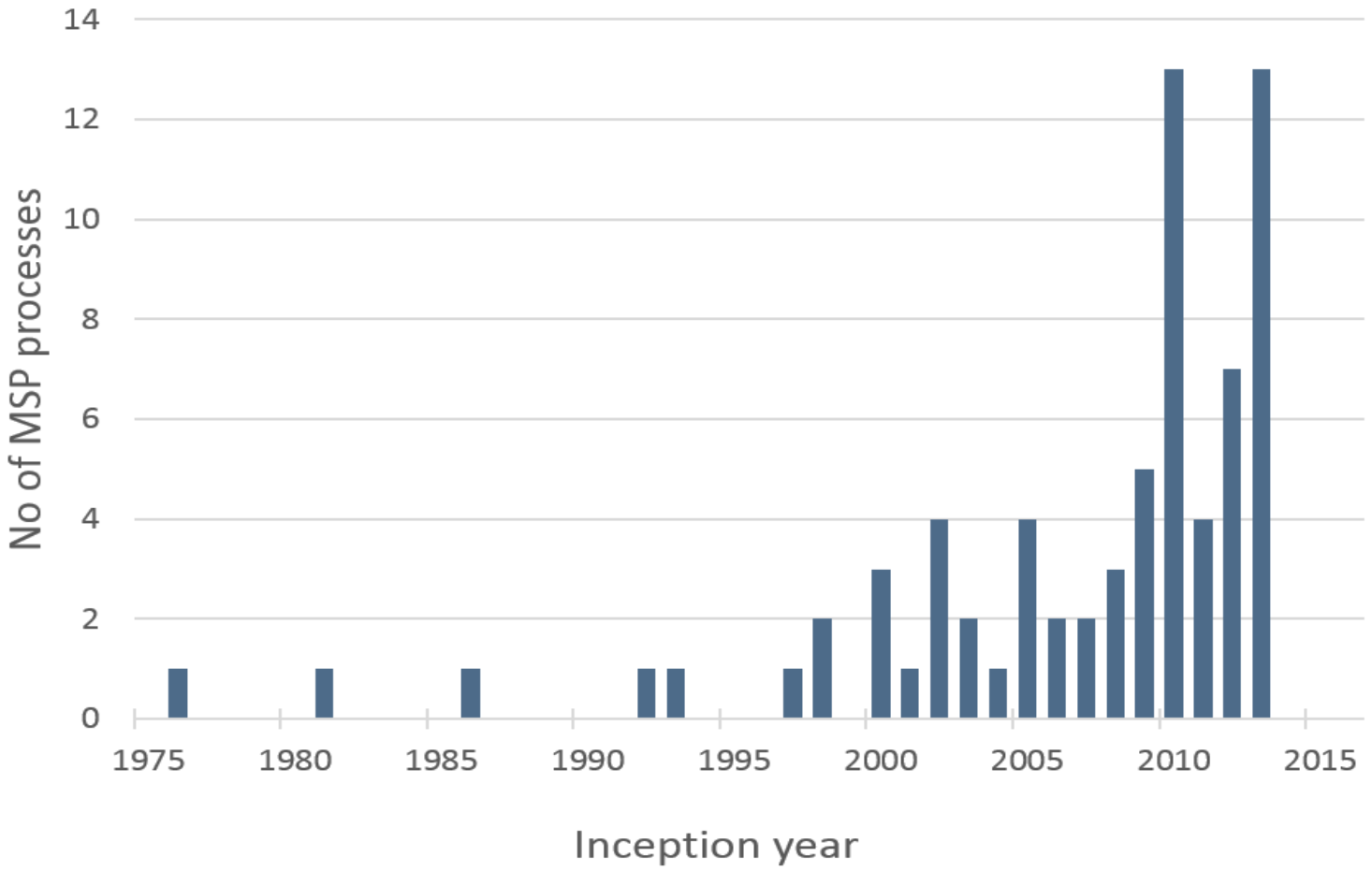
Marine Spatial Planning in Practice: Evidence-based analysis and practical guidance on the challenges and enabling factors for successful Marine Spatial Planning.

1

Thomas, H. L., McOwen, C., Fletcher, R., Weatherdon, L., Fletcher, S., Olsen, S.B., Vestergaard, O. (2016) Evidence-based analysis and practical guidance on the challenges and enabling factors for successful Marine Spatial Planning. UNEP Nairobi, pp. 68

BLUE SOLUTIONS

Inception year for MSP processes surveyed



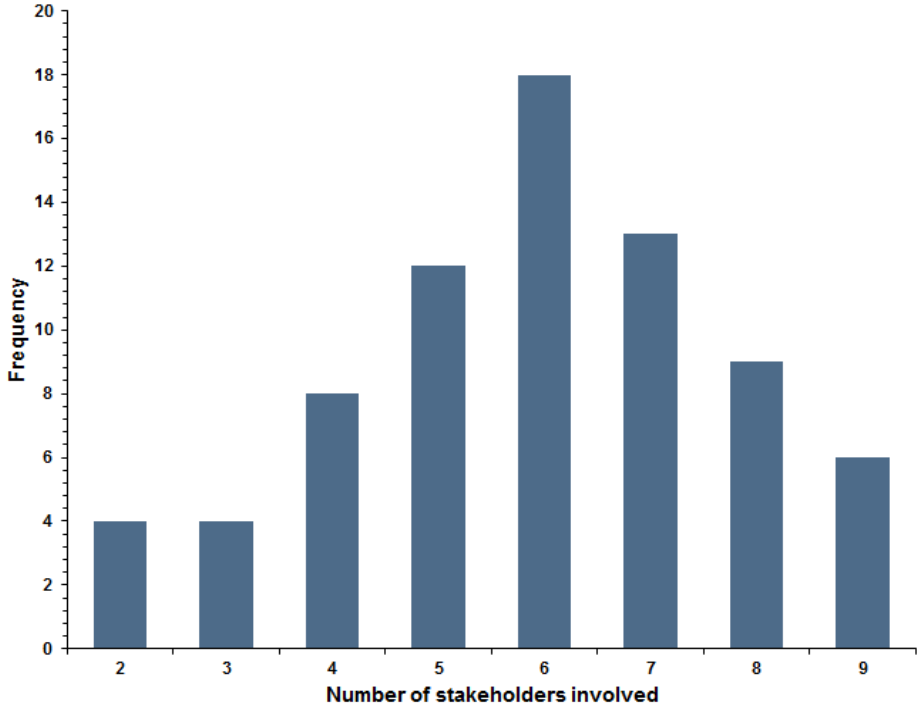
BLUE SOLUTIONS

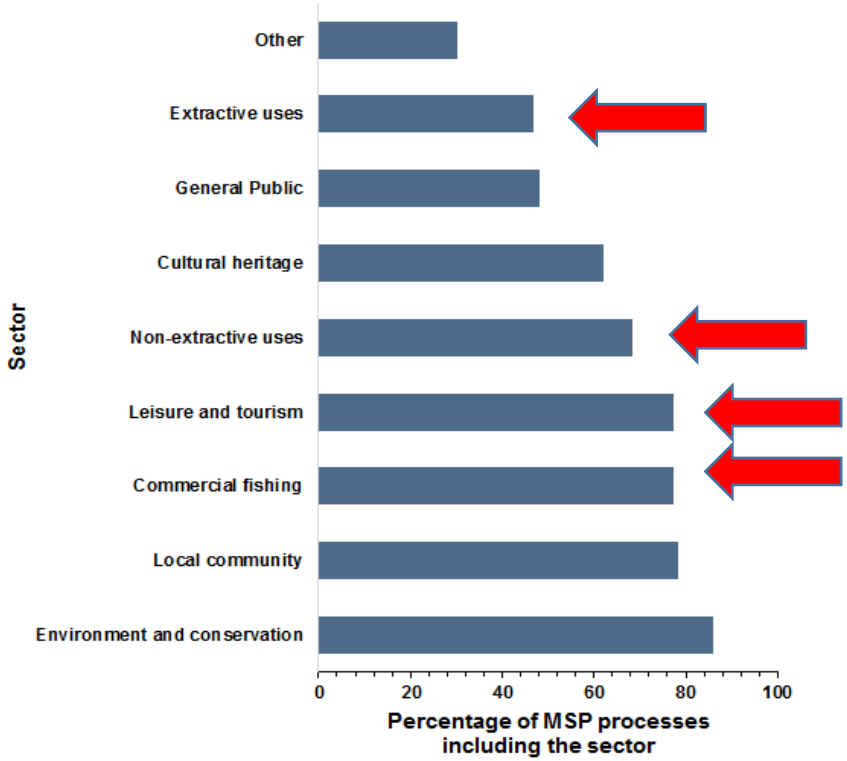
Spatial scale of MSP processes surveyed

Spatial Scale	No. of single MSP processes	Percentage
Local (e.g. bay, county, district)	26	36%
Sub-national (e.g. state, province)	21	29%
National (e.g. country-wide, island)	15	20%
Regional (e.g. international transboundary)	11	15%
Total	73	100%

BLUE SOLUTIONS

Stakeholder engagement within MSP processes





BLUE SOLUTIONS

Main messages of MSP in Practice Study

1) Have a clear MSP **process design** and communicate it well

2) Ensure that **stakeholder engagement** is ample and inclusive

3) Have strong MSP **governance arrangements**

4) Ensure the **necessary resources** are in place

5) Develop **technical capacity** and expertise at all levels

6) Be aware that lack of spatial **data and/or analytical tools** is not a constraint to effective MSP

BLUE SOLUTIONS

giz GRID ARENDAL IUCN UNEP

Thank you!

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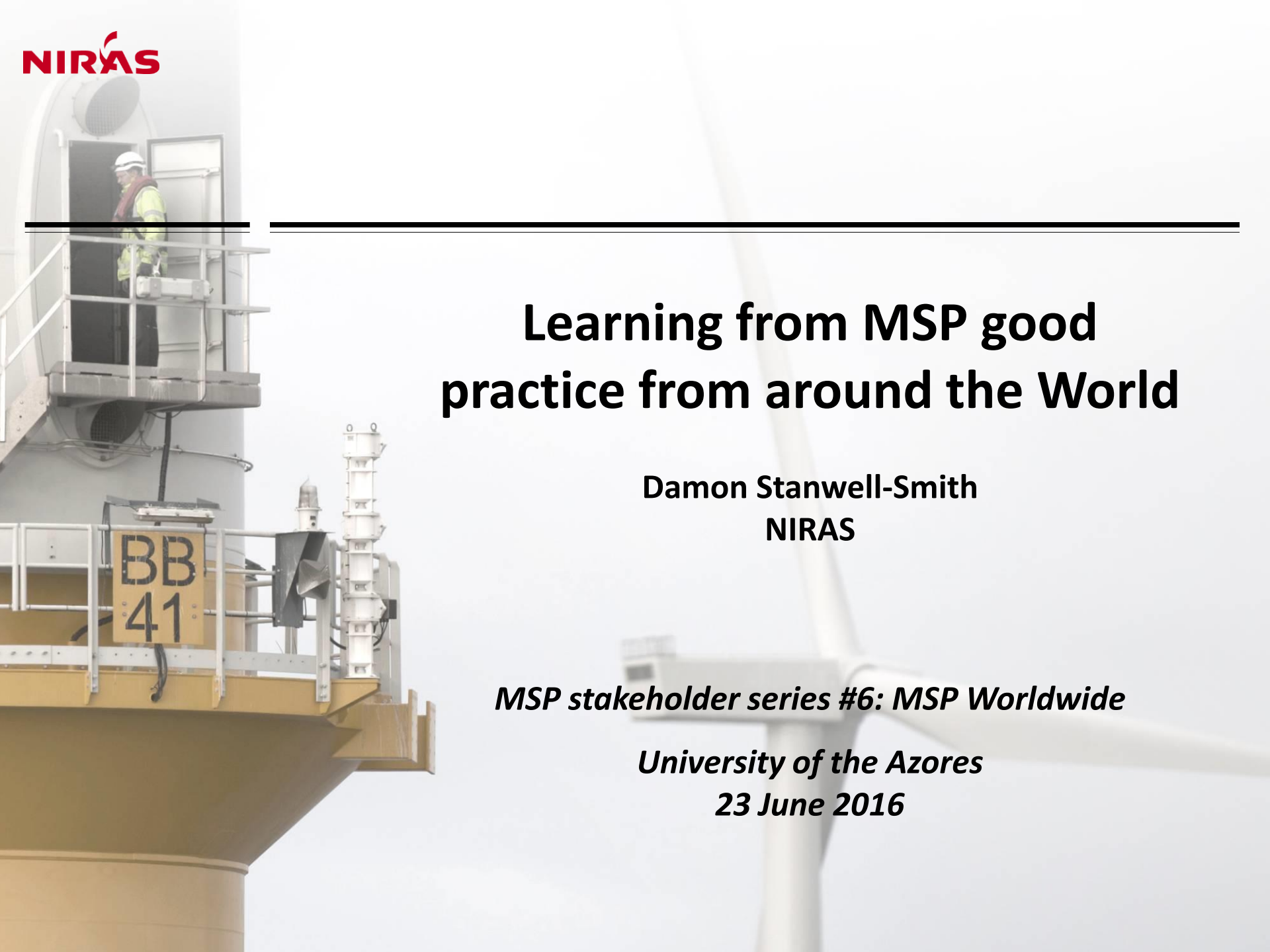
Tecnical Adviser- GIZ
jan.kleine@giz.de

www.bluesolutions.info
www.solutionsexchange.org
www.sustainebloceanslab.org



Learning from MSP good practice from around the World

Damon Stanwell-Smith
NIRAS

MSP stakeholder series #6: MSP Worldwide

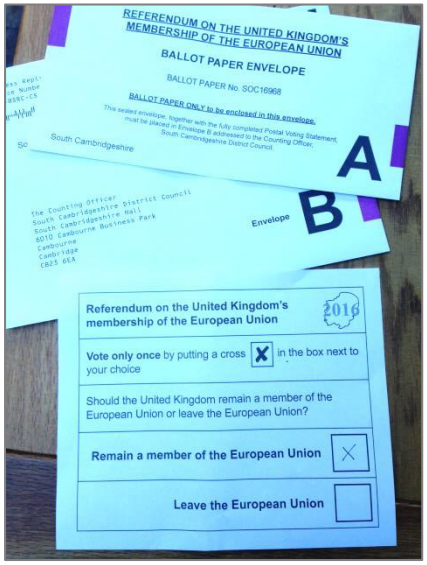
University of the Azores
23 June 2016

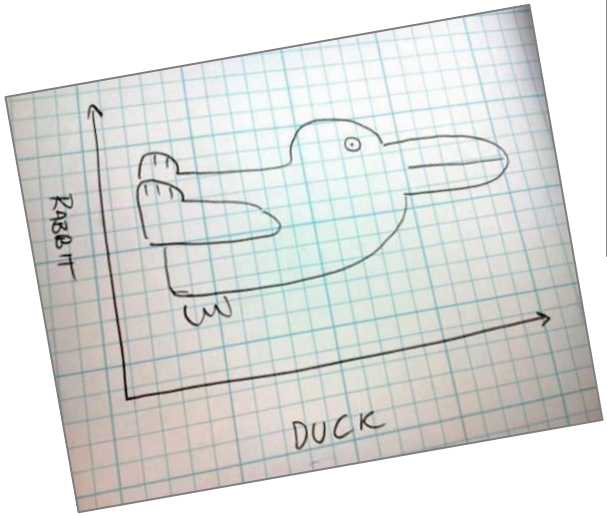
DG MARE study on International best practices for cross-border MSP

DG MARE study on International ~~best~~ good practices for cross-border MSP

DG MARE study on International ~~best~~ good practices for cross-border MSP

23 June 2016…





European Commission

DG MARE study on International ~~best~~ good practices for cross-border MSP

Project management

Global MSP analysis

Law of the Sea expertise

Event planning / dialogue

DG MARE study on International ~~best~~ good practices for cross-border MSP

Project management	MSP evaluation 25 years in Offshore Wind
Global MSP analysis	The UNEP biodiversity centre Leading MSP studies
Law of the Sea expertise	Governance specialists
Event planning / dialogue	Effective “Brussels” dialogue

DG MARE study on International ~~best~~ good practices for cross-border MSP

1 Global MSP inventory

2 Case studies

3 Recommendations

4 International conference

DG MARE study on International ~~best~~ good practices for cross-border MSP

1 Global MSP inventory	Building on MSP in Practice database Including UNESCO /WWF databases
2 Case studies	Project team visits in 2016 to discuss nuances of “success”
3 Recommendations	for MSPD Implementation
4 International conference	DG MARE in partnership with IOC/UNESCO 15-17 March 2017

4 case studies

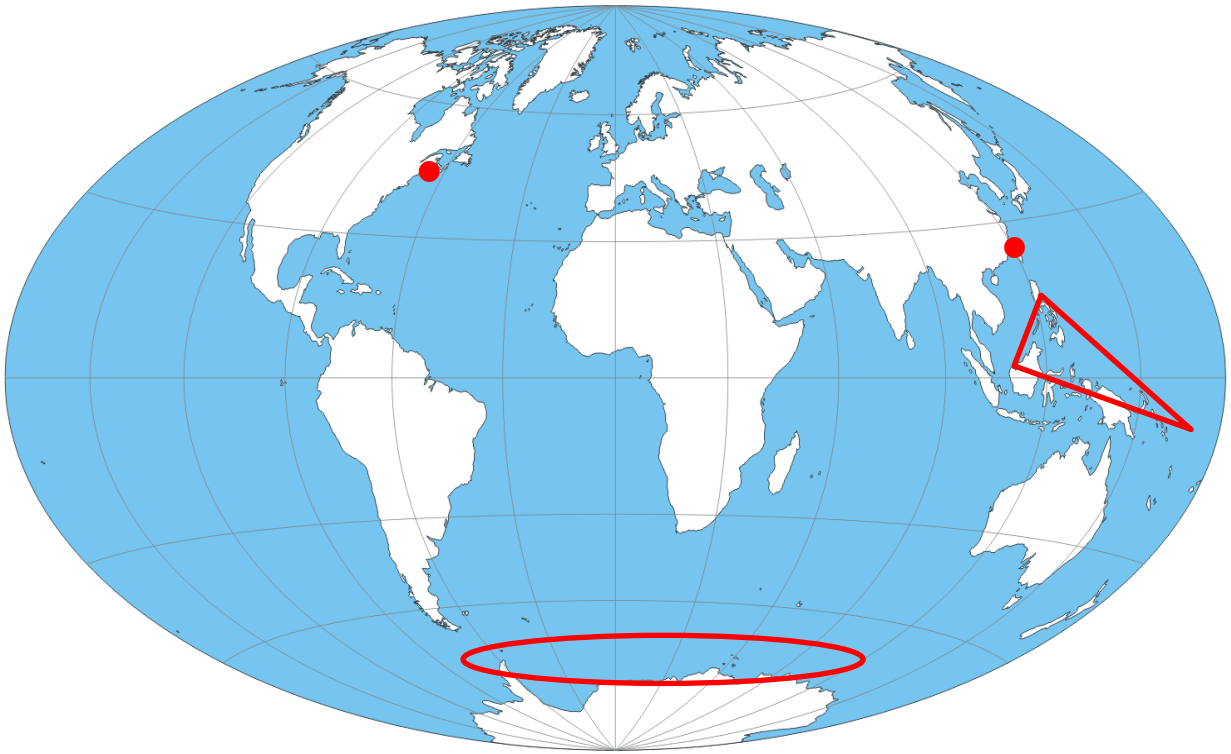
selected from *UNEP/GEF STAP MSP In Practice* study

Rhode Island / Gulf of Maine

Coral Triangle

Southern Ocean

Xiamen / Taiwan



4 case studies

regional project partners

Rhode Island / Gulf of Maine

Rhode I/Massachusetts SAMP
Partner: **URI CRC**

Coral Triangle

CTI CFF Indonesia, Malaysia, PNG, Philippines, Solomon Isl, Timor Leste
Partner: **TNC**

Southern Ocean

CCAMLR (25 parties)
Partner: **SAERI**

Xiamen / Taiwan

Xiamen ICM
Partner: **University of Xiamen**

4 case studies

why selected?

Rhode Island / Gulf of Maine	**An MSP for blue growth initiative driven by offshore wind**
Coral Triangle	**Multi-scale MSP, multiple objective planning for sustainable development**
Southern Ocean	**In ABNJ, Ecosystem based management successful trans-boundary MSP**
Xiamen / Taiwan	**20 years of successful MSP/marine zoning Pioneering "sea-use" fees for marine management**

4 case studies

analytical framework

2016 UNEP/STAP *MSP in practice*

1 **Clear** MSP Process Design

2 **Ample** stakeholder engagement

3 Strong MSP **governance**

4 Necessary **resources** available

5 Develop technical **capacity**

6 **Lack of data** not a constraint to effective MSP

4 case studies
analytical framework

2016 UNEP/STAP *MSP in practice*

1 **Clear** MSP Process Design

2 **Ample** stakeholder engagement

3 Strong MSP **governance**

4 Necessary **resources** available

5 Develop technical **capacity**

6 **Lack of data** not a constraint to effective MSP

1 **Drivers** and goals of MSP process

2 **Context** for MSP process

3 **Scope** and design of MSP

4 **Consultation** in MSP planning

5 Features of MSP **implementation**

6 Implications for **High Seas**

7 Outcomes and **lessons** learned

Please don’t hesitate to get in contact!

dss@niras.com

MSP study contacts, here at Azores meeting:

Valentina Mabilia	DG MARE
Alejandro Iglesias-Campos	IOC/UNESCO
Damon Stanwell-Smith	NIRAS
Steve Fletcher	UNEP-WCMC
Hannah Thomas	UNEP-WCMC

UNESCO/IOC and DG MARE

2nd Marine Spatial Planning International Conference

UNESCO HQ, Paris

15-17 March 2017

MSP as a Tool to Develop a Sustainable Maritime Economy: *Industry Perspectives*

Paul Holthus, CEO

World Ocean Council

paul.holthus@oceancouncil.org

WORLD OCEAN COUNCIL

The International Business Alliance for Corporate Ocean Responsibility

WOC 4th Sustainable Ocean Summit
Rotterdam, 30 Nov-2 Dec 2016

Ocean Industries and MSP: Prospects

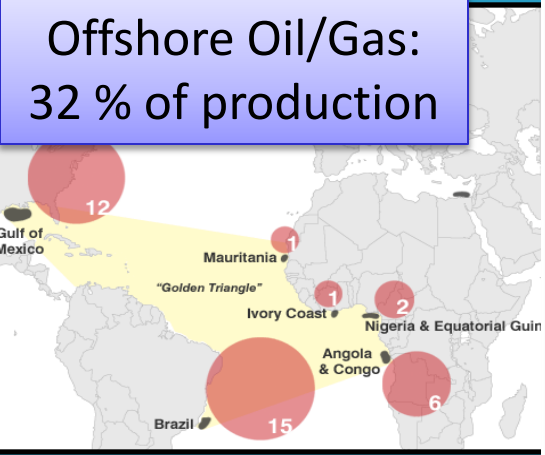
- What role can and should the private sector play in MSP?
- Have companies realised the potential of MSP as a blue growth instrument?
- What are the success stories?
- Are successes or lessons learned transferrable?
- What, where and how could national authorities do more to successfully engage industry?
- How MSP work with industries in transboundary and international waters?

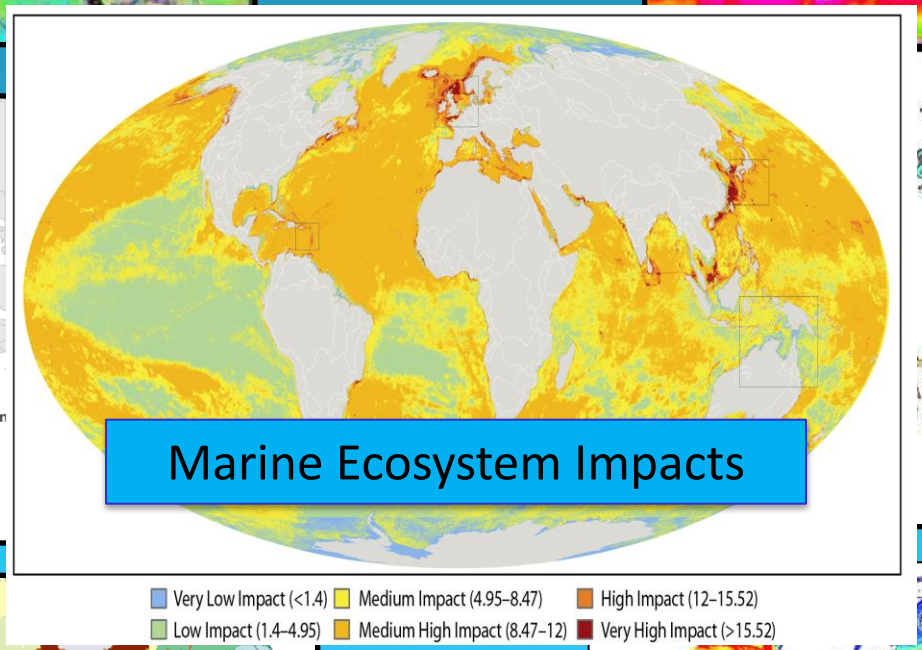
Seabed Minerals: 10% of world's minerals by 2030

Submarine Cables: 1 million kms, 98% of internet traffic

Offshore Wind: 59% growth in 2010

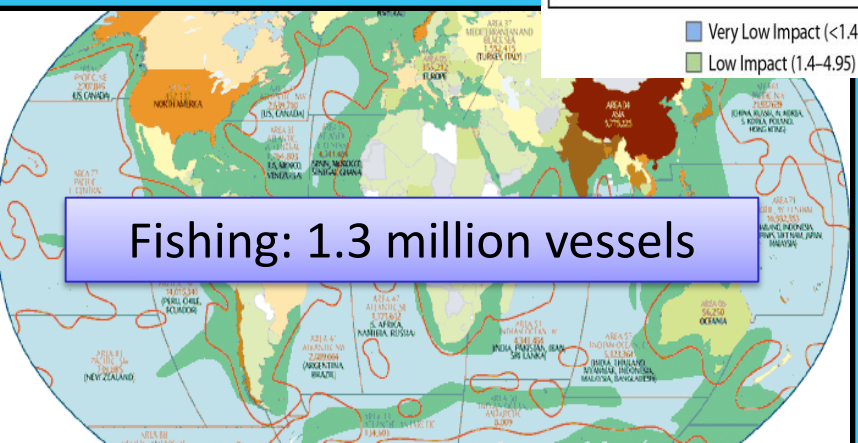
Offshore Oil/Gas: 32 % of production



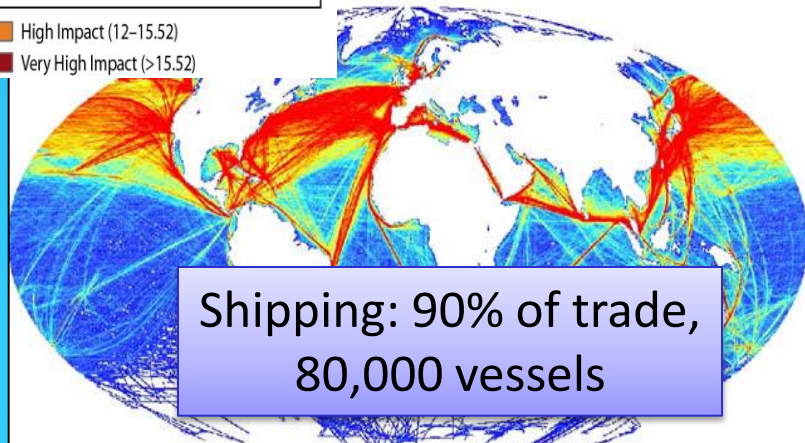


Marine Ecosystem Impacts

Aquaculture: 7.5% growth past 20 years



Fishing: 1.3 million vessels



Shipping: 90% of trade, 80,000 vessels

World Ocean Council

International, Cross-Sectoral *Business* Leadership Alliance

- Bringing ocean industries together, e.g. shipping, oil/gas, fisheries, aquaculture, tourism, offshore renewables, etc.
- Catalyzing private sector leadership and collaboration in
  - Advancing *"Corporate Ocean Responsibility"*
  - Communicating responsible ocean industry/economy
- 80+ members worldwide; 35,000+ in global network

Goal Healthy, productive global ocean and its sustainable use and stewardship by responsible *ocean business community*

Creating business value for responsible companies

- Access and social license for responsible ocean use
- Synergies and economies of scale in addressing issues
- Stability and predictability in ocean operations

World Ocean Council (WOC) Members

3W Marine Pty Ltd
Almi Tankers S.A.
A.P. Moller-Maersk A/S
Arctia Shipping
Arctic Fibre
ASL Environmental Sciences
Baird Publications
BigBlueStuff
BHM Penlaw
Birds Eye – Igloo
Blank Rome
BP
Cape Breton University
Caris USA Inc.
Center for the Blue Economy
CESI- Engineering & Environment Division
China Navigation Co. /Swire Pacific
Circumpolar Solutions
Class NK
Coastal India Development Council
CSA Ocean Sciences Inc.
Damen Shipyards Group
DNV – GL
DHI
ESRI
ExxonMobil
FOB
Golder Associates
Green Sailing
Guangxi Penshibao Co., Ltd
Heerema Marine Contractors (HMC)
Heidmar, Inc.
Holman Fenwick Willan LLP
IHC Mining
Intl Ass'n of Geophysical Contractors
Intl Chamber of Shipping (ICS)
Intl Tankers Owners Pollution Fed. (ITOPF)
JASCO Applied Sciences
JS Capital Power
Keppel Group
Keppel Offshore and Marine
L3 MariPro
Liquid Robotics
Lloyds Register
Louisbourg Seafoods
M3 Marine (Offshore Brokers) Pte Ltd
MF Shipping Group
Marine Acoustics, Inc.
Marine Assets Corporation
Memorial University – Marine Institute
Mitsubishi Heavy Industries
Nautilus Minerals, Inc.
Noise Control Engineering LLC
N America Marine Env't Protection Assn.
Ocean Nourishment
OceanNetworks Canada
Oldendorff Shipping
OLRAC SPS
PanGeo Subsea
Planet OS (formerly Marinexplore)
Resolute Marine Energy
RightShip
Rio Tinto
Royal Greenland A/S
Sanford Limited
Scottish Marine Institute - SAMS
Shell
Shipping HK Forum Ltd
Southall Env't al Assoc (SEA)
Stena Bulk AB
SubCtech
Sunburst Sensors
Tai Chong Cheang (TCC) Steamship Co HK
Technip
Terragon Environmental Technologies
Thordon Bearings Inc.
TierraMar Consulting
Total Marine Solutions
Twin Dolphins
Univan
Univ. Texas Marine Science Inst.
Vieira de Almeida & Associates (VdA)
Windward Ltd.
Zodiac Maritime

WOC: Business Leadership for Ocean Sustainable Development

1. Ocean Policy and Governance

- UNCLOS/BBNJ; Convention on Biological Diversity, etc.

2. Marine Spatial Planning / Ocean Zoning

3. Operational Environmental Issues

- Sound and Marine Life; Marine Mammal / Vessel Interactions
- Port Reception Facilities; Biofouling / Invasive Species

4. Regional Ocean Business Councils

- Arctic, Caribbean, W. Indian Ocean, Pacific

5. Smart Ocean / Smart Industries

- Data from Industry Vessels/Platforms of Opportunity

6. Sea Level Rise / Extreme Weather Events

- Port/coastal infrastructure adaptation and resiliency

- **Sustainable Development Goals for the Ocean**
- **Ocean Investment Platform**

WOC Program on MSP

- Create a clear industry understanding about MSP
- Examine how MSP has worked and the role of industry
- Define and examine the potential business impacts and benefits of MSP
- Determine how industry can optimize potential MSP benefits and minimize the impacts
- Ensure the ocean business community is fully informed of MSP process and plans
- Develop a coordinated business community strategy and action plan for engaging in MSP
- Ensure MSP takes into account responsible ocean economic activities

WOC MSP Program Outputs

- Business Forum on Marine Spatial Planning and Ocean Business Community (2011, Washington DC)
- The Shipping Industry and Marine Spatial Planning: A Professional Approach (2013, WOC/Nautical Institute report)
- MSP Sessions at Sustainable Ocean Summit (2013, Washington DC)
- Business Forum on Marine Policy and Planning (2014, New York)
- MSP Sessions at Sustainable Ocean Summit (2015, Singapore)
- MSP Simulation: S. Atlantic (US) region (2015-16)
- MSP and Industry database of Ocean Industries (for 3 US regions) (2014-16)
- MSP Webinar: North Sea MSP (2016)
- **Report: Ocean Industries and Marine Planning (2016)**
- **MSP Sessions at Sustainable Ocean Summit (30 Nov-2 Dec, 2016, Rotterdam – upcoming)**

Ocean Industries and Marine Planning

WOC MSP Report, 2016…

Potential Value of Marine Planning to Ocean Business

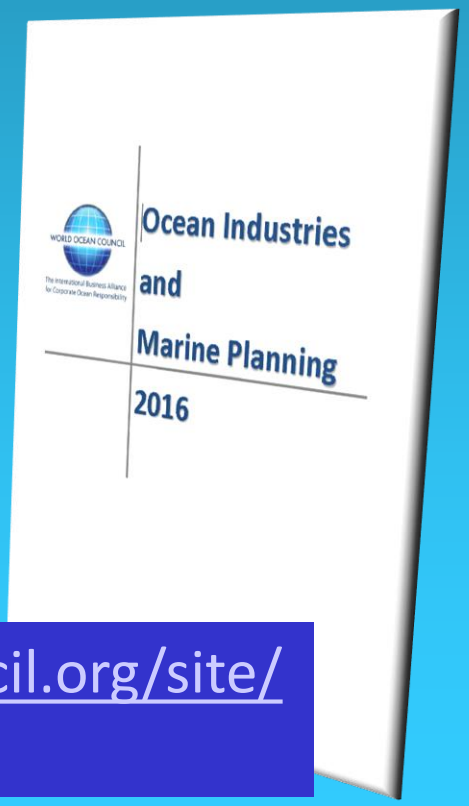
- Identify and develop data sources
- Streamline regulatory/permitting processes
- Address user and resource conflicts
- Increase balanced management approach
- Reduce investor uncertainty
- Efficiently use public and private funds

http://www.oceancouncil.org/site/planning.php

Ocean Industries and Marine Planning

Industry Concerns Regarding Marine Planning

- Increased Regulatory Complexity/Burden
- Authority
- Scale of Decision-Making
- Stakeholder Engagement
- Discrimination in Uses
- Data and Mapping
- Conflicts

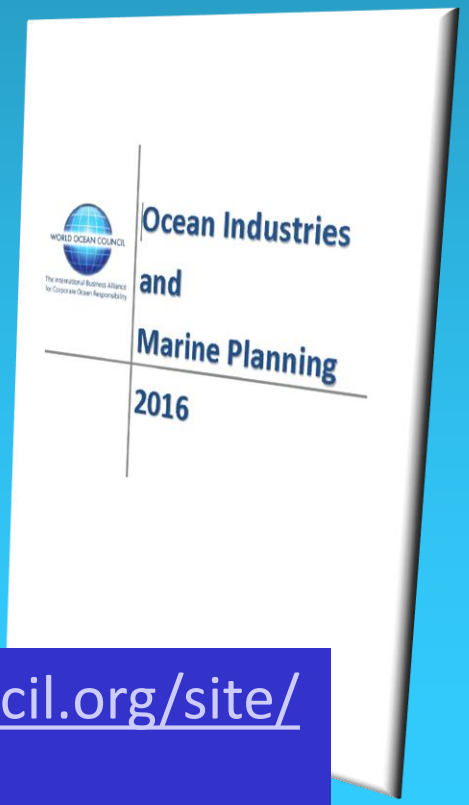


http://www.oceancouncil.org/site/planning.php

Ocean Industries and Marine Planning

Industry Seeks Clarity on…

- The relationship between MSP and other governance processes and mechanisms
- Regulatory and authority gaps and uncertainties
- How MSP will function in multiple jurisdictions
- How the MSP process will remain relevant and transparent



http://www.oceancouncil.org/site/planning.php

MSP at 4th Sustainable Ocean Summit (SOS) (Rotterdam, 30 Nov-2 Dec, 2016)

SOS 2016 Theme:

“Ocean 2030: “Sustainable Development Goals and the Ocean Business Community”

Plenary Sessions, including:

- **European Blue Growth: EU Plans for the Ocean Economy, Role of the Marine Strategy Directive**
- **Ocean 2030: Ocean Economic Development Forecasts for the Next 15 Years**

MSP sessions, including:

- Marine Planning and the North Sea
- Marine Planning and International Waters
- Multi-use Offshore Infrastructure



