

11 September 2018

Las Palmas de Gran Canaria Spain



Workshop Maritime Spatial Planning for Islands



**Balancing maritime sector  
development and environmental planning, supporting socio-economic  
growth and  
ensuring environmental services**

PLASMAR and MarSP

two MSP project initiatives in Macaronesia

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# MSP kick-off in Europe

The screenshot shows the EMODnet website interface. At the top, there are navigation tabs: ABOUT, DATA PORTALS, DATA SERVICES, SOLUTIONS, CHECKPOINTS, NEWS & EVENTS, EOOS CONFERENCE, and ATLAS OF THE SEAS. A 'Map configuration' panel is open on the left, displaying a 'Background' dropdown set to 'OpenStreetMap' and an 'Active Layers (1)' section with a search bar. Below the search bar, there are several category menus: Cultural Heritage, Dredging, Environment, Hydrocarbon Extraction, Ocean Energy Facilities, OSPAR Bottom Fishing Intensity, Waste Disposal, and Wind Farms. Each menu contains a list of layers with checkboxes and information icons. The main map area shows a heatmap of the Mediterranean Sea, with colors ranging from blue (low intensity) to red (high intensity). The map includes labels for various cities and regions in Europe and North Africa, such as Portugal, Evora, Badajoz, Alentejo, Faro, Huelva, Jerez de Frontera, Marbella, Málaga, Taza, Fes, Meknes, Khénifra, Er Rachidia, Maroc, Quazarzate, Sauss-Massa, Guelmim-Oued Noun, and Tindouf. The Windows taskbar is visible at the bottom, showing the system clock as 15:15 on 30/08/2018.



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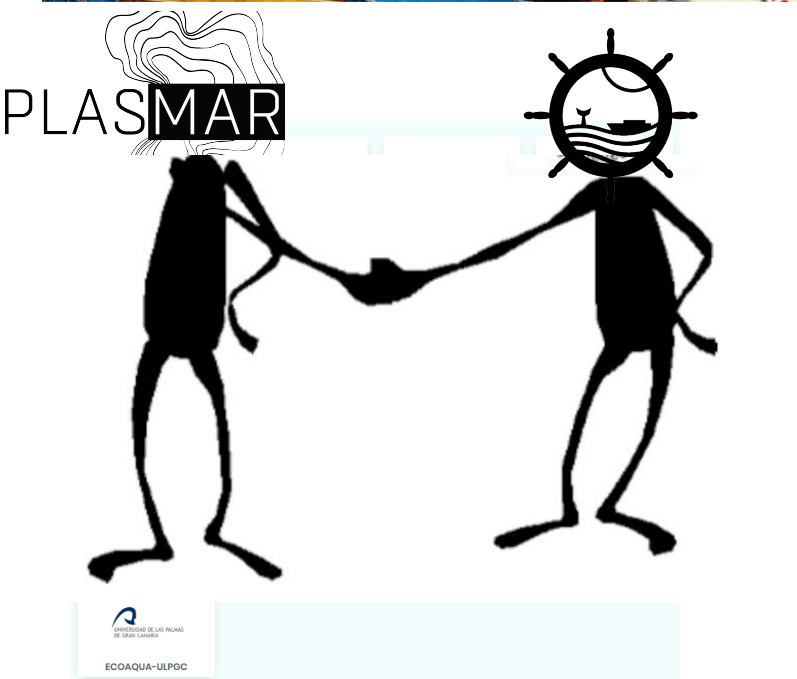


# Two project initiatives on MSP

Cofunded - European Regional Development Fund, INTERREG



- Collaboration Research & Administration
- Common objective – Finalize 1<sup>st</sup> MSP for Macaronesia



Cofunded - European Maritime and Fisheries Fund

# Current uses and projection for MSP in Macaronesia

ANALYZED SECTORS	EU State / World prospect	MADEIRA State / Prospect	AZORES State / Prospect	CANARIES State / Prospect
Aquaculture			RD&I	
Blue biotechnology			RD&I	
Renewable ocean energy		RD&I	X X	RD&I
Deep-sea mining		X X	RD&I ?	RD&I ?
Coastal & maritime tourism (incl. cruises)				
Fisheries				
Maritime transport				
Shipbuilding & shipgear		X X		
Offshore oil & gas (in deep water)		X X	X X	X X
Desalination			X X	

