A handbook on Ecosystem-Based Approach in MSP, including SEA

How to harmonise the implementation of EBA in MSP?

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The EBA in MSP handbook

- Aims to be a practical tool for the daily planners' work in a trans-boundary environment – in the Baltic Sea and beyond.

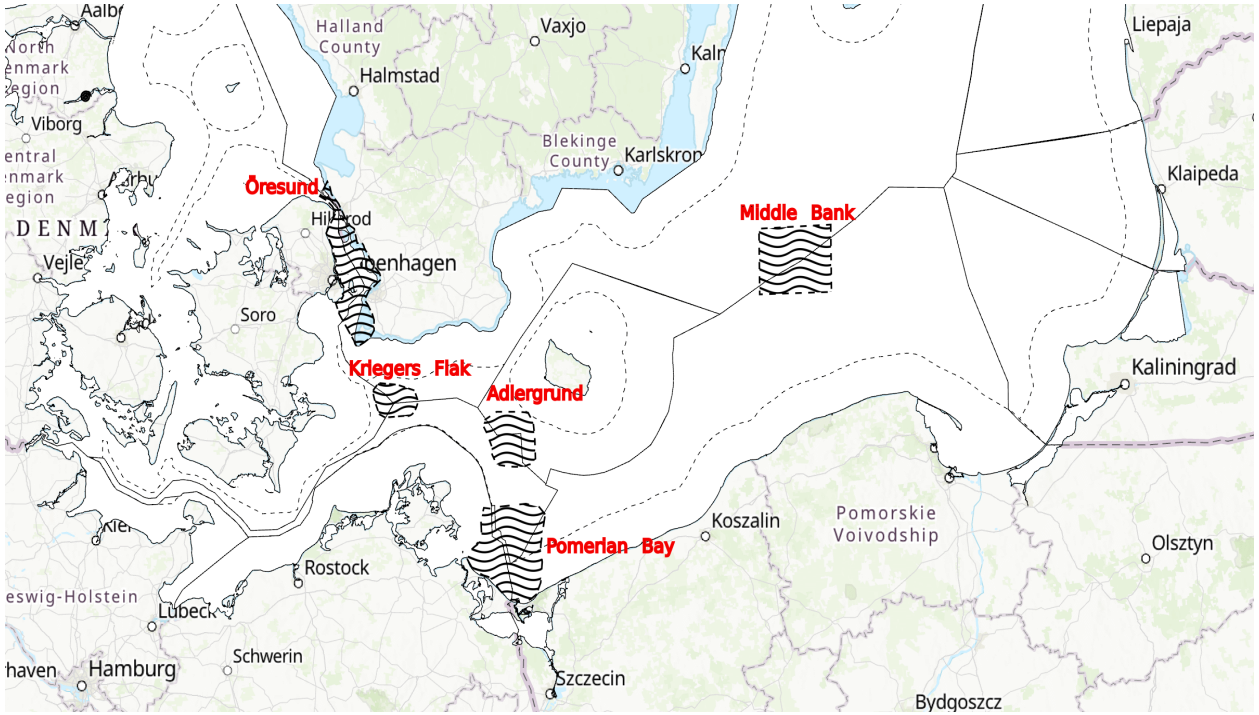


Figure: Southwest Baltic case study area for detailed cross-border and cross-sectoral discussions. Source: BSH

The EBA in MSP handbook

- Addresses the implementation of an EBA, guiding through the comparison of different Strategic Environmental Assessments (SEA) and linking MSP to other key policies like the EU Marine Strategy Framework Directive (MSFD)

