

# Social, geographical, technical, environmental and economic approaches to strength marine sediment reuse options through CEAMaS project.

**Tristan Debuigne<sup>1</sup>, Samira Brakni<sup>1</sup>, Gerry Sutton<sup>2</sup>, Faycal El Fgaier<sup>3</sup>, Joe Harrington<sup>4</sup>, Eric Masson<sup>5</sup>, Leon Van Paassen<sup>6</sup>, Bruno Lemiere<sup>7</sup>, An Janssen<sup>8</sup>, Arjan Wijdeveld<sup>6</sup>**

<sup>1</sup> CD2E, Base 11/19, Loos en Gohelle, France

Phone: +33-(0)-3211-30680

<sup>2</sup> University College Cork, Pouladuff Road, Co. Cork, Ireland

E-mail: t.debuigne@cd2e.com

<sup>3</sup> Ecole Centrale de Lille, Cité Scientifique, Villeneuve d'Ascq, France

<sup>4</sup> Cork Institute of Technology, Rossa Avenue, Bishopstown, Cork, Ireland

<sup>5</sup> Lille 1 University, Cité Scientifique, Villeneuve d'Ascq, France

<sup>6</sup> Delft University of Technology, Stevinweg 1, Delft, Nederland

<sup>7</sup> BRGM, 3 Av. C. Guillemin, Orléans, France

<sup>8</sup> Belgian Building Research Institute, Lombardstraat 42, Brussel

<sup>9</sup> Delft University of Technology, Stevinweg 1, Delft, Nederland

## Introduction:

The management of marine sediment is a major issue for many European countries, and a range of different sediment management challenges have to be addressed across Europe. The volume of sediment to be dredged, the level of contamination and the physical properties of sediments vary widely in North Western Europe countries, in addition to the risk and potential cost of not dredging. In addressing these issues and its own history, each country has developed its own regulatory system and direct comparison between countries is both difficult and challenging.

## Methods:

Regulations and direct costs for the management of dredged material are well known, and are strong drivers for decision making, but the importance of indirect costs and ensuing benefits are now recognized although they have generally received less attention to date.

Is the perception of dredged sediment reuse options by European stakeholders different in North Western Europe countries? How to strengthen indicators for a sustainable reuse of dredged material? How to help stakeholders to take decisions for dredged material reuse? What is the global impact in terms of economics and the environment for dredged material reuse options?

In this context, the CEAMaS project funded by Interreg IVB North-West Europe has taken a multidisciplinary approach involving eight partners from Belgium, France, Ireland and the Netherlands in collaborative research and development to produce analyses and decision tools to support and facilitate stakeholders in strengthening reuse options.

## Results:

This European project develops shared analyses regarding the perception of sediment reuse in Europe by stakeholders, technical issues for application and sediment characteristics analysis, Life Cycle Assessment for dredging and treatment techniques, and economic modeling for several reuse options or geographic-based (GIS) technologies for the evaluation of economic opportunities.

These shared analyses will allow the development of a range of online decision tools and case studies, available through the CEAMaS website and a future European Center of Resources for sediment reuse.

This communication will describe the global approach and findings in the CEAMaS project in this global field of investigation.

The CEAMaS project involves a cooperation between CD2E as lead partner, Technical University of Delft, University College Cork, Cork Institute of Technology, Ecole Centrale of Lille, University of Lille 1, Belgium Building Research Institute (BBRI) and BRGM. The project will be completed in September 2015.

## Key words:

Marine sediment - Dredging - Civil engineering - Life cycle assessment - Decision tool - Center of resource - GIS - Economic model - Methodology - Reuse

## Theme:

Sediment and society  
Sediment quality and perception  
Best practices in sediment management  
Building with dredged material