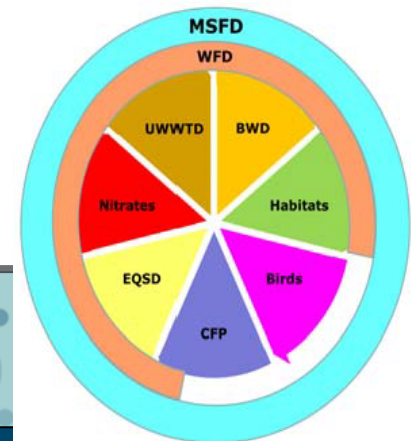
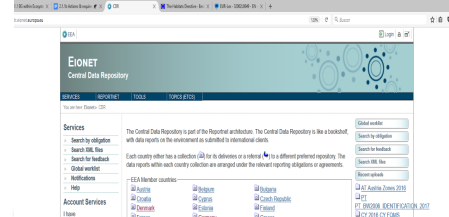
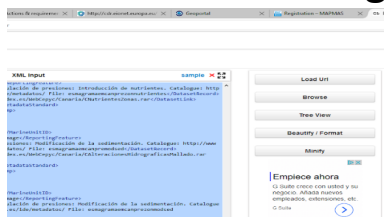


for Islands' 2018



# MSP & Environmental Legislation

- Analysis on environmental legislation Implementation (applies on the sea)
- To understand **what is already done within environmental policies/directives implementation, so that can be considered and potentially reused** in the MSP process.
- **Marine Strategy Framework Directive** as Integrated Marine (environmental) Management
- **European Environment Information and Observation Network (EIONET) & REPORTNET**, by EEA
- **Compatibility** of sustainable maritime sectors development with implementation of the MSFD
- **Marine data, monitoring, programmes of measures, assessments** regarding the 1st MSFD cycle 2012-2018



# Mapping environmental issues/solutions maritime sectors

- Following **marine environment framework given by MSFD – Good Environmental Status 11** quality descriptors/**42 criteria elements given by COM 2017/848/EC**
- Analyzing all **GES criteria VS maritime activities**, technical and scientific reports, workshops and enquiries
- **Identifying pressures, mitigation, solutions, monitoring**
- Finalized finfish aquaculture and offshore wind energy analysis

This deliverable will provide checklist :

- **Facilitate EIA process**, including **EIS& EID**
- **What are the alternatives** and if is possible to avoid pressure and related impact
- If there are **mitigation measures** and if can be applied
- What type of **monitoring** is necessary to establish to secure that maritime activity not pass the sustainability thresholds for all three phases (construction, operations, decommissioning)
- **Trade offs**, local economy VS marine environment



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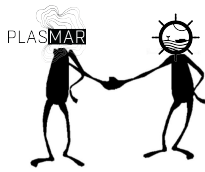
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# Data collection

## PLASMAR data framework



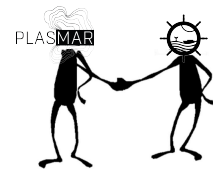
MSFD Good Environmental Status	Marine Protected Areas	(Coastal) Land Use	Oceanography	Maritime activities/Uses
<ul style="list-style-type: none"> <li>MSFD reports, EIONET</li> <li>EMODnet</li> <li>WISE</li> <li>IEO, CSIC, SniMAR, SIGmar, GRAFCAN...</li> </ul>	<ul style="list-style-type: none"> <li>Nationally designated areas (CDDA)</li> <li>Natura 2000</li> <li>IEO, CSIC, SniMAR, SIGmar, GRAFCAN</li> </ul>	<ul style="list-style-type: none"> <li>CORINE</li> <li>Copernicus</li> <li>GRAFCAN</li> </ul>	<ul style="list-style-type: none"> <li>Copernicus</li> <li>EMODnet</li> <li>GEBCO</li> <li>IEO</li> </ul>	<ul style="list-style-type: none"> <li>Local/National data (SniMAR, SIGmar, GRAFCAN...)</li> <li>EMODnet</li> <li>IEO</li> </ul>



