

# **D23 – Report of technical workshop**

2<sup>nd</sup> Technical workshop “LSI analysis for MSP”

## **ACKNOWLEDGEMENT**

The work described in this report was supported by the European Maritime and Fisheries Fund of the European Union- through the Grant Agreement number 887390 - MSPMED - EMFF-MSP-2019, corresponding to the Call for proposal Call EMFF-MSP-2019 (Maritime Spatial Planning) Topic: EMFF-MSP-2019 Type of action: EMFF-AG for Projects on Maritime Spatial Planning (MSP).

## **DISCLAIMER**

The content of this report represents the views of the author only and is his/her sole responsibility; it cannot be considered to reflect the views of the European Commission and/or the Executive Agency for Small and Medium-sized Enterprises (EASME) or any other body of the European Union. The European Commission and the Agency do not accept any responsibility for use that may be made of the information it contains.



<b>Project Full Title</b>	<b>Towards the operational implementation of MSP in our common Mediterranean Sea</b>
<b>Project Acronym</b>	<b>MSP-MED</b>
<b>Gant Agreement Nr.</b>	<b>887390</b>
<b>Project Website</b>	<b>www.mspmed.eu</b>

<b>Deliverable Nr.</b>	<b>D23</b>
<b>Status (Final/Draft/Revised)</b>	<b>Final</b>
<b>Work Package</b>	<b>WP2 – Setting-up Maritime Spatial Plans</b>
<b>Task Number</b>	<b>2.7 – Sharing experiences among countries</b>
<b>Responsible Institute</b>	<b>CORILA</b>
<b>Author/s</b>	<b>Niccolò Bassan, Martina Bocci, Neil Alloncle, Francesco Musco</b>
<b>Infographics</b>	<b>Folco Soffietti</b>
<b>Recommended Citation</b>	
<b>Dissemination Level (Public/Partnership)</b>	<b>Public</b>

<b>Document History</b>			
<b>Version</b>	<b>Date</b>	<b>Modification Introduced</b>	
		<b>Modification Reason</b>	<b>Modified by</b>
1	30/11/2020	Typos & Corrections	Cristina Cervera Nuñez, Laura Cotte, Martina Bocci, Efi Stefani, Niccolò Bassan

## INDEX

1	Introduction.....	7
2	Programme.....	9
3	Participants .....	10
4	Main topics identified .....	11
5	The Workshop.....	13
6	Parallel Sessions .....	20
7	Discussion & conclusion.....	28
8	References .....	31

# 1 Introduction

## *What is meant by “Land-Sea Interactions”?*

The term “Land-Sea Interactions” (LSI) is usually used in the context of planning and management of marine and coastal areas. Despite its high relevance, a unique definition and conceptualization of LSI has not yet been established or formalized in literature.

LSI is generally interpreted as the set of processes linking terrestrial and marine areas. Such processes may include, for example, nutrients and contaminants runoff from agriculture in rivers, and their consequent load in coastal waters, as well as the laying of a submarine pipe in the intertidal area to connect an offshore O&G platform to the terrestrial pipeline network. Almost all maritime uses need support installations on land (such as the ports for shipping, marinas for yachting or grid connections for offshore wind farms). On the other hand, there are uses, mostly exerted on the ground (for example, beach tourism, water-front, ports), that extend their domain also at sea.

Some common categorizations are generally adopted in LSI analysis: i) LSI have double direction: from land toward sea and from sea toward land; ii) LSI can have natural or anthropogenic components.

LSI analysis should also consider the interactions of planning processes and plans for land and sea domains. It is important to ensure that legal, administrative, consultation and technical processes are coordinated (and hopefully linked) to avoid unnecessary duplications, incoherence, conflicts, waste of resources and/or excessive demand of stakeholders’ efforts.

## *Why is important to tackle this topic?*

LSI analysis shall be understood as an important component in the preparation of a marine plan. When carrying out maritime spatial planning (MSP), it is important to consider the continuity between land and sea, and to ensure that spatial planning is conducted in an integrated manner across maritime and terrestrial areas. This is of interests for both the environmental protection of coastal areas and the effective development of maritime and coastal economies.

It is a requirement of the EU Directive 2014/89/EU on Maritime Spatial Planning (MSPD, EC, 2014) to take land-sea interactions into account when preparing maritime spatial plans. In fact, the MSPD specifies that the planning process should consider land-sea interactions and promote the collaboration between Member States. The MSPD makes several references to the concept of LSI in:

- Art. 1, referring to the subject of the Directive;
- Art. 4, which refers to the development and implementation of maritime spatial planning. Paragraph 2 provides that, during the entire MSP process, the Member States shall take account of land-sea interactions; Paragraph 5 states that, when drawing up the maritime spatial planning, Member States shall take into account the peculiarities of the marine regions, the related activities and present and future uses and their effects on the environment, as well as natural resources, and land-sea interactions.
- Art. 6, Paragraph 2 (a), states that one of the minimum requirements for the maritime spatial planning is that Member States take into account land-sea interactions;

- Art. 7, Paragraph 1 (“Land-sea interactions”), describing the nature of the LSI and the relationships with the other formal or informal processes, such as integrated coastal zone management.
- LSI is also referred to in recitals 9, 16 and 18 of the MSP Directive.

**The aim of LSI analysis is to inform the planning process through the identification of the key elements about processes linking the land and marine areas that need to be considered when planning the sea space, i.e. LSI problems to be addressed and opportunities to be exploited.**

### ***Which are the objectives of this second technical workshop?***

There are a number of possible ways of addressing land-sea interaction (LSI) in MSP. These include building on the experience of integrated coastal management (ICM), harmonising terrestrial and maritime spatial plans, and carrying out spatial planning at a scale that crosses the land-sea border. Mediterranean countries could benefit from understanding the options that are available and considering how to develop their practice further.

**The main goal of the second workshop is to exchange information on the different approaches undertaken for LSI analysis in the national marine planning processes. This would help capitalizing from other experiences and setting the ground for cross-border consultation encompassing LSI components.**

### ***What should be addressed during this second technical workshop?***

Giving the complexity of the topic and the number of its different implications the workshop will be organized in two steps: (a) a round-table aimed at sharing snapshots from the countries with basic information on the state-of-art of LSI analysis in MSP and the adopted approach; (b) 3 parallel sessions aimed at sharing and discussing more in detail the approaches, the methods and the issues regarding some key LSI-related topics; (c) sharing of conclusions from the parallel sessions.

#### ***a) Round-table on LSI snap-shots***

Each MSP-MED partner is invited to briefly (5 minutes) share some essential information on the approach adopted for LSI analysis. The following questions are provided as guidance.

- Is LSI analysis considered in your MSP Plan?
- Do you include it in the MSP Plan or present it as a separate document?
- Do you consider one unique LSI analysis at national level or do you work by sub-areas?
- Do you identify key LSI issues (related to specific driver/s<sup>1</sup>) to be considered in the MSP Plan?

---

<sup>1</sup> In this document we refer to the DPSIR model terminology (see [EEA DPSIR definition](#)). Here, drivers are intended as driving forces (see [EEA Glossary](#) for a definition) of LSI processes that need to be considered and managed within MSP, such as, for instance, socio-economic development and related human activities, whose

- Do you undertake stakeholder consultation on LSI analysis?

### ***b) Parallel sessions on key topics***

Three key LSI-related topics (see chapter 3) have been identified through a survey circulated to all MSP-MED partners. Parallel sessions are aimed to discuss these topics in detail. The questions provided below are meant to facilitate the interventions of each participant and focus the discussion. Each MSP-MED partner is invited to briefly (5 minutes) share the country approach.

## **2 Programme**

<b>Programme</b>	
<b>09:30</b>	<b>Introduction, greetings and warm-up</b>
<b>09:45</b>	<b>Roundtable on LSI snap-shots (5 min each)</b> Moderator: Pierpaolo Campostrini <ul style="list-style-type: none"> <li>- European Commission – Celine Frank</li> <li>- MSP Platform – Yves Henocque</li> <li>- UNESCO-IOC – Alejandro Iglesias Campos</li> <li>- PAP-RAC – Marina Markovic</li> <li>- Italy – Francesco Musco</li> <li>- France – Olivier Laroussinie</li> <li>- Spain – Aurora Mesa Fraile</li> <li>- Greece – Foteini Stefani</li> <li>- Malta – Michelle Borg</li> <li>- Slovenia – TBC</li> </ul>
<b>11:00</b>	<b>Virtual Coffee Break</b>
<b>11:15</b>	<b>Parallel session on key topics</b> <b>a. LSI analysis methodology and scale</b> Moderator: Martina Bocci Rapporteur: Agnese Cosulich Spain: Miriam Garcia Oliva France: Patricia Sala Italy: Martina Bocci

---

induced changes can exert pressures (see [EEA Glossary](#) for a definition) on the environment (EEA, 1999). In the context of double-direction processes embedded in LSI, drivers can come both from land and sea.