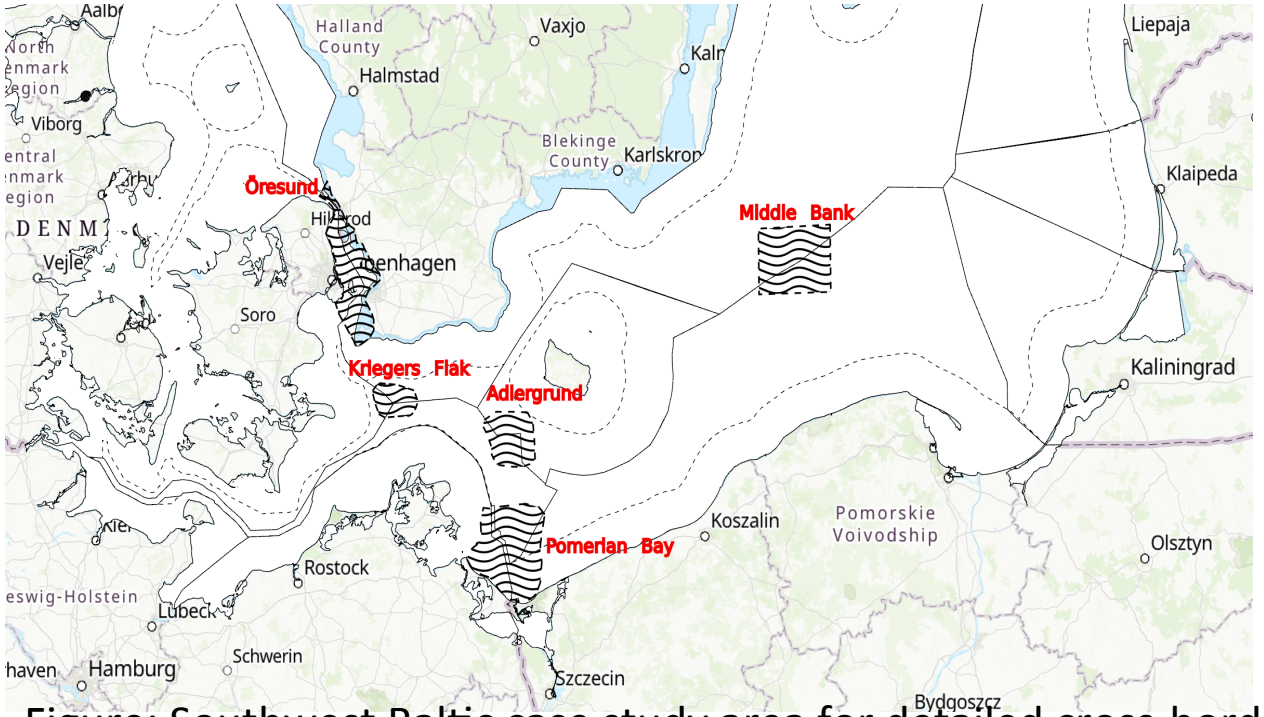
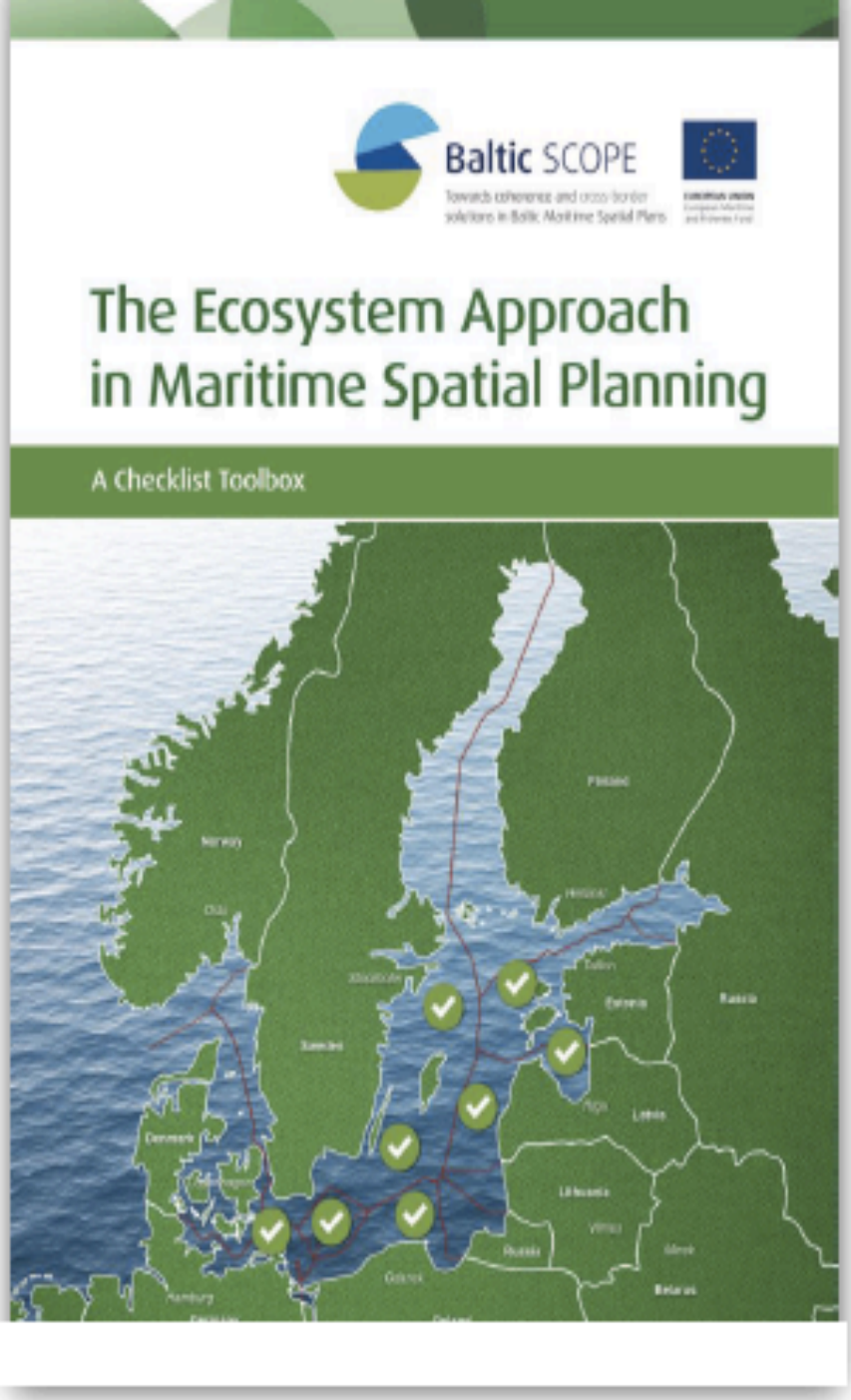


Figure: Southwest Baltic case study area for detailed cross-border and cross-sectoral discussions. Source: BSH

Ecosystem Approach A Checklist Toolbox



s.Pro sustainable projects

Aqua Ecology

How to fill with life and make it useful for planners?

Steps to integrate EBA into MSP

See The EBA Handbook

http://2018.sustainable-projects.eu.w010ccc5.kasserver.com/images/552_19_Pan-Baltic-Scope_web.pdf

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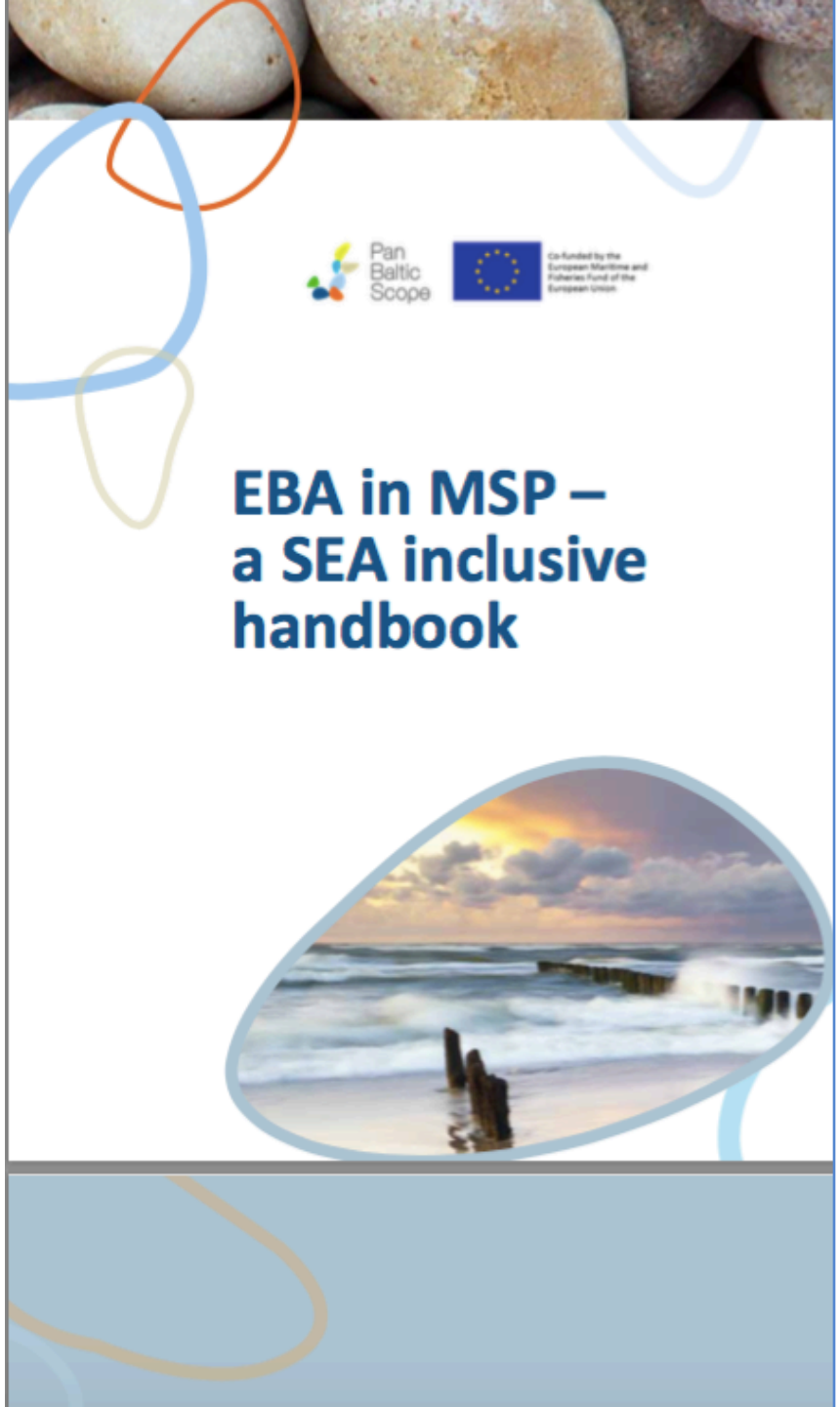

