Water Workshop 2023

A paradigm shift in the sediment management process: from waste to resources

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BEuSED FORUM

Agenda

01 Beneficial Use of Sediments

02 Nature-based Solutions

03 Beneficial Use in Practice

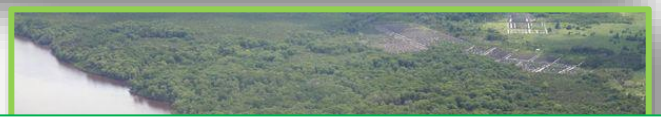
Beneficial Use of Sediments

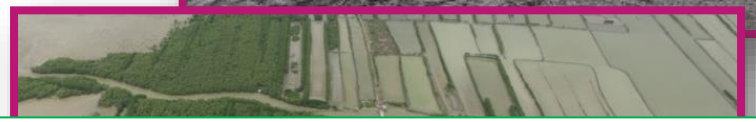
Natural

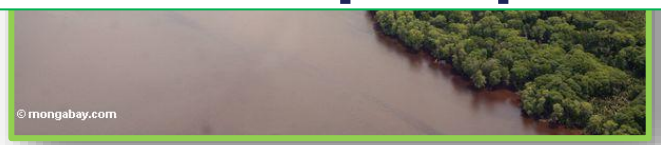
Human activities

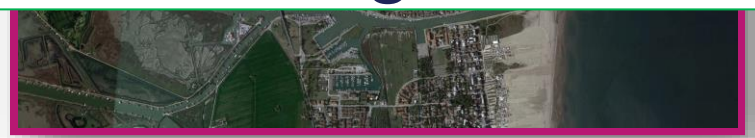
Natural

Human activities









Impact of human activities:

disrupt equilibrium, creating abundance and shortage

Beneficial Sediment Use

CEDA and PIANC Definition

"the use of dredged or natural sediment in applications that are beneficial and in harmony to (human and natural) development"

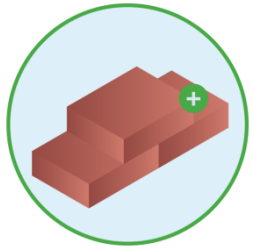
(…as opposed to waste it at sea or store it in a remote deposit forever)