	<p>Malta: Alexia Vella</p> <p><b>b. LSI key natural and anthropogenic drivers and pressures: identification and management</b></p> <p>Moderator: Neil Alloncle</p> <p>Rapporteur: Federico Fabbri</p> <p>Italy: Giulio Farella</p> <p>France: Neil Alloncle</p> <p>Greece: Tonia Koutsopoulou</p> <p>Spain: Carla Murciano Virto</p> <p><b>c. Interaction and integration of LSI analysis for MSP with other planning and management instruments (WFD, ICZM, Coastal risk management, Urban and land planning, etc)</b></p> <p>Moderator: Francesco Musco</p> <p>Rapporteur: Fabio Carella</p> <p>Italy: Niccolò Bassan</p> <p>France: Olivier Laroussinie</p> <p>Malta: Michelle Borg</p> <p>Greece: Haris Coccossis</p> <p>Spain: Ana Lloret</p>
<b>12:00</b>	<p><b>Debriefing and conclusions</b></p> <ul style="list-style-type: none"> <li>- What is/was the most challenging aspect of LSI analysis in MSP in your country?</li> <li>- What is the most important outcome from the LSI analysis undertaken under your national MSP process?</li> <li>- What would you recommend to other countries in order to facilitate / optimize / improve their LSI analysis? (approach, tools, activities)</li> </ul>

### 3 Participants

<b>MSP-MED Partners</b>	
<b>CORILA</b>	<i>Pierpaolo Campostrini, Barbara Giuponi, Andrea Barbanti, Giulio Farella, Agnese Cosulich, Francesco Musco, Niccolò Bassan, Alberto Innocenti, Daniele Brigolin, Elena Gissi, Martina Bocci, Fabio Carella, Folco Soffietti, Amedeo Fadini, Federico Fabbri</i>

<i>PA</i>	<i>Michelle Borg, Alexia Vella, Ivan Fava</i>
<i>Shom</i>	<i>Dominique Carval, Corine Lochet, Laura Ceyrac, Florent Le Courtois</i>
<i>OFB</i>	<i>Neil Alloncle, Camille Assali, Olivier Monnier</i>
<i>RRC Koper</i>	<i>Slavko Mezek</i>
<i>UTH</i>	<i>Haris Coccossis, Evangelos Asprogerakas, Tonia Koutsopoulou, Claire Lappa</i>
<i>YPEN</i>	<i>Foteini Stefani, Elena Lalou, Evgenia Lagiou</i>
<i>IEO</i>	<i>Cristina Cervera Nuñez</i>
<b>MSP Competent Authorities</b>	
<i>Ministry of the Sea (France)</i>	<i>Olivier Laroussinie</i>
<i>Ministry of Environment and Energy (Greece)</i>	<i>Foteini Stefani, Elena Lalou, Evgenia Lagiou</i>
<i>Ministry for the Ecological Transition and the Demographic Challenge – DG for the coasts and the sea (Spain)</i>	<i>Sagrario Arrieta Algarra, Aurora Mesa Fraile</i>
<i>MSP Technical Committee (Malta)</i>	<i>Joe Bianco, Mark Chapelle, Charles Galea, Stephen Brincat</i>
<b>Other Institutions</b>	
<i>European Commission – DG MARE</i>	<i>Céline Frank, Juan Ronco</i>
<i>MSP Platform</i>	<i>Yves Henocque, Thanos Smanis</i>
<i>Pap-Rac</i>	<i>Marina Markovic</i>
<i>Unesco-loc</i>	<i>Alejandro Iglesias Campos</i>
<i>CEDEX</i>	<i>Miriam Garcia Oliva, Ana Lloret Capote, Jose Francisco Sanchez, Carla Murciano Virto, Isabel Moreno Aranda, Jose Maria Medina Villaverde, Ana Molina Marin</i>
<i>CEREMA</i>	<i>Patricia Sala</i>

## 4 Main topics identified

The following main topics were identified through a short survey circulated to all MSP-MED partners, in order to identify the priorities and needs concerning LSI analysis and management. Some questions were also provided in order to drive and facilitate the interventions of each participant and focus the discussion. The speakers (one per country) introduced the topics with respect to the approach undertaken within their national MSP process.

### *LSI analysis methodology and scale*

1. How did you structure LSI analysis? Did you prioritize interactions based on their relevance? If yes, what criteria did you use?
2. Did you support LSI analysis with maps? What kind of maps?
3. At what scale did you develop LSI analysis (national, marine region, other)? Have you identified LSI hot-spots, intended as areas with numerous and/or very intense LSIs? If yes, how?

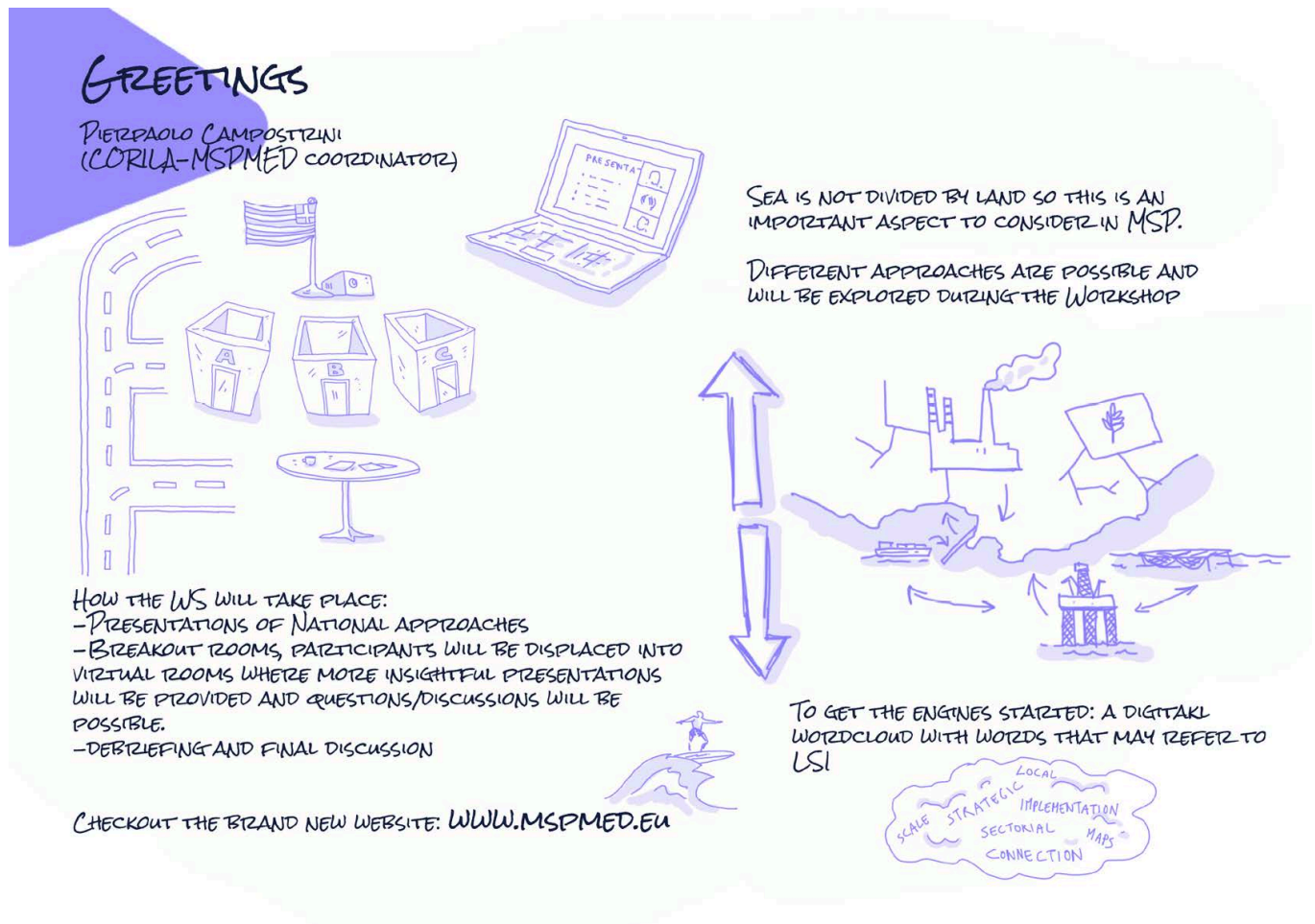
### ***LSI key natural and anthropogenic drivers and pressures: identification and management***

1. What kind of LSI drivers are the most at stake in your Mediterranean coasts (see LSI drivers examples in annex) in the context of MSP? What was the approach for their identification and prioritisation?
2. Did you have any issue with lack/inadequacy of knowledge/data?
3. How do you plan to consider and manage LSI drivers through the MSP process? How the results of LSI analysis should be reflected in the planning phase?