EMODnet

European Environment Agency





# INSPIRE data Management & MSP INSPIRE data model

- UPLGC updated citizen science project Poseidon –(2016) **INSPIRE complainant** - test
- Common workshop/training on data management – **hands on** - development of the basic infrastructure that can be used by partners for data flow
- Development of the **catalogues** of metadata, **data harmonization, data flows, data sharing – within MSP platforms**
- **MSP INSPIRE data model** – current data model for “planned land use” needs adoption for maritime uses
- **MSP e-reporting** in 2021
- Abramic et al. 2018 **MSP supported by INSPIRE**

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Maritime spatial planning supported by infrastructure for spatial information in Europe (INSPIRE)

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 Data model  
 Data availability  
 E-reporting

**ABSTRACT**

The implementation of Directive 2007/2/EC - INSPIRE can improve and actually strengthen the information management and data infrastructures needed for setting up Maritime Spatial Planning (MSP) processes. Evidence for this comes from three parallel analyses: links between the MSP Framework Directive and INSPIRE components and implementation; the availability of marine and maritime data through the INSPIRE Geo-Portal; and the adequacy of using an INSPIRE data model for mapping maritime spatial plans. The first item identifies INSPIRE as a relevant instrument not only for data collection, but additionally for increasing transparency of the MSP processes, using already operational national and European data infrastructures. The marine/maritime data availability analysis highlights a significant difference in data sharing within European marine regions. Finally, the INSPIRE data model is adequate for mapping maritime activities and for the integration of sea and land planning in an overview of cross-border planning for a given sea region.





# Example - Harmonization of benthic habitats cartography

- “Estudios Ecocartográficos de Canarias”: benthic habitats cartographies for all islands and depths 0-50m.

Table 1: Main characteristics of the benthic habitats cartographies of the Canary Islands. Contractor: <sup>1</sup>Ministerio de Medio Ambiente; <sup>2</sup>Cabildo Insular de Tenerife. Own elaboration.