WOC 4th Sustainable Ocean Summit (SOS)
Rotterdam, 30 Nov-2 Dec 2016

Paul Holthus

CEO

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WORLD OCEAN COUNCIL

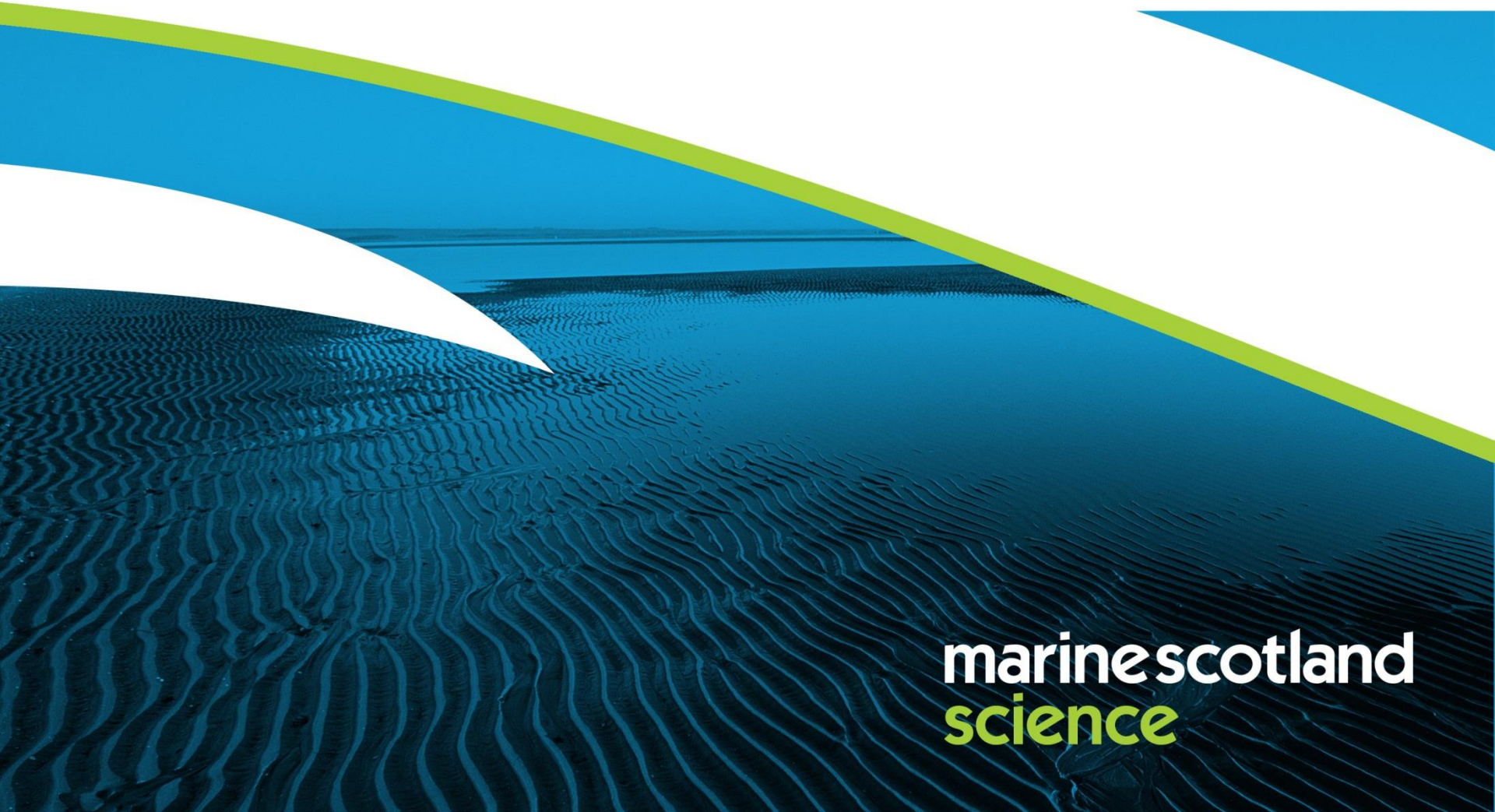
The International Business Alliance for Corporate Ocean Responsibility

www.oceancouncil.org

Marine Planning and Scotland's Sustainable Marine Economy

Matt Gubbins, Marine Planning and Environmental Advice Programme Manager

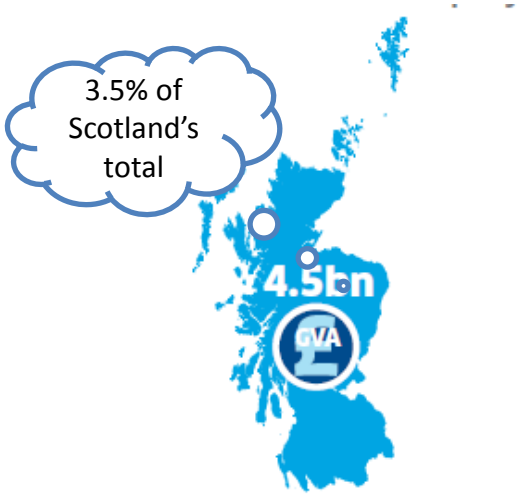
The Scottish Government

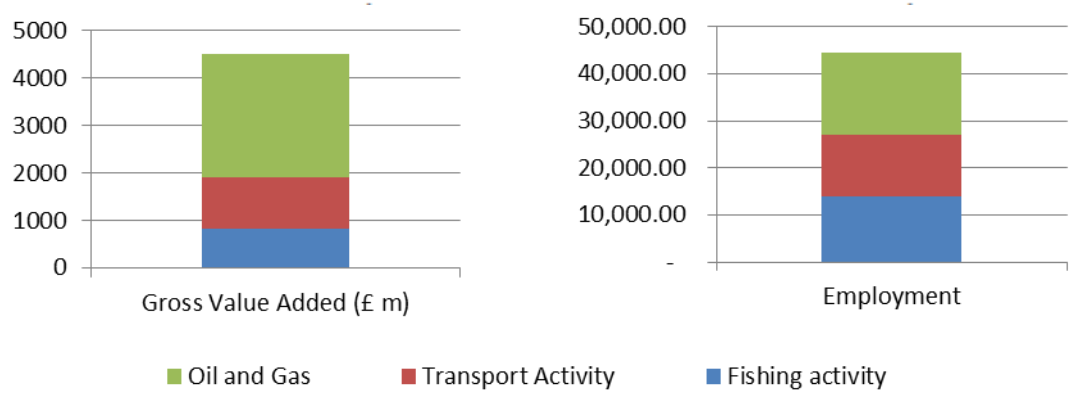


marinescotland science

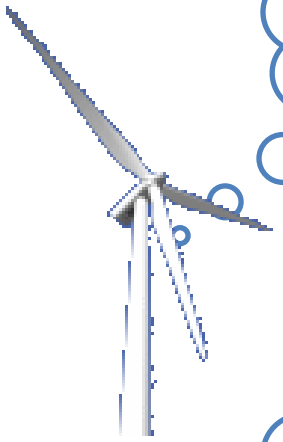
Scotland's Marine Economy: The Big Picture

Economic activity linked to the oceans, seas, bays, estuaries and other major water bodies





POTENTIAL



5 major offshore wind farms consented. Investment £7 bn

Marine tourism GVA £360M and could grow to £450M by 2020

Scotland's Ambition

Achieve Good Environmental Status by 2020

Conservation

Sustainably manage our seas using a three pillar approach.

Wild salmon and freshwater fisheries

Sustainable stocks to support sustainable fisheries. Manage and mitigate interactions.

Tourism and Recreation

Enhance and develop opportunities for marine recreation.

Aquaculture

Increase sustainable finfish production to 210,000T and shellfish production to 13,000 Tby 2020.

Water and Coastal issues

Protect the coast against change and flooding; safeguard water resources and improve wastewater quality.

Transport

Maintain navigational safety and protect the contribution of Scotland's ports to the Scottish economy.

Oil and Gas

Maximise recovery of reserves, Industry innovation and Best Environmental Practice

Fishing

Fish stocks at Maximum Sustainable Yield, sustaining stocks, the industry and coastal communities.

Renewables

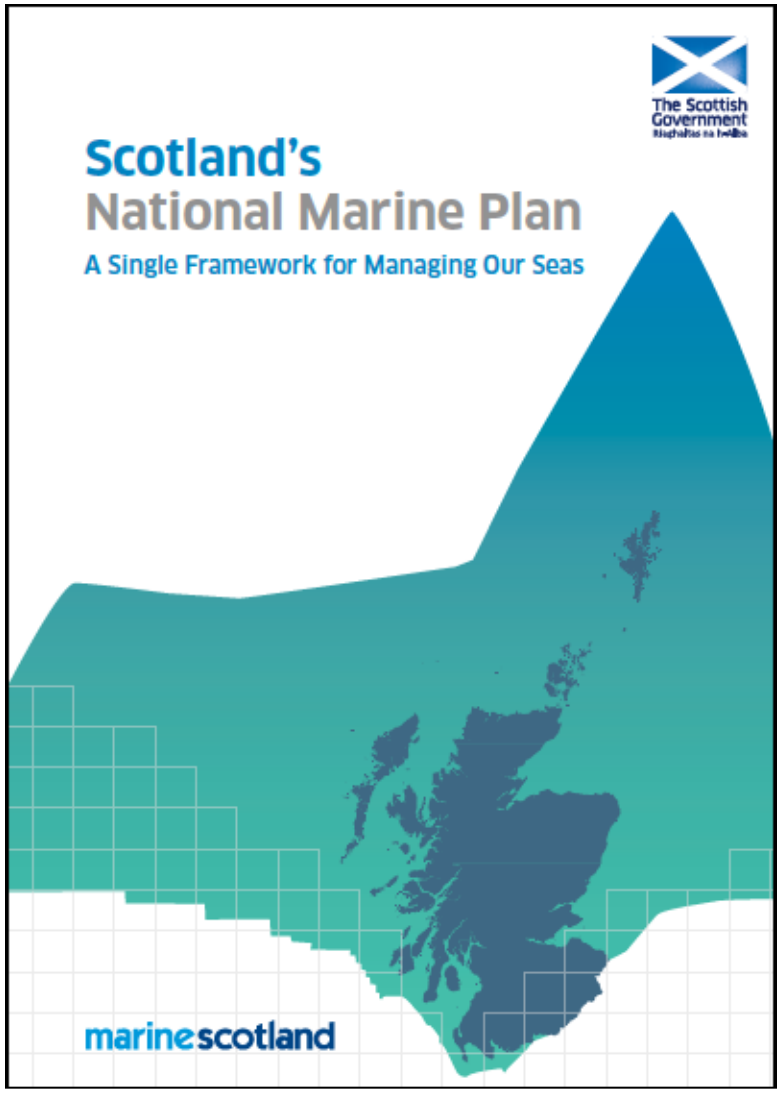
Contribute to 100% renewable electricity generation by 2020

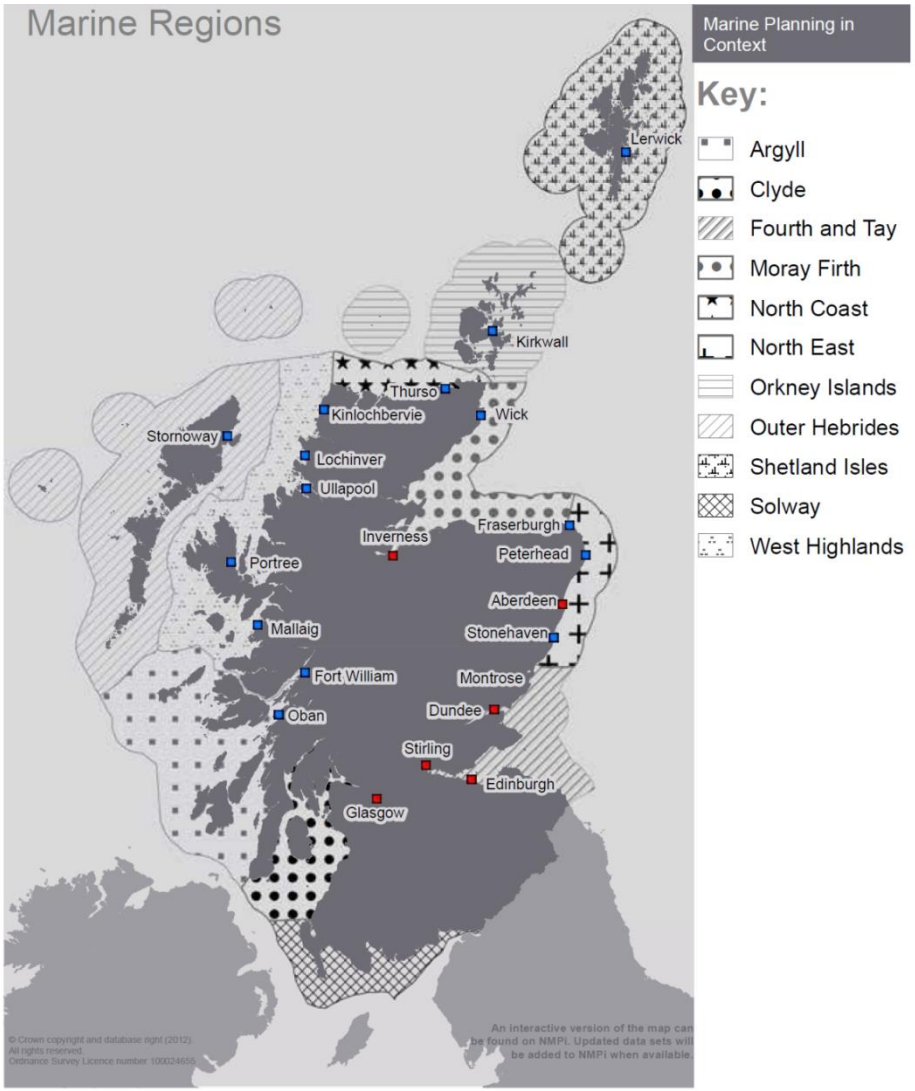
Ports

Ensure facilities are available to facilitate cargo and passenger movement and support renewables services.

Marine Planning in Scotland

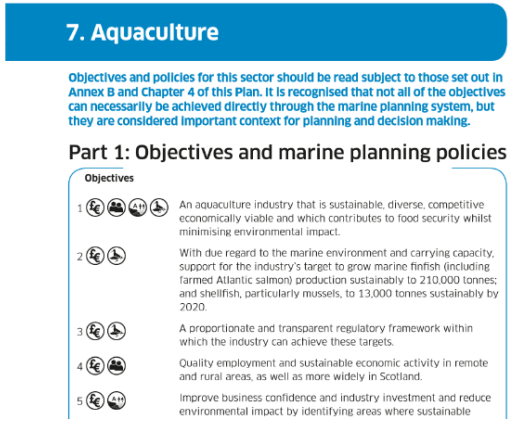
marinescotland science





Aquaculture in the National Marine Plan (CHAPTER 7)

- Seven objectives and 14 planning policies
- Objectives:
  - 210,000T fish, 13,000T shellfish by 2020
  - Food security
  - Growth targets
  - Rural employment
  - R&D
- Policies eg
  - Carrying capacity & locational guidelines
  - Mitigate seascape impacts
  - Not bridge disease management areas
  - Pre-application discussion
  - Fit for purpose equipment



7. Aquaculture

Objectives and policies for this sector should be read subject to those set out in Annex B and Chapter 4 of this Plan. It is recognised that not all of the objectives can necessarily be achieved directly through the marine planning system, but they are considered important context for planning and decision making.

Part 1: Objectives and marine planning policies

Objectives

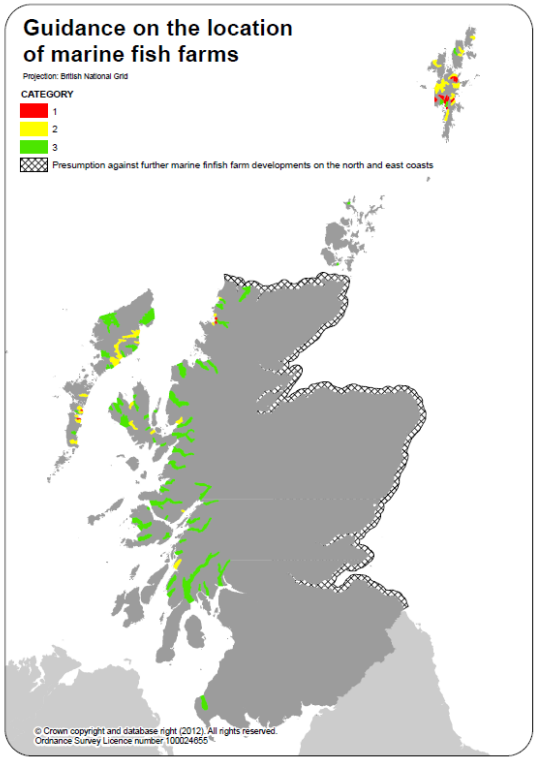
1 An aquaculture industry that is sustainable, diverse, competitive economically viable and which contributes to food security whilst minimising environmental impact.

2 With due regard to the marine environment and carrying capacity, support for the industry's target to grow marine finfish (including farmed Atlantic salmon) production sustainably to 210,000 tonnes; and shellfish, particularly mussels, to 13,000 tonnes sustainably by 2020.

3 A proportionate and transparent regulatory framework within which the industry can achieve these targets.

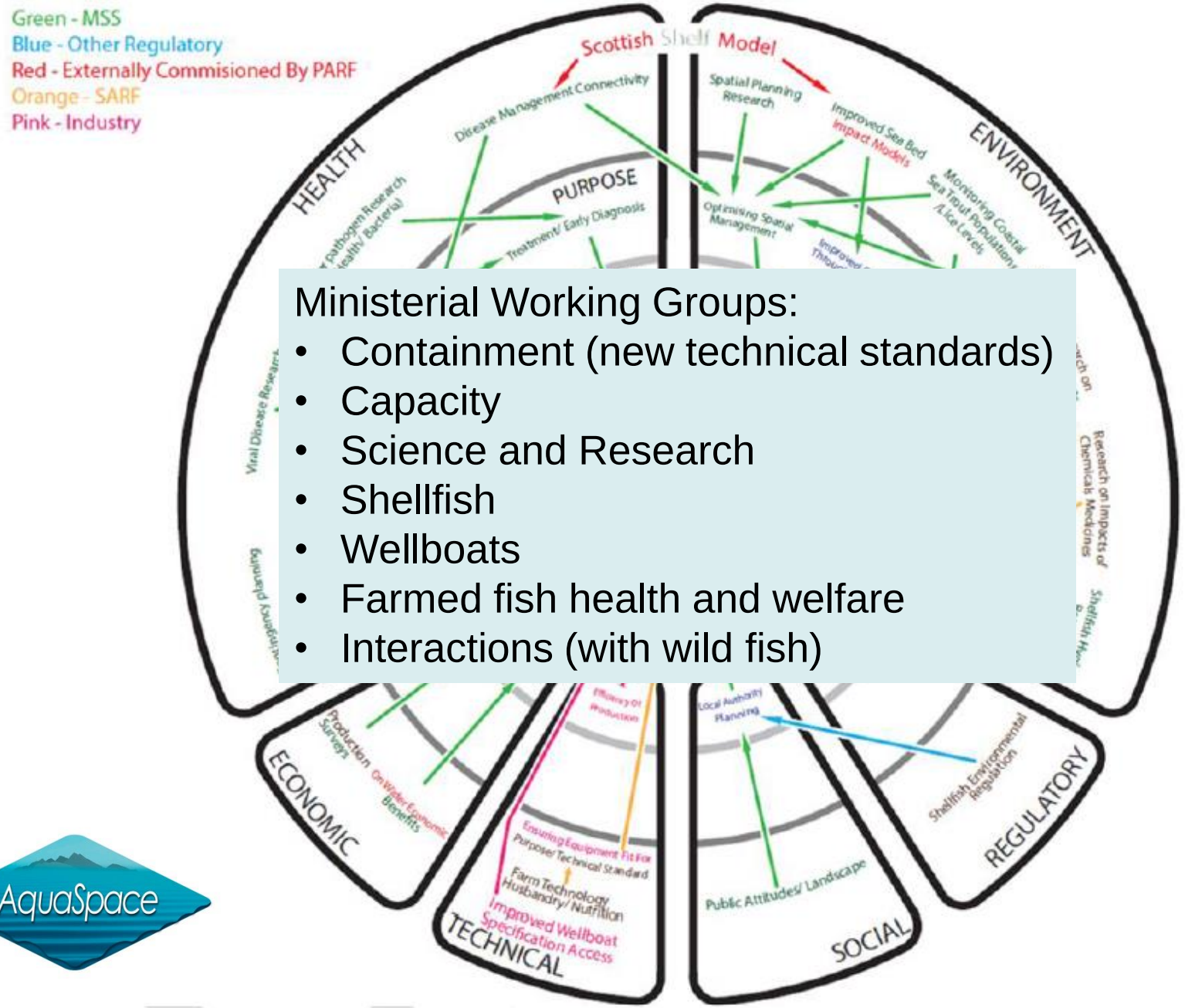
4 Quality employment and sustainable economic activity in remote and rural areas, as well as more widely in Scotland.

5 Improve business confidence and industry investment and reduce environmental impact by identifying areas where sustainable



marinescotland

Delivering on the Plan Objectives: Aquaculture

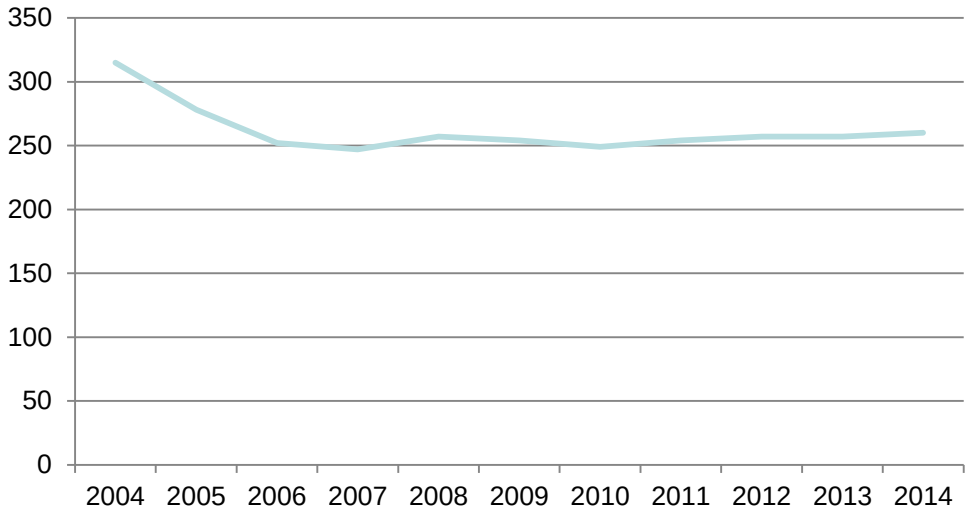


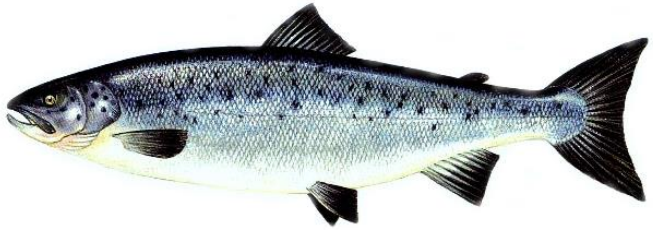
Ministerial Working Groups:

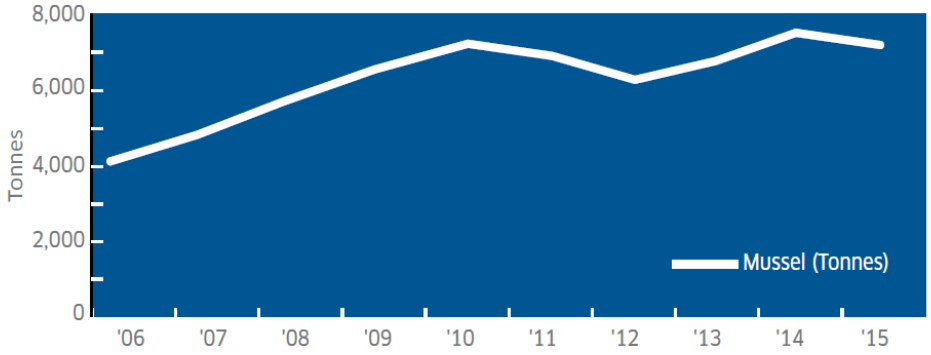
- Containment (new technical standards)
- Capacity
- Science and Research
- Shellfish
- Wellboats
- Farmed fish health and welfare
- Interactions (with wild fish)

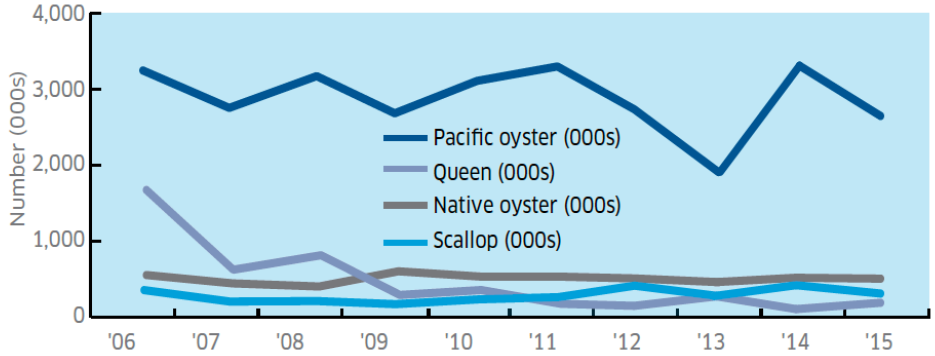
AquaSpace

No. of sites



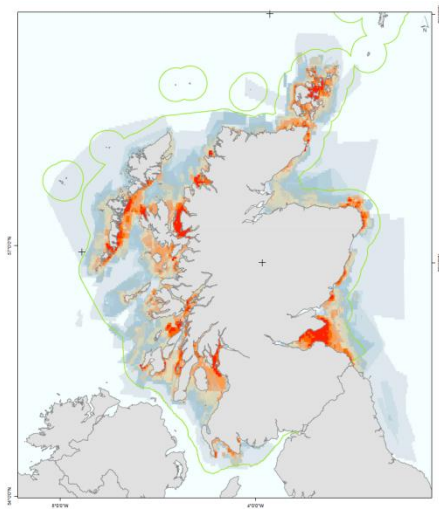






marinescotland

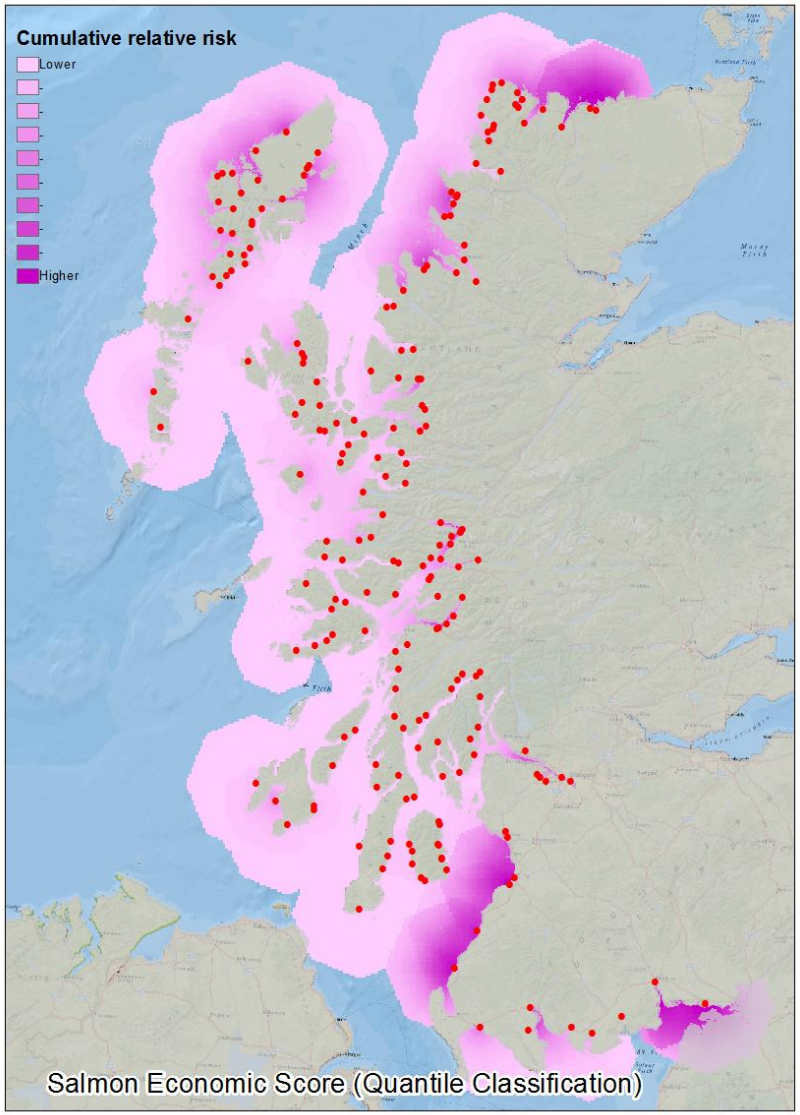
Cross sector cooperation?

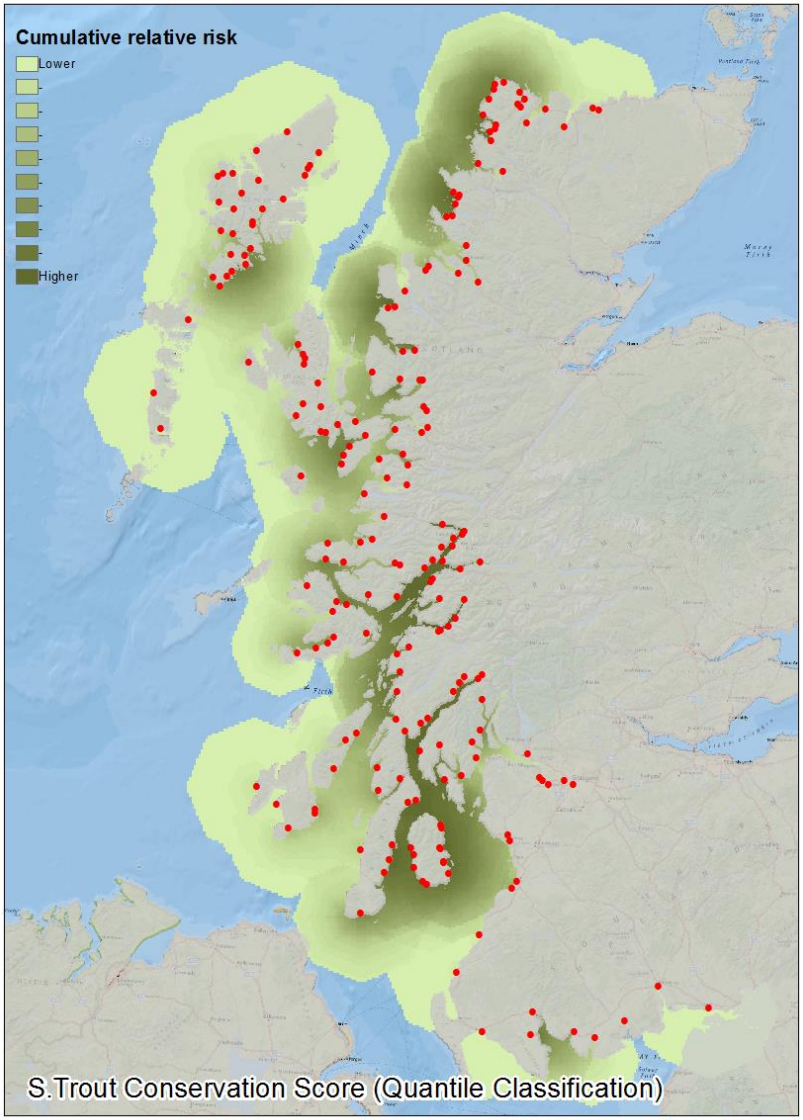


Ensuring environmental sustainability?

marinescotland

Wild salmonids risk-based spatial approach





marinescotland

The Scottish Government

Thank you

marinescotland

Maritime Spatial Planning worldwide & in the EU

Lodewijk Abspoel
Policy advisor EU IMP/MSP & North Sea

Draft 8 June 2016 (world oceans day) + final 23 June 2016 Acores

nl 2016

“Blue growth happens only in a blue environment” says the Salmon of Knowledge to Galene. **“That is right dear Salmon, and humans do not live @ sea”**, replies the daughter of Neptune.

Maritime spatial planning: rationale

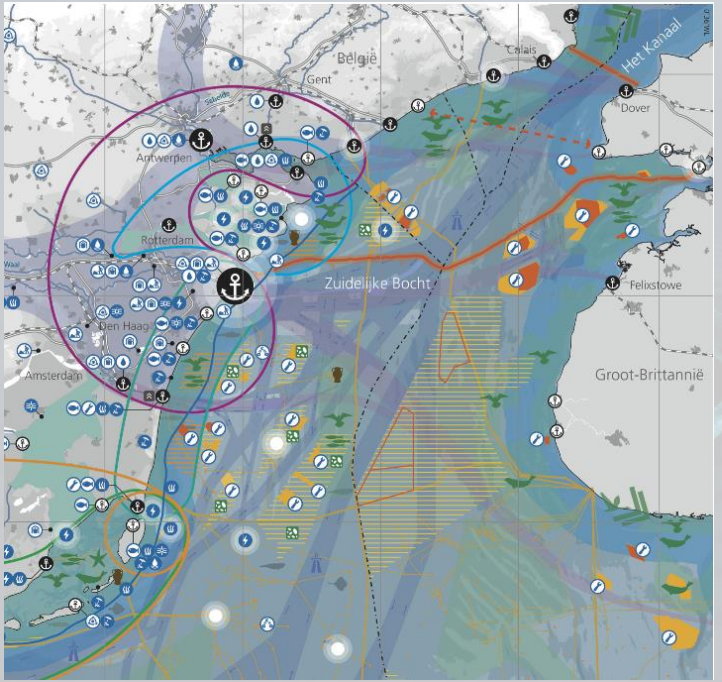
Politically guided and **stakeholder driven process** for informed decision making

Connecting use of marine waters for maritime activities with humans & the ecosystem

Understanding and managing ecological, economic and social systems

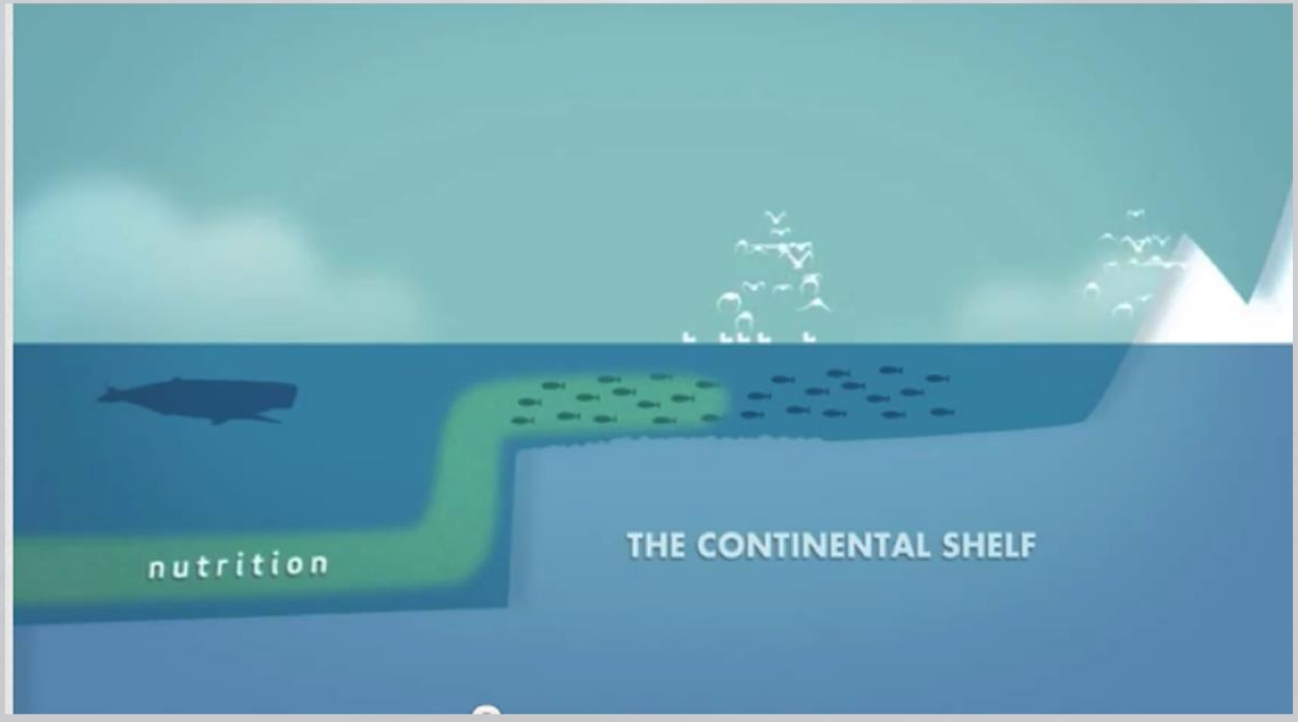
Thinking 7 dimensions of the sea

Political guidance for the Dutch North Sea 2050 spatial development agenda: “What is our sustainable blue growth perspective?”



Possible political guidance to MSP: COP21

Possible political guidance to MSP: SDG's



Sustainable Development Goal 14: Life below the water

Humans are the connecting element in MSP processes: how can we improve?