### ***Interaction and integration of LSI analysis for MSP with other planning and management instruments (WFD, ICZM, Coastal risk management, Urban and land planning, etc)***

1. For LSI analysis could you rely on results from other planning processes?
2. Did you undertake an analysis of planning and management instruments in place as part of your LSI analysis (e.g. identification of gaps, conflicts, synergies)?
3. How do you think integration of results of LSI analysis with other planning and management instruments should be achieved? Has stakeholder engagement a role in this?

## 5 The Workshop



More than 50 participants attended the workshop showing the general interest in the topic among Mediterranean countries and institutes. The first part of the event was dedicated to a round table with snap-shots on LSI experiences, presented by invited institutions and representatives from the participant countries.

DG-MARE raised attention on the strategic role Offshore Renewable Energy (ORE) is having in the European Union with the publication of a new EU strategy on offshore renewable energy being announced for the 16<sup>th</sup> of November 2020. This sector has enormous implications for MSP in the EU seas in general and also in the Mediterranean where ORE is not developed yet but where potential has been recognized especially for Offshore Wind Energy and Wave Energy. This sector has also important implications in terms of LSI, both in the construction and operational phases: issues have to be considered particularly in relationship with some coastal uses such as tourism, and also with environmental protection.

Interventions from the EU MSP Platform and UNESCO-IOC highlighted the importance (and complexity) to deal with diverse scales and the need to define criteria for geographic boundaries

(both on land and at sea). Different approaches and criteria (e.g. clusters of municipalities to be considered for LSI analysis) have been tested (e.g. in SUPREME and SIMWESTMED) and might be capitalized in the national MSP processes. The need for a local approach to LSI, in order to take local specificities into considerations, was also stressed.

UNEP/MAP PAP/RAC provided an update about on-going activities, building on the proposed methodology for LSI analysis developed in SUPREME and SIMWESTMED projects, and aiming at testing and refining it in some local cases (Montenegro and Malta are on-going tests). It was also announced that a module to support LSI analysis will be included within a Toolbox to support MSP which is in preparation by PAP/RAC.

## INSTITUTIONAL SUPPORT

YVES HENOCQUE AND STELLA KYVELOU

EU MSP PLATFORM – WEST MED AND EAST MED

CASES STUDY SHOW THE RELEVANCE OF USING LSI ANALYSIS:  
IN GREECE IN THE IONIAN SEA AND CORINTHIAN GULF HELPED ASSESS  
LANDWARD LIMITS OF MSP.

ANOTHER CASE, FRENCH COAST AND 3 MILES IN THE SEA: WORKING WITH  
MUNICIPALITIES

ANALYSIS IS IMPORTANT FOR MSP DEVELOPMENT.

NEW INSTRUMENT SUCH AS DESEASON MAY HELP TO EVALUATE THE CUMULATIVE  
EFFECTS OF ONGOING PROCESSES.

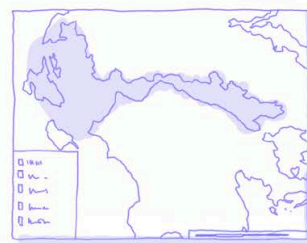
OTHER USEFUL INSTRUMENT: VOCATIONAL MAPS THAT REFLECT A LOCAL APPROACH.



ALEJANDRO IGLESIAS CAMPOS  
IOC-UNESCO

IOC HAS A MORE GLOBAL APPROACH.  
THERE ARE POSSIBLE PHASES BUT IS IMPORTANT TO HAVE ALSO LOCAL  
ANALYSIS, BECAUSE EVERY PART OF THE COAST IS DIFFERENT FROM  
THE OTHER.

MAIN APPROACHES MAY BE USED DEPENDING ON CULTURE, POLICY, ETC.  
STAKEHOLDERS CONSULTATION MAY BE A GOOD WAY TO KEEP IT LOCAL

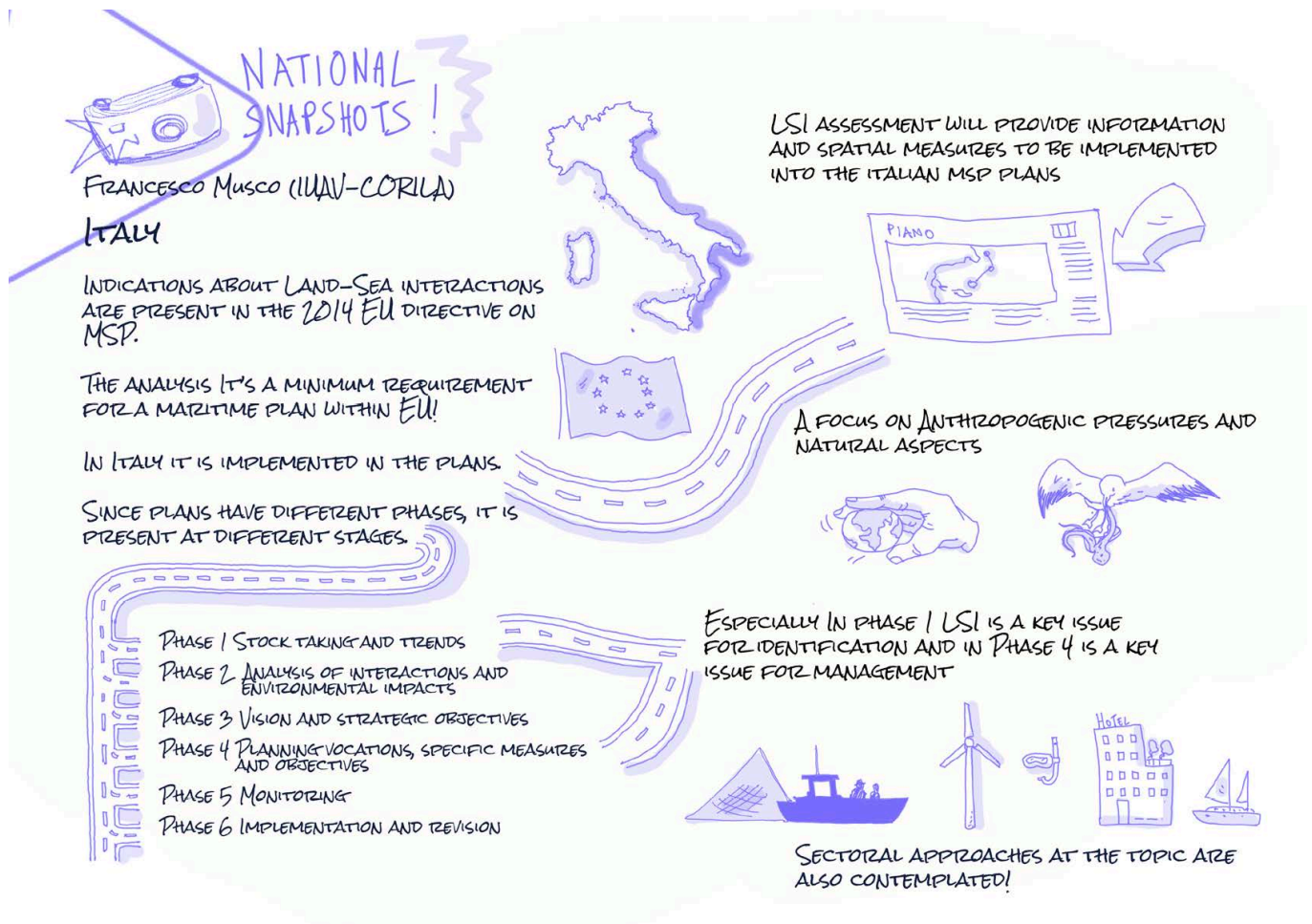


MARINA MATKOVIC  
PAP-RAC

LSI METHODOLOGY IS BEING TESTED IN MALTA AND MONTENEGRO  
IN YOUNG PHASES OF THE PROJECT AND A MSP TOOLBOX IS IN DEVELOPMENT



After the invited external institutions, participant countries shared their approach to LSI analysis and management. Italy has developed and applied an LSI methodology specifically for MSP plan, starting from available experiences and considering the other available planning framework on land and at sea. The LSI analysis is integrated in the national MSP process and follows specific phases of analysis. They are considering LSI analysis at a larger scale (marine areas) and at more local scale (LSI hotspots) for more in-depth research.