Content

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    Definition of the EBA

    EBA in MSP

    Challenges when implementing the EBA in MSP

    Current state of MSP in the study region

2. Transboundary aspects of national MSP with translation matrix (no details in the ppt)

3. Comparison of national SEAs

4. The link between MSP and MSFD

5. Modular EBA Implementation Concept

Overview - The Ecosystem-based Approach in MSP

‘A holistic approach with a focus on preserving/restoring marine ecosystem and maintaining ecosystem services to support human needs.’

Key elements of EBA:

- Best knowledge and practice
- Precaution
- Alternative development
- Identification of ecosystem services

- Mitigation
- Relational understanding
- Participation and communication
- Subsidiarity and coherence
- Adaptation

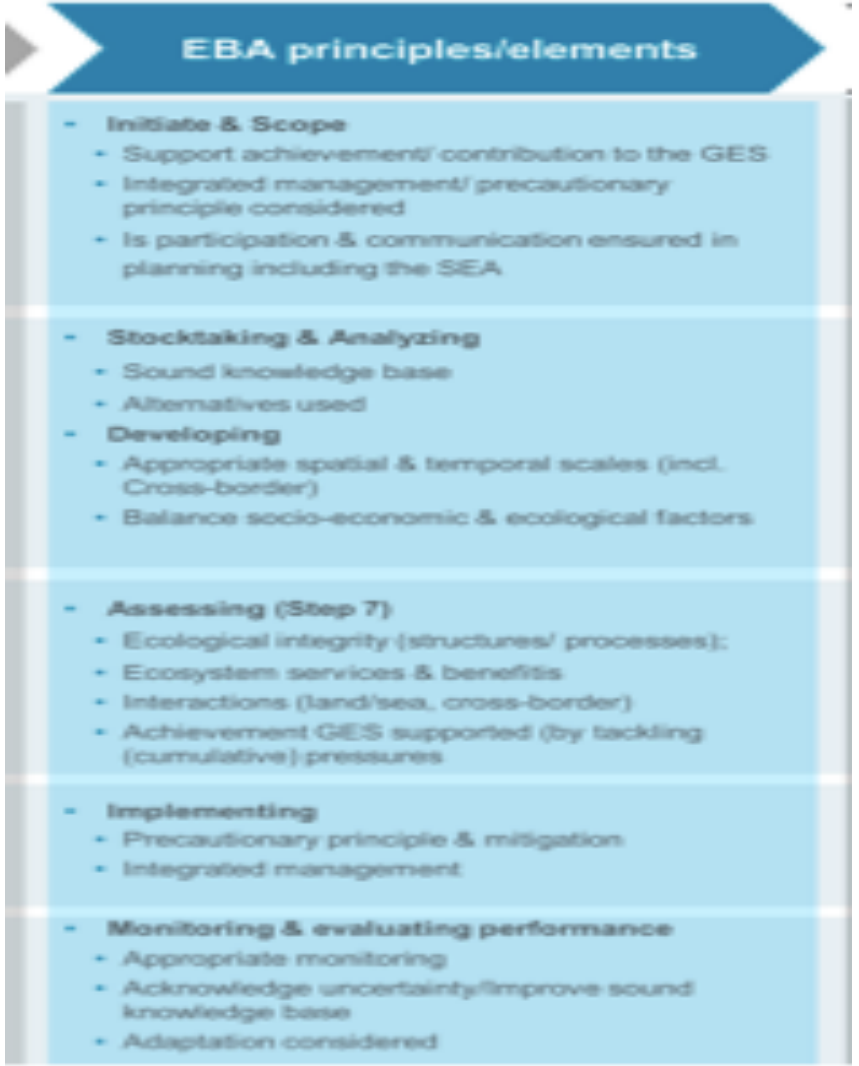
Elements of EBA and their linkage with steps/requirements of MSP

- Review of possible EBA principles
- Resulted in collection of common principles according to MSP stage
- Link of final selection of EBA principles with MSPD requirements