Getting better in MSP through playful cooperative learning

MSP challenge promise for World Oceans Day 8 June – visit us on www.mspchallenge.info

Thank you for your attention

Visit us on www.Noordzeeloket.nl

MSP Background information Acores 23 June 2016

Maritime spatial planning and the Dutch Presidency of the EU

- Follow up COP21 beating Climate Change, a.o. Delta Coalition for sustainable urban delta's – working together accross the globe;
- Connect with maritime and peripheral regions including the EU overseas territories
- Greening shipping and promoting short sea shipping;
- Energy Union, political declaration offshore wind in the North Sea;
- Fisheries management and connecting networks of sectoral directors (marine/water with fisheries and agriculture);
- Promoting MSP in relation to blue growth & short sea shipping

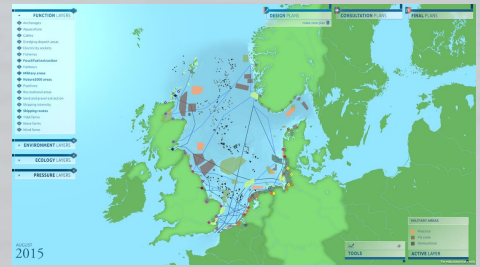
Getting better in MSP through playful cooperative learning

MSP challenge: short sea shipping edition 2016 (Amsterdam, Edinburgh, Hamburg & Berlin)

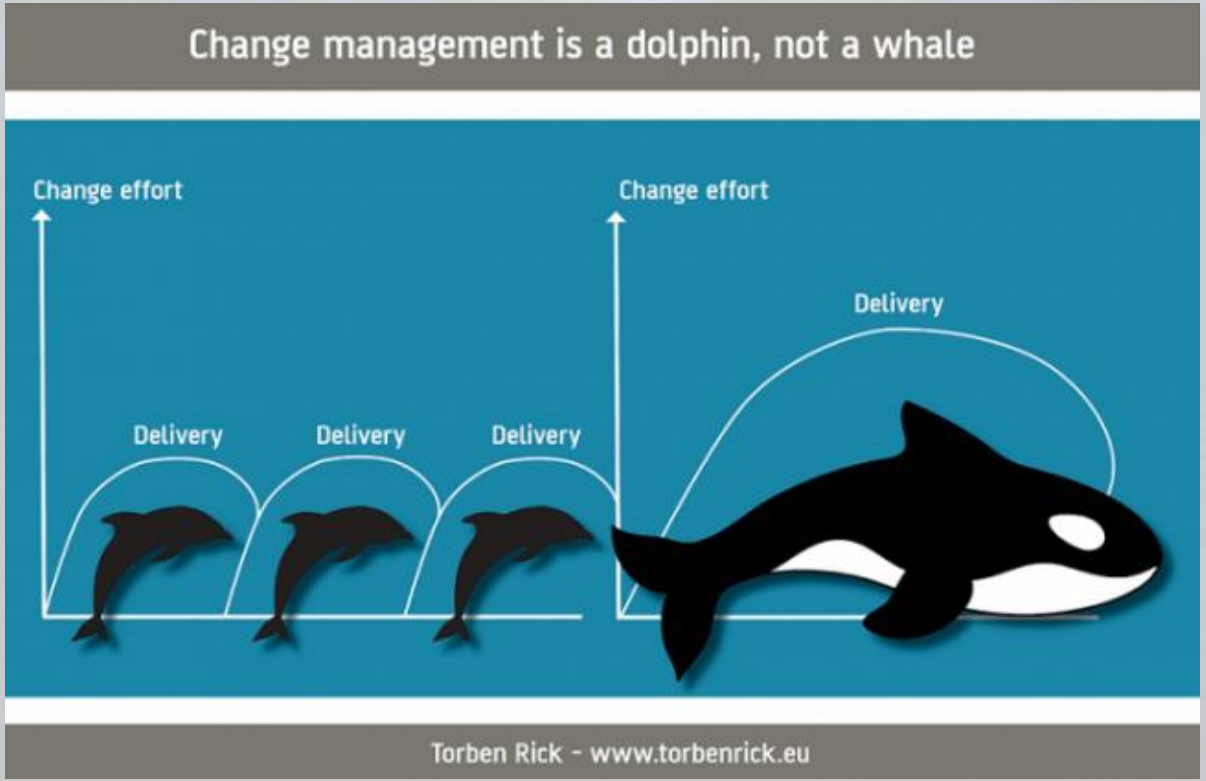
MSP challenge 2050, North Sea edition with Erasmus Mundi students (Venice & Copenhagen)

EU IMP&MSP agenda jigsaw puzzle (Turku)

Harbour purpoise life @ sea – a revised goose game (Amsterdam)



How to tackle the MSP challenge?



Outline of the contribution

1) Introducing the Salmon of Knowledge and Galene as MSP players

2) MSP in short – rationale behind it, and challenge for multilevel, multilateral and golden square goovernenace

3) MSP and LSI in the EU -> cooperation neighouring non EU countries (e.g. Russia/Iceland, UfM partners, Gallway declaration, Cabo Verde)

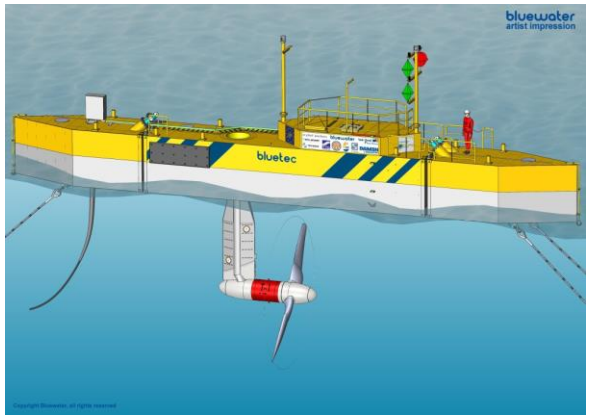
4) MSP as a means for global development, mutual learning and cooperation towards SDG 14 (+ others)

5) Understanding systems and humans by means of gaming MSP and building the digital aquarium

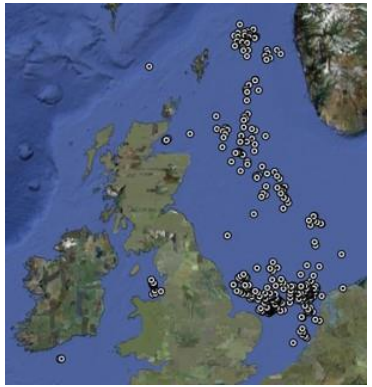
6) Take home message

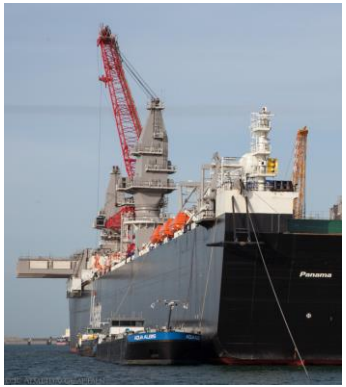
Principles for development

‘Proof of principle’ and ‘Proof of practice’ lead to ‘Proof of market’

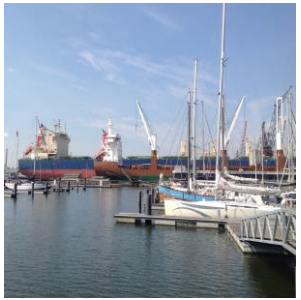


Decomissioning & the Pioneering Spirit



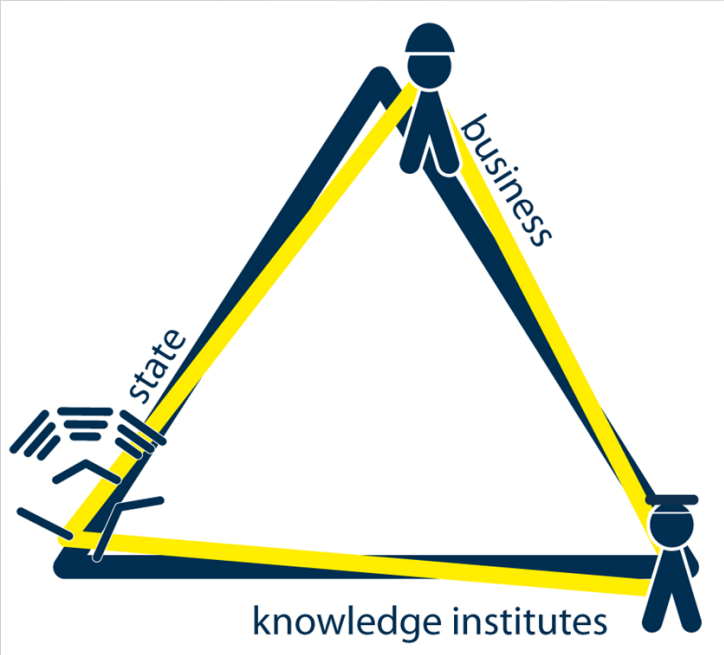


Connecting land and sea – new lock in IJmuiden improves connection Amsterdam (o.a. cruises)



Multi level & lateral cooperation on MSP

The Triple Helix & the Golden Square @ work



Session 3: Maritime Spatial Planning in international waters

OSPAR High Seas MPAs: a first step towards MSP

priorities, challenges, recent and future developments

seascape consultants ltd

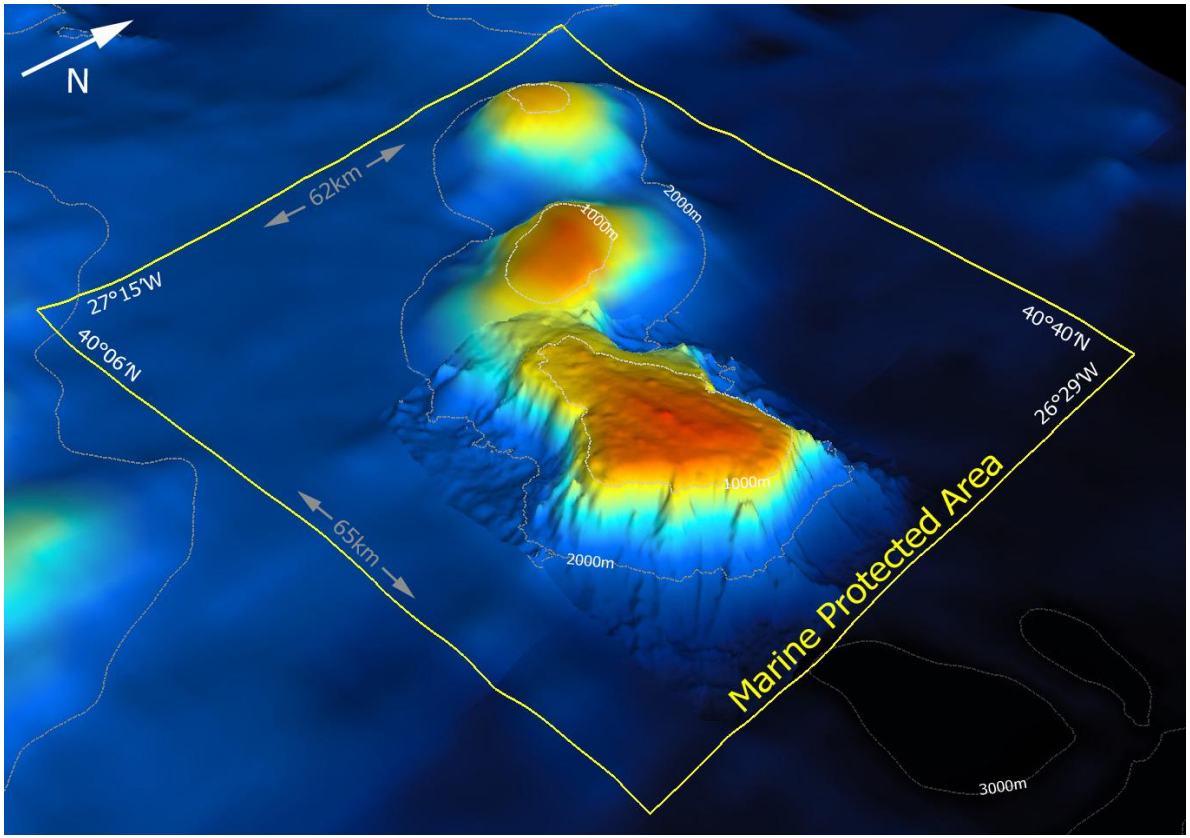
Prof David Johnson

Director, Seascape Consultants
Coordinator, GOBI
Emeritus Professor, Southampton Solent University UK
Former Executive Secretary OSPAR Commission

Maritime Spatial Planning Worldwide 23-24 June 2016, Azores

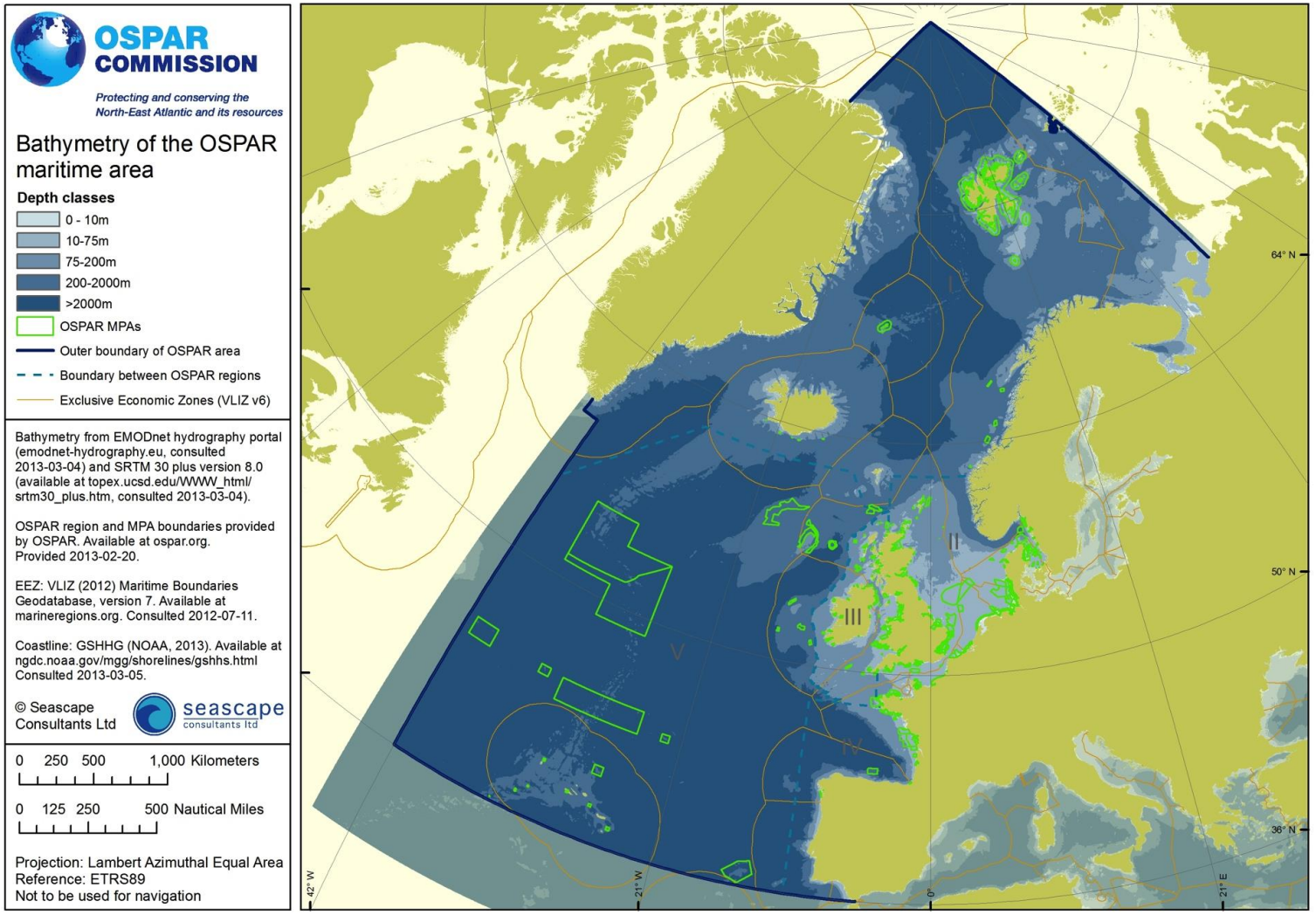
A significant challenge in ABNJ is lack of data and poor understanding of the integrity of ecosystems and ecosystem processes

a. Data collection is too fragmented
b. Data gaps need to be filled
c. Data needs to be continuous across jurisdictional borders



Olsen, EM, Johnson D, Weaver P, Goni R, Ribeiro MC, Rabaut M, Macpherson E, Pelletier D, Fonseca L, et al. (2013) Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities. Marine Board Position Paper 18. Larkin KE and McDonough N (Eds). European Marine Board, Ostend, Belgium 83pp

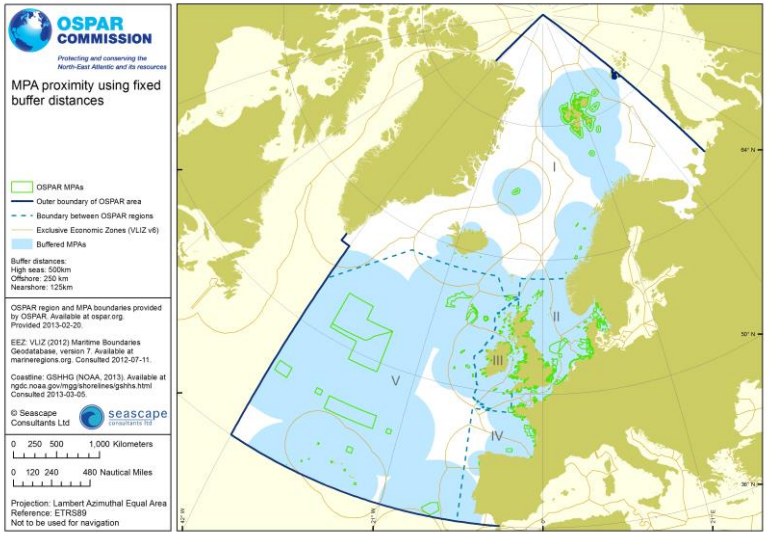
OSPAR MPA Network 2012

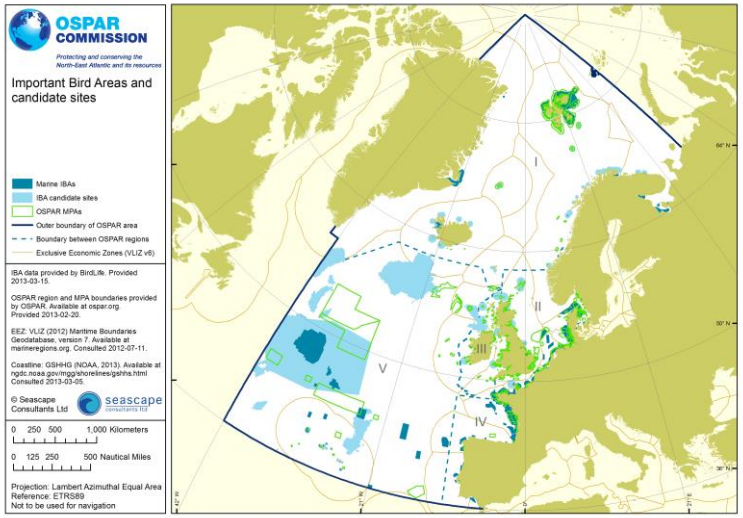


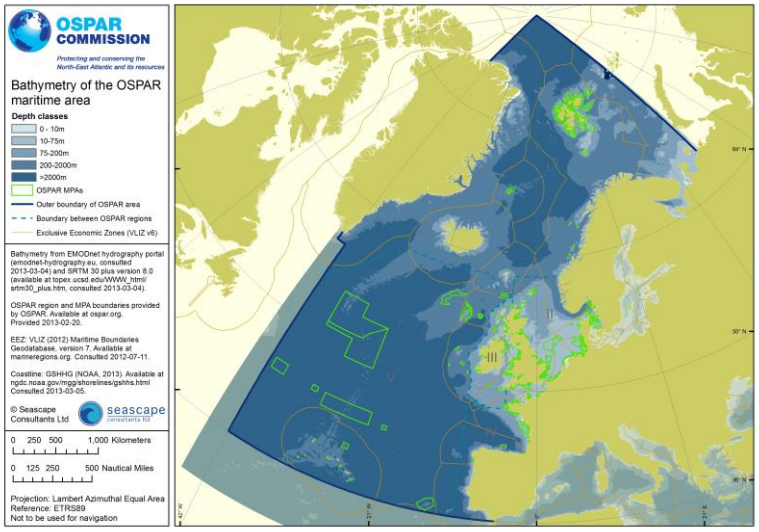
O'Leary, B.C., Brown, R.L., Johnson, D.E., von Nordheim, H., Ardron, J., and Packeiser, T. (2012) The first network of marine protected areas (MPAs) in the high seas: The process, the challenges and where next. *Marine Policy* **36**: 598-605

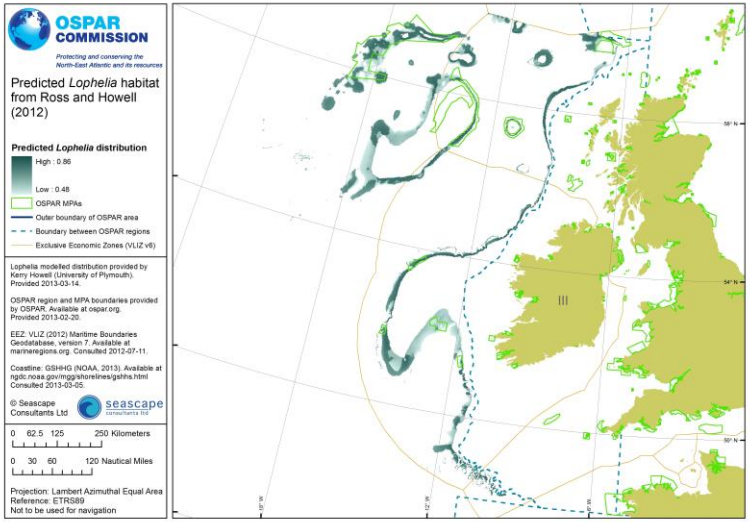
Johnson, D.E. (2016) Conserving the Charlie-Gibbs Fracture Zone: one of the world's first High Seas Marine Protected Areas. Chapter 15: 271-285 in Mackelworth, P. (ed.) Marine Transboundary Conservation and Protected Areas. Earthscan Oceans.

MPA network eco-coherence (2013)



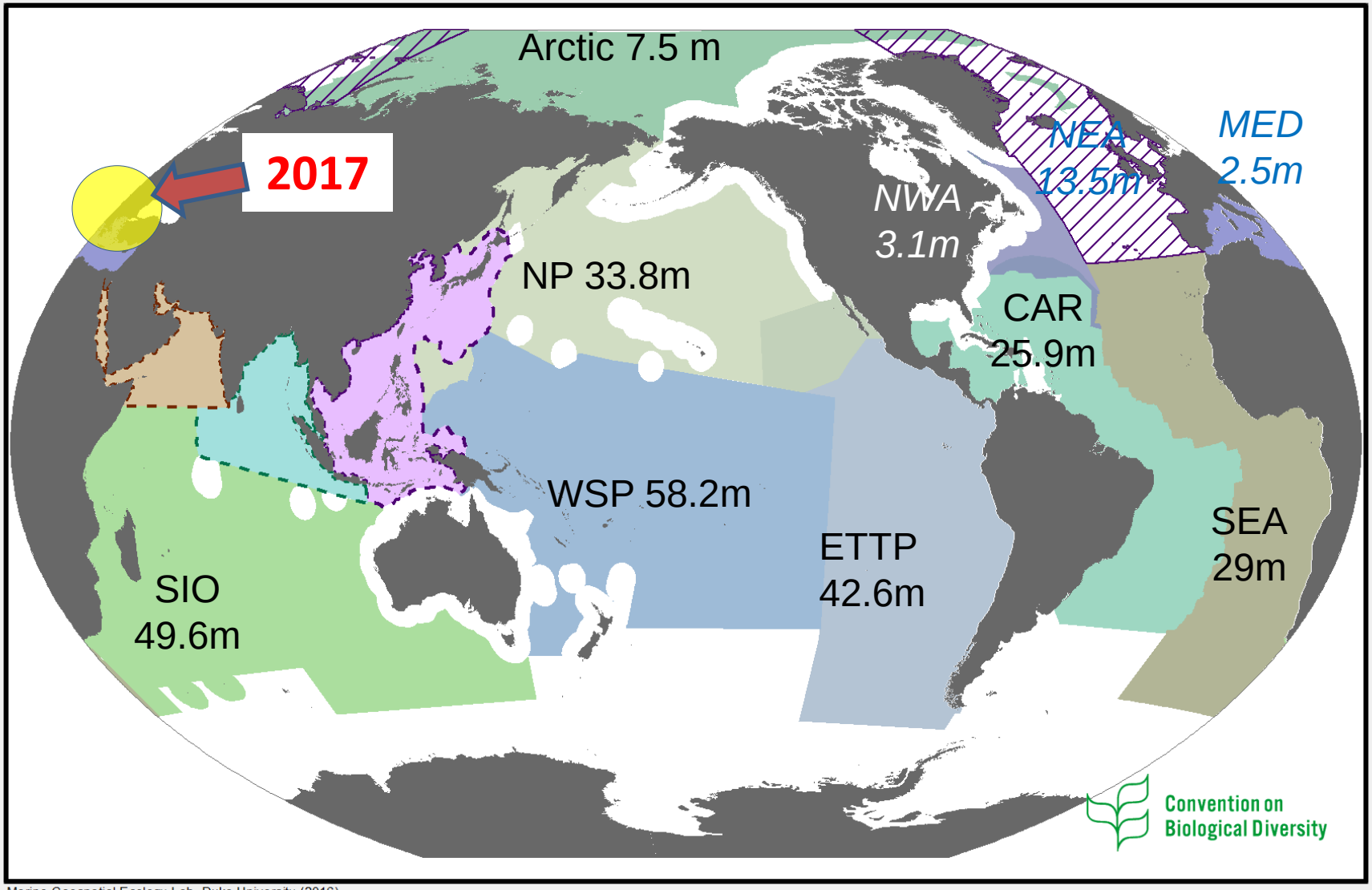




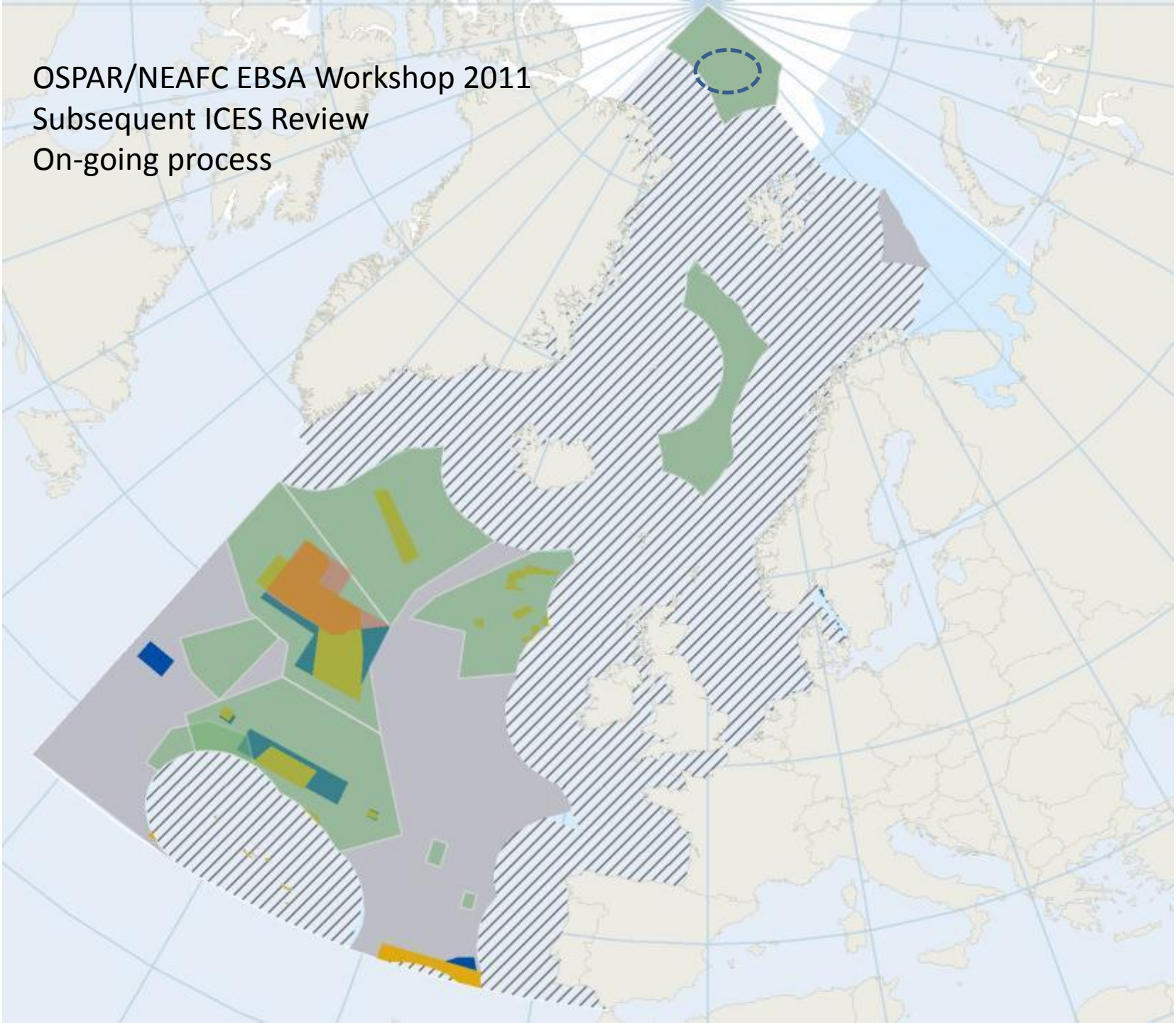


Johnson, D., Ardron, J., Billett, D., Hooper, T., Mullier, T., Chaniotis, P., Ponge, B., Corcoran, E. (2014) When is a marine protected area network ecologically coherent? A case study from the North-east Atlantic. Aquatic Conserv: Mar. Fresh W. Ecosyst. 24 (Suppl.2): 44-58.

74 % (or 82%) of global ocean covered by CBD Regional Workshops on EBSAs



Marine Geospatial Ecology Lab, Duke University (2016)


OSPAR/NEAFC EBSA Workshop 2011
Subsequent ICES Review
On-going process

In ABNJ particularly

Case for a precautionary approach: reverse burden of proof, SEA/EIA

Different types and sizes of EBSAs: cannot be prescriptive, data driven (confidence levels)

Large areas:
Provide an opportunity for marine spatial planning

Footprint:
Recognise areas that should continue to be subject to existing uses albeit subject to review

Think big for marine conservation

Err on the side of caution and protect the widest-possible areas of ecologically important deep sea, say **Phil Weaver** and **David Johnson**.

Marine protected areas are key tools for conservation, but they have some serious shortcomings. The Convention on Biological Diversity (CBD) has called for these areas to cover 10% of each of the world's marine and coastal eco-regions by the end of 2020. Even this modest target is proving elusive. So far, less than 2% of the ocean has been designated as protected, and nearly all of these areas are in coastal and continental-shelf regions. This is partly the result of a lack of data from the open ocean, and partly because of pressures from various interest groups, which may resist the management of ocean areas with valuable resources.

There is now an additional option for protecting the marine environment. In 2010, the CBD created a process to officially endorse Ecologically or Biologically Significant Areas (EBSAs) and to convey information to competent intergovernmental organizations, such as the United Nations General Assembly, for further action. The point of EBSAs is to allow scientists to identify areas that are particularly important to the function of marine ecosystems without the requirement for an accompanying detailed management plan. This 'softer' procedure opens the door to labelling a larger swathe of the ocean as important to ecosystem functioning.

An EBSA is defined by a set of criteria established by the CBD in 2008: the area should contain unique, rare or endemic creatures and/or habitats; have a special role in the survival of a given species; be important for the survival or recovery of threatened species; be vulnerable, fragile or slow to recover once harmed; have high biological productivity; and/or have high biological diversity. These are good criteria. Unfortunately, there are vast swathes of ocean about which very little is known, for which these criteria can be hard to prove.

This lack of knowledge is not preventing fishing, deep-sea mining and other exploitation from expanding, however; nor should it stand in the way of designating EBSAs. We believe that EBSAs should be made as large as possible, encompassing all areas within which the criteria are likely to be substantively met, even before that can be proven.

This approach should be widely adopted by the scientific community now, while proposed EBSAs are being drawn up for a first technical evaluation at a CBD meeting in Montreal, Canada, at the end of April, before their political endorsement.

ATLANTIC BEGINNINGS

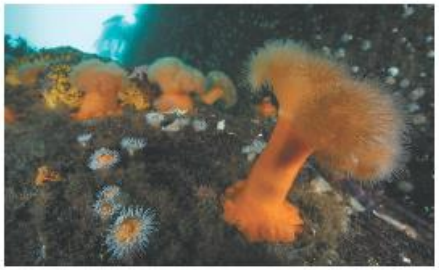
The first CBD regional workshop to identify EBSAs was held in September 2011 to consider the northeast Atlantic, which already hosts a number of marine protected areas and precautionary bottom-fisheries closures. This ocean includes the Hatton and Rockall banks and basin area, to the west of Ireland and Scotland. This area, parts of which are heavily fished, hosts many discrete habitats and supports a wide range of animals, including fragile cold-water coral reefs and sponges. It provides feeding grounds for birds such as shearwaters and petrels. And it may harbour turtles and the endangered blue whale (*Balaenoptera musculus*) as well as the critically endangered North Atlantic right whale (*Eubalaena glacialis*). The exact boundaries of any of the habitats and species distributions are yet to be established.

Initially, there was considerable support among the 25 participating scientists for the designation of small, discrete EBSAs, such as isolated seamounts, in the northeast Atlantic. Experts were focused on their particular specialist habitat or species group, and were conscious that their expert judgement would be scrutinized by their peers. Under such circumstances, it can be difficult to support a large EBSA that extends beyond one's expertise and into areas where there are little data.

Fortunately, the eventual consensus of this meeting was to propose large EBSAs: eight extensive areas (averaging 362,097 square kilometres each) and two smaller international bird areas. For Hatton–Rockall, that meant drawing a line around the entire banks region, measuring 264,322 km². This stands in stark contrast to the average size of the 276 protected areas in this ocean's national waters, which average just 1,040 km² each, and the 6 high-seas protected areas, at 47,718 km² each.

What should happen once an EBSA is defined? We suggest that a marine spatial plan be drawn up for each EBSA and regularly updated. This will articulate a vision, show what activity is taking place in the region (from commercial fishing to tourism) and study the impacts of those activities. In terms of management, we support a three-tier approach whereby areas that historically have been heavily fished and are now degraded remain unprotected; areas with light historical fishing are given full protection; and moderately fished areas are subject to further scrutiny. Marine protected areas could sit comfortably within EBSAs, giving protection to the most critical ecosystems. The main benefit of this system is that it appeals to many different stakeholders: for example, it legitimizes existing fishing activities while preventing them from spreading to vulnerable ecosystems in future.

As scientists meet to rationalize what exactly EBSAs should look like in different parts of the world, we urge them to err on the side of caution and to make the areas large rather than small. This will open the door to broader conservation measures and to sustainable development in future. ■



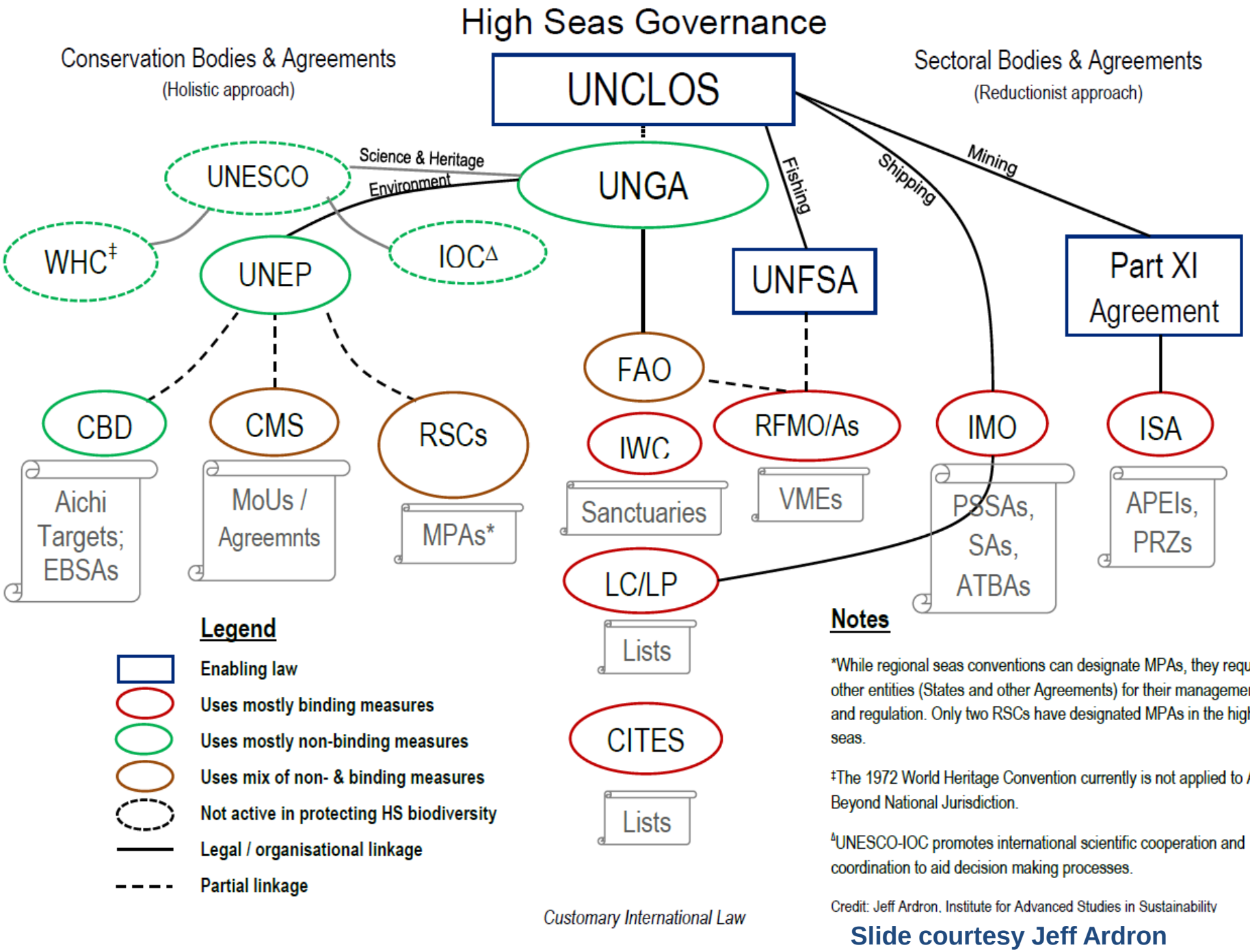
WATERFRAME/GALAXY

Species such as North Atlantic anemones deserve conservation attention.