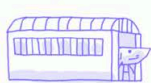
In France LSI is being considered within the strategy for land and sea. The analysis is done at national level, in agreement with the marine planning approach (vocational maps) but the local level is taken into consideration by local authorities through territorial planning.

OLIVIER LATROUSSINIE (MINISTRY OF THE SEA)

## FRANCE

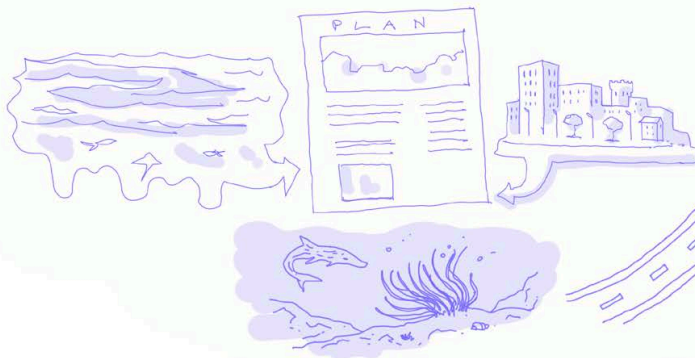
IN FRANCE LSI IS SET WITHIN THE SEA AND COAST MANAGEMENT.

IT IDENTIFIES DIFFERENT ASSETS: INDUSTRY, URBAN....



RESULTS ARE IMPLEMENTED AT A NATIONAL LEVEL.

NOWADAYS THERE IS ONE PLAN FOR BOTH LAND AND SEA PLANNING USES AND ALLOCATIONS.



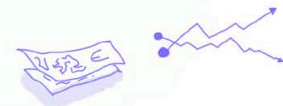
IN FRANCE IT IS COMPULSORY TO HAVE SUCH ASSESSMENTS.



AT THE MOMENT NO SPECIFIC CONSULTATIONS ARE PLANNED.

MAIN ISSUES OF THE PROCESS:

- IDENTIFY COMMON ECOLOGICAL OBJECTIVES
- ECONOMY IS A KEY ASPECT THAT MUST BE INVESTIGATED FURTHER



In Spain, a specific annex to each marine plan is being prepared for LSI, and it will also include several factsheets where specific LSIs will be analysed. The scale of analysis considers the marine subdivisions of the Spanish waters. Participatory approach will be considered: once all factsheets are developed, consultation with other national and regional authorities will be undertaken. Information about LSI progress will be included in the participation process, in order to gather the opinion and suggestions of different sectors and other stakeholders.

## AUTOTRA MESA (MITECO) SPAIN

ROYAL DECREE OF 2017 ADDRESSED THE REQUIREMENTS OF THE 2014 EU DIRECTIVE  
LSI SHOULD BE PRESENT IN EVERY MSP PLANS  
EVERY MSP SHOULD CONSIDER PECULIARITY OF MARINE SUBDIVISIONS

ACTUAL ANALYSIS: MAIN TOPICS LAND-SEA: POLLUTION  
SEA-LAND: POLLUTION AND LAND DEMAND FOR INFRASTRUCTURES

COVER ONLY ASPECTS NOT PREVIOUSLY COVERED  
WILL BE IMPLEMENTED IN THE MSP PROJECTS

TOPICS IDENTIFIED AT NATIONAL LEVELS  
ANALYSIS MADE BY SUB-AREAS, FACTSHEETS WILL BE MADE

RECURRENT KEY ISSUES IN LSI ANALYSIS:  
COASTAL SEALING  
RIVER REGULATION  
EFFECTS OF CLIMATE CHANGE  
PORT FACILITIES  
LANDSCAPE PROTECTION

WHEN FACTSHEETS ARE READY, CONSULTATION WITH OTHER GOVERNANCE BODY WILL BE CARRIED OUT  
AND LSI INCLUDED IN THE PARTICIPATORY PROCESS WITH STAKEHOLDERS

In Greece LSI is considered already in the spatial Planning system and the main issues considered as specific spatial drivers for MSP are given through the provisions of national and regional planning. LSI are already considered in the Spatial Framework for Aquaculture and in the Spatial Framework for Renewable Energy Sources.

FOTINI STEFANI (MINISTRY OF ENVIRONMENT AND ENERGY)

## GREECE

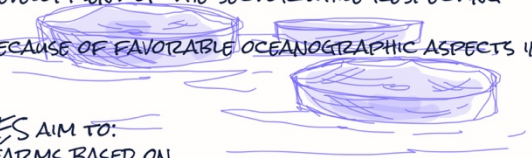
LSI IS A MINIMUM REQUIREMENT TAKEN INTO CONSIDERATION FOR MSP PLANNING. IN GREECE THE MSP DIRECTIVE HAS BEEN IMPLEMENTED WITH A 2018 LAW, THE MINISTRY OF ENVIRONMENT AND ENERGY IS THE COMPETENT BODY. LSI IN MSP IS IN COHERENCE WITH LAND PLANNING.



THE SPATIAL FRAMEWORKS COVERING SPECIFIC PRODUCTIVE SECTORS SUCH AS AQUACULTURE, RENEWABLE ENERGY SOURCES AND INDUSTRY, GIVE DIRECTIONS AND COMMITMENTS TO THE LOWER SPATIAL PLANNING LEVEL AND TO THE LICENSING PERMISSIONS INCLUDING THE COASTAL AND MARINE ASPECTS OF EACH SECTOR AND IN SYNERGY WITH OTHER PRODUCTIVE SECTORS OR SETTLEMENTS.

AQUACULTURE FRAMEWORK: DEVELOPMENT OF THE SECTOR WHILE RESPECTING ENVIRONMENT PROTECTION.

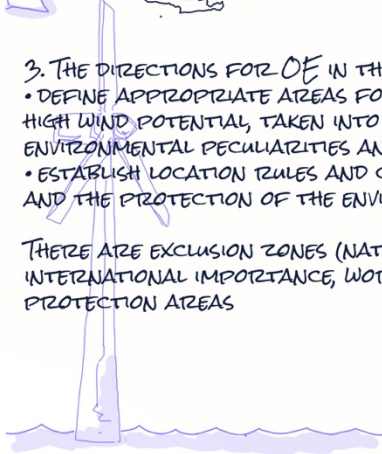
AQUACULTURE IS PROMOTED BECAUSE OF FAVORABLE OCEANOGRAPHIC ASPECTS IN GREECE



3. THE DIRECTIONS FOR OE IN THE SPATIAL FRAMEWORK FOR RES AIM TO:

- DEFINE APPROPRIATE AREAS FOR THE DEVELOPMENT OF WIND FARMS BASED ON HIGH WIND POTENTIAL, TAKEN INTO CONSIDERATION THE SPATIAL AND ENVIRONMENTAL PECULIARITIES AND
- ESTABLISH LOCATION RULES AND CRITERIA FOR SUSTAINABLE WIND POWER PLANTS AND THE PROTECTION OF THE ENVIRONMENT.

THERE ARE EXCLUSION ZONES (NATIONAL PARKS, SHIPPING ROUTES, WETLANDS OF INTERNATIONAL IMPORTANCE, WORLD HERITAGE SITES, MONUMENTS AND NATURE PROTECTION AREAS)



LSI IS IMPLEMENTED WITHIN STAKEHOLDERS CONSULTATION WITH COMPETENT AUTHORITIES: MINISTRIES, NATIONAL COUNCIL OF MSP AND REGIONS (ALL MINISTRIES IN THE SLIDE)

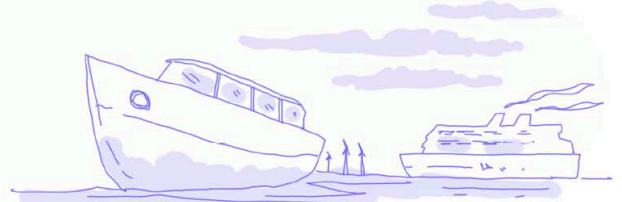
In Malta LSI analysis is considered in the framework of the revision of the current Plan, considering sea and land planning. MSP Technical Committee is engaged in testing LSI analysis methodology developed by PAP-RAC in SUPREME project. The expected outcome of this activity is to identify LSI issues that can inform plan review. The reality of Malta, as a small island state, where small terrestrial size is heavily used by one of the highest population densities makes it more practical to streamline terrestrial and marine planning. Identification of complementarities between LSI analysis and ICZM process is also of great interest for the country.

MICHELLE BORG (PLANNING AUTHORITY)

## MALTA

FOR MALTA LSI IS PART OF COAST HISTORY:  
TERRITORIAL PLAN EXTENDED TO THE 12  
NAUTICAL MILES SINCE 1992 (WITH AN ICZM  
APPROACH).