Flood risk management

Navigability

Nature development

Water quality



Building material

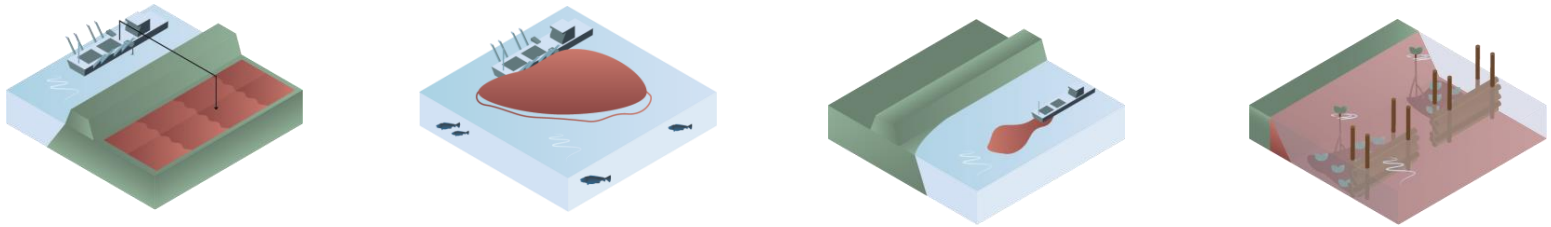
Local economy

Beneficial Use Classification

CEDA

Technique

Function



Raw Material

Remediation

Reclamation

Restoration

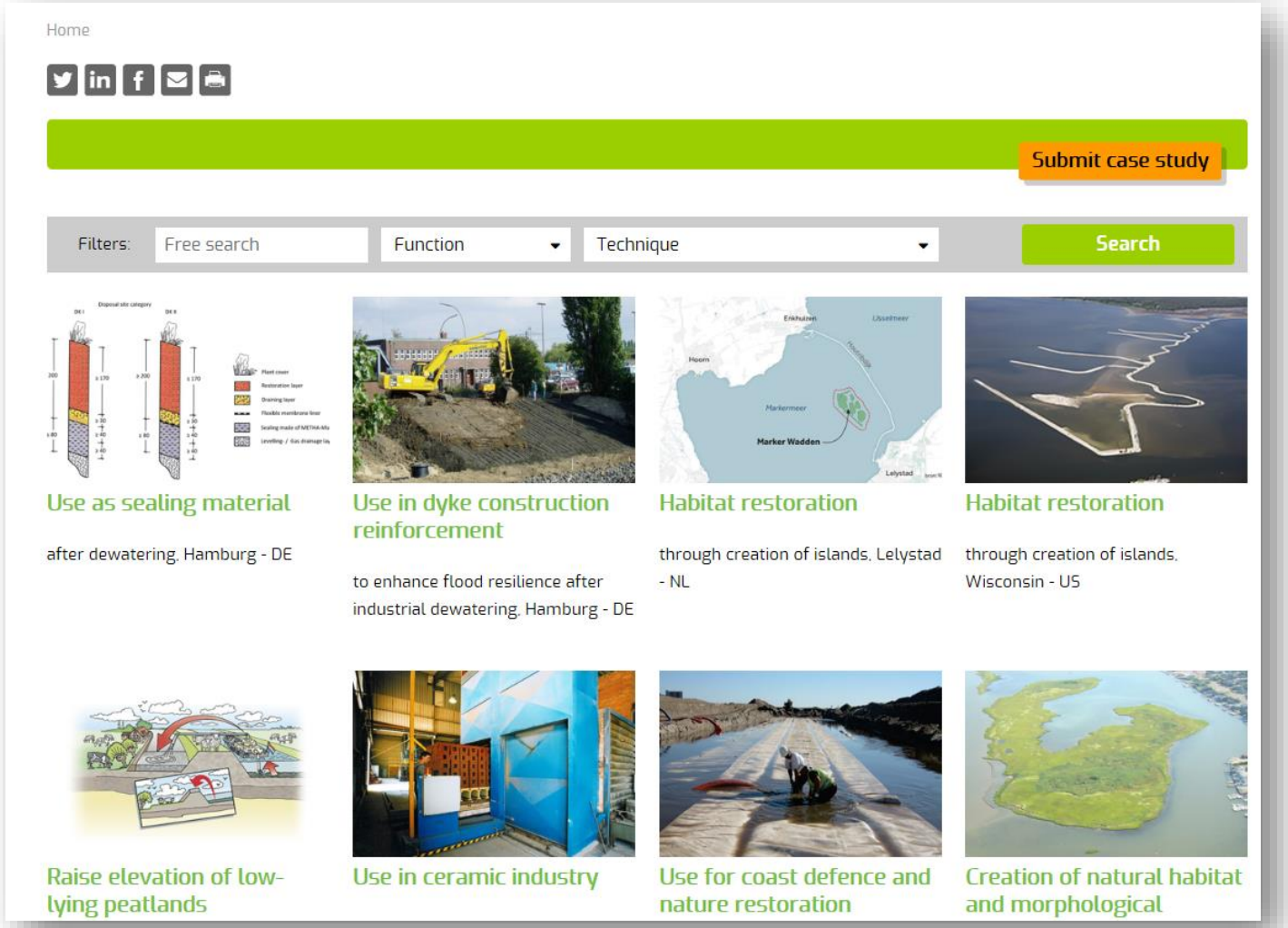
Resilience

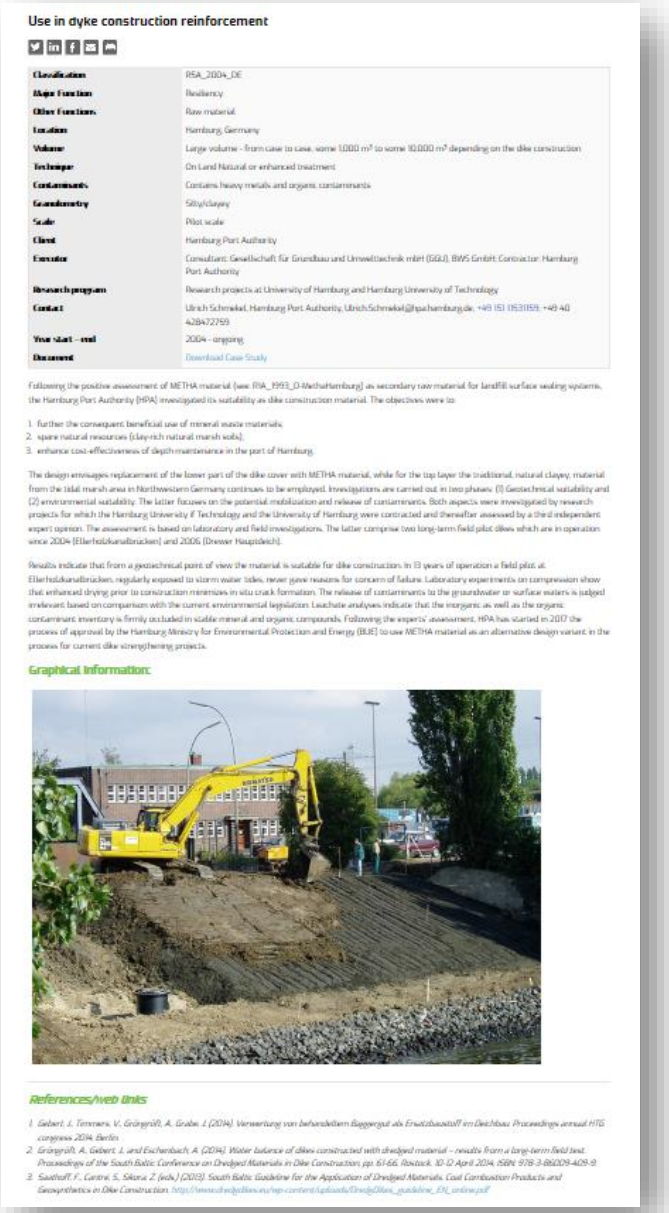
Treatments and contaminants

With Nature (NBS)

CEDA WG Beneficial Use Website

Used by SedNet and PIANC as open common shared case-studies bank





A PIANC ENVICOM REPORT ON THE SUSTAINABLE USE OF DREDGED MATERIAL

Burton Suedel
US Army Engineer Research and Development Center, Vicksburg, MS
Victor Magar
Ramboll, Chicago, IL, USA
Luca Sittoni
Deltares, The Netherlands
WODCON XXIII Copenhagen
May 2022

Guidance Report Goals

- Increase industry-wide Beneficial Use (BU) practices globally
- Develop strategies to overcome barriers to BU
- Advance circularity and sustainability goals by managing sediment as a resource

"Setting the course"

BU Catalysts

- **Redefine** cost to value
- **Connect** supply and demand
- Enlarge **stakeholders**' involvement
- Evaluate broad **(ecosystem) benefits** and **explore NbS**
- Use contaminated sediments on a **risk-management** basis, preserving safety for human and nature

From WODCONXXIII

- Project owner to **required 100%** BU
- **Ecosystem restoration** as objective of (BU) projects

Pictures, from top to bottom:
