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Terms of Reference for a CEDA Working Group on **Adaptive Management for environmental aspects of dredging and reclamation projects (WGAM)**

Introduction

A number of publications, among which the CEDA information paper on Adaptive Management (AM), published in 2015, contains a high-level description of the different aspects of AM. The descriptions are often generic and do not include details of AM of specific parameters yet. In this fast-evolving topic, a number of information gaps and subjects that require revision have appeared the past years. For instance, a topic which has undergone a considerable evolution in recent years is 'pro-active adaptive management of turbidity'.

The CEDA Environment Commission (CEC) has therefore decided to establish a Working Group to prepare a CEDA information paper on Adaptive Management in dredging and land reclamation projects. The paper will provide an overview of key aspects, of all project phases, to aid structured decision-making, while implementing AM. It will collect case studies demonstrating that AM can be applied to guarantee environmental compliance, as well as ensuring the project completion without significant impact on the aquatic environment.

The TOR is formally established by the Working Group at their first meeting.

Objective

The Working Group is tasked with preparing a CEDA information paper on Adaptive management in relation to potential environmental impacts related to turbidity and other water quality aspects. A questionnaire will be launched to inform the WG on levels of awareness and current practices with respect to AM.

The paper will raise awareness of the benefits of AM, both for employers and contractors, and highlight current best practice. Accompanying dissemination tools will be prepared.

Understanding Dredging

Scope

Issues to be addressed in the information paper are categorised on two parts and include:

PART 1 - Adaptive Management: Awareness & Recent developments

- Currently it is unknown what the awareness of AM is amongst employers, regulators and contractors, and what are the tools applied. This should be investigated in the WG, so that existing tools not yet deployed to full potential can be proposed in the paper.
- A questionnaire on current practices, awareness and applications with respect to AM will therefore be organised.
- Focus will be laid on information gaps with respect to Adaptive Management of environmental effects to be considered and managed, mainly related to turbidity and sedimentation, but also any other parameters relevant for water quality.
- Adaptive Strategy in addition to Adaptive Management: investigate the effect of potential adaptive measures before tender phase.
 - The term “Adaptive management” is often used in papers and discussions regarding sediment management in a broader sense:
 - e. g. as strategy to adapt sediment management to hydromorphological changes,
 - to obtain flexibility for the management of dredged material,
 - to promote understanding of the effectiveness of strategies for handling dredged material
 - How can the definition of AM in this sense can be broadened?
- Update of knowledge on existing platforms that integrate the different building blocks and information streams for AM.
- Investigate legal framework-related limitations hampering the full deployment of AM, recent evolutions in the legal framework and formulate principles for modifications.

PART 2 - Operational Pro-Active Adaptive Management

- The concept of Pro-Active Adaptive Management, as a way to avoid breaches of trigger levels, instead of reacting when a trigger level is breached.
- Fully online and real-time data availability to run adaptive management is required – this high-quality field monitoring is a basic prerequisite to explore adaptive management. It should be illustrated which monitoring techniques are available and operational today to realise this online and real-time field data stream.
- Forecasting tools:
 - Specify what are the critical elements in this kind of tools to become reliable, robust and common ground for everyone, including stakeholders
 - What forecasting tools do we really need for dredging works, land reclamation or other marine works?

- The role of monitoring (in situ and remote techniques) and numerical modeling interaction to support decision makers in determining adaptations.
- Once there is an adaptive management tool in place; what shall we do with it? How to run the operational tool to check, manage and adapt the daily project operations? What will be the drivers and indicators to select the “right” adaptive dredging work?
- The Role of Decision Support Systems in determining adaptations.

Deliverables

The following deliverables will be prepared by the Working Group:

- Realization of questionnaire
- Results of a questionnaire on awareness and implementations of AM of relevant project-specific environmental parameters (e.g. sedimentation, turbidity and other water quality parameters)
- An information paper that will focus on above topics
- An accompanying presentation/webinar/eLearning
- An interactive PDF visualizing the key aspects of adaptive management
- Communication of WGAM milestones to the CEC and via social media

Length of the documents

Four to eight pages plus relevant case studies.

Timetable

The Working Group had their first meeting on September 9th, 2021.

The Working Group is expected to deliver the final paper and other deliverables 18 months after their first meeting.

Membership

It is envisaged that CEDA WGAM will be an international group of experts with knowledge and experience relating to environmental management of dredging, deep sea mining or land reclamation projects, Turbidity Management and Monitoring Plans (TMMP), operational forecasting, pro-active adaptive management.

WG members are preferably a group of experts bringing together expertise from the full range of relevant institutes, including contractors, regulators, employers, consultants or any other stakeholders.

References

CEDA (2015): Integrating adaptive environmental management into dredging projects. CEDA Position Paper.

CEDA (2015): Environmental Monitoring Procedures. CEDA information Paper.

CEDA (2020): assessing and evaluating environmental turbidity limits for dredging. CEDA Information Paper.

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