Phil Weaver *is science coordinator of the Global Ocean Biodiversity Initiative and is at the National Oceanography Centre, Southampton, UK.* **David Johnson** *is executive secretary for the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) in London.*
e-mail: ppew@noc.ac.uk

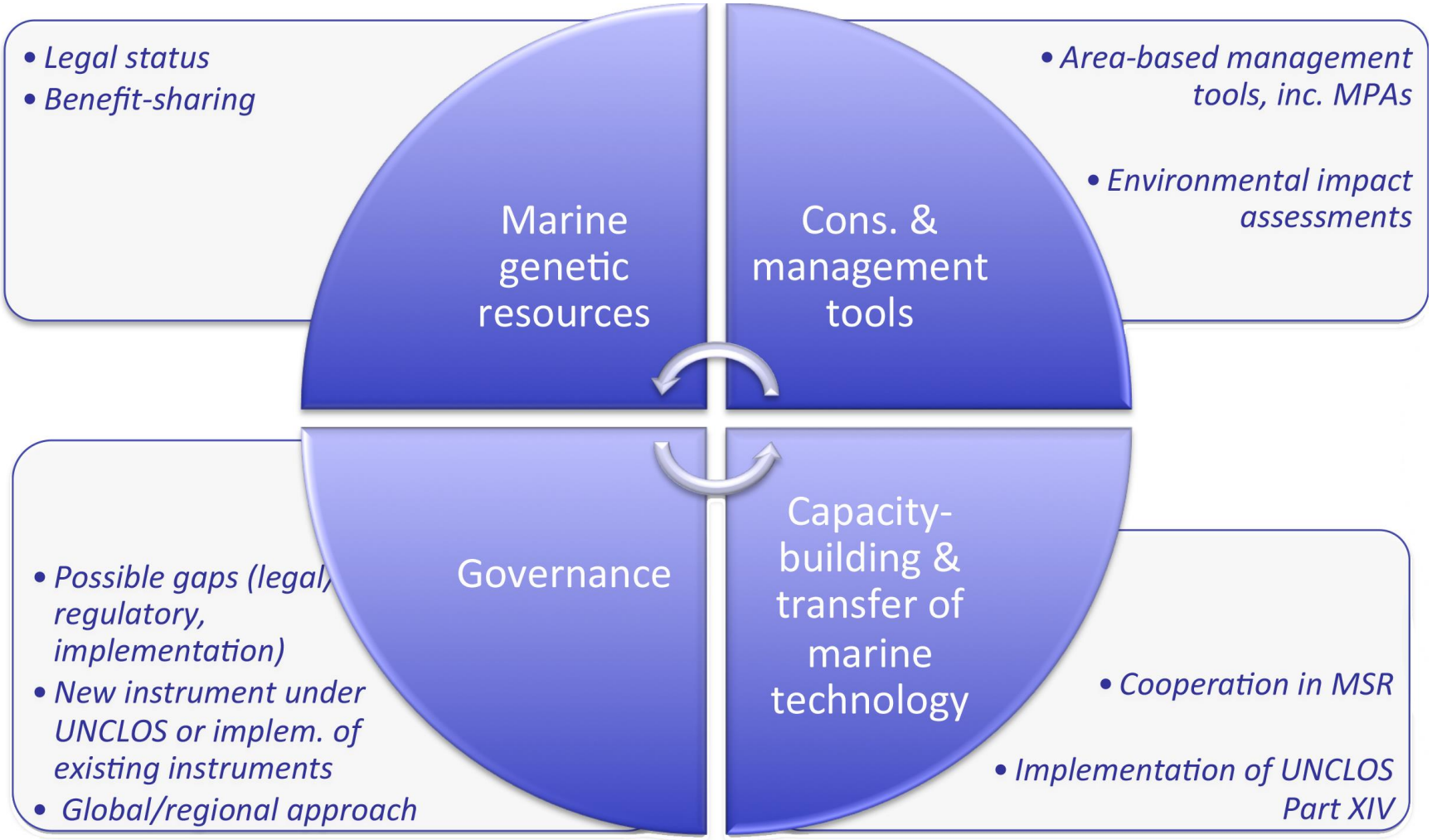
Further reading accompanies this article online at go.nature.com/soqzlu

Weaver, P. and Johnson D.E. (2012) Think big for marine conservation. 22 March 2012, *Nature* Vol **483**: 399, Macmillan.



Slide courtesy Jeff Ardron

The 'package' of Issues to be considered for protecting BBNJ (UNDOALOS, 2015)

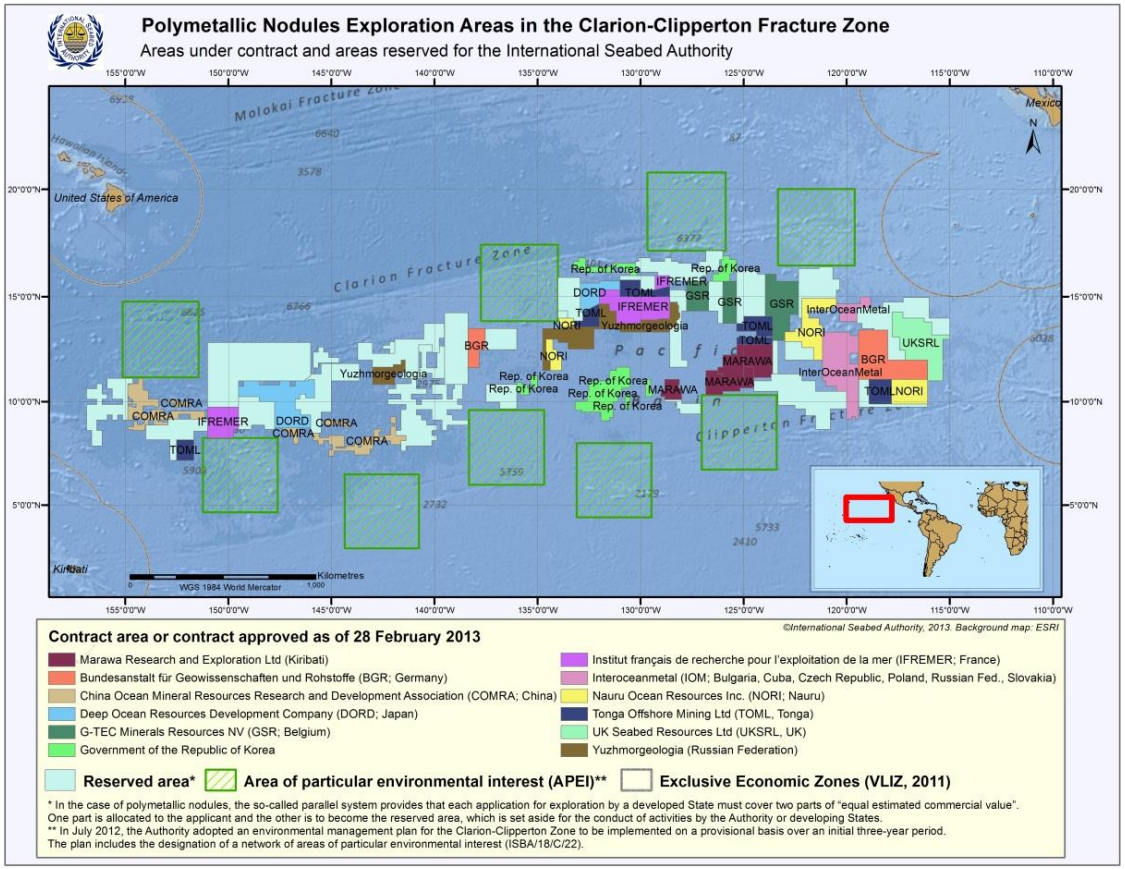


Hoydal, K., Johnson, D. and Hoel, A.H. (2014) Regional governance: the case of NEAFC and OSPAR. Chapter 16: 225-238 in Garcia, S.M., Rice, J. and Charles, A (eds) Governance for Fisheries and Marine Conservation: Interaction and co-evolution. Wiley-Blackwell

Areas of Particular Environmental Interest (APEIs)

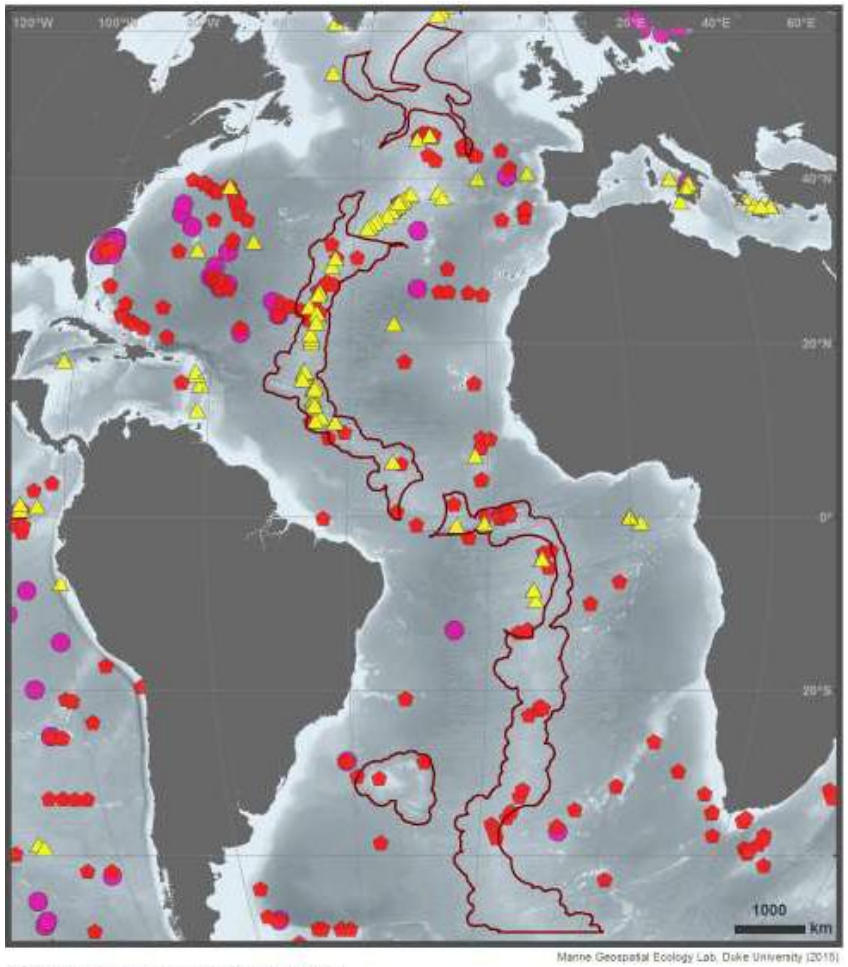
In 2012, the ISA Council approved an environmental management plan for the Clarion Clipperton Zone (CCZ), including a network of nine APEIs, in total covering an area of 1.5 Million km^2, noting the need for a 'comprehensive environmental management plan at the regional level'.

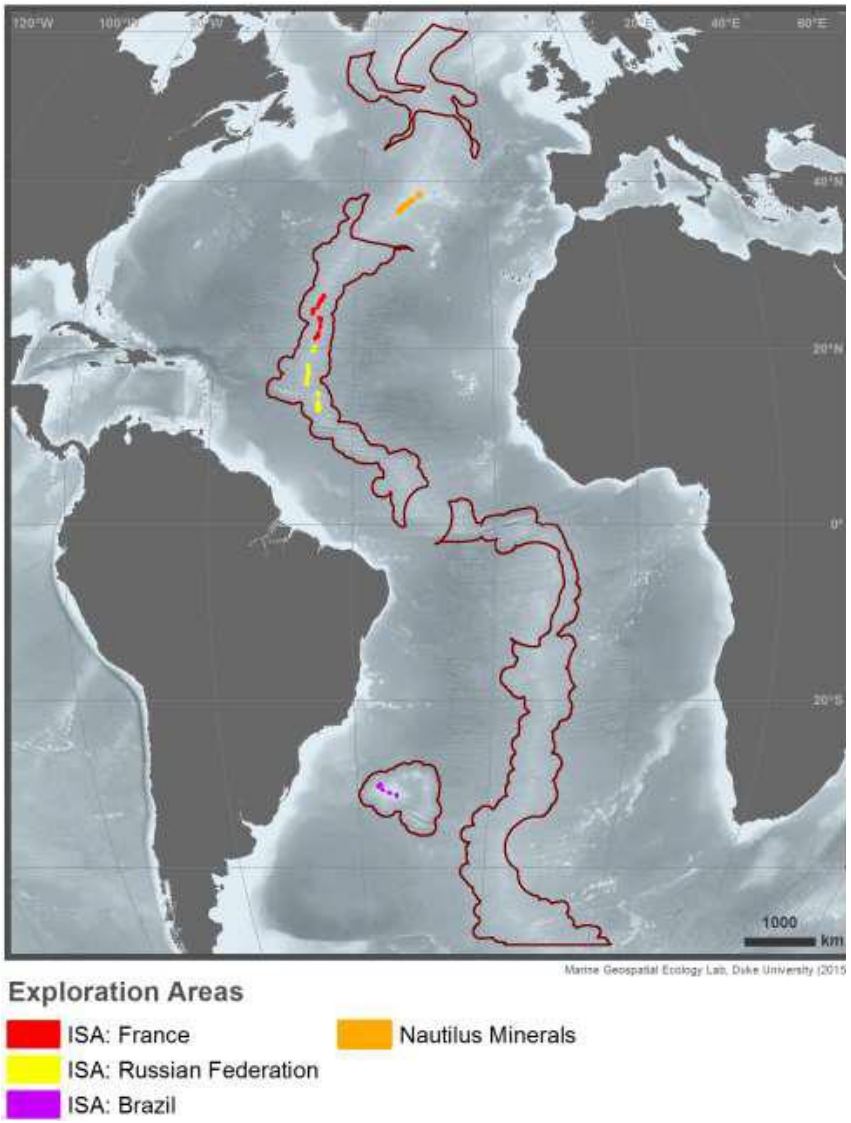
Psychropotes longicauda (source Ifremer)



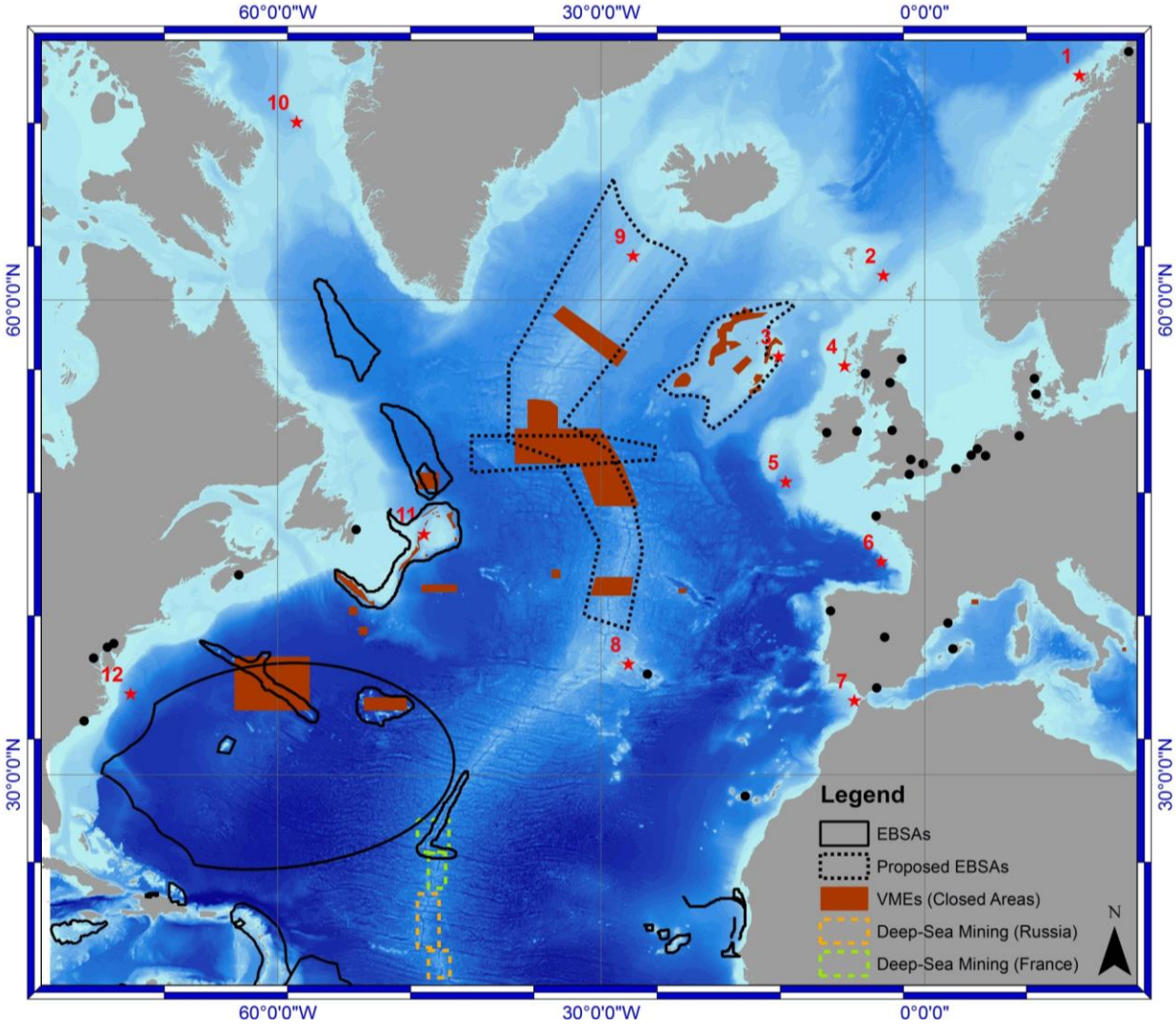
SEMPIA Data Report (Morato et al., 2015)

Selected data: ISA Resource Distribution and current Exploration Areas





A Trans-Atlantic Assessment and deep-water ecosystem-based spatial management plan for Europe



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 678760 (ATLAS). This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein

Europe’s Ocean Observing System and Marine Spatial Planning

EuroGOOS

Glenn Nolan

Patrick Gorringe, Vicente Fernandez

Talk structure

Why is ocean observation important for MSP, particularly in ABNJ?

What are the knowledge gaps?

How can our services be used for MSP in ABNJ?

A Diversity of Marine Resources

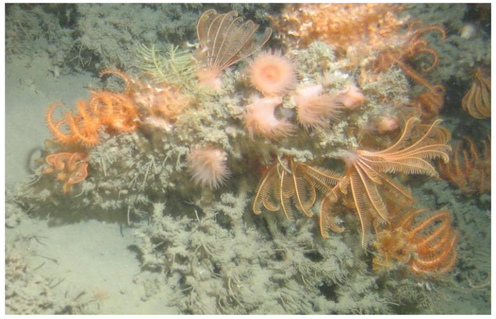












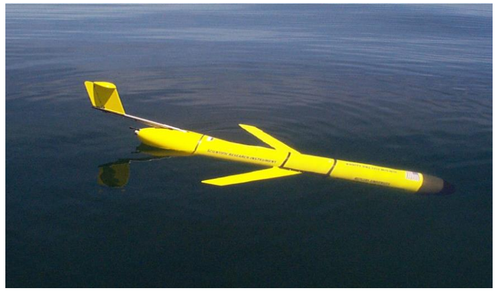




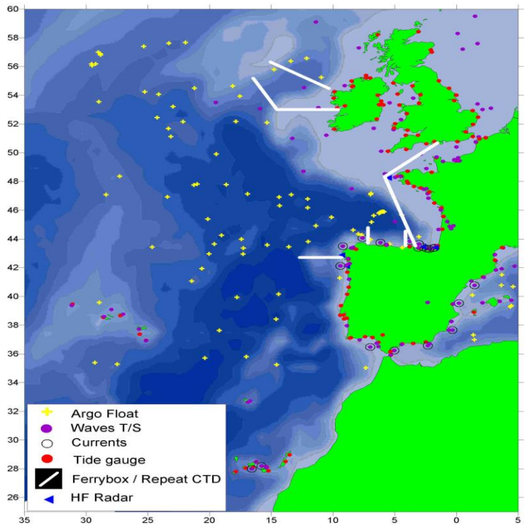

Courtesy Jenny O'Leary, IMI

End to end oceanographic system

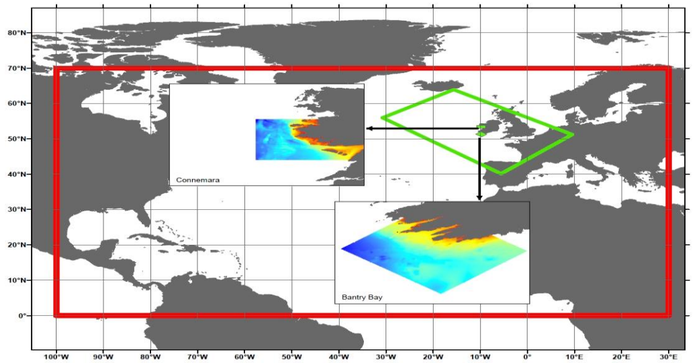
Technology

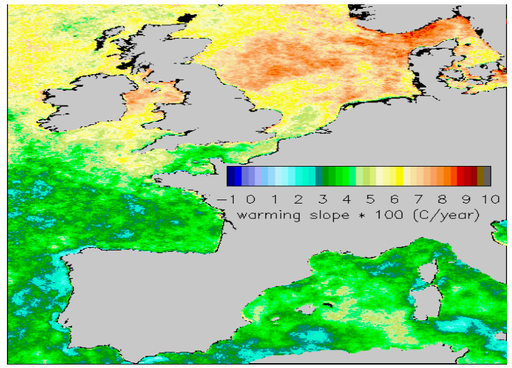


In-situ system



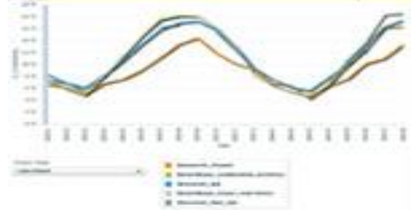
Modelling and satellite products



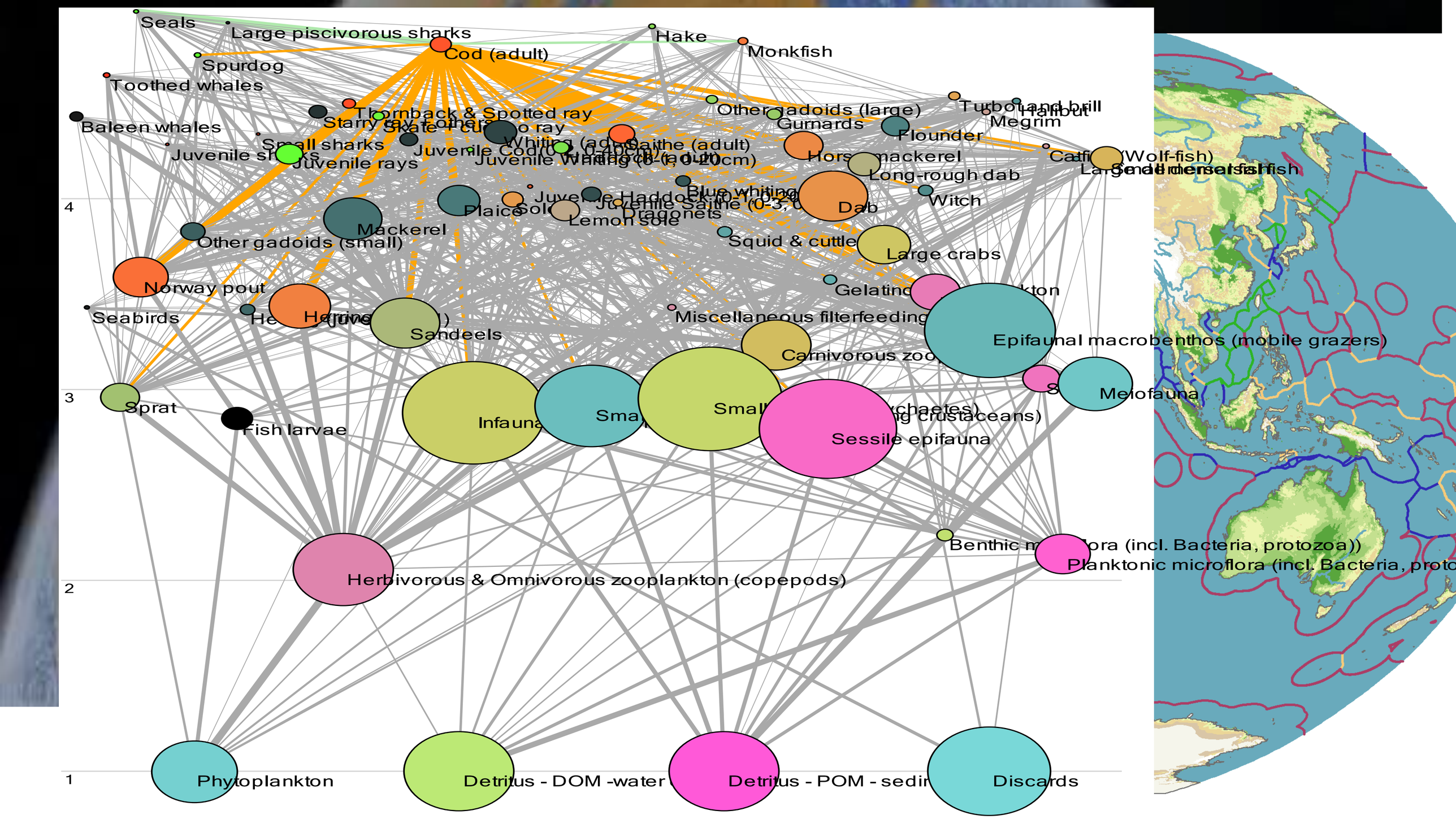


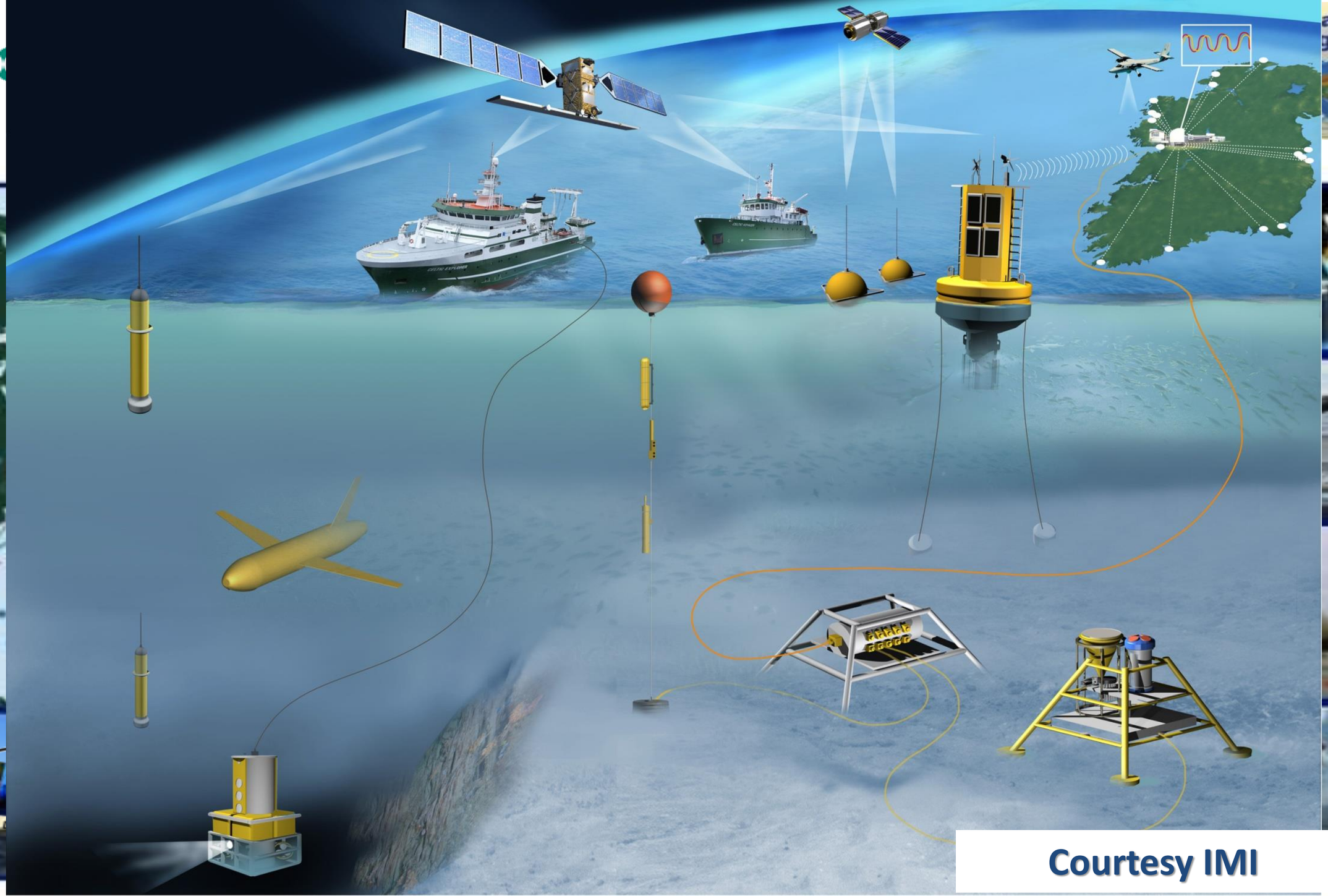
Data archives and resources

Tools



Answers (Decision support)

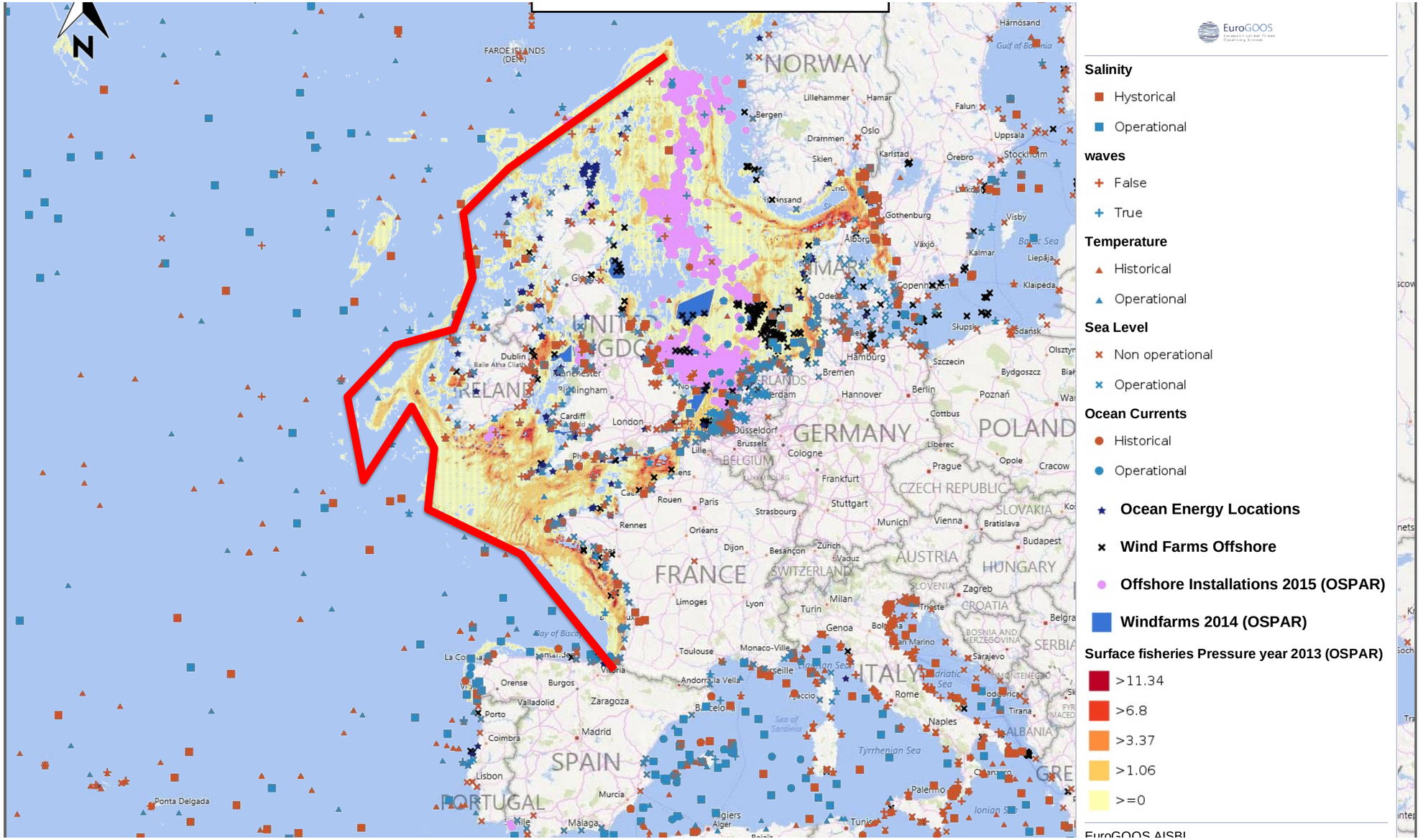

Seals
Large piscivorous sharks
Hake
Cod (adult)
Monkfish
Spurdog
Toothed whales
Thornback & Spotted ray
Other gadoids (large)
Turbot and brill
Halibut
Megrim
Baleen whales
Starry ray
Gurnards
Flounder
Small sharks
Whiting (adult)
Saithe (adult)
Juvenile rays
Juvenile Cod (0-20cm)
Juvenile Whiting (0-1, 0-20cm)
Horse mackerel
Long-rough dab
Blue whiting
Witch
Plaice
Dragonets
Dab
Lemon sole
Mackerel
Other gadoids (small)
Squid & cuttle
Large crabs
Norway pout
Seabirds
Miscellaneous filterfeeding
Sandeels
Epifaunal macrobenthos (mobile grazers)
Carnivorous zoo
Meiofauna
Sprat
Fish larvae
Infauna
Sessile epifauna
Herbivorous & Omnivorous zooplankton (copepods)
Planktonic microflora (incl. Bacteria, proto
Phytoplankton
Discards
4
3
2
1



Courtesy IMI

Temperature VS Oxygen stations

Activities and physical observations

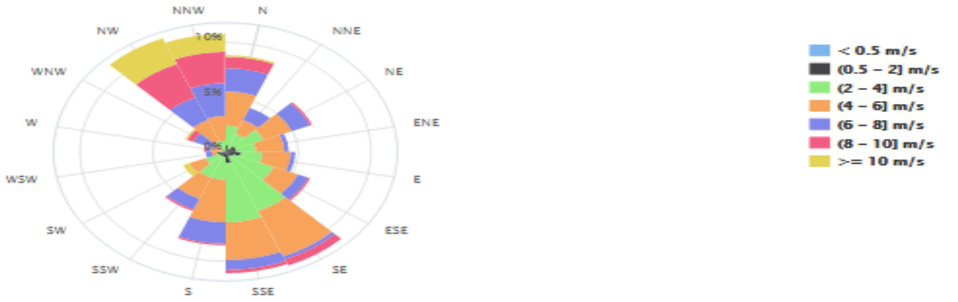


d Product page are calculated using the maximum values of Wind Speed in a day. The Wind Rose, Hourly Windspeed and Average Windspeed plot are related to the last 60 days observations.