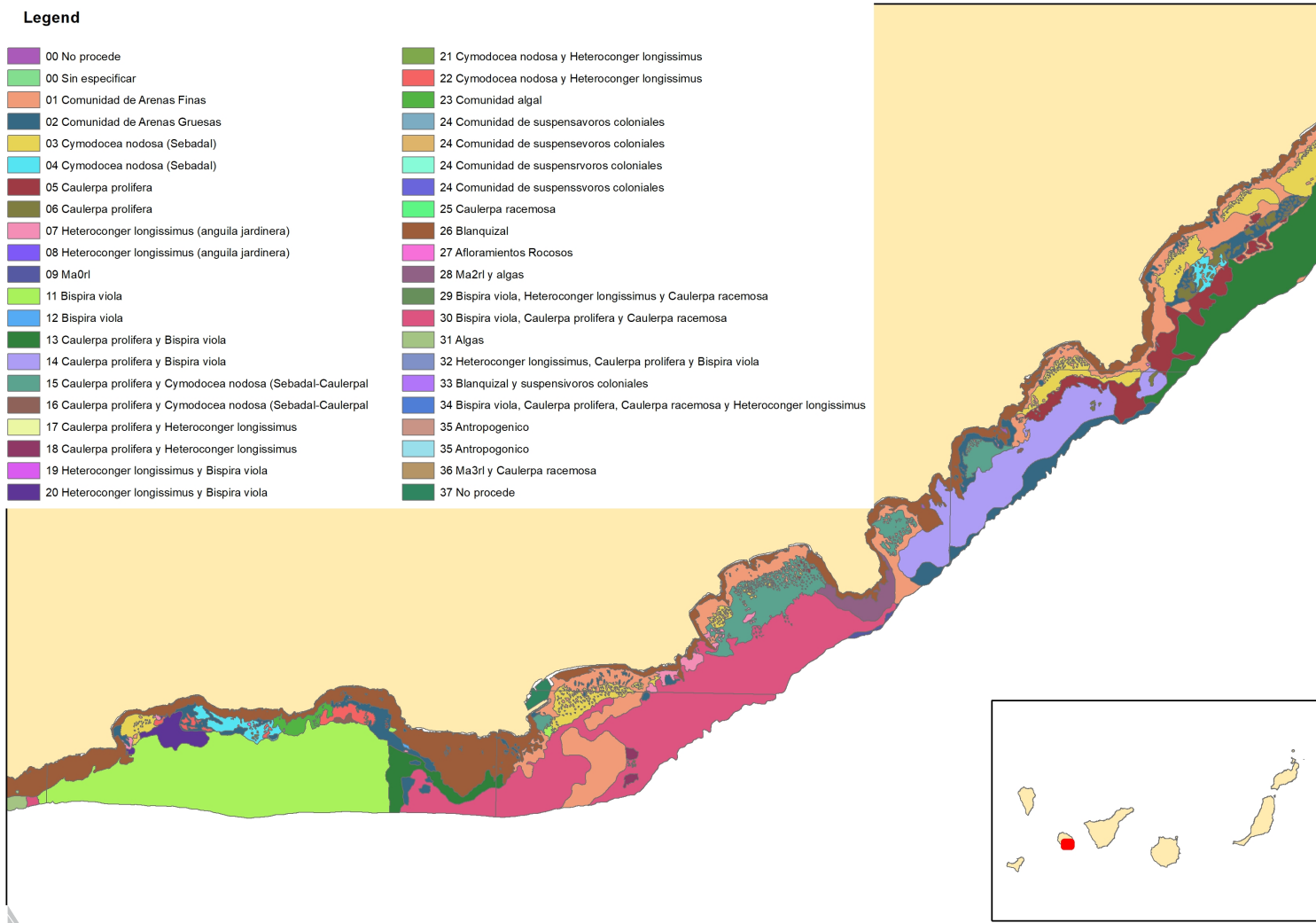
Island	Years	Authors	Nr. cats. legend
Lanzarote, Graciosa y Alegranza <sup>1</sup>	2000 (2000-2003)	UTE: HIDTMA, IBERINSA, CIS y TOPONORT	39
Fuerteventura y Lobos <sup>1</sup>	2003 (2003-2006 8??)	UTE: HIDTMA e IBERINSA	12
Gran Canaria <sup>1</sup>	Norte 2005 (2006-2007)	TYPSA	20
	Sur 2001 (2000-2002)	UTE: INTECSA-INARSA, TECNOAMBIENTE y GEOMY TSA	16
Tenerife <sup>2</sup>	2001-2006 - Buenavista-Arona 2001-2002 - Arona-Fasnia 2003 - Fasnia-R. Anaga 2004-2005 - R. Bermejo-Buenavista: 2006	UTE: LA ROCHE CONSULTORES, S. L., ESTUDIO ITAC S.L.	25
La Palma <sup>1</sup>	2003 (2003-2004)	UTE: ALATEC, ESGEMAR S.A., GRUPO INTERLAB S.A.	13
La Gomera <sup>1</sup>	2003 (2003-2006)	UTE: INTECSA-INARSA, TECNOAMBIENTE y GEOMY TSA	38
El Hierro <sup>1</sup>	2003 (2003-2006)	UTE: INTECSA-INARSA, TECNOAMBIENTE y GEOMY TSA	12

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# La Gomera - 38 different habitat classification