STRATEGIC PLAN IS NEEDED FOR MARINE  
PARTS WORKING ON THE RELATIONSHIP  
LAND-SEA SEA-LAND, BUILDING KNOWLEDGE OF  
POSSIBLE INTERACTIONS.



INTEGRATED APPROACH IS NEEDED SO THAT  
EVERY SECTOR IS PROPERLY RECOGNIZED  
AND IS PROPERLY DEVELOPED.

LEGITIMATE COASTAL USES (E.G. AN HOTEL CAN  
BE BUILT MOTRE INLAND TO ALLOW SPACE TO  
BE USED FOR OTHER PURPOSES.)



A SMALL ISLAND MEANS THE SPACE IS  
INTENSIVELY USED.  
LSI ANALYSIS METHODOLOGY DEVELOPED  
WITHIN THE SUPREME PROJECT (WITH  
PAP-RAC)

Slovenia can count on relevant previous experiences on LSI analysis and management namely within SHAPE project where harmonization of regimes in 100-meter coastal belt has been considered (requirements of article 8 of the ICZM protocol); within the ESPON 2020 Cooperation Programme; and within the Municipal Spatial Plans (preparation in course). LSI is integrated in the MSP plan, when considering the coastal strip, as guideline and recommendations for the spatial planning units. Key LSI issues in Slovenia are both linked to human activities: coastal tourism, mariculture, maritime transport, fisheries, urban development, as well as to natural processes: coastal erosion, marine flooding and saline intrusion.

SLAVKO MEZEK (REGIONAL DEVELOPMENT CENTER KOPER)

## SLOVENIA

THESE ISSUES ARE ADDRESSED IN THE SLOVENIAN PLANS  
DISCUSSION WITH THE STAKEHOLDERS

2 MAIN PROJECTS: SHAPE WITH A PROPOSAL OF HARMONIZATION OF  
REGIMES ON THE COAST AND DEFINITION OF COASTAL BELT WHERE LSI  
ARE MORE PRESENT AND INTENSE) PERMANENT STAKEHOLDER  
COORDINATION. (PRESENTED TO MSP AND MUNICIPALITIES)



MSP AND LSI (ESPON 2010) IMPORTANT ELEMENTS HAVE BEEN  
DEFINED. (PRESENTED TO LOCAL STAKEHOLDERS)  
MUNICIPAL SP (IN PREPARATION)

RECOMMENDATION HOW TO CARRY OUT MSP IN THE COASTAL BELT.  
REGARDING ALSO TO DIFFERENT SECTIONS.  
MSP AT STRATEGIC LEVEL, ICZM STRIP AT IMPLEMENTATION LEVEL

MOST IMPORTANT ACTIVITIES TO TAKE PLACE ON THE COAST. TOURISM,  
MARICULTURE, MARITIME TRANSPORT.  
URBAN DEVELOPMENT, FISHERIES

ALSO NATURAL PROCESSES ARE TAKING PLACE AND WILL BE TAKING  
PLACE: COASTAL EROSION, MARINE FLOODING AND SALINE INTRUSION.  
STAKEHOLDER CONSULTATION TAKING PLACE THROUGHOUT ALL THE  
PROCESS. MSP PROCESS: STAKEHOLDERS AND PUBLIC PRESENTATION

## 6 Parallel Sessions

### LSI analysis methodology and scale

The parallel session started with a round of presentations from some of the partners. The Spanish approach to LSI analysis was presented starting with the general frame identifying most relevant LSIs at national level: 7 land-to-sea interactions and 6 sea-to-land interactions. Each interaction is being assessed considering: description of cause-effect chain; analysis of planning instruments eventually available for managing the interactions; identification of the contribution from the MSP plan. A further step in the analysis is the preparation of LSI factsheet for each of the five marine subdivisions considered by the national MSP plan. The factsheets include introduction, description of the activities, effects on uses, available planning tools, contribution from the MSP plan, maps supporting the analysis. Examples of maps used in the factsheets were also given. Approach to prioritization of interactions was illustrated.

The Maltese LSI analysis approach being implemented is based on the methodology developed under the SUPREME/SIMWESTMED projects by UNEP/MAP PAP/RAC, with contributions from

all partners. The process is still in the early stages with main LSIs being identified based on analysis of uses and activities and supported by thematic maps.

In Italy the LSI analysis approach has been based on existing guidelines and experiences at EU level (DG Mare Factsheet, ESPON study), at Mediterranean level (SUPREME/SIMWESTMED) and at national level (CAMP Italy). The methodology is articulated in four steps: (1) Identification of main territorial elements (done); (2) Identification and mapping of factors determining LSI (anthropogenic activities and natural processes generating interactions) (done); (3) Identification and prioritization of interactions (LSI and SLI, natural and anthropogenic, present and future) and identification of hotspots areas for LSI (Done); (4) In-depth analysis of hot-spot areas and identification of measures to be included in MSP plan. Regarding the scale considered for LSI analysis, a nested-approach has been adopted, with a first, general analysis at marine area scale (Italy is preparing 3 marine plans for the three marine areas under national sovereignty). The result of the first stage analysis brings to the identification of hot-spot areas, which are then analysed in a greater detail. The analysis has been supported by the use of maps, illustrating natural and anthropogenic factors determining LSIs. Finally, LSI prioritization approach was illustrated, based on expert judgement and scoring the relevance of the interactions for each of the main uses of the area (including natural and cultural heritage protection).

During the discussion several questions, were addressed on diverse topics, like for example the way the other existing EU directives have been taken into consideration, the time horizon used for the analysis, the eventual interactions with stakeholders.

The discussion highlighted how LSI methodologies, in order to be practically applicable to MSP processes, have to be tailored on national specificities such as the overall structure of MSP plans, the planning process organization, data availability, time constraints, etc. Capitalization of existing approaches is recommended to save effort and time, but original approaches also work well. In general, expert judgment is a commonly used assessment tool in LSI analysis.

One main challenge is represented by the scale of analysis: in principle, different scales should be considered and coherence of analysis (and measures identification) should be ensured between different scales. Local scale is very important for LSI: most of the interactions are evident at local scale and, very importantly, engagement of local stakeholders and communities is crucial to guarantee the feeling of “ownership of the territory” is considered and respected. Across the Mediterranean much experience is available on LSI management in the framework of ICZM: this experience should be capitalized as much as possible in LSI for MSP.

Finally, it was recommended that any LSI analysis should capitalize on knowledge and data, measures identified and implementation experience available from other legislation / planning contexts: River Basin Management Plans (Water Framework Directive), Program of Measures (Marine Strategy Framework Directive), Flood Risk Management Plans (Floods Directive) and other national, regional (sub-national) and local planning instruments.

## BREAKOUT ROOM A LSI ANALYSIS METHODOLOGY AND SCALE

1. HOW DID YOU STRUCTURE LSI ANALYSIS? DID YOU PRIORITIZE INTERACTIONS BASED ON THEIR RELEVANCE? IF YES, WHAT CRITERIA DID YOU USE?
2. DID YOU SUPPORT LSI ANALYSIS WITH MAPS? WHAT KIND OF MAPS?
3. AT WHAT SCALE DID YOU DEVELOP LSI ANALYSIS (NATIONAL, MARINE REGION, OTHERS)? HAVE YOU IDENTIFIED LSI HOT-SPOTS? IF YES, HOW?

SOME COUNTRIES USE MATRIX TO IDENTIFY MAIN ISSUES (E.G. CAUSE OF ENVIRONMENTAL IMPACT, AFFECTED SECTORS, ANALYSIS TOOLS, ETC.)

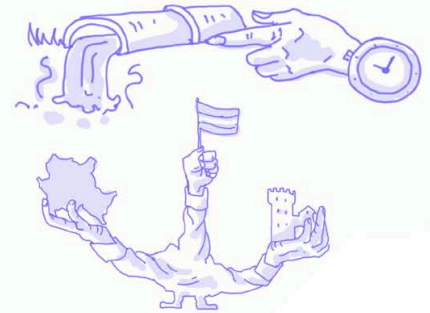
FOR INSTANCE, SPAIN GAVE DIFFERENT PRIORITY TO BEACH LOSS BASED ON CURRENT TRENDS OR POTENTIAL FUTURE TRENDS.

RISKS SUCH AS BEACH RETREATS

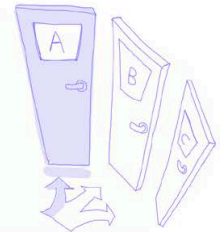


MATRIX

LSI	Waves	Wind	Sea level	Coastal erosion	Beach loss
PRESSURES					



MAINLY BASED ON EXPERT APPROACH AND KNOWLEDGE  
SPECIFIC CONTEXT (COUNTRY SPECIFIC APPROACH, NO SILVER-BULLET)  
MANAGING DIFFERENT SCALE OF ANALYSIS (NATIONAL, REGIONAL, LOCAL)  
LOCAL STAKEHOLDERS, COMMUNITY.