24/06/2016 Filter Export data

Wind rose

from 2016/04/22 to 2016/06/24



Hourly windspeed

from 2016/04/22 to 2016/06/24, according to Beaufort scale

Maximum windspeed

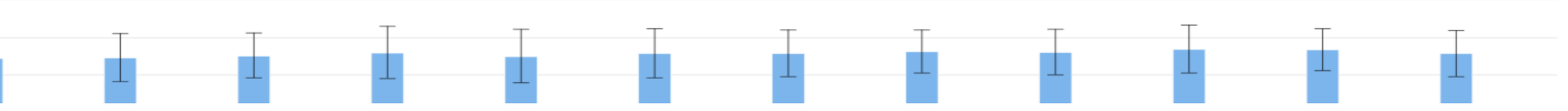
from 2015/06/23 to 2016/06/24

maximum windspeed in a day

from 2015/06/23 to 2016/06/24, according to Beaufort scale

average windspeed

from 2016/04/22 to 2016/06/24

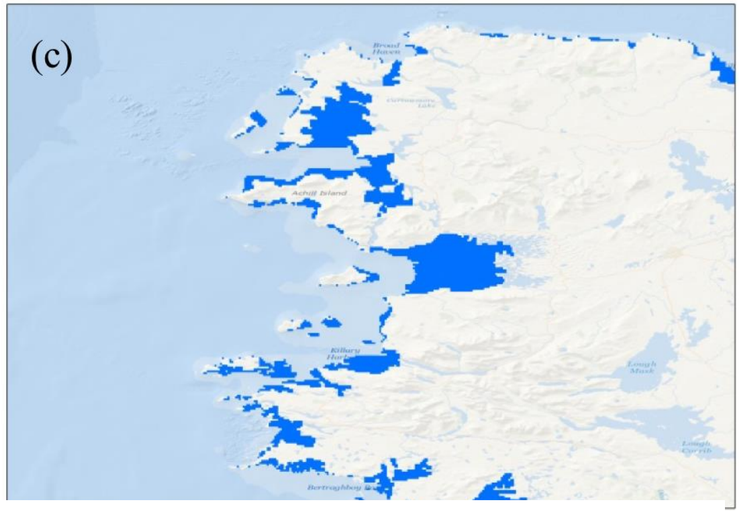


(a)

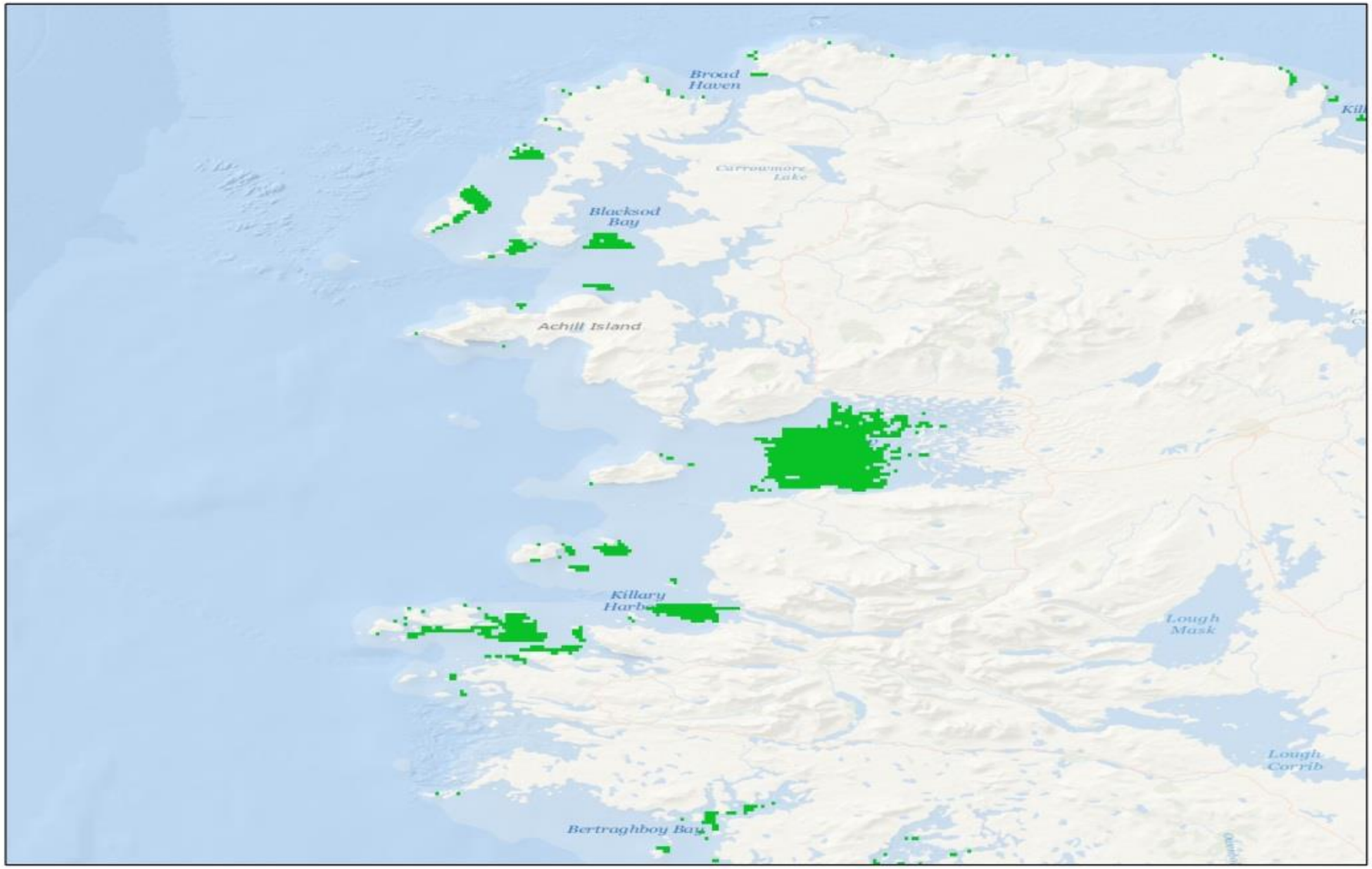
Water depth <15m

(b)

(c)

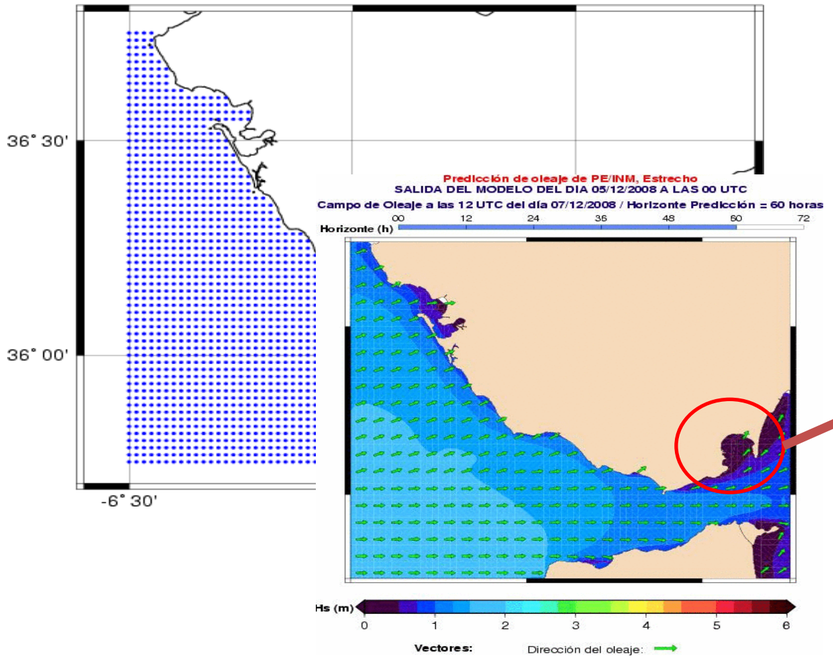


Waves <4m

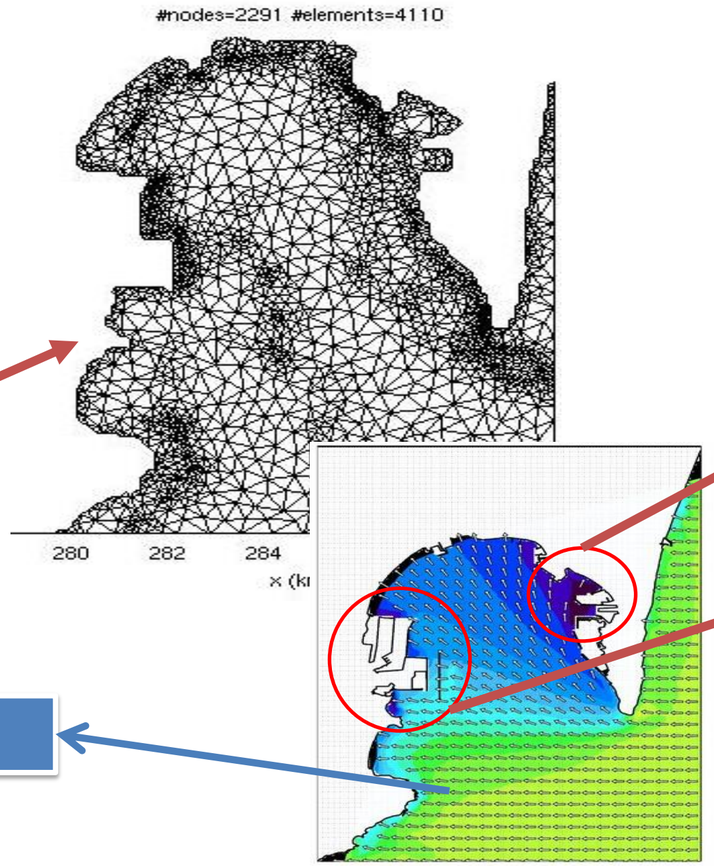


Agitation forecast

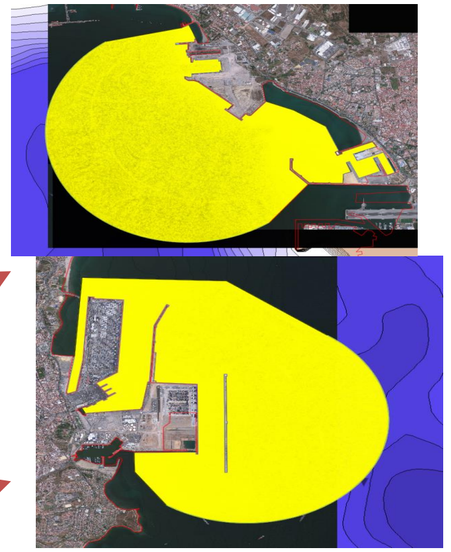
Strait model



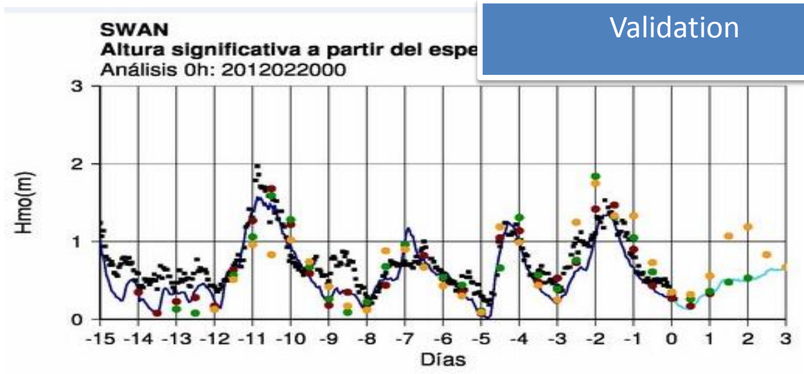
Algeciras model

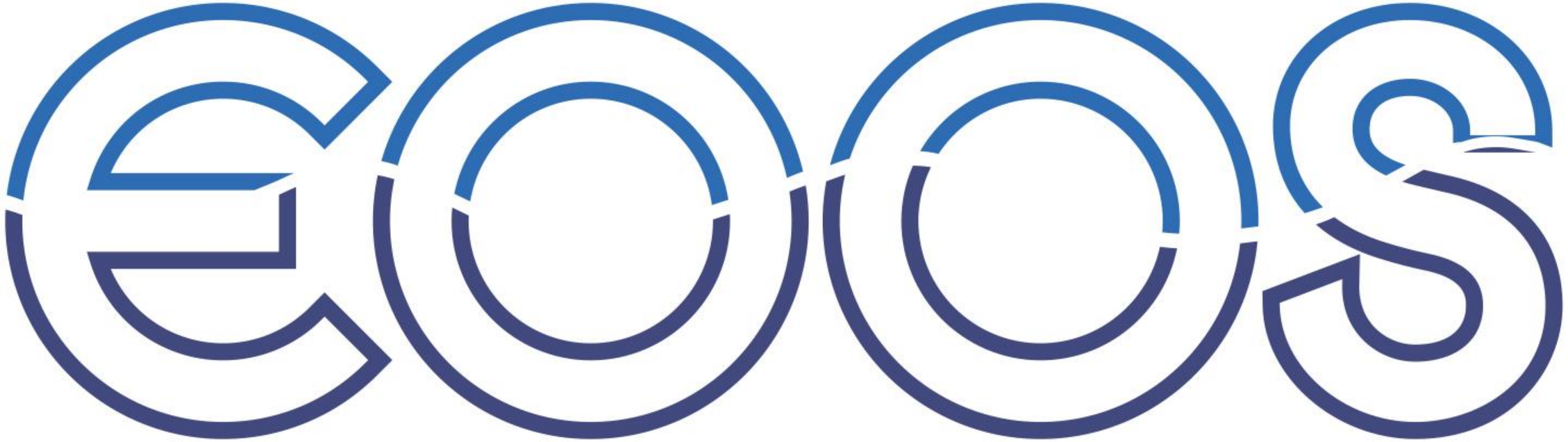


Harbour model



Validation





EOOS is a coordinating framework designed to:

- ***align*** *and* ***integrate*** *Europe's ocean observing capacity;*
- ***promote*** *a systematic and collaborative approach to collecting information on the state and variability of our seas;*
- ***underpin sustainable management*** *of the marine environment and its resources*

UNEP

Food and Agriculture Organization of the United Nations

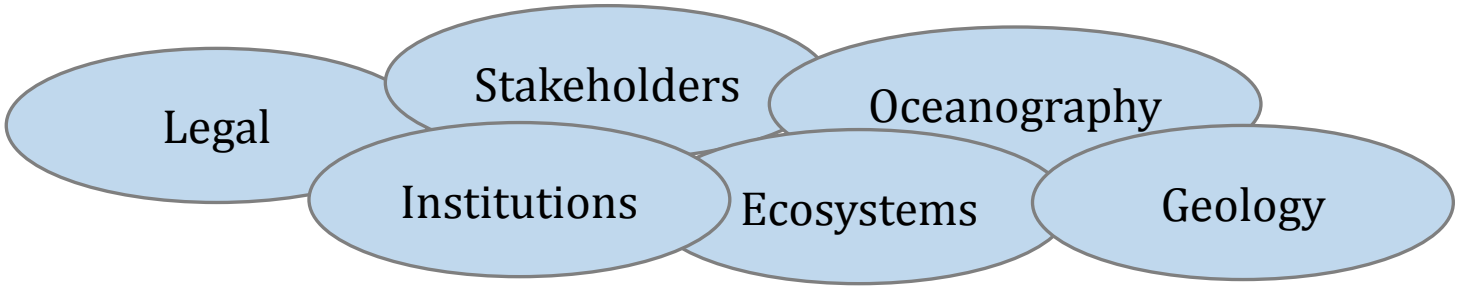
The potential for area-based planning in international waters

Dr Steve Fletcher, UNEP-WCMC

UNEP WCMC

COMMON OCEANS gef

International waters are *different*…



Why is this important?

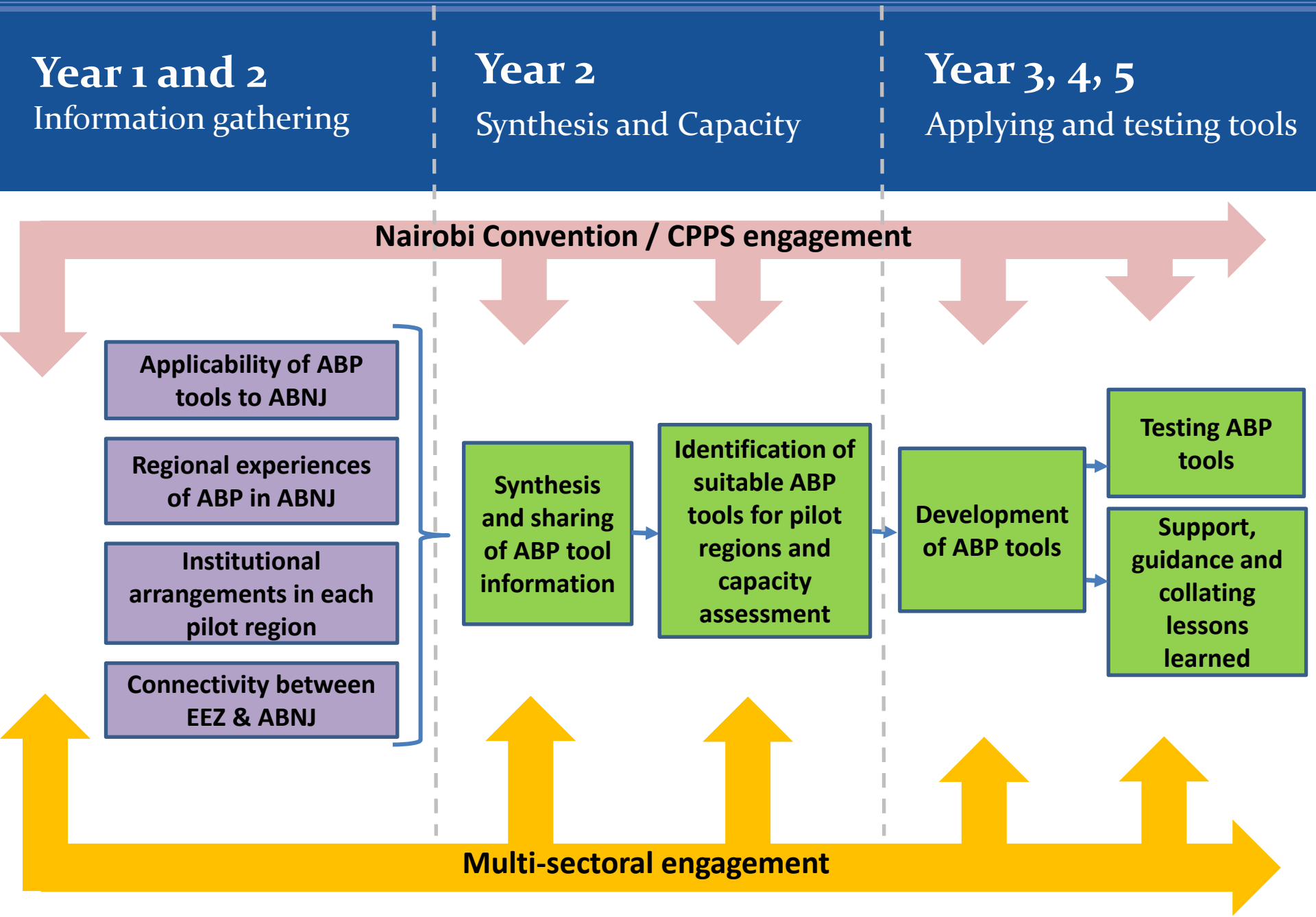
- ABP tools that are used effectively within EEZs may not be as applicable in international waters.

COMMON OCEANS

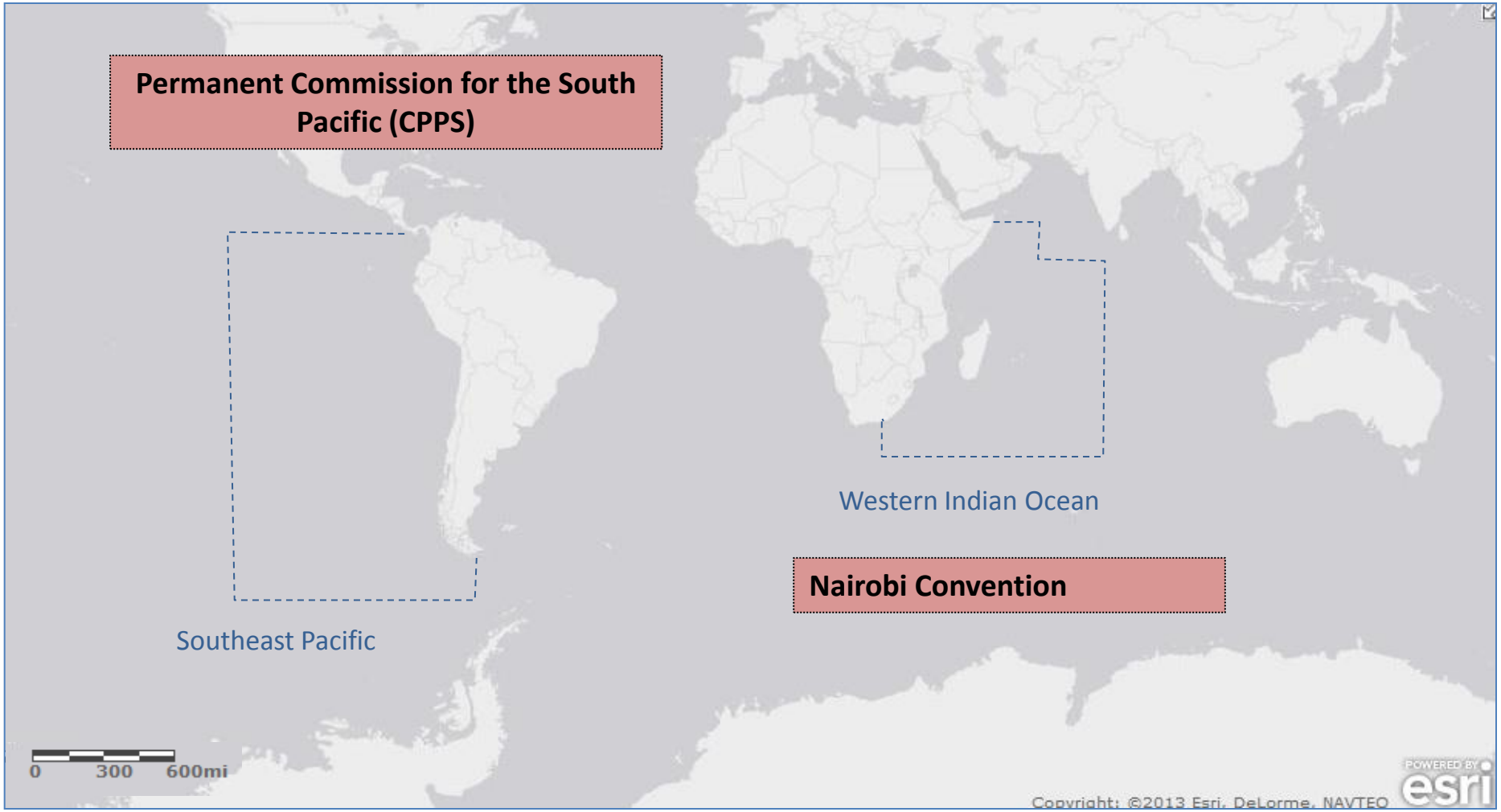
Key questions for ABP in international waters:

* Which area-based planning (ABP) tools might work?
* What can we learn from our existing experiences of ABP?
* Do the institutional arrangements support the use of ABP tools?
* How can we connect ABP in international waters to ABP in EEZs?
* What should ABP in international waters seek to achieve?

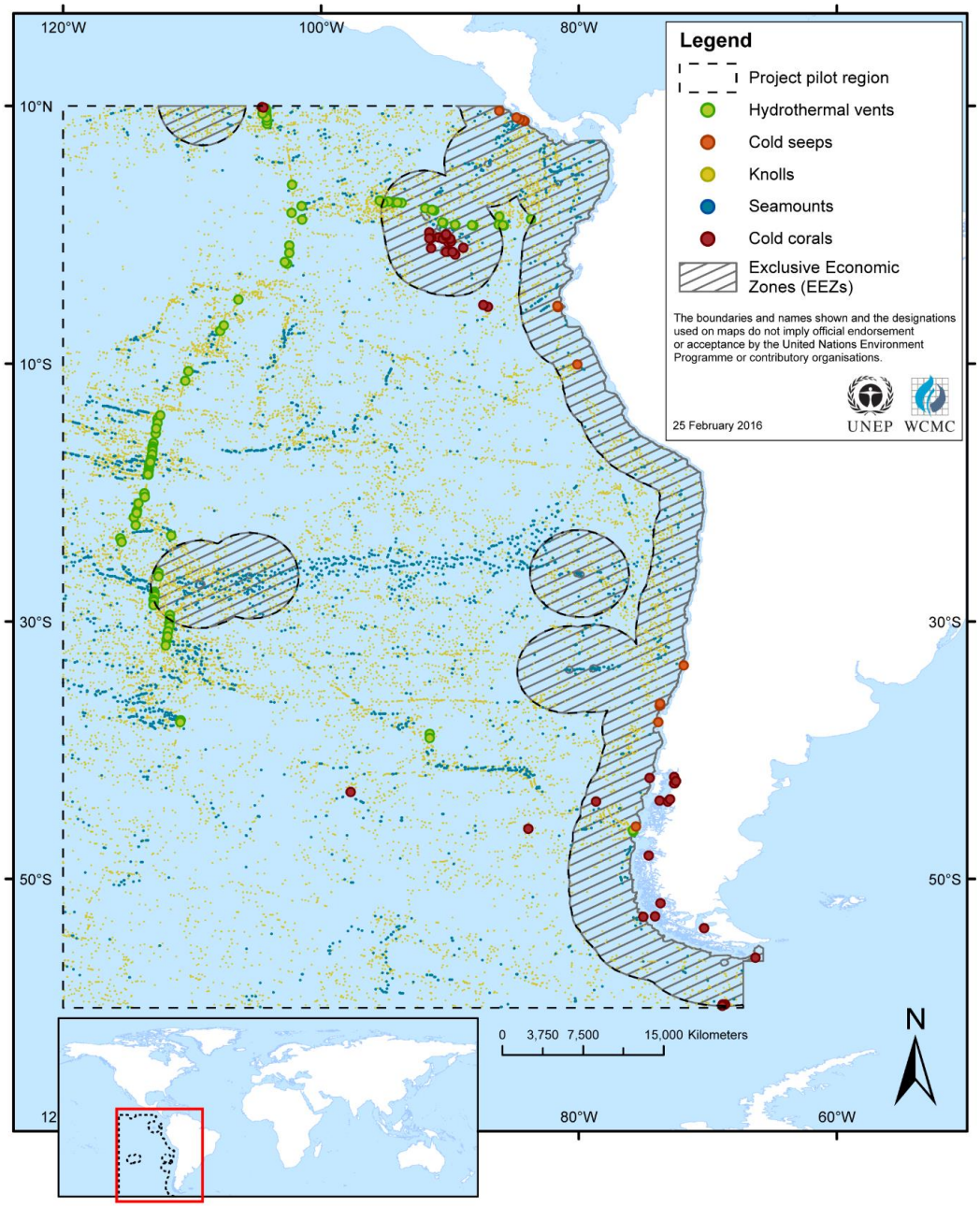
COMMON OCEANS


Year 1 and 2
Information gathering
Year 2
Synthesis and Capacity
Year 3, 4, 5
Applying and testing tools
Nairobi Convention / CPPS engagement
Applicability of ABP tools to ABNJ
Regional experiences of ABP in ABNJ
Institutional arrangements in each pilot region
Connectivity between EEZ & ABNJ
Synthesis and sharing of ABP tool information
Identification of suitable ABP tools for pilot regions and capacity assessment
Development of ABP tools
Testing ABP tools
Support, guidance and collating lessons learned
Multi-sectoral engagement

Project Pilot Regions

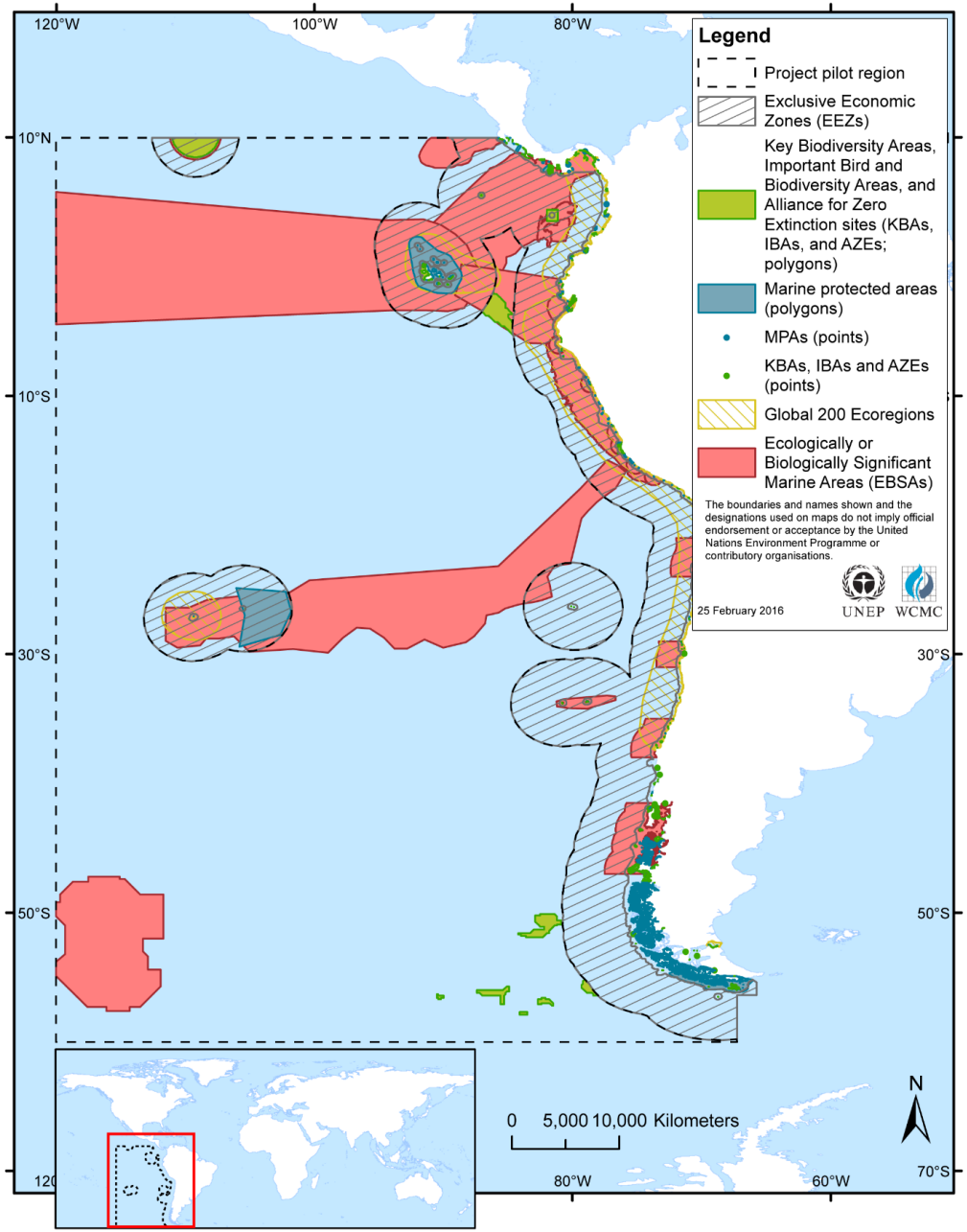


Selected biogeographic characteristics in the South East Pacific



COMMON OCEANS

Areas identified as important for biodiversity in the South East Pacific



COMMON OCEANS

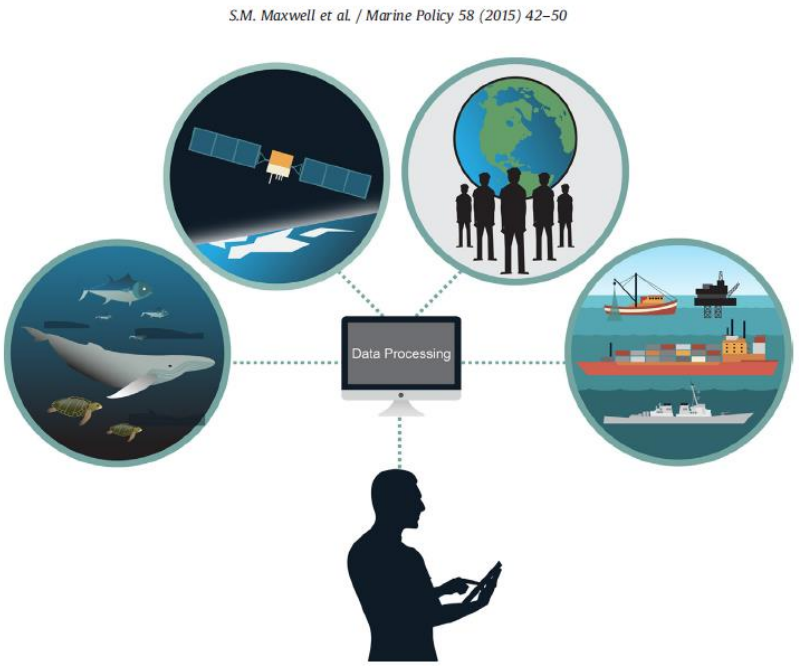
Initial results

* Resource connectivity is a driver for ABP in international waters.
* Existing ABP tools in international waters are sector-specific.
* The mix of institutions in international waters is variable.
* Level and type of interaction between institutions is variable.
* There are limited mechanisms for cross-sector communication.
* There is limited stakeholder involvement and limited process transparency.
* Scale and remoteness of ABP tools makes enforcement difficult.
* There is no single access point for relevant information.

COMMON OCEANS

Potential for ABP in international waters

* Remote sensing and big data
* New approaches to international collaboration
* Dynamic Ocean Management?



COMMON OCEANS

‘Radical’ MSP – a different perspective

* In which MSP is framed a reflection of wider political forces and capital flows and serves to re-assert existing power relations.

* The rhetoric of “participation”, “governance”, “stakeholders” obscures the role of MSP as a means of spatial domination by powerful interests.

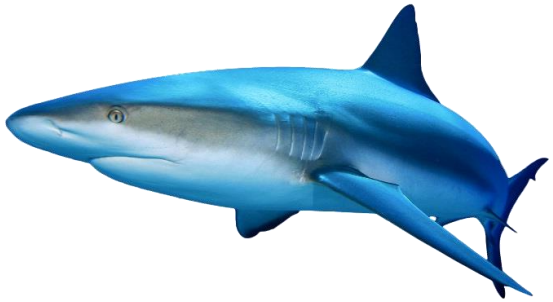
* Deconstruct the conventional view of MSP to consider:
  - Who gains and who loses? / What is desirable? / Can MSP do more than re-assert existing power relations?
  - For example, where is the emphasis on poverty alleviation, forced migration, illegal wildlife trade, etc.

* A need for a much more critical analytical approach to the outcomes that MSP delivers and aspires to deliver.

For more information, please contact:

Steve Fletcher
Head of Marine Programme
UNEP World Conservation Monitoring Centre, Cambridge, UK.

