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

### **Introduction**

A number of publications, including 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. In this fast-evolving topic, a number of information gaps, and subjects that require revision, have appeared in recent years. One such topic, which has undergone a considerable evolution, 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 that demonstrate how AM can be applied to guarantee environmental compliance, as well as to accelerate project completion, without additional impact on turbidity and water quality parameters.

The CEC proposes the following Terms of Reference (TOR) for the Working Group. The TOR will be 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 turbidity and water quality aspects. Optionally, it can be decided by the WG to launch an industry-wide questionnaire to inform the WG on current practice with respect to AM.

The paper will raise awareness of the benefits of AM, both for employers and contractors, and highlight current best practice. An accompanying presentation, as well as an interactive PDF, will be prepared.

### **Understanding Dredging**

## Scope

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

### PART 1 - Adaptive Management: Awareness and recent developments

- Evaluate whether an industry-wide questionnaire is on current practices, awareness and applications, with respect to AM would be of value. If yes, organisation of the questionnaire, and analysis of the results, will be part of the scope of the WG.
- Focus on information gaps with respect to Adaptive Management of. Additional: water quality parameters such as BOD, dissolved oxygen level, ChIA should be considered as well.
- Adaptive Strategy in addition to Adaptive Management: investigate the effect of potential adaptive measures before tender phase.
  - o The term 'Adaptive Management' is often used in papers and discussions regarding sediment management in a broader sense, for example:
    - as a strategy to adapt sediment management to hydromorphological changes;
    - to obtain flexibility for the management of dredged material; and/or
    - to promote understanding of the effectiveness of strategies for handling dredged material.
  - o How the definition of AM can be broadened in this sense?
- Current unknowns are the levels of awareness of AM amongst project owners, regulators and contractors, and the tools applied. These should be investigated in the WG so that existing tools, which are not yet used to full potential, can be proposed in the paper.
- Update 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, 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 AM is required. This high-quality field monitoring is a basic prerequisite to explore AM. The information paper should illustrate that monitoring techniques are available, and operational today, to realise this online and real-time field data stream.
- Forecasting tools: (a) Specify the critical elements these kinds of tools need to become reliable, robust and commonplace for everyone, including stakeholders (b) Consider what forecasting tools we really need for dredging works?
- Once there is an AM tool in place, what do we do with it? How do we run the operational tool to check, manage and adapt, the daily management of a dredging

project? What will be the drivers and indicators to select the 'right' adaptive dredging work?

### **Deliverables**

The following deliverables will be prepared by the Working Group:

- An information paper that will focus on above topics.
- Results of a questionnaire on awareness and implementations of AM of turbidity, sedimentation, and water quality (if applicable).
- An accompanying presentation.
- An interactive PDF visualising the key aspects of AM.
- 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 will have their first meeting on MSTeams on 9 September 2021, from 13:00-16:00 hrs.

The Working Group is expected to deliver the final paper, presentation and interactive PDF, 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, and pro-active adaptive management.

WG members will be representative of the full range of relevant organisations including institutes, contractors, regulators, employers, consultants, and other relevant stakeholders.

### **References**

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

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

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CEDA Environment Commission.