	MSP stage (link to UNESCO steps)	EBA principles/elements	MSP Directive requirements
Defining	• **Initiate & Scope (Step 1 to 4)** • Organizing MSP process (general) • Defining principles • Defining goals & SMART objectives	• **Initiate & Scope** • Support achievement/ contribution to the GES • Integrated management/ precautionary principle considered • Is participation & communication ensured in planning including the SEA	• **Initiate & Scope** • Take into account the precautionary principle • Balance socio-economic & ecological factors in goals/objectives • The MSPD does not address public participation in direct EBA requirement, but is integral to EBA and MSP (Art 9)
Developing	• **Stocktaking & Analyzing (Step 5 to 6)** • Current status environment, human activities, conflicts & compatibilities • Spatial & temporal needs of future use (alternative scenario's) and preferred scenario • **Developing (Step 7)** • Identifying & selecting alternative spatial & temporal management measures • Developing the zoning plan	• **Stocktaking & Analyzing** • Sound knowledge base • Alternatives used • **Developing** • Appropriate spatial & temporal scales (incl. Cross-border) • Balance socio-economic & ecological factors	• **Stocktaking & Analyzing** • Taking into account the availability of data and information at sea basin level • Key ecological elements and human pressures considered? • **Developing** • Adapted to the specific ecosystems and other specificities of the different marine regions
Assessing	• **Assessing (Step 7)** • Assessing (SEA) & approving the plan	• **Assessing (Step 7)** • Ecological integrity (structures/ processes); • Ecosystem services & benefitis • Interactions (land/sea, cross-border) • Achievement GES supported (by tackling (cumulative) pressures	• **Assessing** • The capacity of marine ecosystems to respond to human-induced changes is not compromised • The collective pressure of all activities is kept within levels compatible with the achievement of good environmental status • Sustainable use of marine services in the future
Implement.	• **Implementing (Step 8)** • Implementing & enforcing	• **Implementing** • Precautionary principle & mitigation • Integrated management	• **Implementing** • Take into account the precautionary principle and take preventive measures • Elements of MSP process further into force
Follow-Up	• **Monitoring & evaluating performance (Step 9-10)** • Developing & evaluating performance monitoring • Revision & adapting the plan	• **Monitoring & evaluating performance** • Appropriate monitoring • Acknowledge uncertainty/Improve sound knowledge base • Adaptation considered	• **Monitoring & evaluating performance** • Effective monitoring • Evaluate performance • Allow for an adaptive management

Elements of EBA and their linkage with steps/requirements of MSP

- Initiate & Scope:
  - ✓Support achievement to the GES
  - ✓Integrated management
  - ✓Is participation & communication ensured in planning, including the SEA?
- Stocktaking:
  - ✓Sound knowledge base
  - ✓Alternatives used
  - ✓…..



1. Comparison of national MSFD and SEA approaches

- The MSFD and the SEAs can contribute to the implementation of EBA in MSP
- But extent of integration of administrative processes of MSP, MSFD and SEA varies related to national implementation

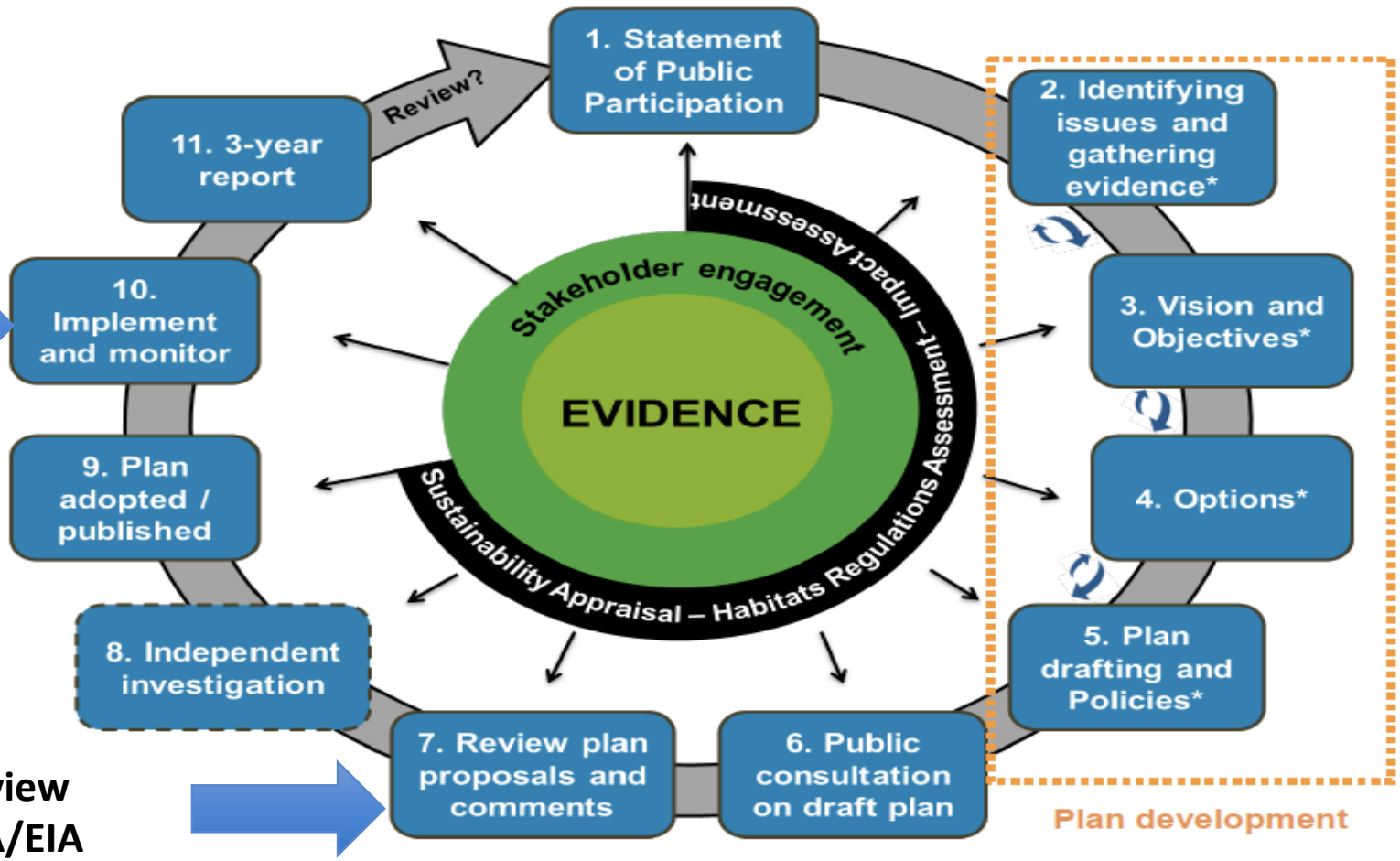
Nevertheless, theses processes

✓ are mutually informing

✓ pre-determined connection points

✓ supportive for an effective transfer of information

The MSP cycle and SEA/EIA



Conduct SEA/EIA

Use SEA/EIA as basis

Review SEA/EIA

National MSP and conducted SEA

Country	Plan (click on names to open them)	SEA (click on names to open them)
Belgium	**Maritime Spatial Plan for the Belgium Part of the North Sea (2014)**	**SEA on the design of the MSP**
Germany (national)	**Maritime Spatial Plan for the EEZ of the North Sea (2009)**	**Maritime Spatial Plan for the EEZ of the North Sea**
Germany (Schleswig-Holstein)	**Maritime Spatial Plan for the Territorial Sea of the Baltic and North Sea – Schleswig Holstein (2010)**	**Umweltbericht**
Germany (Lower-Saxony)	**Maritime Spatial Plan for the Territorial Sea of the North Sea – Lower Saxony (2006)**	**Umweltbericht zur Änderung der Verordnung über das Landes-Raumordnungsprogramm Niedersachsen**
Norway	**Management Plan 2013: Integrated Management of the Marine Environment of the North Sea and Skagerrak**	**?**
Sweden	**Swedish Maritime Spatial Plan for the Kattegat (under development)**	**Miljökonsekvensbeskrivning Havsplan – Västerhavet**
The Netherlands	**Policy Document on the North Sea, 2016 – 2021 (part of Dutch Waterplan) (2015)**	**PlanMER national Waterplan**
UniKingdom England	**East Inshore and East Offshore Marine Plans**	**East Marine Plans Sustainability Appraisal**