- Fehmarnbelt tunnel, D – DK → 100% BU required
- Port of Kokkola, FI → 100% BU of different qualities
- Markerwadden, NL → Main objective Ecosystem Restoration

- Source: PIANC WG 214 Report

Nature-based Solutions

Nature-based Solutions Fundamentals

What

***Building with Nature**: Conceptual approach for creating, implementing and uscaling **Nature-based Solutions** for water-related infrastructures, with **proactive** use of natural processes*

Central EU Strategy and Legislation

Central to DEME business

EUROPEAN COMMISSION

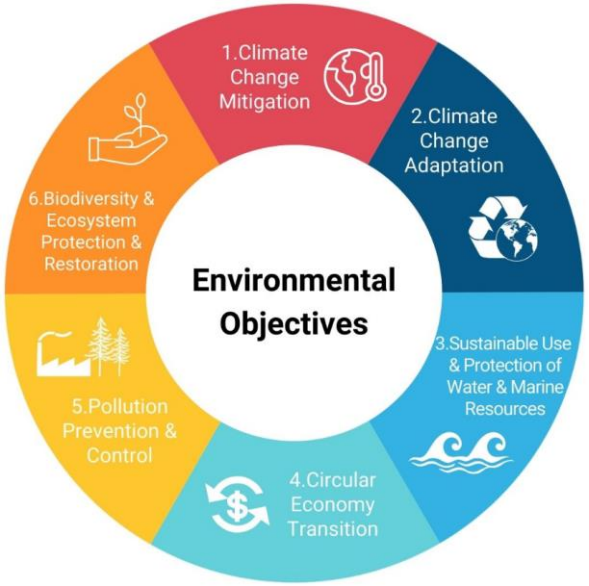
What is the EU taxonomy?

The EU taxonomy is a classification system, establishing a list of environmentally sustainable economic activities. It could play an important role helping the EU scale up sustainable investment and implement the European green deal. The EU taxonomy would provide companies, investors and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable. In this way, it should create security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed.

Taxonomy Regulation and delegated acts

The Taxonomy Regulation was published in the Official Journal of the European Union on 22 June 2020 and entered into force on 12 July 2020. It establishes the basis for the EU taxonomy by setting out 4 overarching conditions that an economic activity has to meet in order to qualify as environmentally sustainable.