## Legend

- |  |  |
|--|--|
| 00 No procede  | 21 Cymodocea nodosa y Heteroconger longissimus                                     |
| 00 Sin especificar   | 22 Cymodocea nodosa y Heteroconger longissimus                                     |
| 01 Comunidad de Arenas Finas                                 | 23 Comunidad algal   |
| 02 Comunidad de Arenas Gruesas                               | 24 Comunidad de suspensivoros coloniales   |
| 03 Cymodocea nodosa (Sebadal)                                | 24 Comunidad de suspensivoros coloniales   |
| 04 Cymodocea nodosa (Sebadal)                                | 24 Comunidad de suspensivoros coloniales   |
| 05 Caulerpa prolifera  | 24 Comunidad de suspensivoros coloniales   |
| 06 Caulerpa prolifera  | 25 Caulerpa racemosa   |
| 07 Heteroconger longissimus (anguila jardinera)              | 26 Blanquizal  |
| 08 Heteroconger longissimus (anguila jardinera)              | 27 Afloramientos Rocosos   |
| 09 MaOri   | 28 Ma2r1 y algas   |
| 11 Bispira viola   | 29 Bispira viola, Heteroconger longissimus y Caulerpa racemosa                     |
| 12 Bispira viola   | 30 Bispira viola, Caulerpa prolifera y Caulerpa racemosa                           |
| 13 Caulerpa prolifera y Bispira viola                        | 31 Algas   |
| 14 Caulerpa prolifera y Bispira viola                        | 32 Heteroconger longissimus, Caulerpa prolifera y Bispira viola                    |
| 15 Caulerpa prolifera y Cymodocea nodosa (Sebadal-Caulerpal) | 33 Blanquizal y suspensivoros coloniales   |
| 16 Caulerpa prolifera y Cymodocea nodosa (Sebadal-Caulerpal) | 34 Bispira viola, Caulerpa prolifera, Caulerpa racemosa y Heteroconger longissimus |
| 17 Caulerpa prolifera y Heteroconger longissimus             | 35 Antropogenico   |
| 18 Caulerpa prolifera y Heteroconger longissimus             | 35 Antropogonico   |
| 19 Heteroconger longissimus y Bispira viola                  | 36 Ma3r1 y Caulerpa racemosa   |
| 20 Heteroconger longissimus y Bispira viola                  | 37 No procede  |



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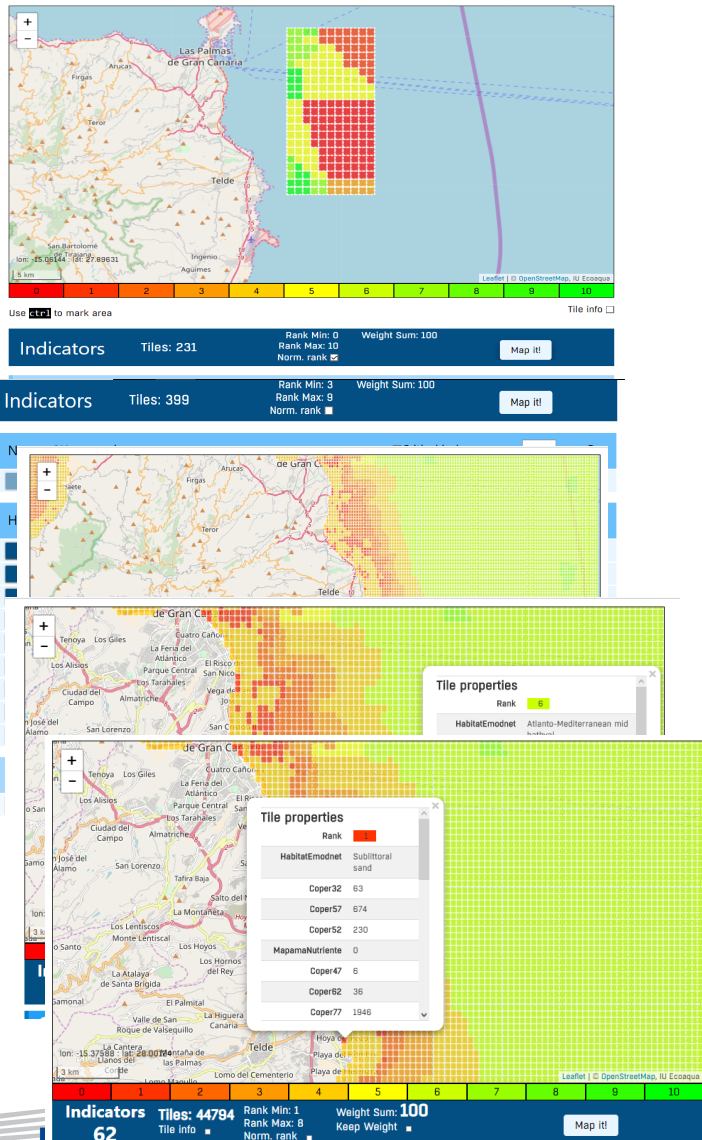
European  
MSP Platform

