## **Discussion Document, V3.0 –** Mike Elliott (IECS Ltd)

## **Marine Management – DSS and Toolbox Entry Points (EP)**

***Preamble***

Several/many of the current and previous Horizon Europe projects have been collating/creating tools and constructing toolboxes or Decision Support Systems for marine management. The aim has often been to help the manager in managing a marine area or at least to direct them towards the tool(s) and approach(es) which can help them (or at least can help their advisors). In these discussions, it has been assumed that that the marine manager user knows exactly why and for what they want such a DSS/Toolbox. However, given that the toolboxes/DSS are needed for skills- and data-poor areas as well as skills- and data-rich areas, it can be argued that the user needs help in accessing and using such a toolbox/DSS. This discussion paper suggests the way a DSS/Toolbox needs to be constructed and the way it should be used.

***Method of Use –***

The marine management user would go in via one or more sequential Entry Points (EP1-5) related to their problem in hand. The hierarchical FAQ and successive questions (currently being collated) can help the user decide which EP to use but hopefully they have their own question(s) formulated. In theory, by the time the user has used their question(s) in mind to indicate sequentially which item(s) (A, B, C, etc) in the Entry Points (1-5) relate to their question(s) then it needs to take them to a tool or approach. Therefore, the tools identified in the various projects would need to be linked to such items and hence the reason for using the tool.

An experienced user would probably be able to immediately identify what tool they require to address a particular question but the DSS and Toolbox are needed to help all users. The cross-links between each item in each EP would need to be created and although there are potentially many permutations, it is likely that the actual number of likely permutations is much smaller.

***System Use:***

1. The user would start by determining their main question/problem needing to be addressed,
2. Then they would indicate their role in marine management (EP0)
3. Then choosing their major public concern (basic human needs) as an item in EP1 and
4. then, following this, only relevant items in EP2 and 3 would be shown, related to the question(s) in hand.
5. The user then needs, based on their question(s), to decide in which Topic in EP4 they are interested (i.e. what a method will answer)
6. and then, using EP5, what management actions will help to solve their problem (although we have always worked on the basis that all tenets are required for sustainable and successful management).
7. Finally, as an output, the system would then indicate what tool(s)/approach(es) are available which would solve their problem.

**EP0. Marine Manager Typology**

1. Someone creating the policies
2. Someone implementing the policies (i.e. a regulator)
3. Someone advising those who create and implement the policies
4. A manager of activities (i.e. a regulator)
5. An advisor of the managers of activities
6. An eNGO worker influencing or lobbying decisions
7. Fishers as influencers
8. Other industry as influencers
9. SME as influencers
10. Educators and researchers as influencers

## **EP1. Drivers (Basic Human Needs):**

1. Welfare (Safety, health, security)
2. Resource provision (space, food, water)
3. Employment, resource use
4. Relaxation and enjoyment (satisfaction, culture, aesthetics)

**EP2. Activity Sector/MSFD Theme:**

1. Physical restructuring of rivers, coastline or seabed (incl. water management)
2. Extraction of non-living resources
3. Production of energy
4. Extraction of living resources
5. Cultivation of living resources
6. Transport
7. Urban and industrial uses (incl. carbon removal, capture and storage)
8. Tourism and leisure
9. Security/defence
10. Education and research
11. Conservation and restoration

**EP3. Risks and hazards:**

1. Surface hydrological hazards (e.g. flooding)
2. Surface physiographic removal by natural processes - chronic/long-term (e.g. erosion)
3. Surface physiographic removal by human actions - chronic/long-term (e.g. land-claim, space removal)
4. Surface physiographic removal - acute/short-term (e.g. cliff failure)
5. Climatological hazards - acute/short term (e.g. storminess)
6. Climatological hazards - chronic/long term (e.g. NAO changes, sea-level rise)
7. Tectonic hazards - acute/short term (e.g. earthquakes, land-slip)
8. Tectonic hazards - chronic/ long term (e.g. subsidence, isostatic rebound)
9. Anthropogenic microbial biohazards (e.g. sewage pollution)
10. Anthropogenic macrobial biohazards (e.g. non-indigenous species)
11. Anthropogenic introduced technological hazards (e.g. infrastructure, sediments)
12. Anthropogenic extractive technological hazards (e.g. fishing, aggregates)
13. Anthropogenic acute chemical hazards (e.g. oil spills)
14. Anthropogenic chronic chemical hazards (e.g. diffuse and point-source contaminants)
15. Anthropogenic acute geopolitical hazards (e.g. wars, unrest, terrorism)
16. Anthropogenic chronic geopolitical hazards (e.g. human migrations, civil-war)

**EP4. Topics:**

1. Basic Concepts, Fundamental Understanding

## Ecosystem Structure and Functioning (Processes, Connectivity and Variability)

## Ecosystem services (natural domain)

## Biodiversity Loss (habitats and species)

## Fisheries - Economics Aspects

## Other Resource extraction (energy, space)

## Non-indigenous species

## Climate-Change

## Other Anthropogenic Effects

1. Ecosystem recovery and remediation
2. Economic Aspects - Societal Goods and Benefits
3. Governance and management
4. Policy Derivation
5. Policy Implementation
6. Marine conservation
7. Marine planning
8. Societal and Cultural Considerations
9. Marine Citizenship
10. Scientific Skills, Mapping, Evidence and Data
11. Methods, techniques, tools

**EP5. Management Solutions (tenets):**

1. Ecology, natural environment (Ecologically sustainable)
2. Technology, techniques (Technologically feasible)
3. Economics, valuation (Economically viable)
4. Society (Socially desirable/tolerable)
5. Laws, agreements (Legally permissible)
6. Authorities, agencies (Administratively achievable)
7. Politics, policies (Politically expedient)
8. Ethics, morals (Ethically defensible/morally correct)
9. Culture, aesthetics (Culturally inclusive)
10. Communication, literacy (Effectively communicable)

A diagram of a document

AI-generated content may be incorrect.

A diagram of a person's mind map

AI-generated content may be incorrect.