Email: steve.fletcher@unep-wcmc.org
Tel: +44 (0)1223 814687



COMMON OCEANS

6th Conference on Maritime Spatial Planning Worldwide

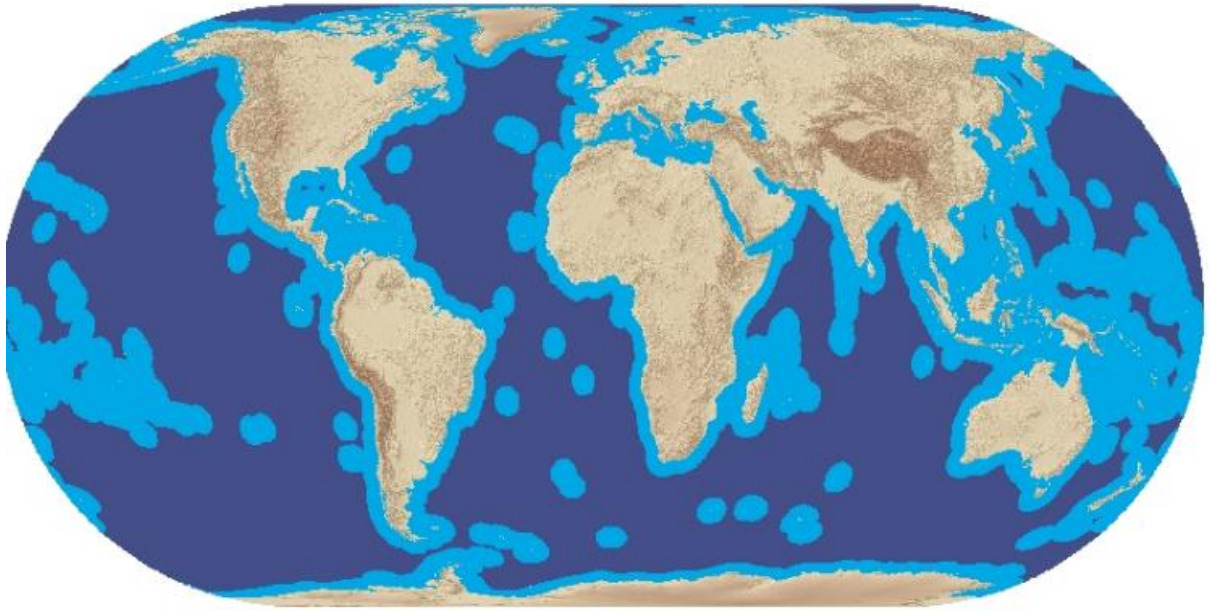
2016, Azores

Carolina Hazin

Global Biodiversity Policy Coordinator

BirdLife INTERNATIONAL | Partnership for nature and people

"Conservation Agenda for Biodiversity Beyond National Jurisdiction (BBNJ)"



UNEP WCMC

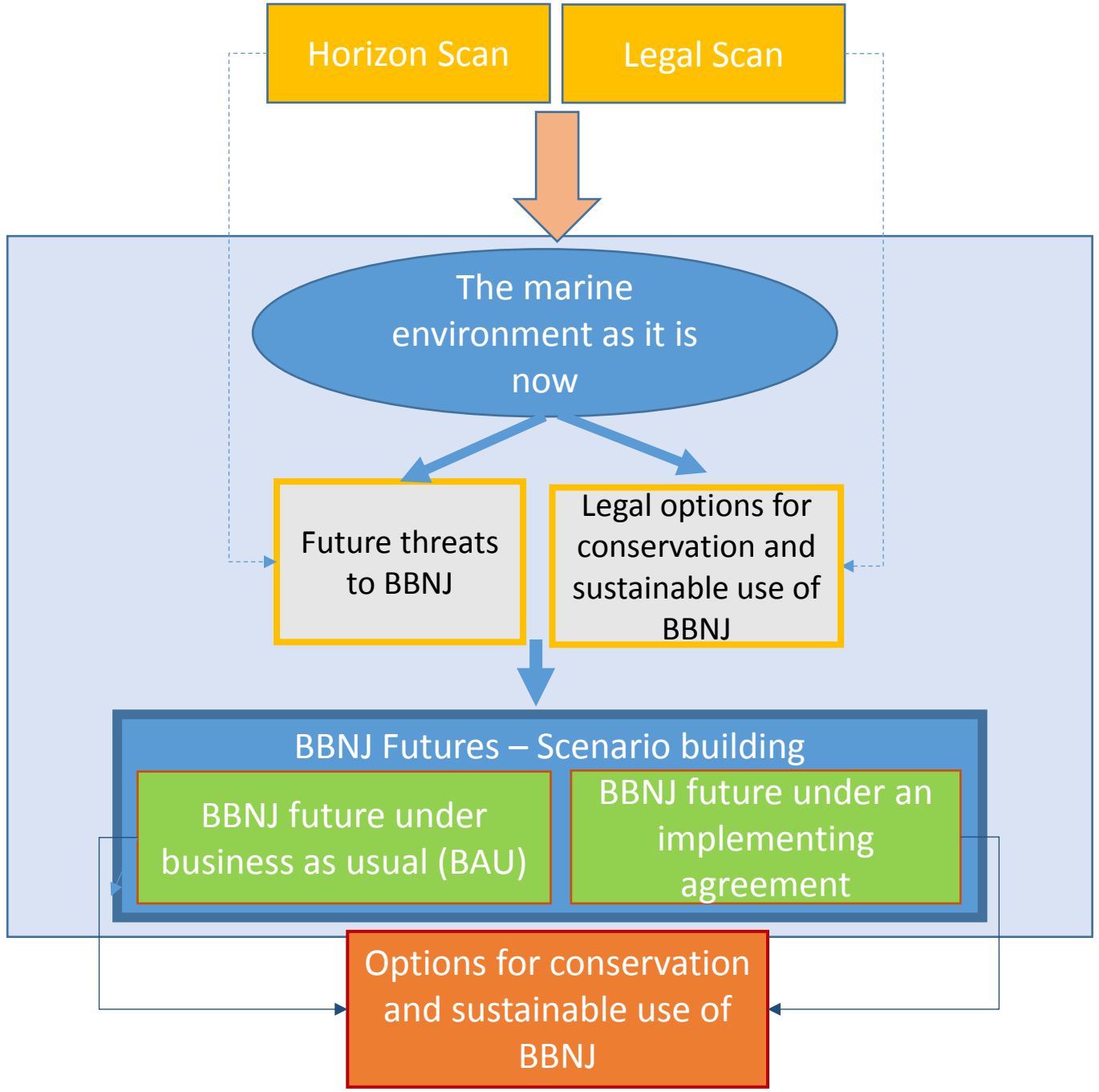
UNIVERSITY OF CAMBRIDGE

BirdLife INTERNATIONAL

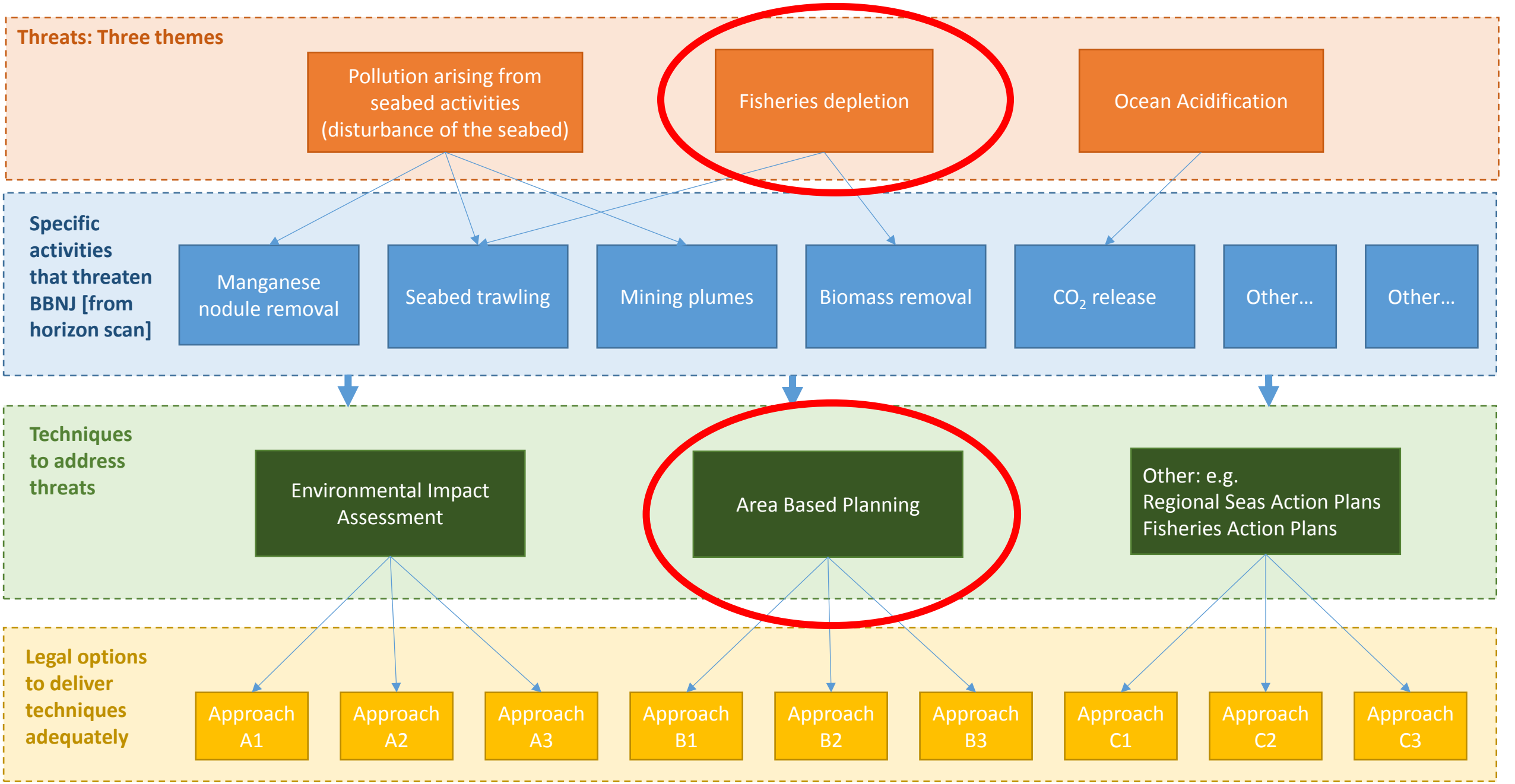
IUCN

CambridgeConservationInitiative

transforming the landscape of biodiversity conservation


Horizon Scan
Legal Scan
The marine environment as it is now
Future threats to BBNJ
Legal options for conservation and sustainable use of BBNJ
BBNJ Futures – Scenario building
BBNJ future under business as usual (BAU)
BBNJ future under an implementing agreement
Options for conservation and sustainable use of BBNJ

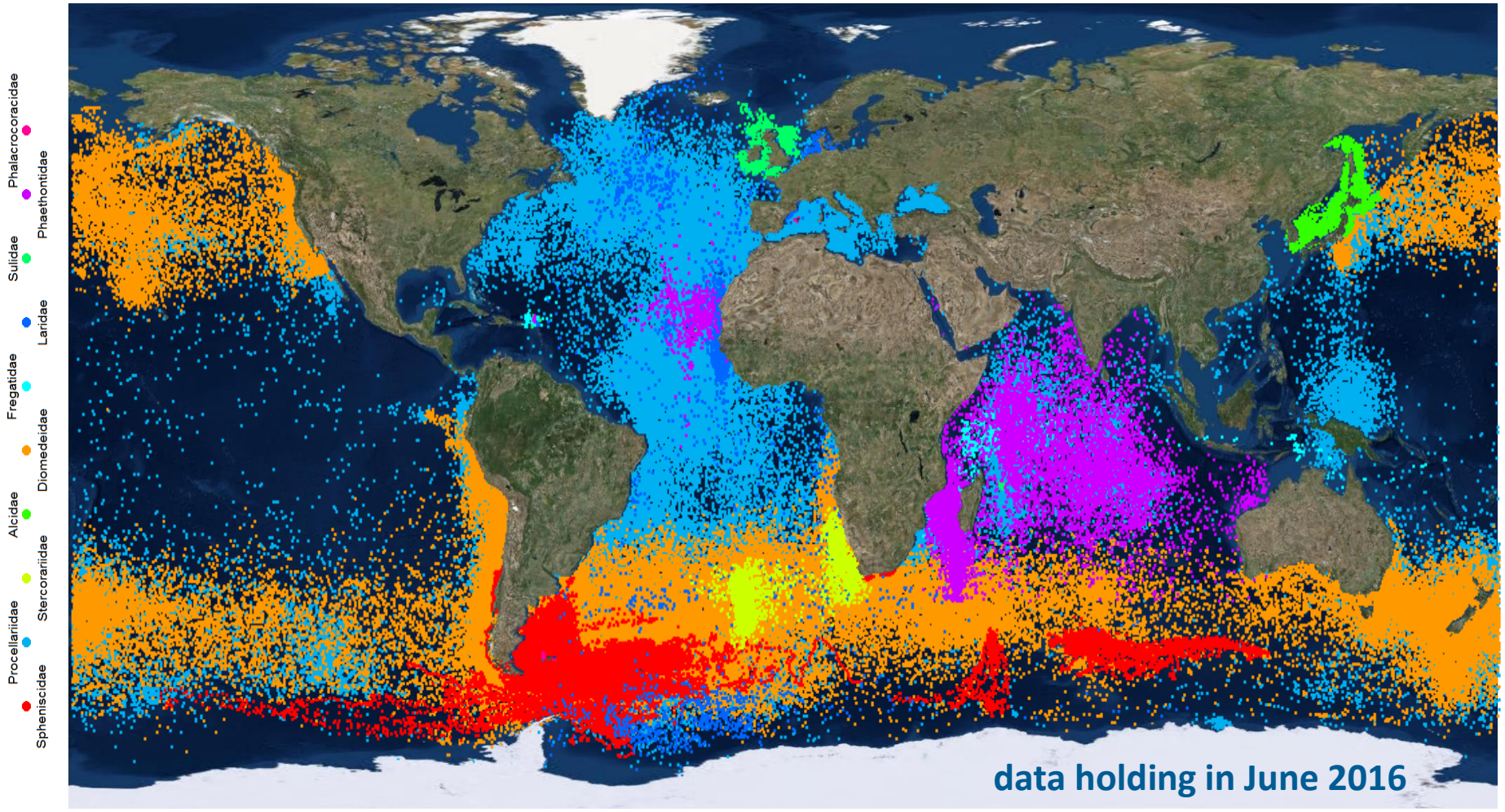
Analytical process



Is zoning the response to all threats to biodiversity?

Seabird tracking database (www.seabirdtracking.org)

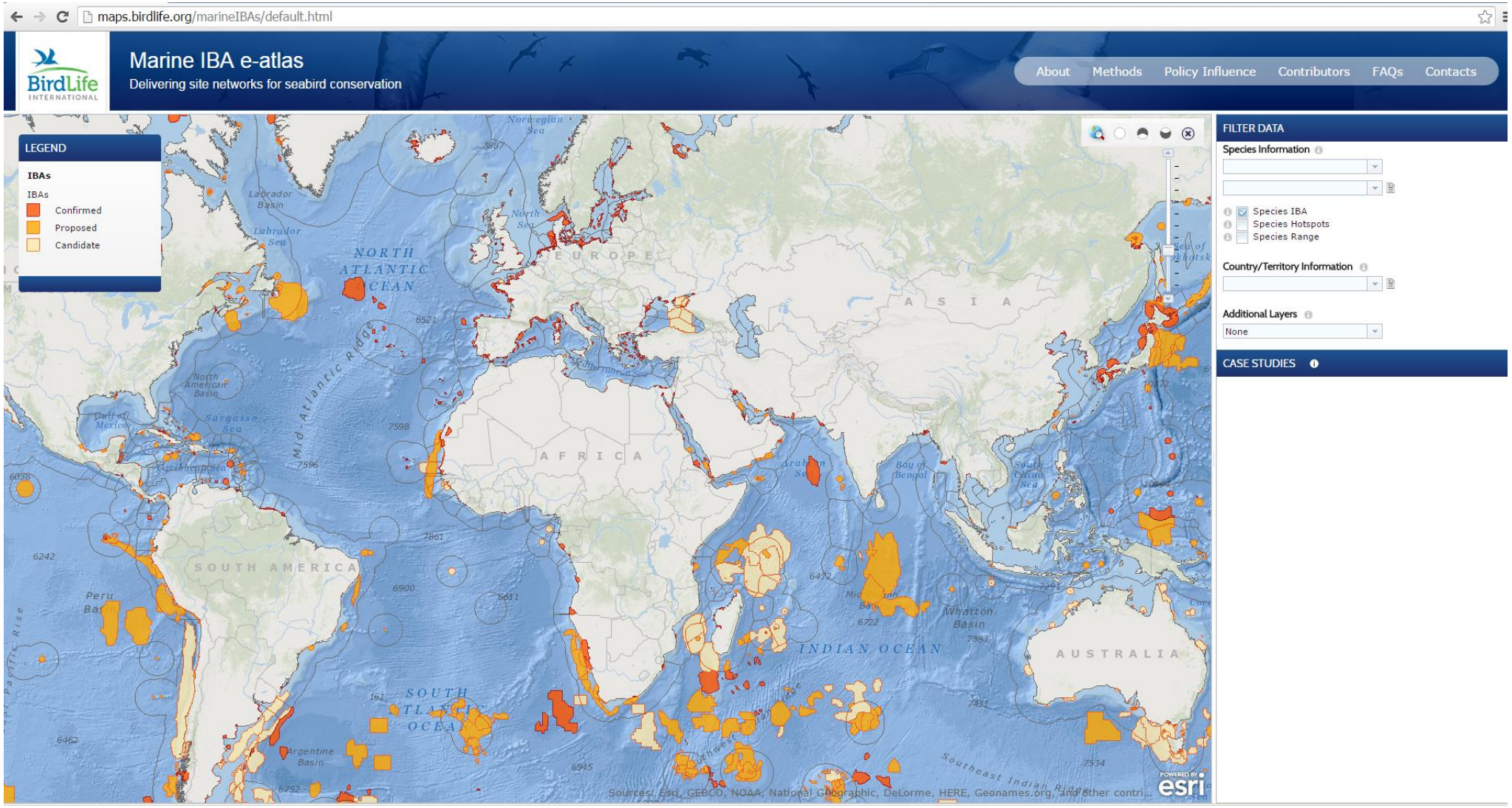
Scientific-based approach to management



152 contributors | >100 species | > 7 million locations

BirdLife INTERNATIONAL | Partnership for nature and people

Marine IBAs informing the creation of marine protected areas and/or the management of marine areas



Multi-national approach for species conservation

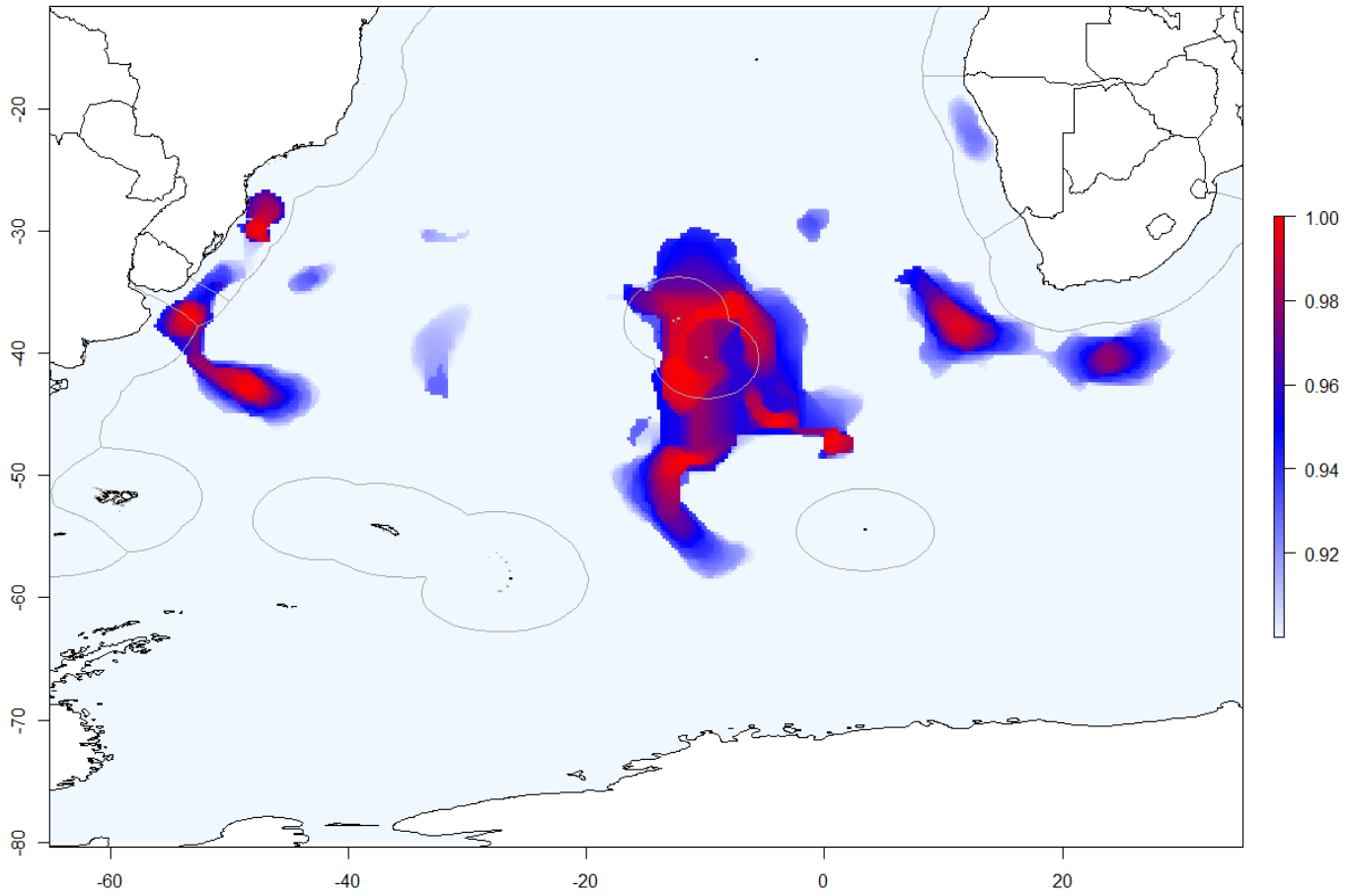
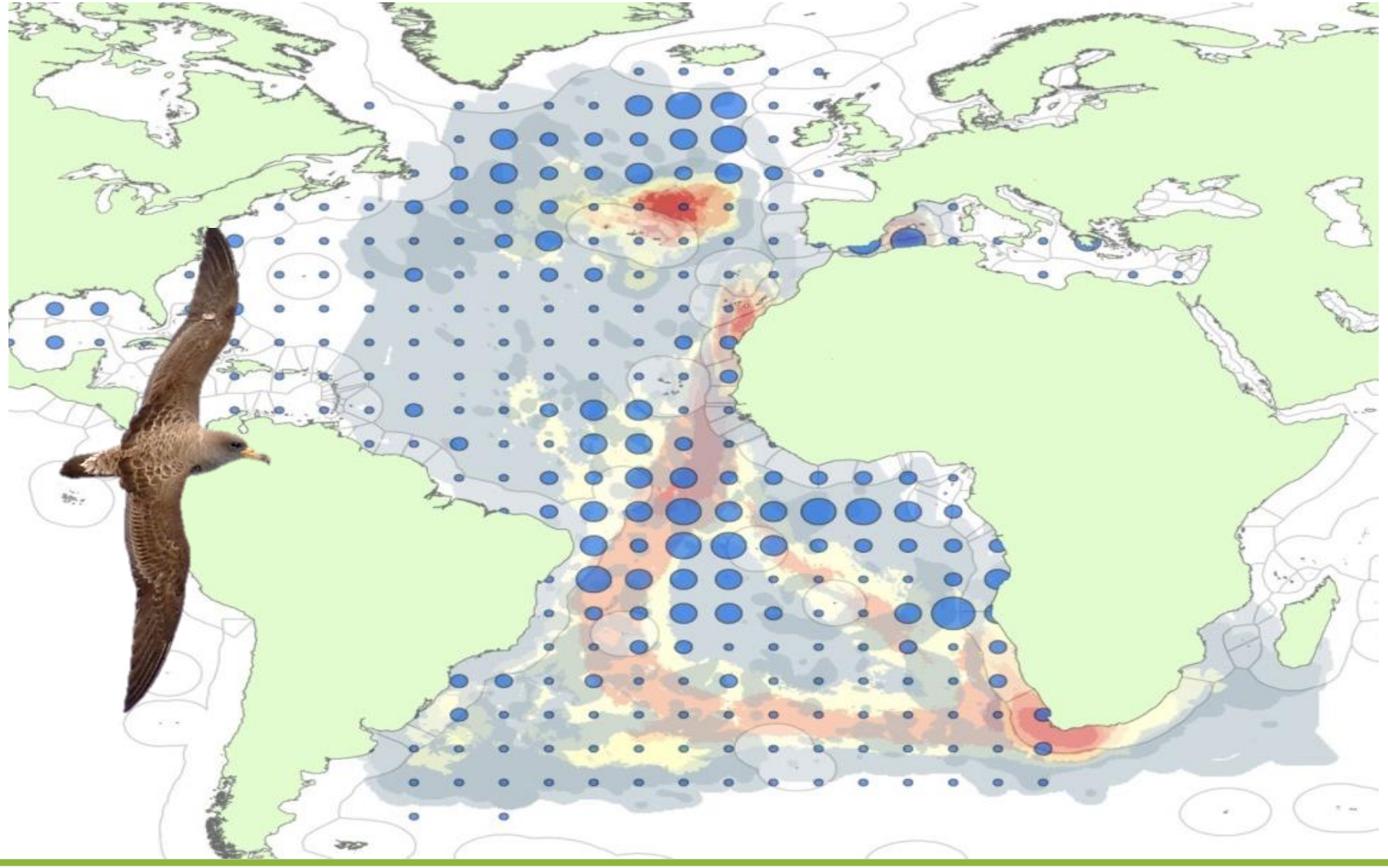


Figure. Ranking of marine areas in the South Atlantic Ocean for the conservation of six globally threatened pelagic seabird species breeding in the Tristan da Cunha archipelago. Areas were identified using the systematic conservation planning algorithm 'Zonation' ; the shading reflects the priority for conservation.

Threats and management

Assessment of overlap between seabird distribution (Cory's Shearwater) and fishing effort (ICCAT) to determine potential bycatch hotspots



MSP in the Falklands - identification of key and used areas for megafauna

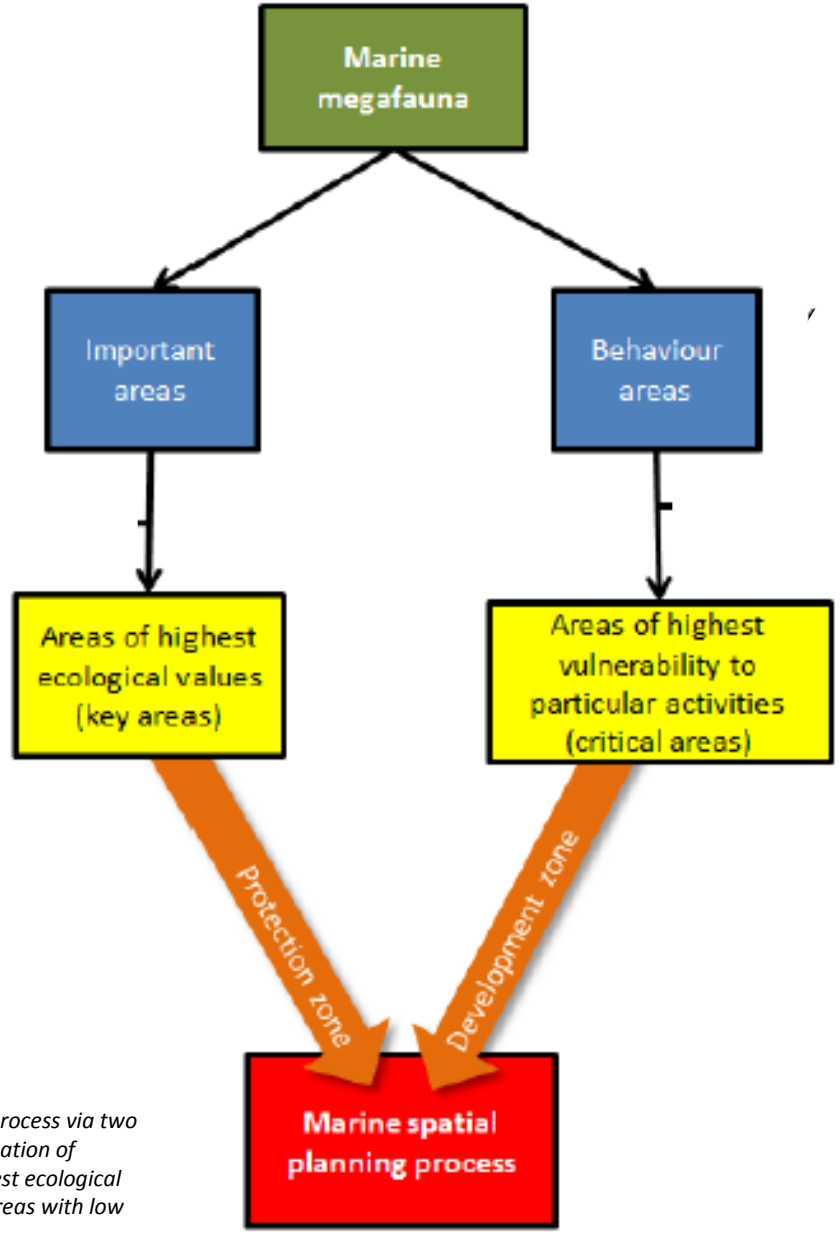


Figure: Methodology to include marine megafauna in the Marine Spatial Planning process via two different approaches based on designation for environmental protection and designation of development areas. Protection areas could be derived from the areas with the highest ecological values while development areas for a particular activity could be identified within areas with low vulnerability scores.

Thank you!

Seychelles
Marine Spatial Planning Initiative

6th Conference on Maritime Spatial Planning

European Commission's Directorate General for Maritime Affairs and Fisheries

Alain de Comarmond, Principal Secretary (Environment Department)

24 June 2016

SMSP
SEYCHELLES MARINE SPATIAL PLANNING

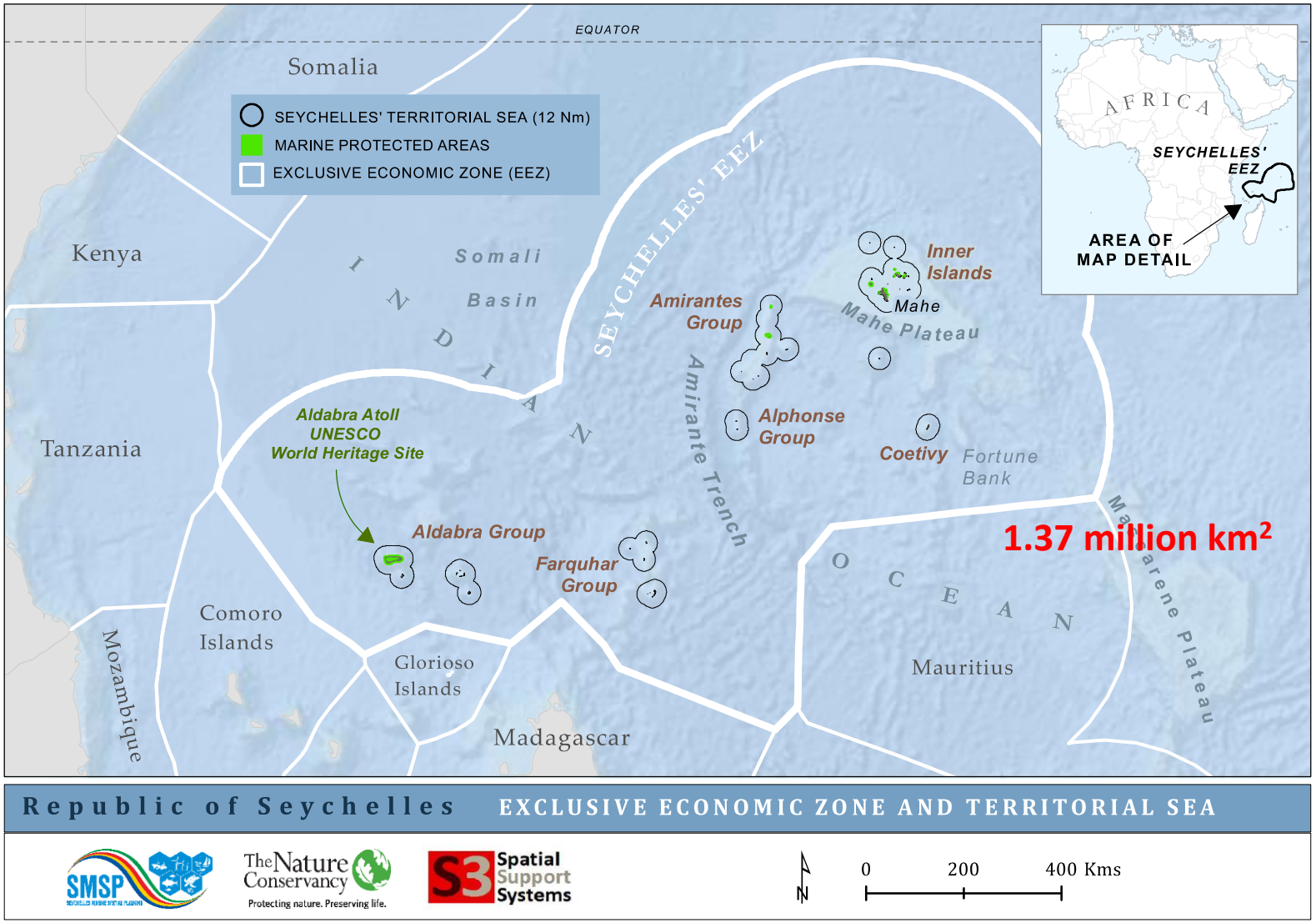
FINIS·CORONAT·OPVS

The Nature Conservancy

UNDP

gef

Republic of Seychelles

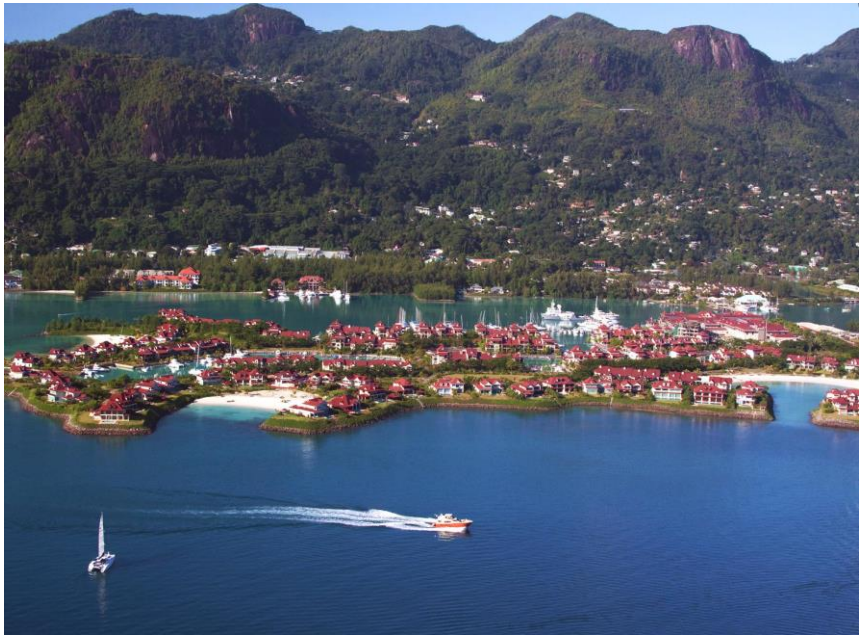


115 islands (455 sq.km)

Population 90,000

Global Biodiversity hotspot (1200 endemics)

735 species on IUCN Red List



Seychelles MSP: Goals and Outcome

BIODIVERSITY PROTECTION

BLUE ECONOMY

CLIMATE CHANGE ADAPTATION

et al., 2015.

OUTCOMES

1. DEBT SWAP
Innovative Financing

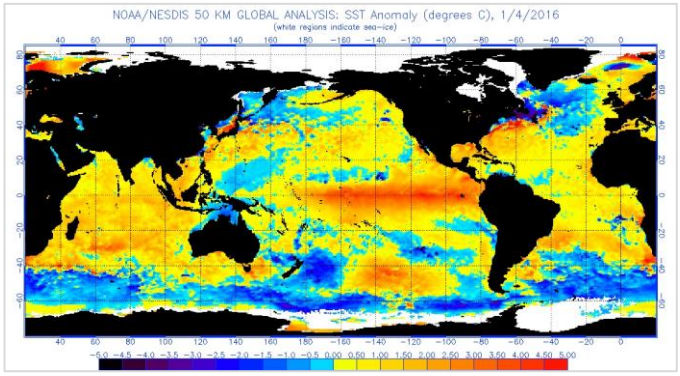
2. MARINE PLAN
Zoning Design

3. TRUST
Implementation Funding

Photo by Manu San Félix/National Geographic, shot during the Pristine Seas expedition to Seychelles, March 2015.