# La Gomera. 14 habitats IEHE

With INSPIRE data model we used three classification standards:

- European Nature Information System (**EUNIS**) – 26 categories; not enough detail for MACaronesia
- Marine Strategy Framework Directive (**MSFD**)-12 habitats categories; Very broad classification
- **Spanish Inventory of Marine Habitats and Species** – 43 categories
- This data product is available on the: <http://www.geoportal.ulpgc.es>

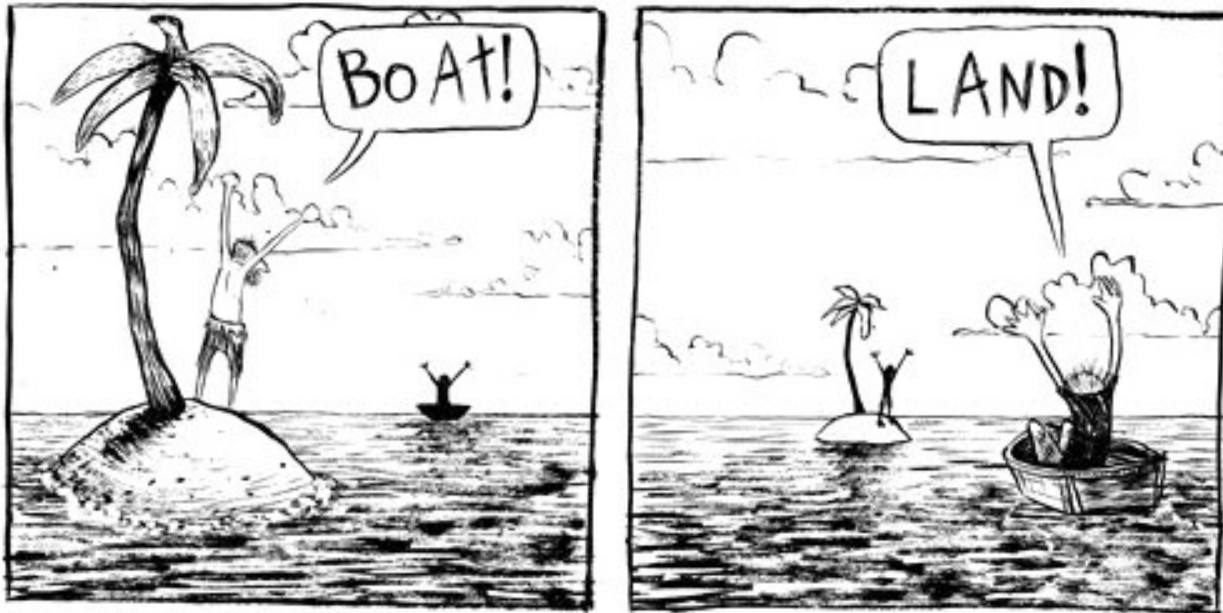
# DSS / AI Expert System – INDIMAR



- **Still on development**, fulfilling with data, training the system – establishing **weight on each parameter VS maritime activities**
- **Interactive system**, easy development - no need experts in programming – **all partners are participating**
- Rotation of the results within the partners and **adjusting for the local environment**
- Will provide maps on location for the studied **maritime activities where env. impact is minimized**
- Results will be used to **establish new methodology for MSP zoning**
- Will define **Environmental trade-off**
- Will be defined **what is necessary to monitor in operational phase and what is necessary to analyze before license is provided**
- **DSS will be publicly open**, but with already defined parameters weights
- **Facilitate EIA process and encourage investment**

# Thank you for your attention

...and patience



[www.plasmar.eu](http://www.plasmar.eu)

[www.marsp.eu](http://www.marsp.eu)

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