2. Link between MSFD and MSPD

- **Relevant descriptors for MSP processes** (biological diversity maintained, sea floor integrity…)
- **Different entry points to link MSFD and MSP**
- **Further options for linking MSFD and MSP Directive's aims exist through (examples):**
  - An adequate design of monitoring programs for measuring MSFD indicators, assessing predominant pressures and impacts and environmental status of marine waters;
  - An adequate evaluation of pressures and impacts produced by activities, including cumulative impact assessments;
  - Setting adequate targets for indicators;
  - Considering ecosystem boundaries, instead of administrative ones;
  - Taking into account the assimilative capacity (carrying capacity of the system before breaching GES);

3. Development of a modular concept for planners

- Selection of relevant sources for EBA tools under each of the steps of a MSP:

- Initiation

- Stocktacking

- Analysing

- Defining spatial scales

Initiation & Scope (Step 1-4) ***Relevant Elements: MSP/EBA principles and objectives, MSP indicators, precautionary principle.***
The Handbook on Developing indicators in MSP (MSP for Blue Growth Study developed by the EU MSP Platform) provides a methodology for setting up SMART MSP objectives and indicators
EcAp/IMAP ecological objectives (11 EO) and indicators for MSP applied in Montenegro
Eionet Reporting Obligations Database
Stocktaking and analysing (Step 5-6) ***Relevant Elements: consideration of ecological elements and human pressures***
Approaches implemented to assess the limit of carrying capacity and develop sensitivity maps, including the NOAA – coastal sensitivity maps (index) on oil spills (US), DEFRA - marine sensitivity assessments (UK), Scottish Government - Fishery Sensitivity maps (UK), Plan4Blue project - The Gulf of Finland marine and coastal environmental risk profile (FI and EE)[1], Wildlife Sensitivity Maps (many Member States, as well as cross border approaches)[2]
Latvia stocktaking of conditions and ecosystem components for MSP (HELCOM, national surveys)
The Netherlands National Water Act where GES acts as the baseline towards which the Strategic Environmental Assessment should be measured
Swedish Agency for Marine and Water Management application of a SYMPHONY tool, used in MSP to understand and illustrate the environmental pressure on ecological values
Developing (Step 7) ***Relevant Elements: Defining spatial and temporal scales, identifying and selecting alternative spatial options***
The Netherlands five steps compensation scheme which includes choosing the location and assessing requisite space and time
Portuguese MSP tool for identifying priority conservation areas
The PLASMAR - INDIMAR tool (DSS) to identify best marine areas for setting up different maritime activities – according to group of parameters
The ECODUMP project guidelines explicitly dealing with the influence of MSP and EBA principles on the search and assessment of new disposal sites at near-shore of Lithuania.
The projects BALANCE, BalticSCOPE and Pan Baltic Scope outline the concept of blue corridors and how to work with it during practical marine spatial planning processes.
ADRIPLAN, SimCelt and TPEA projects all provide techniques and methods based on the EBA for practically implementing MSP in the sea basin and macro reginal scales
nd
es

Basic and extended assessment of EBA tools

- Example: Polish SEA Heuristic forecasting method

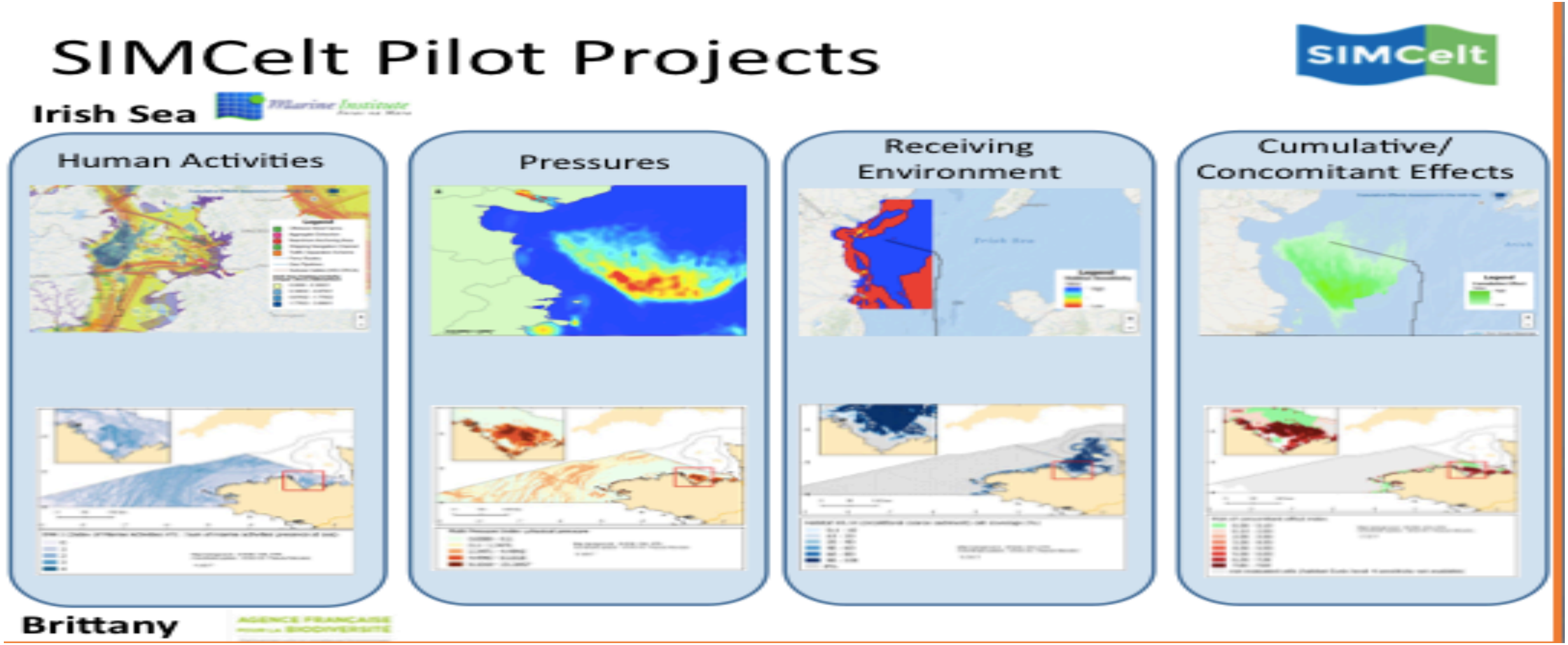
Basic assessment	
Assessment criteria	***Response options***
Link to the stage of a MSP Process	Assessing; the method was applied as part of the SEA
Type of element	Heuristic forecasting method (Kruk-Dowgiałło et al. 2011), which uses the knowledge and experience of specialists of the interdisciplinary team of authors. It is based on rational, scientific premises, it has a definite time horizon and a qualitative character.
Link to other Directive and administrative processes	Applicable for the implementation of other directives and based on the assessment of the state of the environment according to the MSFD and WFD indicators and was carried out mainly on the basis of the results of the Sea Water Monitoring Program implemented according to the HELCOM COMBINE guidelines, including monitoring of radioactive contamination (HELCOM MORS PRO) as well as measurements and observations carried out at the IMGW-PIB Maritime Department statutory activity of the Oceanography and Hydrosphere and Atmosphere Monitoring Center (in the scope of: water mixing, water exchange, exposure to waves, etc.). The underwater noise was characterized based on HELCOM data and the European BIAS (Baltic Sea Information on Acoustic Soundscape) project.