MODERATOR: MARTINA BOCCI  
SPEAKERS:  
SPAIN: MIRIAM GARCIA SALA  
MALTA: ALEXIA VELLA  
ITALY: MARTINA BOCCI  
FRANCE: PATRICIA SALA

## LSI key natural and anthropogenic drivers and pressures: identification and management

Objectives of this parallel session were to emphasise key LSI drivers identified in each country of the project and to a certain extent, to discuss approaches to manage them appropriately. Participants agreed on the importance of the local level when analysing interactions between land and sea. It was widely recognised that local scale was the most appropriated to assess LSI, both considering uses conflicts or interactions between uses and environment. Therefore, LSI can vary significantly depending on the location of the region and the type of coastal area considered: urban or natural coast, type of coast (islands, estuaries, lagoon), areas subject to erosion or flooding. These specificities have to be taken into account in the LSI management. It appeared that the main drivers identified through the different MSP implementation experiences are mostly the same between different Mediterranean countries represented at the workshop:

- Coastal artificialisation, either due to urban development or coastal protection, is raised by all partners as a major LSI driver in their Mediterranean coasts. It leads to biodiversity loss, landscape deterioration, alteration of coastal dynamics creating erosion phenomenon and can reinforce land-based pollutants and litters inputs by the increase of watershed runoffs.

- Coastal tourism is also an important driver shared by all countries. It amplifies facilities needs leading to coastal artificialisation and the growing population induced during summer period raise the level of pollution and litters inputs. Moreover, coastal leisure activities are sources of environmental impacts on coastal habitats and species.
- Aquaculture is an important sector in coastal blue economy development for several countries (Greece, France). This activity requires fixed space allocation, the most often close to the shore, and coastal facilities and therefore is an important LSI driver.
- Maritime transport is also an activity linking sea with land, particularly with harbour development and connexion with the hinterland going far from the coasts. Slovenia raised this driver with the port of Koper (one of the main port of the Adriatic) which has a dedicated spatial plan to fulfil its needs that have to be integrated into the MSP framework.
- Marine Renewable Energy production, mostly windfarms, was pointed out by France and Greece as a significant LSI driver when considering cables to connect with land and related harbour activity. It could also raise landscape issues with coastal populations.

Conversely, some drivers were emphasised by few partners. Agriculture, obvious LSI drivers due to pollutants and nutrients runoff, doesn't seem to be of the main interaction factors in the Mediterranean and eutrophication doesn't appear as an issue. Fisheries were little pointed out as a driver of LSI. Greece stressed it out as a source of pressure for marine biodiversity and France pointed out the need to manage fishing of euryhaline fishes, species that move between sea and rivers along their lifecycle.

A major challenge that emerges when addressing LSI key drivers and related issues in a concerted integrated approach such as MSP is that legal and management frameworks take place at different scales, they are often disjoint between land and sea and are sector based. To overcome these challenges, it is fundamental to push for integration when analysing and sharing issues with stakeholders. Then, specific issues can be tackled through sectorial approaches and measures at different scales.

It has also been raised that LSI are constantly evolving, particularly in the context of climate change and coastal population densification. Monitoring and access to adequate data are crucial aspects of LSI management.

## BREAKOUT ROOM B

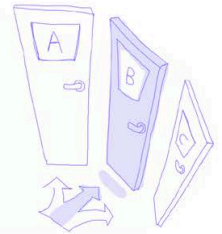
### LSI KEY NATURAL AND ANTHROPOGENIC DRIVERS AND PRESSURES 2: IDENTIFICATION AND MANAGEMENT

1. WHAT KIND OF LSI DRIVERS DID YOU IDENTIFY? WHAT WAS THE APPROACH FOR THEIR SELECTION?
2. DID YOU HAVE ANY ISSUE WITH LACK/INADEQUACY OF KNOWLEDGE/DATA?
3. HOW DO YOU PLAN TO CONSIDER/MANAGE LSI DRIVERS THROUGH MSP PROCESS? HOW THE RESULTS OF LSI ANALYSIS SHOULD BE REFLECTED IN THE PLANNING PHASE?

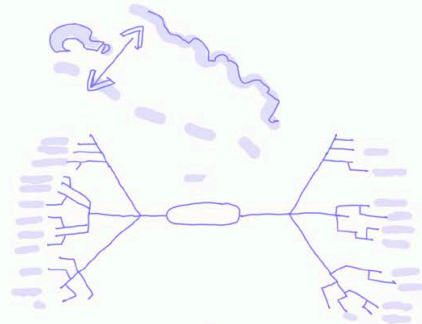
ITALY METHODOLOGY FOR LSI ANALYSIS WAS BASED ON STEPS TO IDENTIFY TERRITORIAL ELEMENTS (BOUNDARIES, ETC.), IDENTIFY MAIN FACTORS DETERMINING LSI, IDENTIFICATION OF LSI HOTSPOTS IN ORDER TO CREATE RECOMMENDATIONS TO BE IMPLEMENTED IN THE PLAN (MATRIX EMPLOYED)



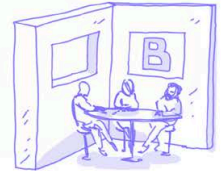
FRANCE: SUBDIVISION AND IDENTIFICATION ON ISSUES AND ASSETS, FOR INSTANCE A MIND MAP TAKING INTO ACCOUNT ALL POSSIBLE INTERACTIONS RESULTED INTO IDENTIFICATIONS OF POSSIBLE ACTIONS TO BE UNDERTAKEN.



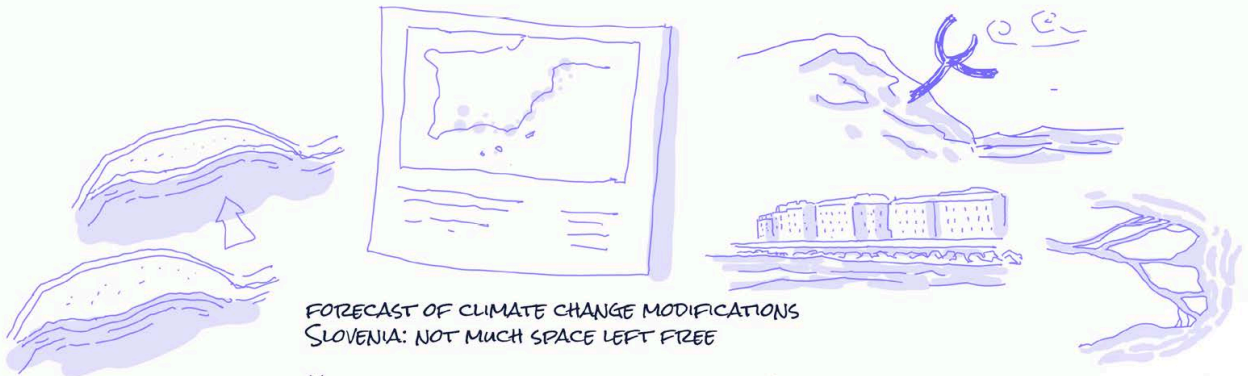
MODERATOR: NEIL ALLONCLE  
SPEAKERS:  
ITALY: GIULIO FARELLA  
FRANCE: NEIL ALLONCLE  
GREECE: TONIA KOUTSOPOULOU  
SLOVENIA: SLAVKO MEZEK  
SPAIN: CARLA MURCIANO VITZIO



LSI ANALYSIS TO BE SHARED WITH STAKEHOLDERS AND COMPETENT AUTHORITIES.  
 GAP: REGIONAL AUTHORITIES HAVE NO POWER TO PROTECT CULTURAL HERITAGE BEYOND TERRESTRIAL BORDERS OR ESTABLISH LIMITATION FOR MARITIME INFRASTRUCTURES, THEY ARE ASKING FOR MORE TOOLS TO PROTECT MARINE AREAS NEAR BICs (E.G. PEINE DEL VIENTO DI CHILLIDA).  
 MS PLANS MAY ENSURE FURTHER PROTECTION AND NEW ACTIVITIES MIGHT BE MOVED AWAY FROM BICs. ALL THIS IS TO BE AGREED WITH REGIONAL GOVERNMENTS.