Climate Change Threats

- Warming of the sea (2016 > 32^{o}c)
- Coral bleaching (2016 worst and most extensive in history)
- Ocean acidification
- Harmful Algal Blooms
- Sea level rise and coastal erosion



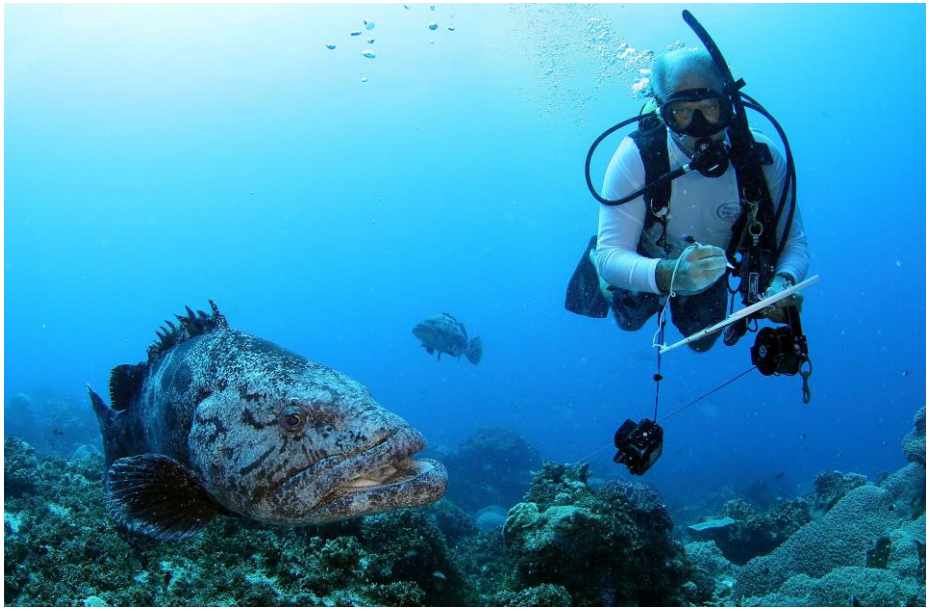
WARM WATER EVENTS

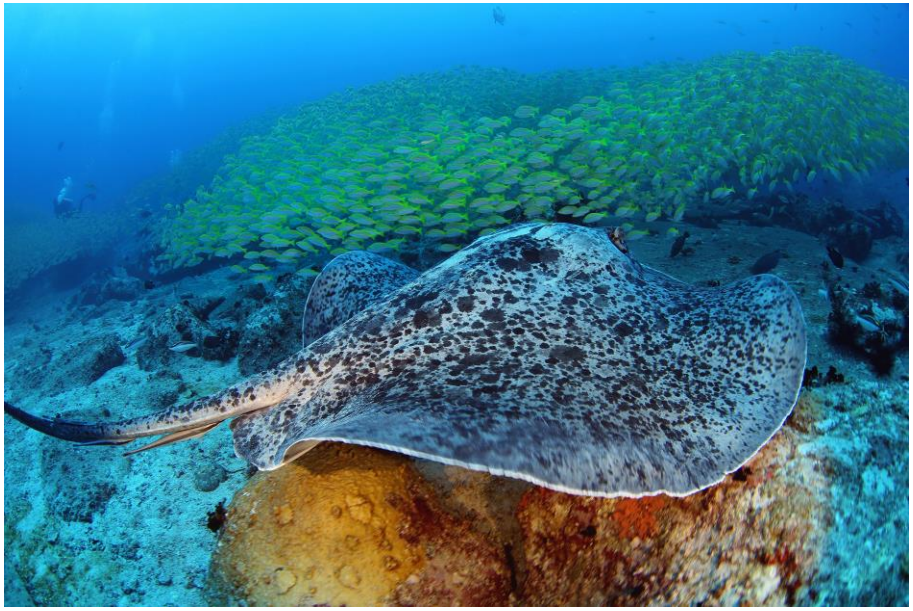
CORAL BLEACHING

COASTAL EROSION

MSP GOAL = CLIMATE CHANGE OBJECTIVES

- **Protect 30%** OF EEZ
- CC Mitigation- **Blue Carbon**?
- Economic climate change adaptation- Reduce reliance of land-based economic development/diversification of economic activities
- Explore 'unexplored' potentials of our ocean space in an environmentally sustainable manner = **BLUE ECONOMY**

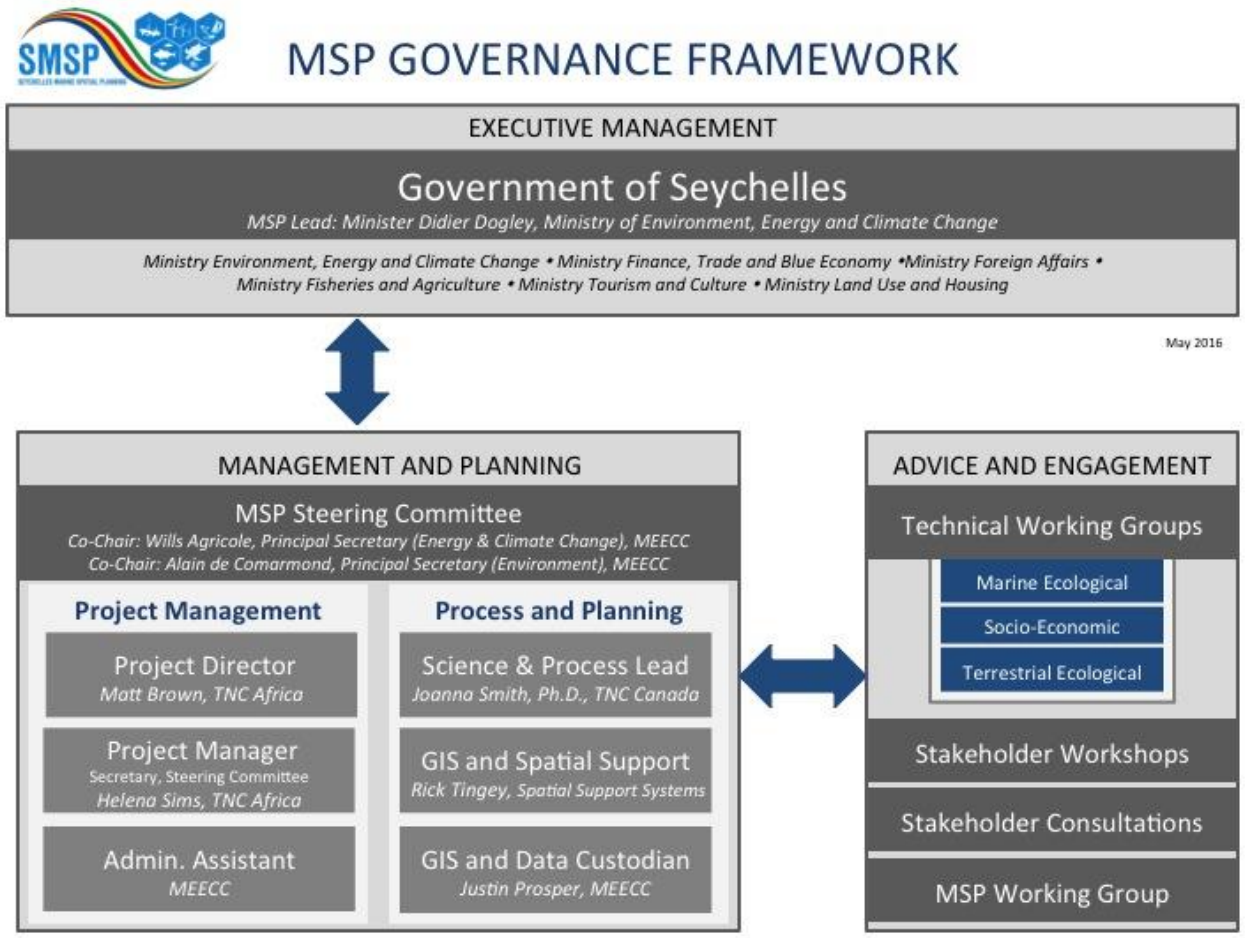




> 3200 MARINE SPECIES

Photos : National Geographic Channel (Pristine Seas Series) 2015

Seychelles MSP: Governance Diagram



Seychelles MSP: Principles for Guiding Decisions

GOVERNANCE & MANAGEMENT

- National Laws, Regulations, Acts
- International Agreements
- Policy, Management Plans, Strategies, Action Plans
- Transparency, Inclusivity, Participation
- Integration, Co-management
- Environmental Stewardship
- Equity, Sustainable Development

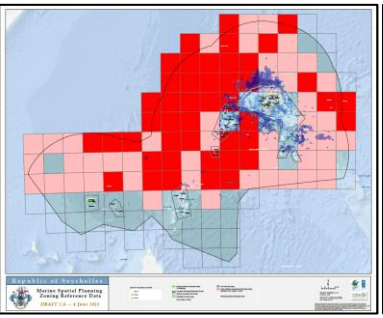
APPROACH & PRACTICE

- Ecosystem-Based Management
- Precautionary Principle
- Balance ecological, economic, social and cultural objectives
- Feasible, Practical, Implementable,
- Financially Sustainable
- Adaptable, Dynamic
- Relevant Temporal and Spatial Scales

Seychelles MSP: Zoning Framework

- **Science based with local expertise and knowledge**
- **100+ spatial data layers** for marine biodiversity, economic uses
- **Five thematic areas**: fisheries, biodiversity, infrastructure & renewable energy, non-renewable resources, tourism & recreation
- **Three zone categories:** protection, sustainable uses, multi-use
- **Two phase approach:** coarse and fine scales
- **Identify high priority areas:** fisheries, tourism, energy, shipping
- **Develop 'Activities Tables':** allowable uses by zone and area

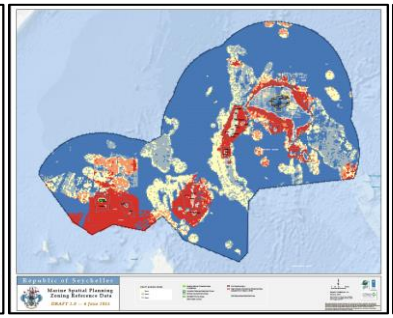
Seychelles MSP: Spatial Data Catalogue



FISHERIES
SPORT FISHING

Domestic Catch
Vessel Location
EU Tuna Catch
Mariculture
Participatory Mapping

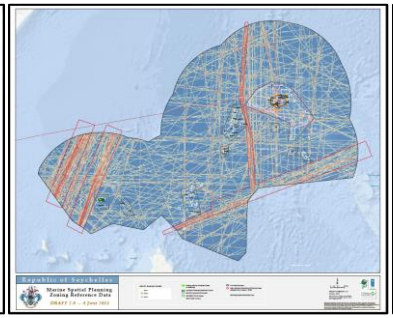
Sources: Seychelles Fishing Authority 2014; Fishing Boat Owners Association 2014, TNC 2014.



BIODIVERSITY
Source: UNDP 2015

Benthic geology
174 "features"
WIOMER Areas of Importance
BirdLife Important Areas
Participatory Mapping

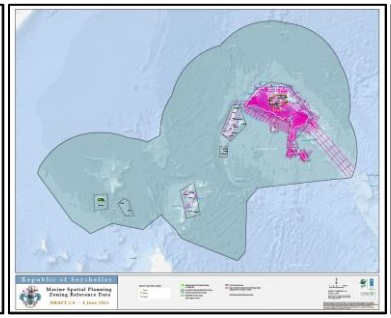
Sources: Harris et al. 2014; Klaus 2015; IMaRS-USF 2005; IMaRS-USF and IRD 2005; Spalding, Ravilious and Green. 2001; UNEP-WCMC, WorldFish Centre, WRI and TNC. 2010; Seychelles Fishing Authority 2014; Seychelles National Park Authority 2014; Seychelles Port Authority 2014. See UNDP 2015 for full citations.



INDUSTRIAL &
PUBLIC UTILITIES

Ferries & Shipping
IMO Marine Highways
Ports & Marinas
Renewable Energy
Participatory Mapping

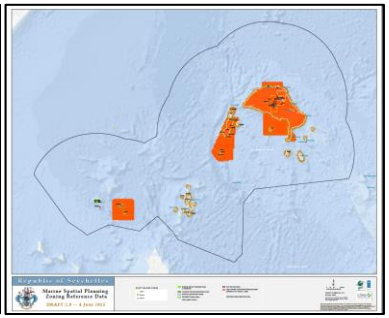
Sources: Halpern et al. 2006; British Admiralty Charts; Seychelles Port Authority 2014; Ministry Land Use and Housing 2014, TNC 2014.



NON-RENEWABLE
RESOURCES

Licensed Blocks
Low Gravity Areas
Seismic Surveys
Sand Mining
Participatory Mapping

Sources: PetroSeychelles 2014, 2015. TNC 2014.



TOURISM &
RECREATION

Marine Charters
Diving, Snorkeling
Viewpoints
Accommodation
Participatory Mapping

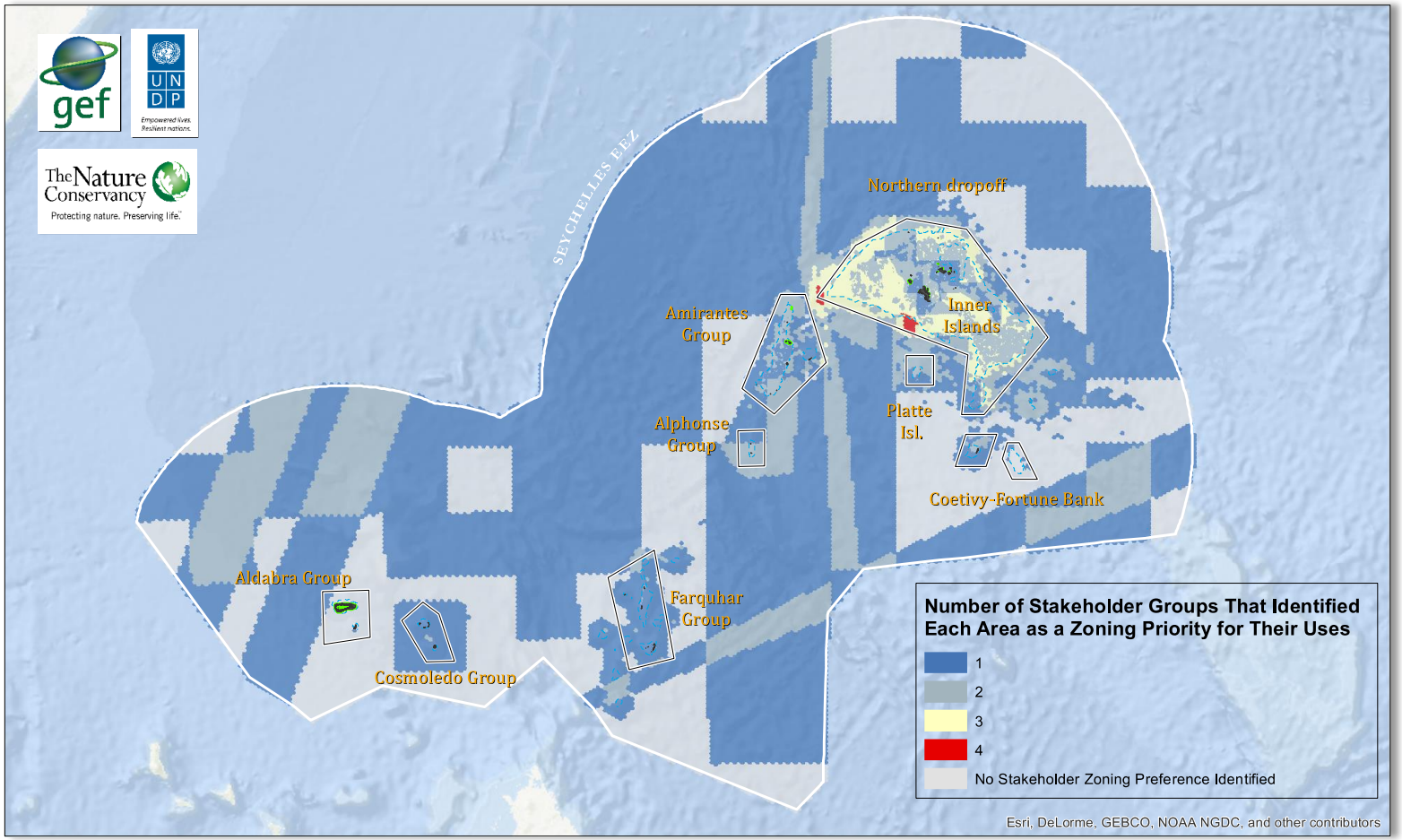
Sources: Seychelles Sport Fishing Club 2014; Ministry of Tourism and Culture 2014; Seychelles Hoteliers Association 2014.

Over 100 layers in data catalogue

Seychelles MSP: Draft Zoning Framework (v2.0)

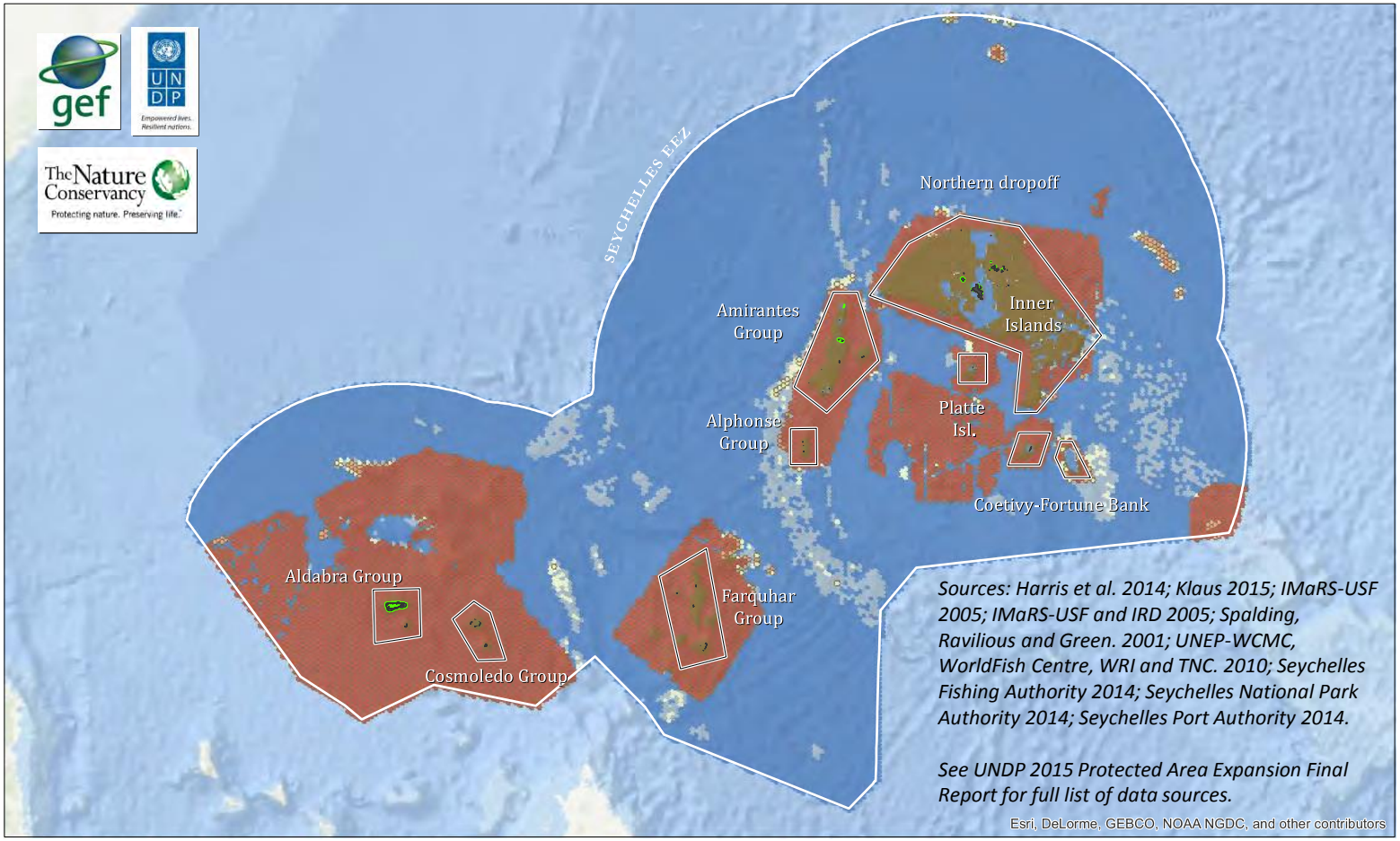
Zone 1 High Biodiversity Protection	Zone 2 Medium Biodiversity Protection	Zone 3 Multiple Use
To allocate 15% of the EEZ to provide high protection for marine biodiversity goals, by representative habitats and species.	To allocate 15% of the EEZ to provide medium protection for biodiversity goals, by representative species and habitats, and allow economic opportunities for sustainable uses.	To allocate 70% of the EEZ to maximise economic opportunities and Blue Economy in Seychelles.

Seychelles MSP: Stakeholder Preferences



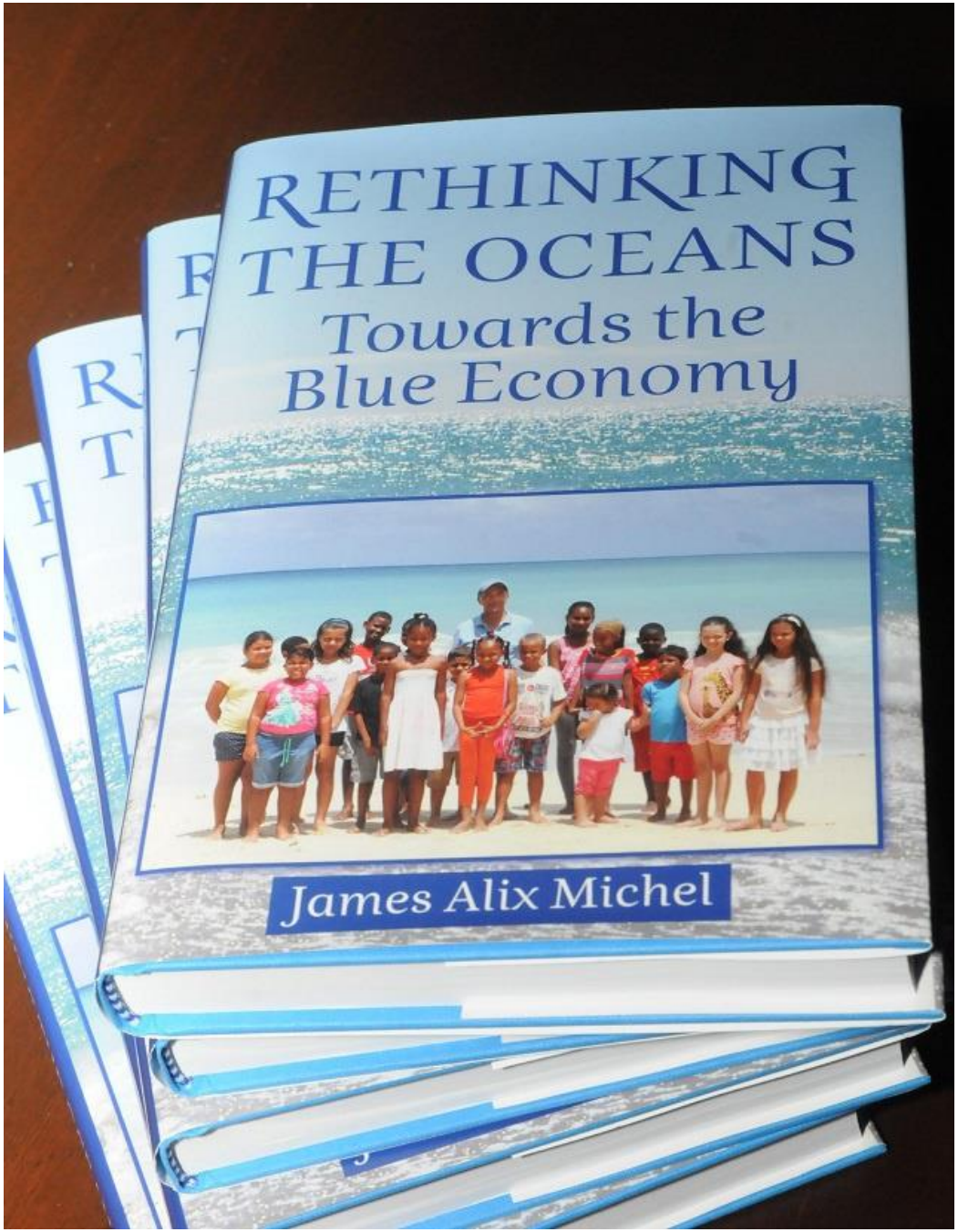
Source: Smith and Tingey, unpublished

Outputs for Seychelles Protected Area Expansion



Seychelles MSP: 2017-2020

- Spatial data catalogue (updated)
- Website (updated)
- MSP Atlas (updated)
- Stakeholder workshops and consultations
- Refine Zoning Design and Management Considerations
- Finalise Activities Tables and Zone Objectives
- Total of 15% of EEZ - high biodiversity protection zones
- Total of 15% of EEZ - medium biodiversity protection zones
- Final Marine Plan including implementation, strategies, and budget
- Cabinet Approval


RETHINKING
THE OCEANS
Towards the
Blue Economy
James Alix Michel

Thank you!

Photo by Manu San Félix/National Geographic, shot during the Pristine Seas expedition to Seychelles, March 2015.

www.seychellesmarinespatialplanning.com

Contact for more information:
Dr. Joanna Smith email: joanna_smith@tnc.org | Ms. Helena Sims email: helena.sims@tnc.org

Multi-governance cooperation, heterogeneity of marine areas and ecosystem connectivity.
Key issues for tackling climate change through Marine Spatial Planning.

Dr Eleni Hatziyanni

Director of Environment and Spatial Planning
Region of Crete, Greece

Post Doc Research Associate at the Hellenic Centre of Marine Research

ΠΕΡΙΦΕΡΕΙΑ ΚΡΗΤΗΣ
REGION OF CRETE

Ecosystem-based management is "an integrated approach to management that considers the entire ecosystem, including human"

Existed Tools
(GIS /Stakeholders Platforms)

Available Scientific Data

Ecological impact

Competing activities within MA

Intensively used maritime area

MP or ICZM
National/regional framework

National supportive legislation

International Cooperation

Monitoring/evaluation

Ecosystem Approach
(*Overarching MSP Principle*)

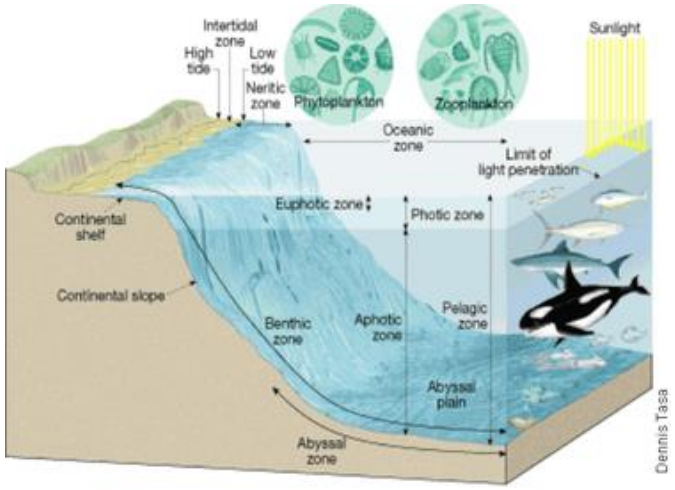
Outline points

Marine Ecosystems occur at various scales and their components are linked primarily by physical and biological features.

Biophysical component of marine ecosystems: provides the basic template on which all human activities occur and that various forms of governance regulate.

Dispersal and connectivity: crucial in sustaining marine populations and habitats:

→ **Connectivity in the sea** and **existing boundaries** for corresponding ecosystems



Heterogeneity of the sea:
spatially heterogeneous patterns of topography, water stratification and movement, living things, and human interests and impacts.

in time, with some important processes carried out on time scales of hours, days, or months, and others over years, decades, or centuries

***Complexity of natural processes in the sea:* results in mosaic patterns in space and time**

Mapping biophysical conditions and human uses in the oceans: an important first step in defining place.

Climate change on marine environment

CLIMATE CHANGE

Influences :
- **the ecosystem**
- **the human activities on the sea and the coastal zone**

Changes in sea temperature, sea level, air pressure and wind conditions

Changes in the geographical distribution and population of species

- *Physical and biochemical parameters*
- *Ecosystems & Dispersal of species*
- *Connectivity at sea*
- *Heterogeneity of sea basins*

Changes in the conditions for aquaculture, fisheries, energy production, recreation, maritime traffic, tourism and rest activities in the coastal zone

- *Human activities*
- *Existing regulatory frameworks*
- *Adaptations to new "environment"*
- *Socio economic values and parameters*
- *Increasing of knowledge*

Planning issues raised in a changing marine environment

- *How established marine protected areas can play a role in climate change adaptation and responses through a MSP*
- *Physical phenomena caused by climate change> a new environment where MSP is being implemented*
- *MSP acting as a "buffer" – procedure for increasing the resilience to climate change in service of sustainable development*
- *How countries have incorporated climate change into MSP*
- *Flexibility into MSP is necessary to address existing stressors that reduce marine ecosystems' resilience, because of climate change effects in the marine environment*

New Aspect: MSP for a changing marine environment

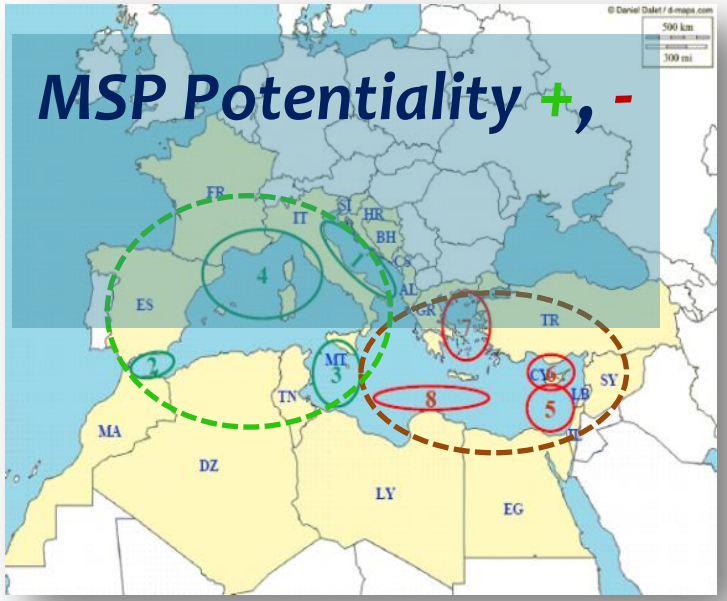
But:

Have we allocated spatial (existed or future) distribution of human activities in coastal and marine areas?

Are ecological, economic, and social objectives clearly described ?

Are we prepared as a society to adapt human uses and relative policies in a climate change marine environment?

Have we developed such a tool combining ecological, socio-economics and policy issues in a continuous marine environment with sea basin peculiarities?



	Intensively used	Available Data	MP/ICZM Framework	Cooperation
W Mediterr (4)	√	√	√	√
Alboran Sea (2)	√	√	√	√
Area around Malta (3)	√	√	√	√
Adriatic Sea (1)	√	√	√	√
Aegean Sea (7)	?	….	….	….
Libyan Sea (8)	?	….	….	….
Levantine Sea / SE Cyprus (5&6)	?	….	….	….

MSP as a tool:
through a multilevel governance

Why?

INTERPLAYING and/or OVERLAPPING REGIME

International	European/Regional	National/Regional
UNCLOS	Barcelona Convention	MSP implementation
ESPOON Convention	Bologna Charter	Ecosystem Management
CBO	Habitats Directive	Public participation
HELCOM	Fisheries Policy	Public consultation
OSPAR	Renewable Energy Directive	Social standards
	SEA/EIA Directive	Economic Aspects
	WDF	National , sectoral legislation
	MSFD	
	Marine and Maritime….	

MSP
ICZM
WFD
MSFD

MSP as a tool :
For Sustainable Development, Blue Growth and Job Creation in a changing marine environment

How and Who?

The role of:

- Policy Makers (National, Regional, Local)
- Scientific Community
- Networks
- Stakeholders
- General Public

MSP should act as an Appropriate "tool" for :

- ***Connectivity in the sea and ecosystems,***
- ***Heterogeneity in the sea AND in the regulatory frameworks***
- ***Sea basin peculiarities and environmental conditions***
- ***MSP Potentiality and cross border cooperation***
- ***Multi governance and scientific guidance***

- ***Ecosystem , Socio-economic MSP approach***
- ***Policy Tool for existing and future uses of marine/ocean space***
- ***And further focusing on adaptations and increasing resilience in a Changing Marine Environment***
- ***Sustainable development, blue growth, blue economy, and job creation***

Thank you!

Dr Eleni Hatziyanni

Director of Environment and Spatial Planning
Region of Crete, Greece
Post Doc Research Associate at the Hellenic Centre of Marine Research

ΠΕΡΙΦΕΡΕΙΑ ΚΡΗΤΗΣ
REGION OF CRETE

ATLAS: A Trans-Atlantic assessment and deep-water ecosystem-based spatial management plan for Europe

Leader: HERIOT WATT UNIVERSITY

MSP conference: Maritime Spatial Planning Worldwide

Ponta Delgada, 23-24 June 2016

@atlas_eu


2012@LuisCampos

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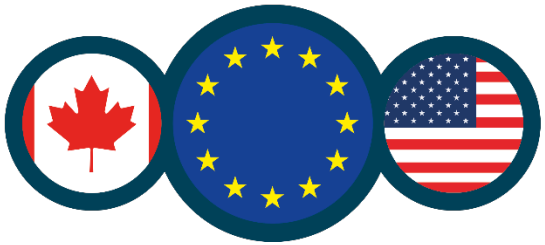


ATLAS vision

Enhance trans-Atlantic scientific data

Deepen understanding of deep Atlantic ecosystems

Predict changes under future climate or oceanographic conditions

To provided scenarios and support tools for integrated Maritime Spatial Planning across Atlantic jurisdictional regimes and under current and futures conditions

ATLAS vision

Enhance trans-Atlantic scientific data

Deepen understanding of deep Atlantic ecosystems

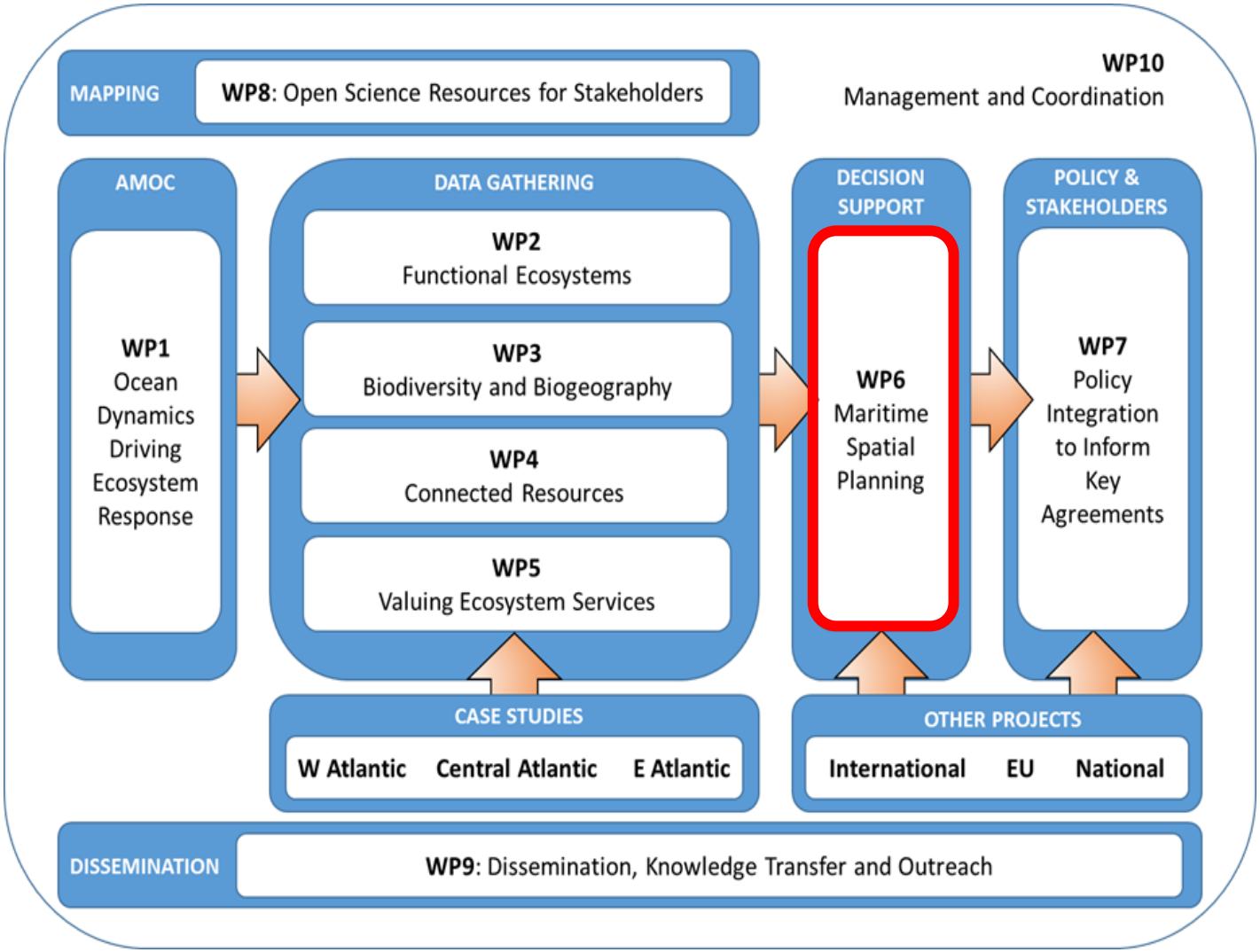
Predict changes of future conditions

ocean governance

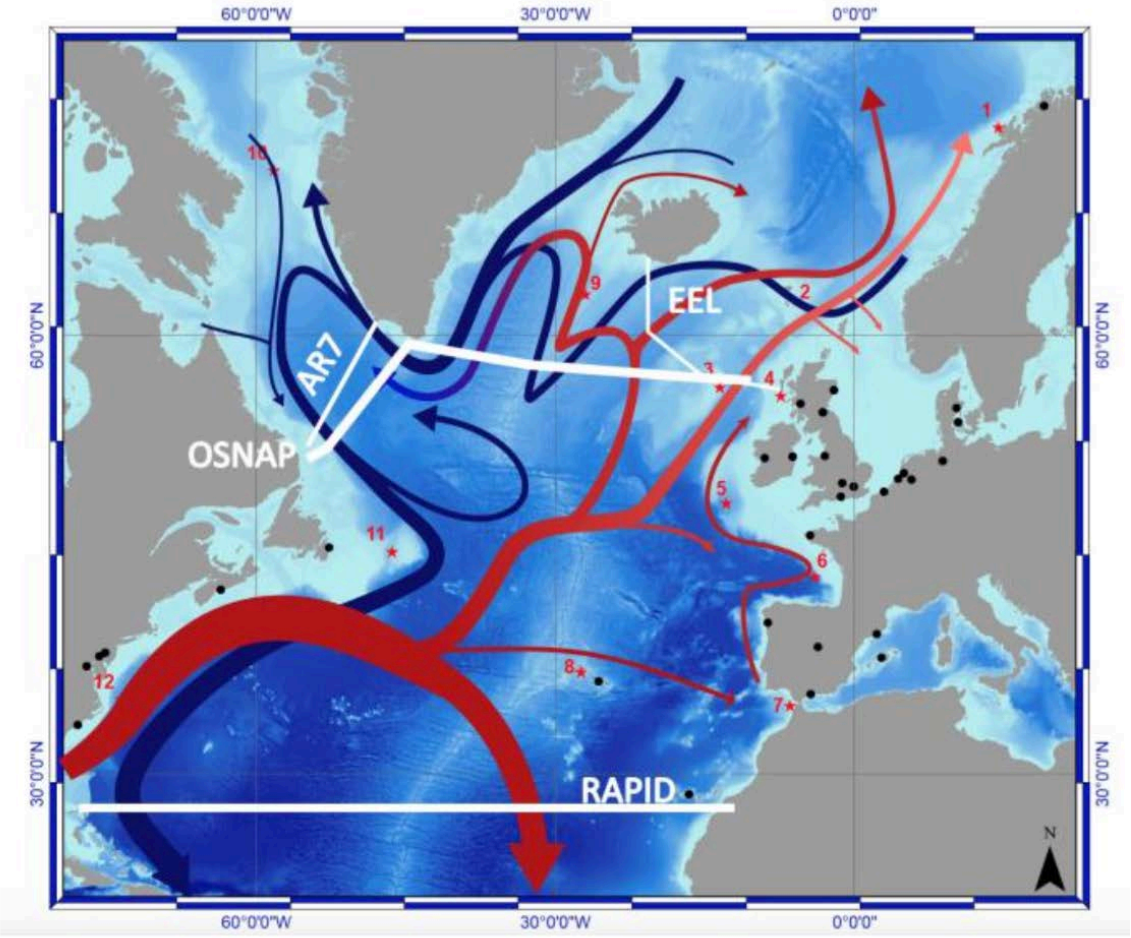
Thereby achieving ecosystem preservation, sustainable exploitation and Blue Growth