Assessment of Cumulative Impact Tools

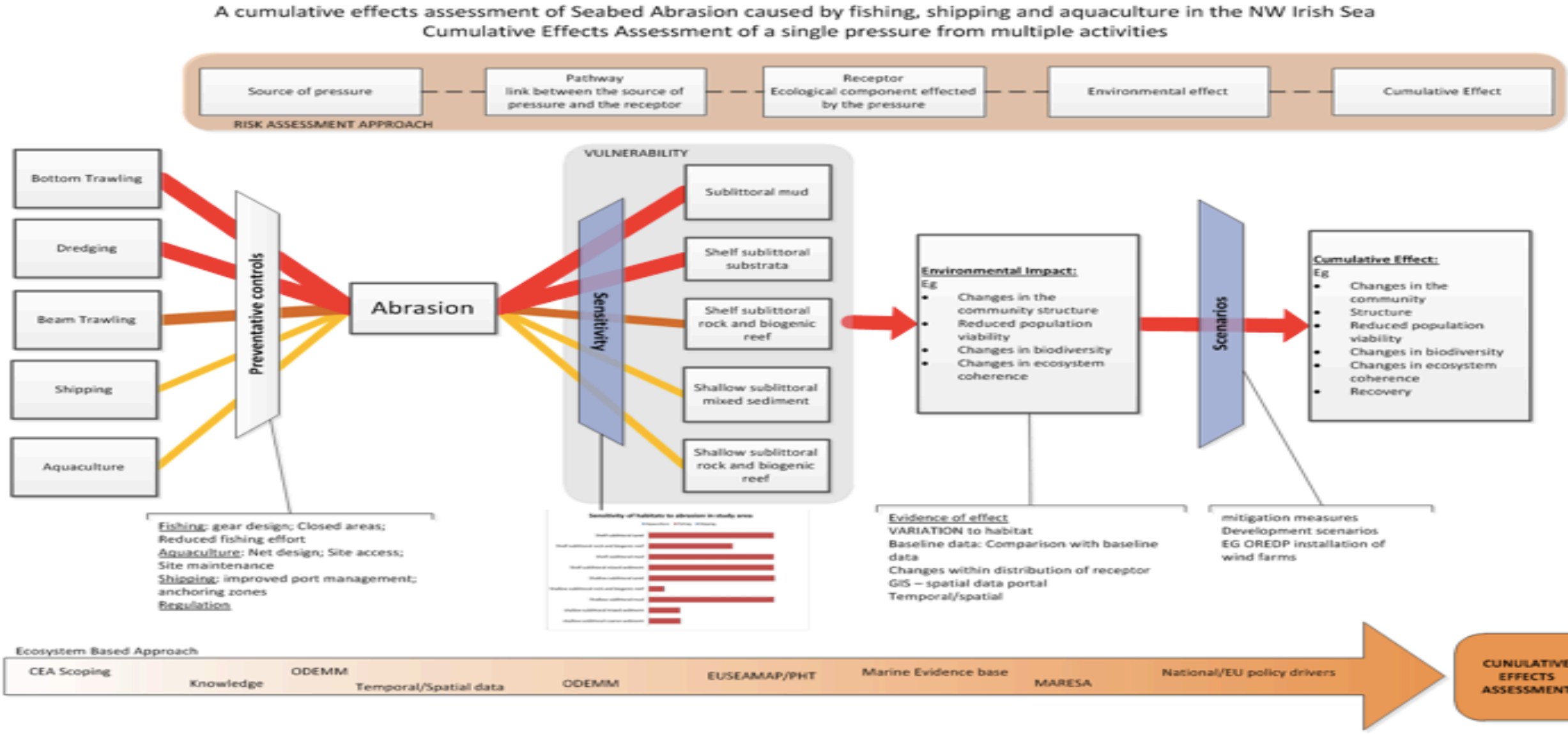
- Adriplan / Ritmare Cumulative Impact Tool (Tools4MSP)
- ESaTDOR / Med IAMER / PANACEA cumulative assessment work
- SYMPHONY tool incl. new work under Pan Baltic Scope project
- SIMCelt Cumulative Effects Assessment
- BONUS BASMATI project work on cumulative impacts
- Plan4Blue project work on cumulative impacts
- Cumulative effects assessments for Estonia MSP
- PLASMAR project work on cumulative impact assessments
- **UNEP-MAP PAP/RAC EcAp-Med II project work on Indicators related to cumulative impact assessments**
- **University of Aveiro development of cumulative impacts tools**
- development of a common approach on CEA with North Sea Countries for offshore wind (Rijkswaterstaat)
- State of the Baltic Sea cumulative effects assessments (HELCOM)
- WWF Medtrends
- EEA cumulative impacts assessments