WHEN IMPACTING SEA LANDSCAPE AND NEARBY CULTURAL HERITAGE SITES: SPECIAL SITES TO BE DESIGNATED A BIC AND A CATALOGUE CREATED AT NATIONAL LEVEL.  
 AT REGIONAL LEVEL SPECIAL PLANS FOR PROTECTION AND CATALOGUES WITH SUBCATEGORIES OF BICs. BICs ARE IDENTIFIED ON MAPS.



FORECAST OF CLIMATE CHANGE MODIFICATIONS  
 SLOVENIA: NOT MUCH SPACE LEFT FREE

KEY ISSUES, THERE ARE ASPECTS THAT CAN BE SPREAD FURTHER THAN THE LOCAL LEVEL PRIORITIZATION. VERY DYNAMIC PROCESSES. SPECIFICITY OF DIFFERENT NATURAL SITUATIONS (LAGOONS, DELTA, ETC.) URBAN DEVELOPMENT ONE OF MAJOR DRIVERS IN LSI. HAS TO BE MANAGED (SOURCE OF ECONOMY BUT ALSO LITTER AND POLLUTIONS. ISSUES: EROSION.

## Interaction and integration of LSI analysis for MSP with other planning and management instruments (WFD, ICZM, Coastal risk management, Urban and land planning, etc)

During the parallel session some of the partners involved presented how each country is managing and integrating LSI analysis for MSP with their existing spatial plans (also on land/coastal areas) and instruments.

The existing spatial planning in the Italian approach is addressed in the fourth phase of LSI analysis defined as “*Planning: vocations, specific objectives, measures*” and it has been divided into two main contexts: national planning and regional-local planning.

The plans identified at the national scale mainly include management, regulative and strategic plans concerning hydrographic district, energy, climate, tourism, aquaculture, national interest sites, and logistic issues. Meanwhile, at the regional-local scale more specific items such as transports, landscape plans, regional interest sites, operational plans for ports, MPAs management and ICZM have been considered. All have been spatialized and mapped to understand the possible interactions between them and to identify the role MSP will play.

A matrix has also been set up in which the most relevant hot-spot area interactions have been listed and analysed according to legislative criteria, identifying the specific goals that these interactions are intended to achieve.

In France the importance of the scale was stressed and, in particular, the small scale for local planning. To enhance the effectiveness and integration of LSI for MSP, a local development project should be considered which allows to identify local stakeholders that should be involved during the process.

In Greece the main challenge underlined, was the reconstruction of spatial planning considering to establish relationships between normative regulation and strategic guidance linking planning and management, particularly important for maritime and coastal areas which require adapting decision making. It is important to focus on the specificities and peculiarities of certain areas.

In Spain, starting from the general frame of Land-Sea interactions, the main issue behind the impact of maritime activities in the surroundings of coastal cultural and historical heritage was highlighted. The instruments available for cultural heritage at the National level are based on Spanish law which establishes: the guiding principles for designation and protection, the special value sites designed as “BIC” and defining the Regional Authorities as competent for establishing the inventories of BIC and Protection Plan. Between National and Regional levels, a gap has been identified: Regional Authorities have no power to protect cultural heritage beyond the terrestrial domain which establishes limitations for maritime activities. MSP proposal may provide, in the surrounding of certain BICs, protection measures against maritime activities, and stresses that new activities with negative impact in the landscape must be outside the zone of visual influence. Finally, the choice of these areas should be based on an agreement between the regional government and local stakeholders.

The Maltese MSP process experience underlined the lack of integration between plans. The role of MSP, indeed, “shouldn’t be a stand-alone plan, rather the key able to connect and interact with all the different plans operating in the marine area.”

Sharing the approaches of different countries has brought out key aspects for integration and roles of MSP within existing planning processes.

The reference scale on which to carry out the analysis and intervene is certainly the first aspect to address. The local scale is a dimension that allows not only to identify the real needs and problems, but to create above all a functional network of local stakeholders as well as those directly interested in the process.

As expressed previously, the number of plans and programs in place often present a lack of integration between them. This gap could be filled through the decisive role of MSP.

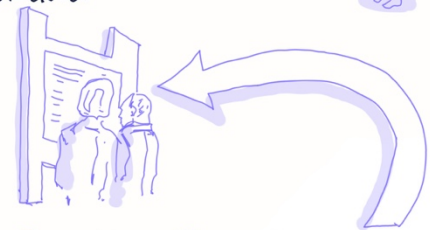
## BREAKOUT ROOM C

INTERACTION AND INTEGRATION OF LSI ANALYSIS FOR MSP WITH OTHER PLANNING AND MANAGEMENT INSTRUMENTS (WFD, ICZM, COASTAL RISK MANAGEMENT, URBAN AND LAND PLANNING, ETC)

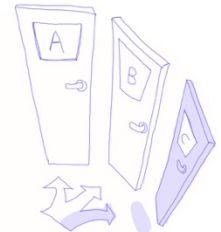
1. FOR LSI ANALYSIS COULD YOU RELY ON RESULTS FROM OTHER PLANNING PROCESSES?
2. DID YOU UNDERTAKE AN ANALYSIS OF PLANNING AND MANAGEMENT INSTRUMENTS IN PLACE AS PART OF YOUR LSI ANALYSIS (E.G. IDENTIFICATION OF GAPS, CONFLICTS, SYNERGIES)?
3. HOW DO YOU THINK INTEGRATION OF RESULTS OF LSI ANALYSIS WITH OTHER PLANNING AND MANAGEMENT INSTRUMENTS SHOULD BE ACHIEVED? HAS STAKEHOLDER ENGAGEMENT A ROLE IN THIS?

LAND SEA INTERACTIONS WITH GOVERNANCE SCHEMES, SOMETIMES ACCORDINGLY, SOMETIMES IN CONTRAST.

ITALIAN METHODOLOGY BASED ON AREA OF INFLUENCE OF DIFFERENT SECTORS AND PRIORITIZATION OF LSI HOTSPOTS BASED ON THE COMPLEXITY OF THE TOPICS. THE STEP-WISE ANALYSIS IS CARRIED OUT FROM LARGE TO DETAIL (CURRENTLY IN PHASE 4) INCLUSION OF STAKEHOLDERS CONSIDERED FUNDAMENTAL AND ALREADY BEEN EXPERIENCED AT REGIONAL LEVEL



MALTA RESULTS FROM DIFFERENT FRAMEWORKS, E.G. WATER FRAMEWORK, DIRECTIVE AND MARINE STRATEGY FRAMEWORK DIRECTIVE, NATURE DIRECTIVES, ARE AMONG THE TOOLS THAT MIGHT FURNISH RESULTS USEFUL FOR LSI ANALYSIS (MONITORING). LSI ANALYSIS AND STOCK-TAKE ARE INHERENTLY BUILT IN THE MSP PROCESS, THE RESULTS WILL BE PRESENTED IN REPORTS AND WILL BE SUBJECT TO PUBLIC CONSULTATION.



MODERATOR: FRANCESCO MUSCO  
SPEAKERS:  
ITALY: NICCOLÒ BASSAN  
FRANCE: OLIVIER LATROUSSINIE  
MALTA: MICHELLE BORG  
GREECE: HATIS COCCOSSIS  
SPAIN: ANA LORET



## 7 Discussion & conclusion

The general aim of an LSI analysis is to inform the planning process through the identification of the key elements about processes linking the land and marine areas that need to be considered when planning the sea space. The MSP Directive requires that LSI are taken into account to promote sustainable and integrated development and management of human activities at sea. For this reasons alignment between maritime and terrestrial spatial planning should be achieved through consistency of policies, plans and decisions.

The main goal of this second workshop was to exchange information on the different approaches undertaken for LSI analysis in the national marine planning processes. Ultimately this could help capitalizing from other experiences and setting the ground for cross-border consultation encompassing also LSI components.

During the discussion and conclusion of the workshop, three main LSI components were considered as fundamental for a coherent and correct analysis and for the integration in national MSP process and could be summarized as follows:

- Quantity and quality of information and data
- Scale of analysis
- Involvement of stakeholders

Data and information on LSI was underlined as fundamental especially during the first phases of analysis. Having enough information from both land and sea areas useful for a concrete LSI analysis was expressed as challenging. Also economic and environmental information needs to be compared with other planning or management indicators (such as water quality, WFD). It was also evidenced how difficult it is to know how many sectors and industries at land are linked to the sea in general. There is the need to gather more focused information and data and facilitate communication between planning and management instruments (even if integration is complex).

