Co-creating minimum requirements for Nature-Based Solutions in EU marine and coastal environments

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Theme: Marine Protection & Restoration

Workshop Summary

Christian Riisager-Simonsen, a marine science and policy officer at the Technical University of Denmark (DTU) began the workshop with an overview of the important role played by Nature-based Solutions(NbS) in the process of sustainability transition in the EU. He pointed out that the adoption of NbS, especially in the context of marine and coastal ecosystems, is challenged by its rather ambiguous definition and the absence of detailed implementation standards, which allows for potential misuse of NbS, e.g. greenwashing.

Christian then introduced the participants to TRANSEATION, a Horizon Europe project that aims to develop environmental minimum requirements for marine and coastal NbS to provide all relevant stakeholders with clear guidance on NbS implementation. To help TRANSEATION understand how one can evaluate whether a proposed solution is an NbS or not, the participants of the workshop were engaged in the following group discussions:

Identifying the main risks associated with poor implementation of proposed NbS, from an ecosystem perspective and in the context of marine and coastal environments, at different project phases (i.e. planning, construction, operation, decommissioning)

- **Planning.** Participants highlighted uncertainty when predicting the impacts of an NbS due to the complex nature of marine and coastal environments, stressing that the lack of long-term planning in the context of climate change, and the use of 'wrong' data might lead to unexpected ecosystem changes.
- **Construction.** Here participants discussed the choice of artificial and potentially harmful materials for an NbS construction, as well as various side-effects from construction activities (e.g. noise pollution), that can have a negative impact on ecosystems.
- **Operation.** When it comes to the operation of an NbS, participants emphasised the risk of mismanagement when it comes to discrepancies between planned activities and reality (e.g. in case of changes due to such natural processes as coastal erosion).
- **Decommissioning.** Participants talked about the risks associated with disassembling NbS constructions (e.g. challenging waste utilisation) or leaving it in place (e.g. creating a hub for non-native species). One of the main concerns was leaving the ecosystem worse than before.

Identifying relevant minimum requirements (e.g. ecosystem accounting and documentation) related to the deployment of marine and coastal NbS at different project phases (i.e. planning, construction, operation, decommissioning)

- **Planning.** Apart from key performance indicators and well-defined targets, participants discussed the importance of conducting feasibility studies to ensure that a proposed NbS is justifiable from environmental and socio-economic perspectives. They also thought it is beneficial to perform a cost-benefit analysis, as well as a life cycle assessment and a risk assessment when planning for NbS.
- **Construction.** Here the emphasis was made on technical plans, such as quality control plans, and health and safety plans. Additionally, participants stressed the need for a standardised procurement process.
- **Operation.** Participants mentioned the need for regular monitoring and audit of a constructed NbS, and hence developing a maintenance plan, keeping accounting records, etc. It is also important to have a communication plan to keep engaged with all relevant stakeholders regarding a constructed NbS.
- **Decommissioning.** Participants considered it important to have an inventory of NbS assets remaining or removed from the site, including their further utilisation plan, as well carrying out environmental impact assessment. Participants also highlighted that documentation of lessons learned would benefit future projects.

Identifying potential exclusion criteria for NbS

When it comes to exclusion criteria, participants mentioned durability of NbS (e.g. only permanent NbS can be approved), scalability of NbS (e.g. only scalable ones can be approved), its safety in terms of material (e.g. only degradable or reusable materials for NbS can be approved), and in terms of ecosystem damage (e.g. introduction of non-native species cannot be approved).

The results of discussions, as Christian explained, will contribute to the drafting of LEED-based sustainability rating systems for marine and coastal structures to help developers contribute to ecosystem-based management of our oceans.