European MSP Platform

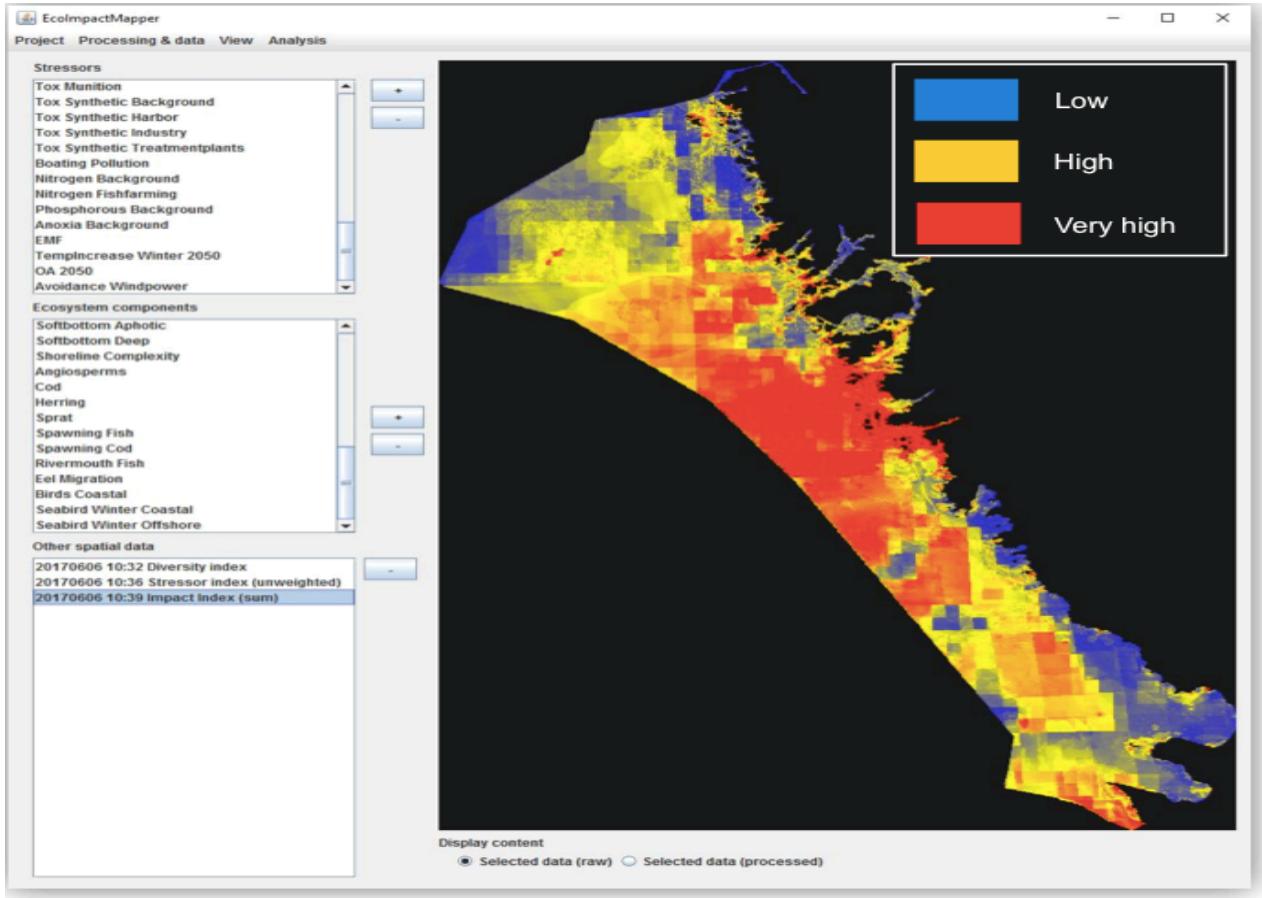
Example: SIMCelt Cumulative Impact Assessment Tool (Ireland/France)



Example TPEA Tool (UK)



Example: Symphony Tool (SE)

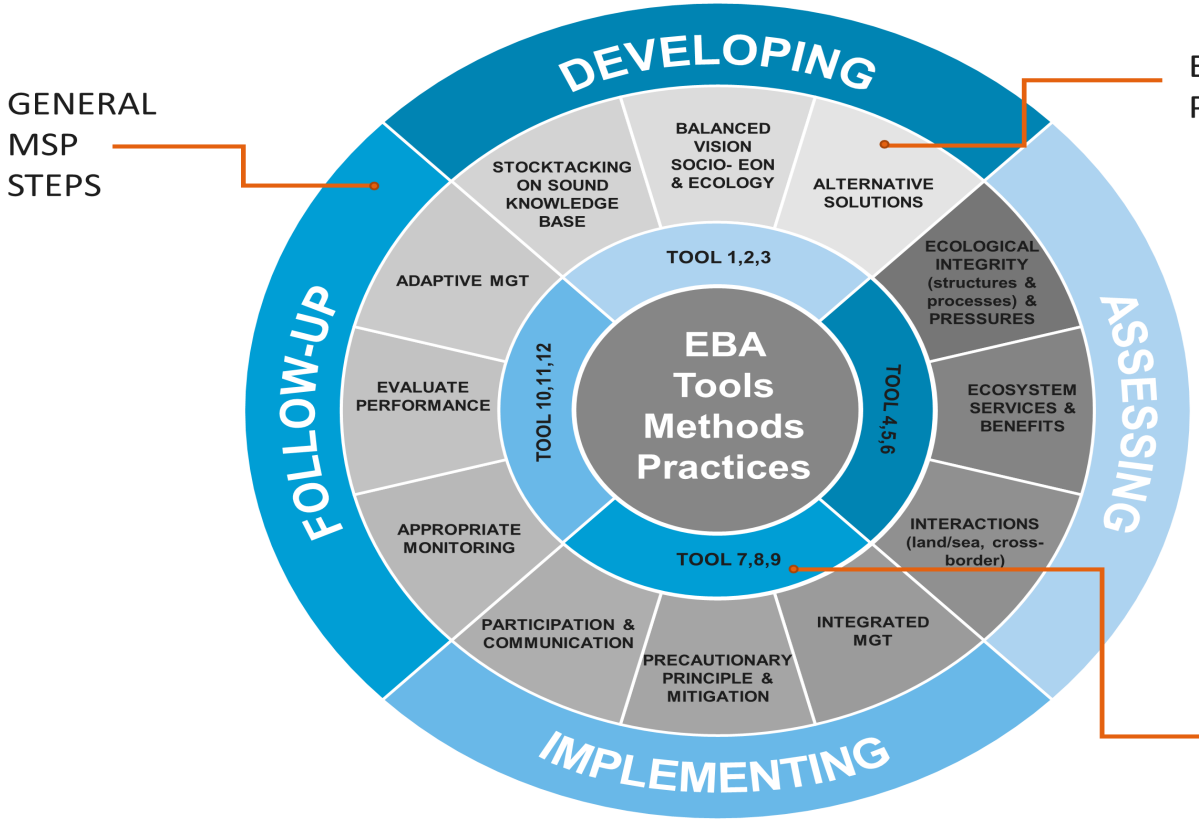


Swedish Agency for Marine and Water Management

Cumulative impact on Swedish west coast

Sector	Contribution
Climate change (2050)	23.3%
Fisheries	22.3%
Eutrophication	22.2%
General pollution	15.7%
Shipping	12.3%
Coastal activities	2.1%
Defence	0.8%
Industry	0.8%
Energy	0.4%
Aquaculture	0.0%
Mineral mining	0.0%