The reference scale of analysis was also a highly debated topic and is certainly one of the first aspects to be addressed. The local scale was underlined as a dimension that allows not only to identify the real needs and problems, but to create above all a functional network of local stakeholders, as well as those directly interested in the process. On the other hand, the MSP process gives the opportunity to adopt an integrated national and, above that, regional approach to LSI that should harmonize different local decisions and management instruments. Many LSI issues cannot be addressed just at local scale but from overarching planning instruments such as MSP. To this respect, the role of regional administrations in this process is fundamental. Moreover, in many cases maritime activities have significant landward footprints and impacts that extend beyond the local level, and have regional, national and international reach. Things that happen very far from the coast can have huge impacts.

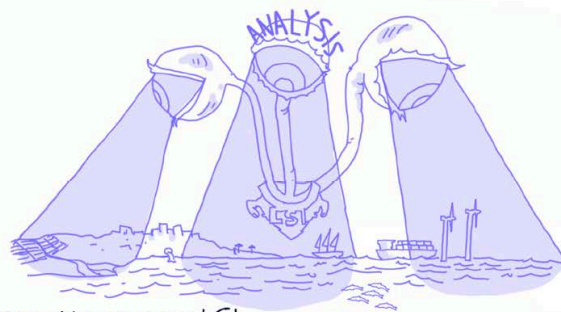
Involvement of stakeholders was also much discussed. It was underlined how the ownership of local stakeholders is fundamental for achieving a real integration of LSI in an MSP process. Also regional and national stakeholders need to be included in an LSI analysis to achieve coherence between the different scales. The scale of governance and sectorial planning needs to be addressed properly in order to involve all relevant actors in the process, especially when considering sectors that have no direct relation with the maritime space (in-land agriculture). In the end the result is a very complex landscape with diverse stakeholders with different competences to be involved. The role of local governments which held all the competences of land and urban planning and how to transfer the needs of the sea to these stakeholders were also discussed. Ocean literacy could be a tool to educate the civil society in understanding the overall interconnections that all human activities have with the sea.

There are numerous factors and sectorial policies that shape development on both land and sea, all of which should ideally be considered in an integrated planning process. Land and sea are basically connected via complex interactions and these interactions often influence people's livelihoods, economies and wellbeing. Any strict division between land and sea domains, planning frameworks, and binaries is essentially an "artificial" construct that follows political-administrative

demarcations and priorities. But planning at land and sea is often divided between different government departments and agencies, reflecting the characteristics of particular country contexts. This results in complex governance settings that are further complicated by the need for cross-border coordination. In the end LSI analysis does not have a single answer and should be highly context based, involving all relevant stakeholders in a multi-scalar approach.

## MAIN DISCUSSION

ISSUE: FIND INFORMATION EASILY  
(NATURE, ECONOMY, ESPECIALLY ECONOMY)  
AND ALSO THE COMMUNICATION



GENERAL QUESTION: IS THERE A POTENTIAL RISK WHILST WORKING ON LSI  
THAT OUR FOCUS IS STEERED BACK TO THE COAST SINCE THE ULTIMATE  
DELIVERABLE IS A PLAN THAT GUIDES SPATIAL ALLOCATION FOR BLUE  
GROWTH?

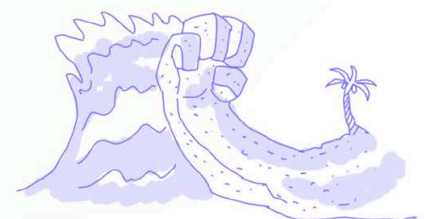
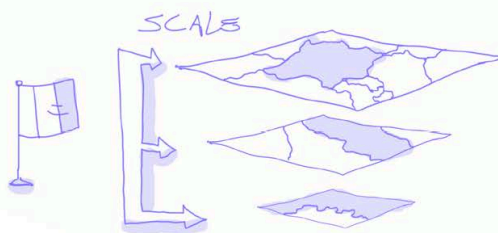
THERE IS A RISK BUT THERE IS ALSO A CHALLENGE TO REFINE OUR TOOLS  
LSI IS LOCAL THEREFORE CONSIDER LOCAL STAKEHOLDERS (GOVERNANCE)  
LSI SHOULD BE IMPLEMENTED INTO MSP PROCESS  
ENGAGE THE PUBLIC

CONSIDER ROLE OF DIFFERENT ADMINISTRATIONS

KEEP IN MIND SPATIAL DIMENSION (PROBLEM OF SCALES)



USEFUL TO ASSESS HUMAN IMPACT AND  
AREAS STRONG IN RESILIENCE



## 8 References

DG-ENVIRONMENT 2018. Land-Sea Interaction in Maritime Spatial Planning.

EU MSP PLATFORM 2017. Maritime Spatial Planning: Addressing Land-Sea Interaction. A briefing paper (MSP Conference, Malta 15- 16 June 2017).

ESPON 2019. MSP-LSI - Maritime spatial planning and land-sea interactions

SIMWESTMED PROJECT 2018. Relationship between LSI and ICZM. Deliverable C 1.3.1.4.

SUPREME PROJECT 2018. How to perform analysis of land-sea interactions, combining MSP and ICZM in the considered project area. Deliverable 1.3.7

European Environmental Agency (EEA), 1999. Environmental indicators: Typology and overview, Technical report No 25/1999, pp. 19, available at <https://www.eea.europa.eu/publications/TEC25> (accessed at 16/10/20)

Co-Evolve Project: Threats to co-evolution in touristic areas - Mediterranean scale: Land-Sea uses and land-sea interactions

## Annex: LSI drivers according to the conceptualisation proposed by the CAMP Italy Project

<b>SEA-LAND INTERACTION</b> <i>Economic activities / natural phenomena at "sea" interacting with "land"</i>	<b>LAND-SEA INTERACTION</b> <i>Economic activities / natural phenomena at "land" interacting with "sea"</i>
<p><b>SPECIFIC HUMAN ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>▪ Aquaculture in seawater</li> <li>▪ Fishing</li> <li>▪ Mining activities from seabed (including sand and marine aggregates mining)</li> <li>▪ Industry (systems, including off-shore desalination, CO<sub>2</sub> capture and storage)</li> <li>▪ Energy industry (offshore /oil and gas] energy, offshore renewable energy [wind, waves, surge/)</li> <li>▪ Infrastructures (ports, civil works of marine / coastal engineering /artificial reefs, breakwaters, etc./)</li> <li>▪ Submarine cables and pipelines</li> <li>▪ Maritime activities in general, including dredging and storage of materials</li> <li>▪ Maritime transport (maritime traffic, commercial, including ferries)</li> <li>▪ Tourism and cruise boat</li> <li>▪ Recreation and sports</li> <li>▪ Biotechnology</li> <li>▪ Marine Protected Areas (MPA), Biological Protection Zones (BPZ) (and in general "area based management tools, including marine protected areas")</li> <li>▪ Defence and security</li> </ul> <p><b>GENERAL HUMAN ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>▪ Waste (marine litter)</li> </ul> <p><b>NATURAL</b></p> <ul style="list-style-type: none"> <li>▪ Extreme events (storms, heavy tides, tsunami)</li> <li>▪ Sea Level Rise (global and local)</li> <li>▪ Risks to coastal areas (coastal erosion, marine flooding and saline intrusion)</li> <li>▪ Algae bloom</li> <li>▪ Volcanic and tectonic activities</li> </ul>	<p><b>SPECIFIC HUMAN ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>▪ Coastal and lagoon aquaculture</li> <li>▪ River and lagoon fishing</li> <li>▪ Natural resource use (water abstraction, removal of aggregates /quarries/)</li> <li>▪ Farming and livestock farming</li> <li>▪ Industry (food, manufacturing, on-shore plant, including desalination plant, CO<sub>2</sub> capture and storage)</li> <li>▪ Energy industry (onshore energy /oil and gas/, onshore renewable energy /wind, sun, geothermal/)</li> <li>▪ Infrastructures (river ports, including dredging activities, engineering work, including dam, bridges, remediation activities, railways and roads), Port activity</li> <li>▪ Transports (river transport, road and rail transportation)</li> <li>▪ Tourism, sports and recreation activities (i.e. bathing stations, touristic facilities)</li> <li>▪ Biotechnology</li> <li>▪ Natural Protected Areas (Nature reserves, National Parks, Regional Parks, etc., on-shore or with offshore boundaries)</li> <li>▪ Defence and security</li> </ul> <p><b>GENERAL HUMAN ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>▪ Urban plants (including pollution of water bodies that collect waste water)</li> <li>▪ Waste</li> <li>▪ Services network (i.e. sewage systems)</li> </ul> <p><b>NATURAL</b></p> <ul style="list-style-type: none"> <li>▪ Soil erosion (leaching, wind action)</li> <li>▪ Natural subsidence</li> <li>▪ Hydrogeological instability (including landslides)</li> <li>▪ Transport of river sediments</li> <li>▪ Flooding</li> <li>▪ Volcanic and tectonic activities</li> </ul>