To provided scenarios and support tools for integrated Maritime Spatial Planning across Atlantic jurisdictional regimes and under current and futures conditions

ATLAS Structure

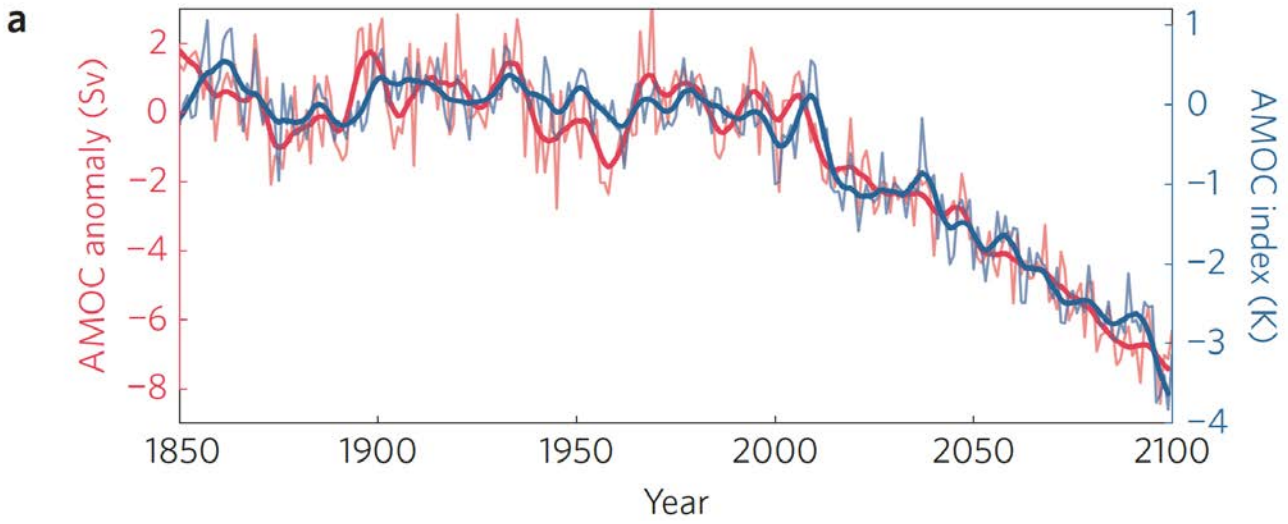


Ocean currents



Main drivers of ocean productivity and climate regulation

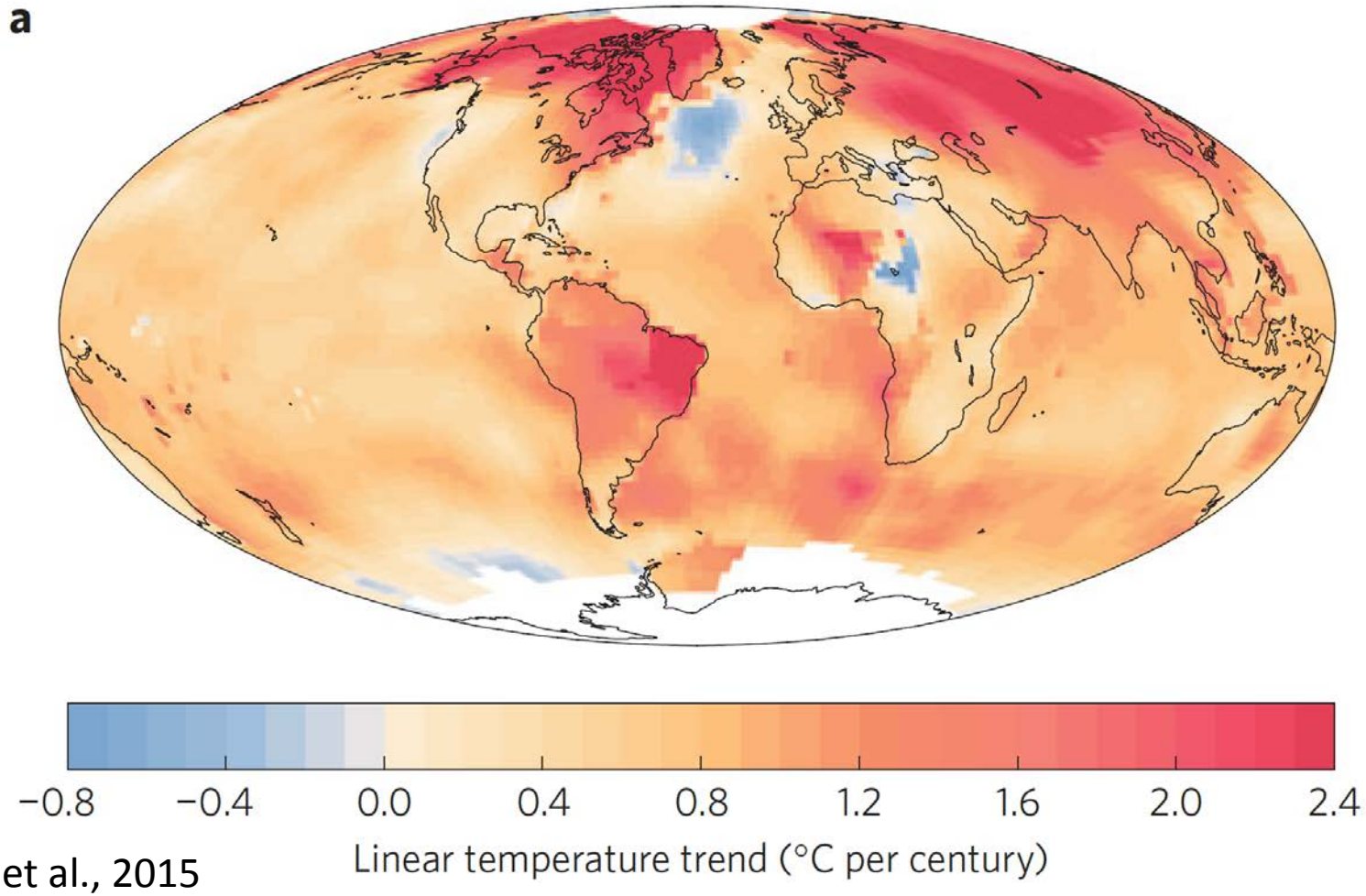
Atlantic Meridional Overturning Circulation



Evidence for a slowdown of the overturning circulation, suggesting that over recent decades the current system has been weaker than ever before in the last century, or even in the last millennium.

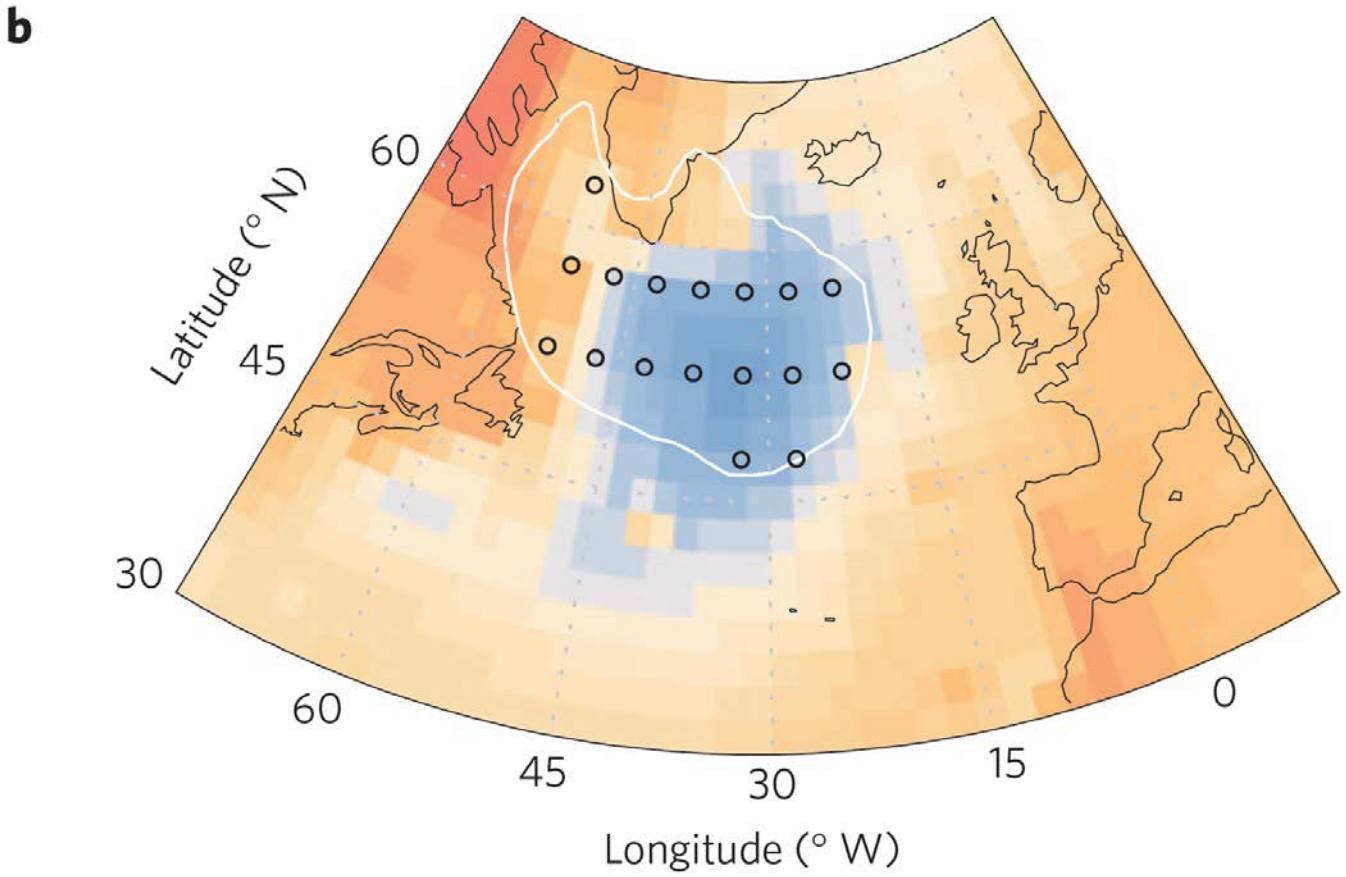
Rahmstorf et al., 2015

Atlantic Meridional Overturning Circulation



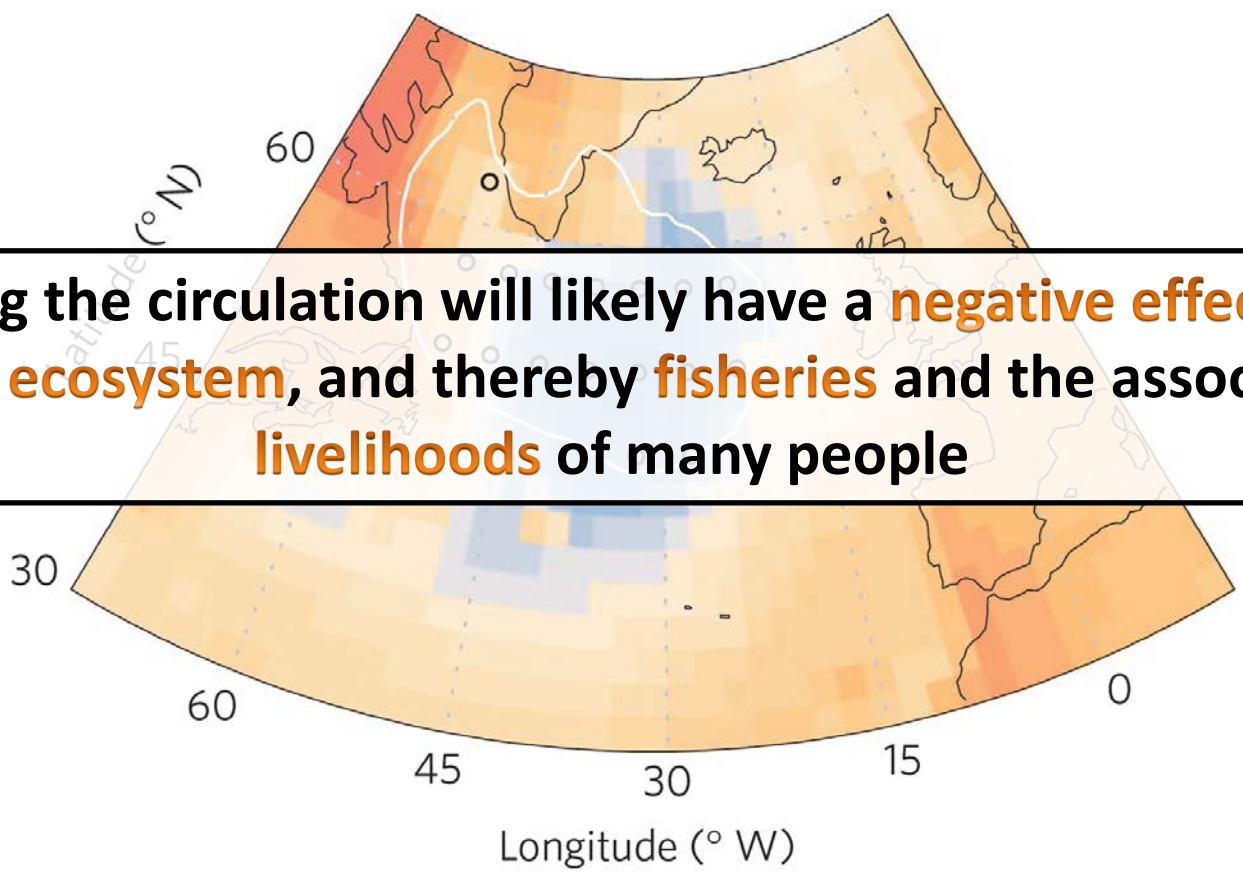
Rahmstorf et al., 2015

Atlantic Meridional Overturning Circulation



Rahmstorf et al., 2015

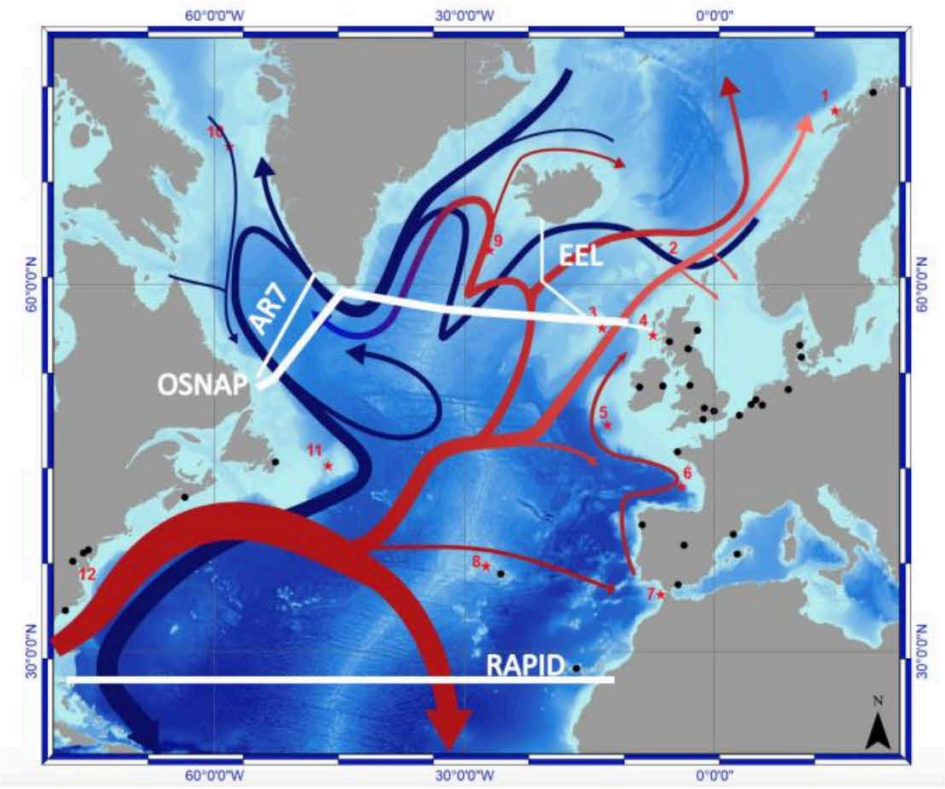
Atlantic Meridional Overturning Circulation

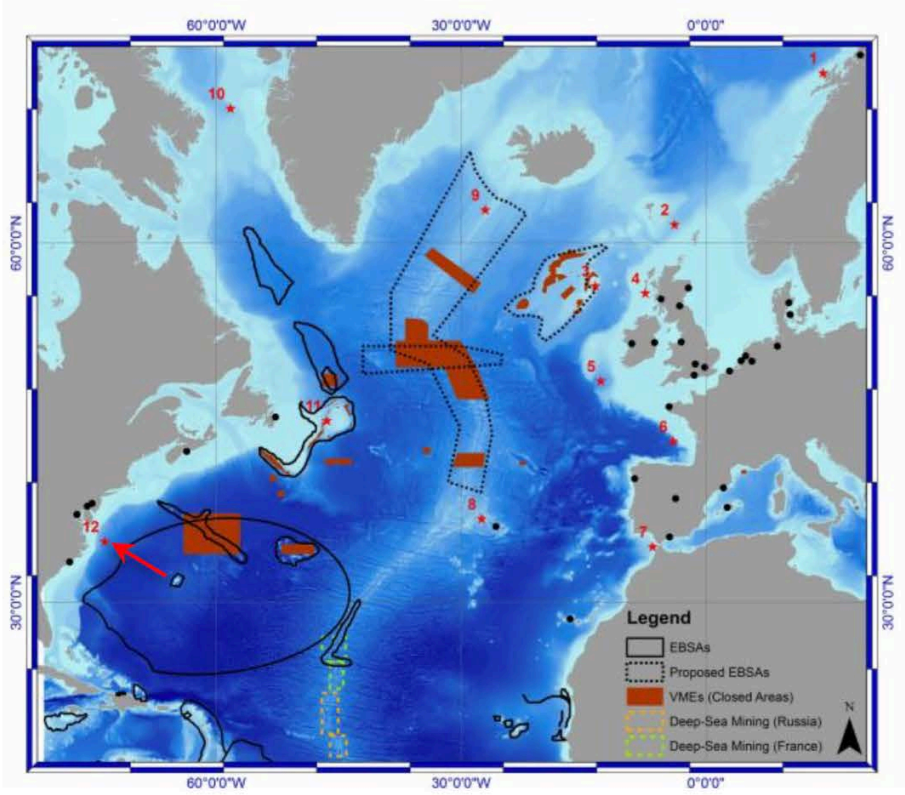


Disturbing the circulation will likely have a negative effect on the ocean ecosystem, and thereby fisheries and the associated livelihoods of many people

Rahmstorf et al., 2015

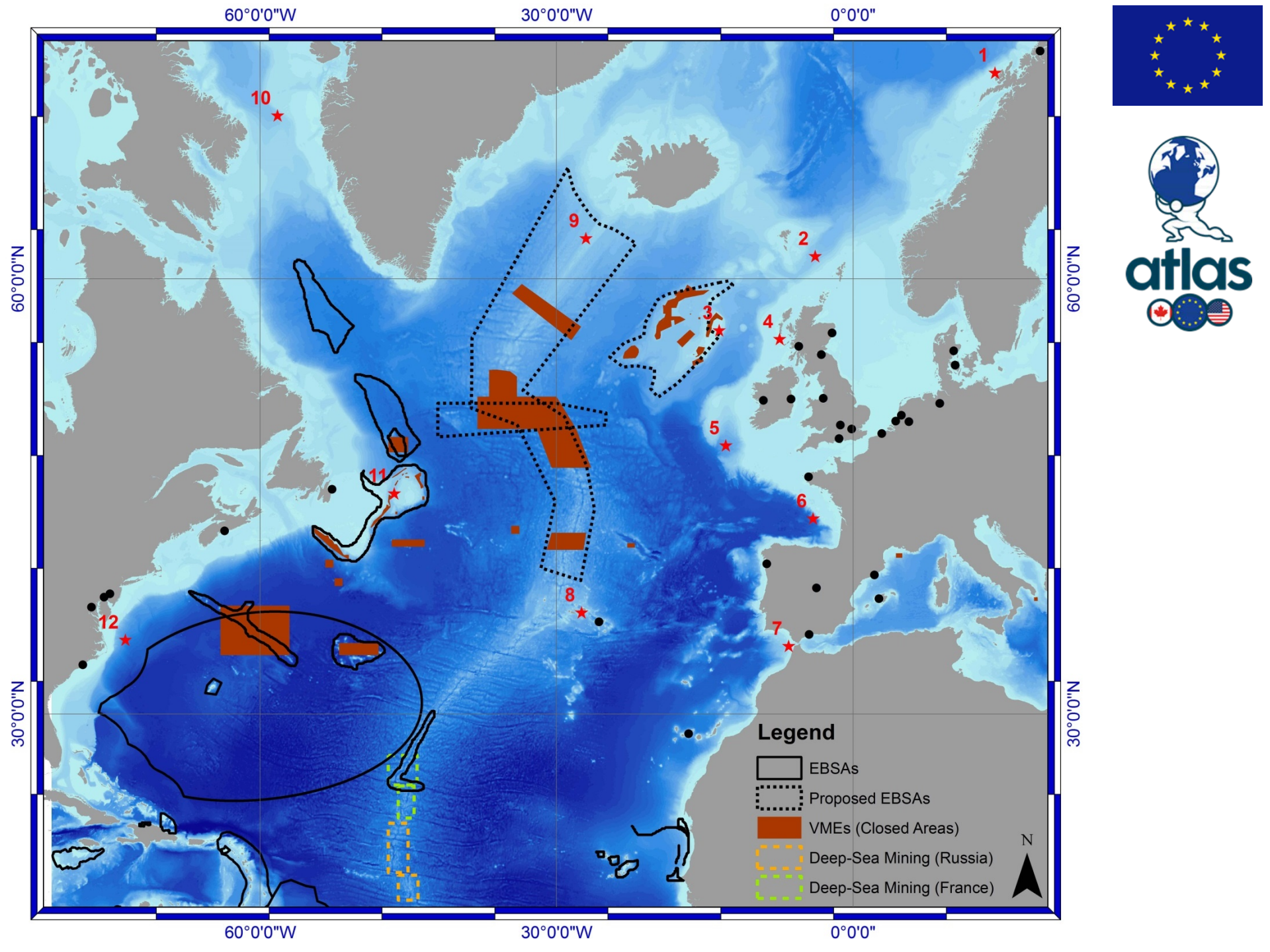
Partners involved





Partnership Industry, SMEs, Govt & Academia

24 Partners, 1 3rd Parties; 15 Associate Partners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Legend
EBSAs
Proposed EBSAs
VMEs (Closed Areas)
Deep-Sea Mining (Russia)
Deep-Sea Mining (France)
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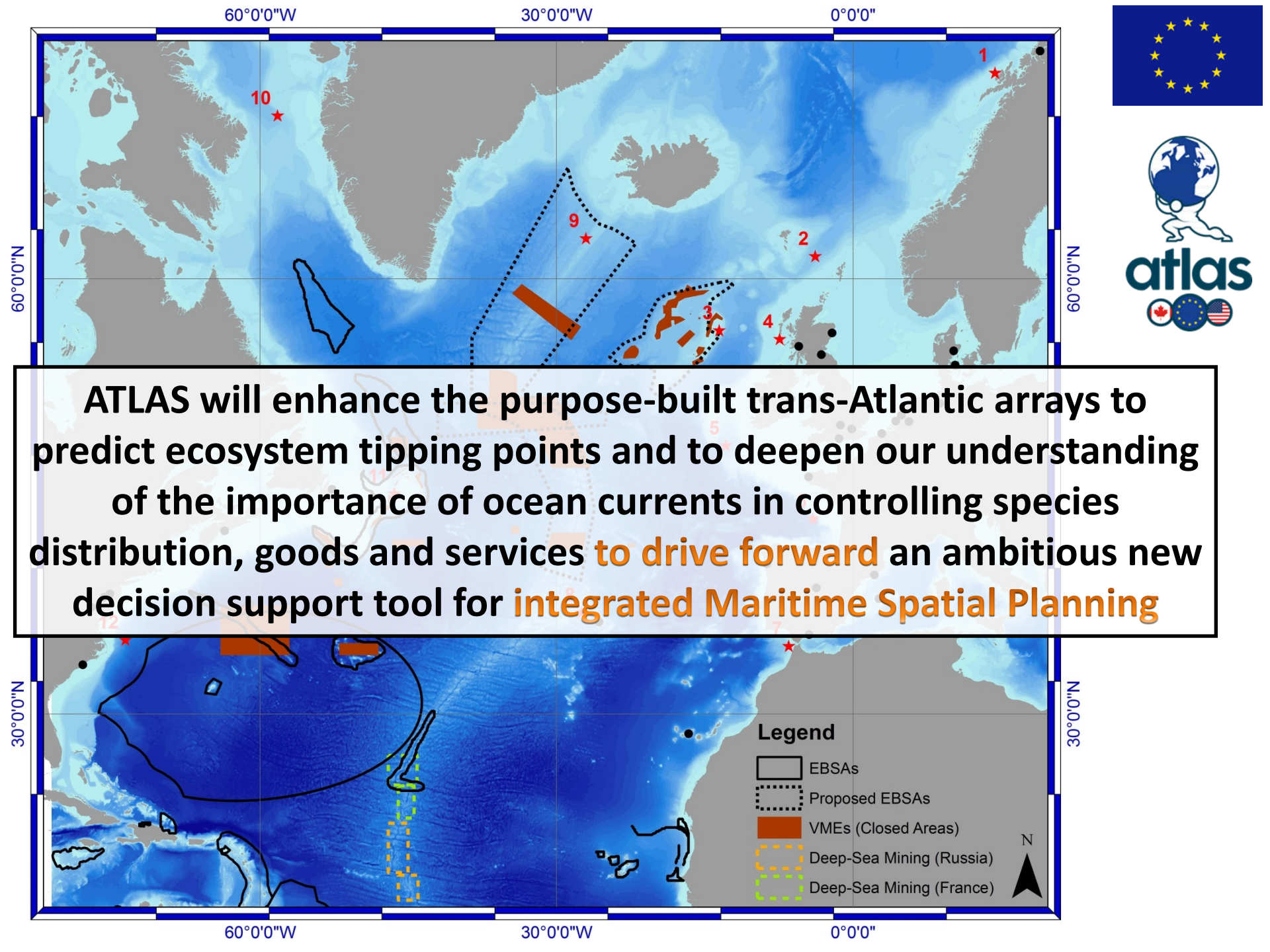
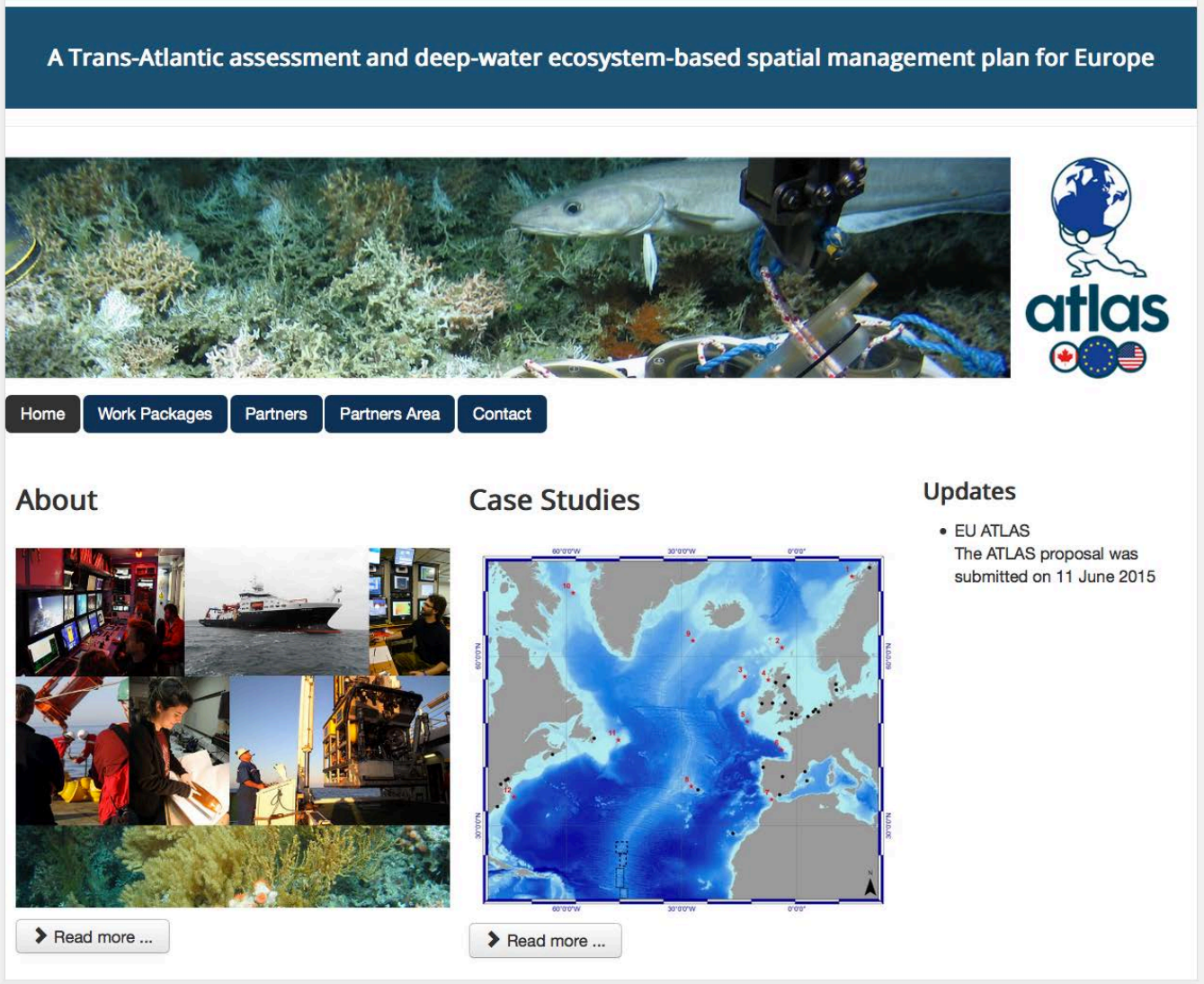


ATLAS will enhance the purpose-built trans-Atlantic arrays to predict ecosystem tipping points and to deepen our understanding of the importance of ocean currents in controlling species distribution, goods and services to drive forward an ambitious new decision support tool for integrated Maritime Spatial Planning

ATLAS information



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We just started

Acknowledgements

Special thanks to

Marina Carreiro Silva

The whole ATLAS consortium

Laura Palomo-Rios

This project has received funding from the European Union's Horizon 2020 research and innovation programme, under grant agreement No 678760 (ATLAS)

This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein

Expected Impact

(1) Improve resources management (ecosystem approach) and governance

(2) Improve cooperation among EU Member States with respect to Atlantic ecosystem based research as well as with International partners

(3) Contribute to the implementation of international agreements to conserve Vulnerable Marine Ecosystems and Ecologically or Biologically Significant Areas

Expected Impact

(4) Contribute to the implementation of the EU Integrated Maritime Policy,

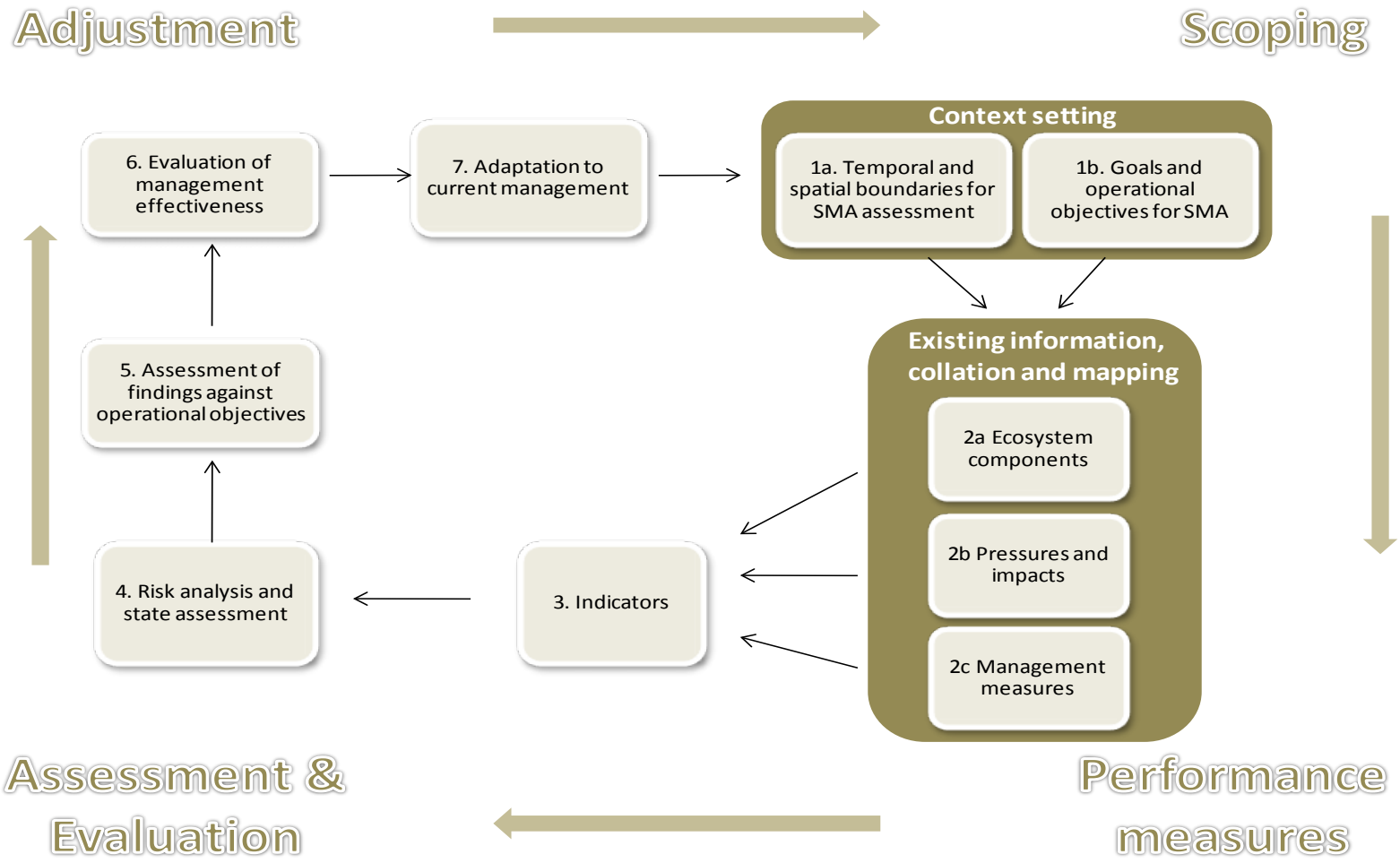
Marine Strategy Framework Directive (MSFD),

Common Fisheries Policy (CFP),

Maritime Strategy for the Atlantic Ocean Area

Galway Statement on Atlantic Cooperation

MESMA framework



Stelzenmüller, V, et al. (2013) Monitoring and evaluation of spatially managed areas: A generic framework for implementation of ecosystem based marine management and its application. Marine Policy 37:149-164

ATLAS Objectives

(1) **Improve understanding of deep Atlantic marine ecosystems**

by collecting and integrating high-resolution measurements of ocean circulation with functioning, biological diversity, genetic connectivity and socioeconomic values

ATLAS Objectives

(2) Improve the capacity to monitor, model and predict shifts in deep-water ecosystems and populations in response to future change

through better understanding of the connections between physical parameters and biological characteristics to support sustainable exploitation in the N Atlantic

ATLAS Objectives

(3) Transform new data, tools and understanding into robust ocean governance

in line with an adaptive ecosystem based maritime spatial planning (MSP) approach to achieve ecosystem preservation, sustainable exploitation and Blue Growth

ATLAS Objectives

(4) Scenario-test and develop science-led, cost-effective adaptive management strategies

for sustainable use of living and non-living resources that stimulate Blue Growth