Result: Development of a modular concept for planners



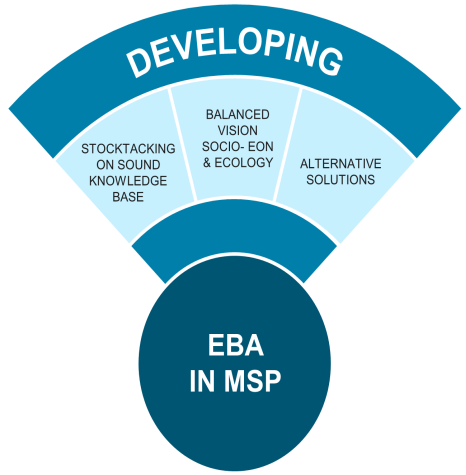
GENERAL MSP STEPS

EBA PRINCIPLES

EXAMPLES OF TOOLS/ METHODS/ PRACTICES

- Note: The structure of the module set to guide planners which toolkit and element to use in which context is *flexible*

MSP stage 1
- Development



- Tool 1: Assessment of the limit of carrying capacity and development of sensitivity maps

- Tool Example: Marine Evidence based Sensitivity Assessment (MarESA)

-> Selection criteria for planners

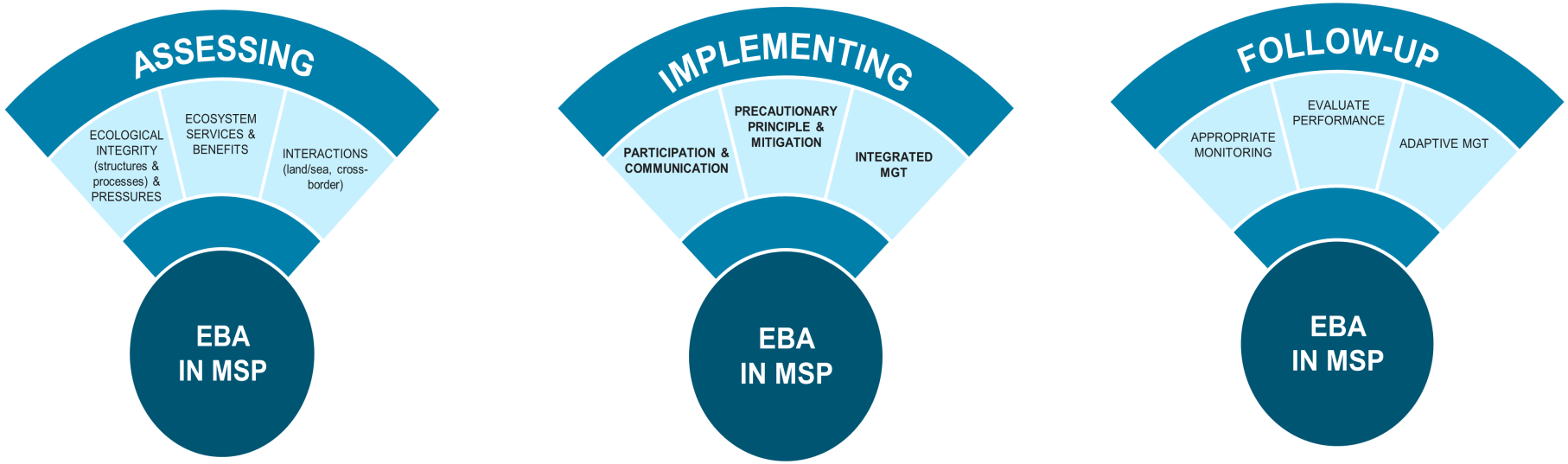
Tool Example: Marine Evidence based Sensitivity Assessment (MarESA)

The MB0102 sensitivity assessment methodology was developed by Tillin et al. (2010) to create a pressure vs. feature sensitivity matrix to support marine and coastal management. Due to the project MB0102 timescales, the approach relied on expert judgement to create sensitivity assessments at two workshops. The methodology was modified to introduce a detailed evaluation and audit trail of evidence on which to base the sensitivity assessments. The revised methodology (henceforth termed MarESA) was subsequently applied to Ecological Groups based on species characteristic of offshore, circa-littoral biotopes and to biogenic habitats. The methodology involves the following stages: (1) Define the key elements of the feature (in terms of life history, and ecology of the key and characterizing species); (2) Assess the feature's resistance (tolerance) and resilience (recovery) to a defined intensity of pressure (the benchmark); (3) Combine resistance and resilience to derive an overall sensitivity score; (4) Assess the confidence in the sensitivity assessments; (5) Document of the evidence used; and undertake quality assurance and peer review. The method was applied in England where a total of 88 birds, 13 fish (and a crustacean) and 5 marine mammal species were assessed for their sensitivity to 36 anthropogenic pressures. All species were notified features of existing or planned MPAs in British waters. All features were assessed against the same standardised list of human pressures as defined by the Inter-sessional Correspondence Group on Cumulative Effects, 2011.

Selection criteria for planners: Method requires a solid baseline data - the assessment of sensitivity should be guided by the presence of key structural or functional species/assemblages and/or those that characterize the biotope groups.

Selection criteria for planners: The method has two versions that may be applied depending on the available time and resources.

MSP stage 2, 3, 4
- Assessment, Implementation, Follow-up



Key Messages

- **What is needed to strengthen EBA implementation in MSP at a practical level?**

➢ Easy to handle approaches and translation matrices *across boundaries* for planners

  ➢ Basis for bi-/multilateral or even sea basin-wide cooperation on (cumulative) assessments (SEA and EIA)

  ➢ To overcome a fragmented system of measures (MSFD) relevant for MSP and to coordinate them among Member States to reach GES

➢ Practical application of EBA tools and exchange of experiences *across all planning stages, e.g. about tools showing success of planning/scenario planning*

Thank you

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