

Dredging for SUSTAINABLE INFRASTRUCTURE





**Dredging** Today.com



## Benefits of using Dredged Material Chris Adnitt







## **Benefits of using Dredged Material Chris Adnitt**

- Create Habitats for wildlife
- Protect the Coast
- Natural Filtration system
- Use for excess material
- Comply with legislation and guidance
- Sustainable Approach to managing dredged material





## What can be created?

- Offshore islands
- Saltmarsh habitat
- Mangrove habitat
- Sand dune
- Oyster reefs
- Fish shelters
- Lagoons
- ????









## Navigation with Nature Tiedo Vellinga







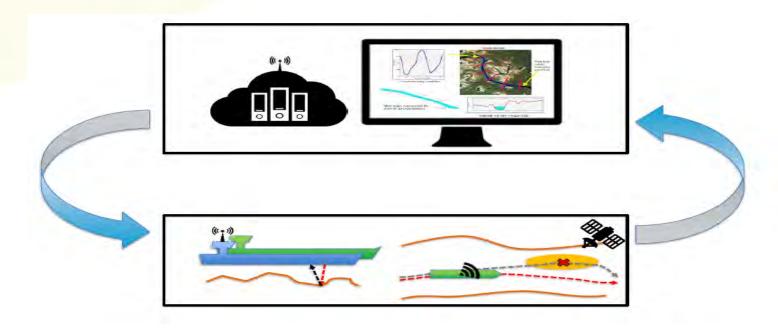
## Navigation with Nature Tiedo Vellinga TuDelft

- Large rivers, like the Ayeyarwady and Mekong river, are known for their very dynamic meandering character, resulting in fast and unpredictable channel migration.
- Navigation on these rivers is significantly hampered by the high variability of both the water level and fairway channel position.
- Large scale river training works and appropriate aids to navigation are relatively expensive and not sustainable















## The Climate-Resilient Coast Stefan Aarninkhof





## **The Climate-Resilient Coast**

## Stefan Aarninkhof Tudelft















# Dredging Sustainable Solutions Teresa Sá Pereira by Gerard van Raalte





## **Dredging Sustainable Solutions**



## Teresa Sá Pereira

#### **Port of Lisbon**

- Maintenance dredging: 2 3 campaigns / year, each campaign  $\sim 250,000$  m<sup>3</sup>.
- Traditionally, placement inside estuary and in offshore disposal sites, prescribed by regulations.
- Investigations into more sustainable use or relocation options.







## **Dredging Sustainable Solutions**



### Teresa Sá Pereira

#### **Portuguese Coast**

- Studies by Portuguese Environmental Agency
- 42% of Atlantic coast sandy beaches, seriously eroding
- Protection against sea level rise and climate change needed
- Reinforce the coast line by traditional hard solutions or by sand nourishments?







## **Dredging Sustainable Solutions**



## Teresa Sá Pereira

#### **Port of Lisbon**

- Use maintenance dredged material for reinforcement of Costa da Caparica.
- Port of Lisbon and Environmental Agency working together.
- Yet, many years (~6) before all legislative permits in place.







## **Energy Transition Mark van Koningsveld**











## Ecological Infrastructure Development Martin Baptist

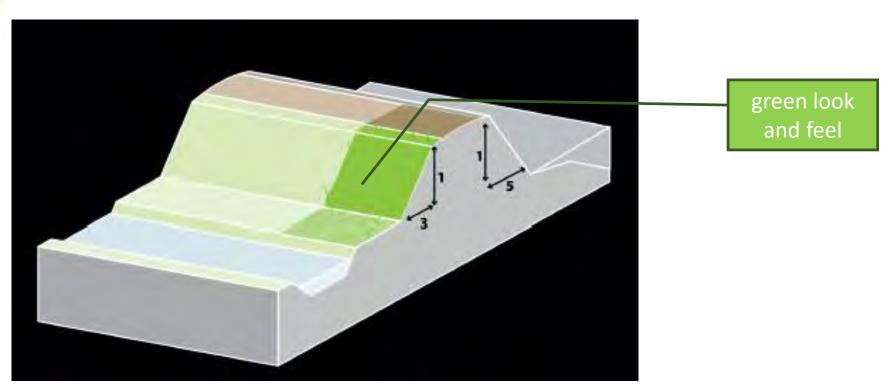






## **Ecological Infrastructure Development Martin Baptist**

Traditional flood defence "Form Follows Function"









## Ecologist's flood defence "A flood resistant landscape"









A landscape full of gradual gradients, diversity