The Taxonomy Regulation establishes six environmental objectives



DEME

SUSTAINABLE COASTAL AND ESTUARINE MANAGEMENT

CREATING NATURE-BASED SOLUTIONS FOR THE FUTURE

Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change

11. Promoting nature-based solutions for adaptation

[43] [44] [45]Implementing nature-based solutions on a larger scale would increase climate resilience and contribute to multiple Green Deal objectives. Blue-green (as opposed to grey) infrastructures are multipurpose, "no regret" solutions and simultaneously provide environmental, social and economic benefits and help build climate resilience. For example, protecting and restoring wetlands, peatlands, coastal and marine ecosystems; developing urban green spaces and installing green roofs and walls; promoting and sustainably managing forests and farmland will help adapt to climate change in a cost-effective way. It is vital to better quantify their benefits, and to better communicate them to decision-makers and practitioners at all levels to improve take-up. In addition, the Commission will develop a certification mechanism for carbon removals, which will enable robust monitoring and quantification of the climate benefits of many nature-based solutions.

Nature-based solutions are essential for sustaining healthy water, oceans and soils. They must play a bigger role in land-use management and infrastructure planning to reduce costs, provide climate-resilient services, and improve compliance with Water Framework Directive requirements for good ecological status. Using nature-based solutions inland, including the restoration of the sponge-like function of soils, will boost the supply of clean, fresh water and reduce risk of flooding. In coastal and marine areas, nature-based solutions will enhance coastal defence and reduce risk of algal blooms. Simultaneously, they will provide benefits such as carbon sequestration, tourism opportunities, and biodiversity conservation and restoration.

Europe needs to leverage more investments in nature-based solutions to generate gains for adaptation, mitigation, disaster risk reduction, biodiversity, and health. Investments in nature-based solutions must be viable over the long-term, because climate change is amplifying stresses on ecosystems. This can be done through new and innovative financing approaches and products under InvestEU [46], targeted support under Cohesion Policy programmes, and support for investments, eco-schemes and advisory services in the Common Agricultural Policy. Through carbon farming, the Commission will promote a new business model for land-based carbon removals, including financial incentives to rollout nature-based solutions.

The Commission will:

- propose nature-based solutions for carbon removals, including accounting and certification in upcoming carbon farming initiatives;
- develop the financial aspects of nature-based solutions and foster the development of financial approaches and products that also cover nature-based adaptation;
- continue to incentivise and assist Member States to rollout nature-based solutions through assessments, guidance, capacity building, and EU funding.

EU Soil Strategy for 2030
Reaping the benefits of healthy soils for people, food, nature and climate

Member States should better integrate soil and land use management in their river basin and flood risk management plans where possible by deploying nature-based solutions such as protective natural features, landscape features, river restoration, floodplains, etc.

BU in practice, a step further

TTP1, SIN

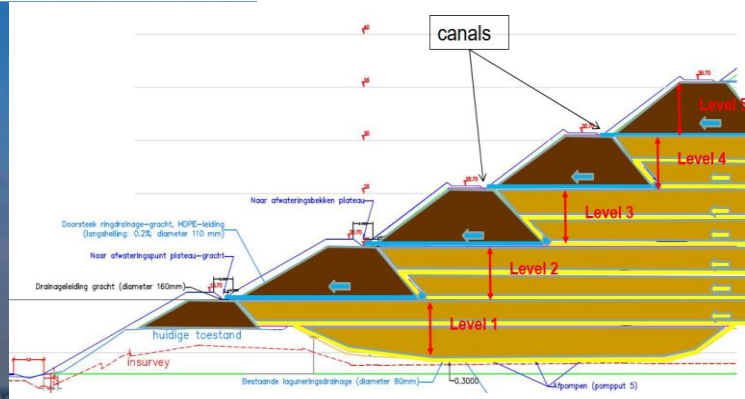
Land reclamation with fine dredged materials

Brest, F

Land reclamation with fine dredged materials

Fasiver, B

Redevelopment with contaminated soil



Baarland , N L

Sand Nourishment – Beach Protection

Markerwadden, NL

Creation of nature islands

Kleirijperij and Brede Groene Dijk, NL

Dikes reinforcement

Pilot Ophoging agrarischlanden, NL

Raising agricultural land

Upper Barataria, USA

Marsh Creation

Venice Lagune, I

Restoration of wetlands

The time for Beneficial Use and Nature-based Solutions

Technology → Practical examples / projects → Implementation legislation and finance

Thinking “how to” best use this resource is far more sustainable than hiding behind “yes buts” and continue to waste

Thank you

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