

Adding Value to Society Worldwide

Scaling up Building with Nature

By Jane Madgwick, CEO Wetlands International



Climate Change: wake-up @ Paris 2015



CARBON DIOXIDE

↑ 405.25 parts per million

GLOBAL TEMPERATURE

↑ 1.7 °F since 1880

ARCTIC ICE MINIMUM

↓ 13.3 percent per decade

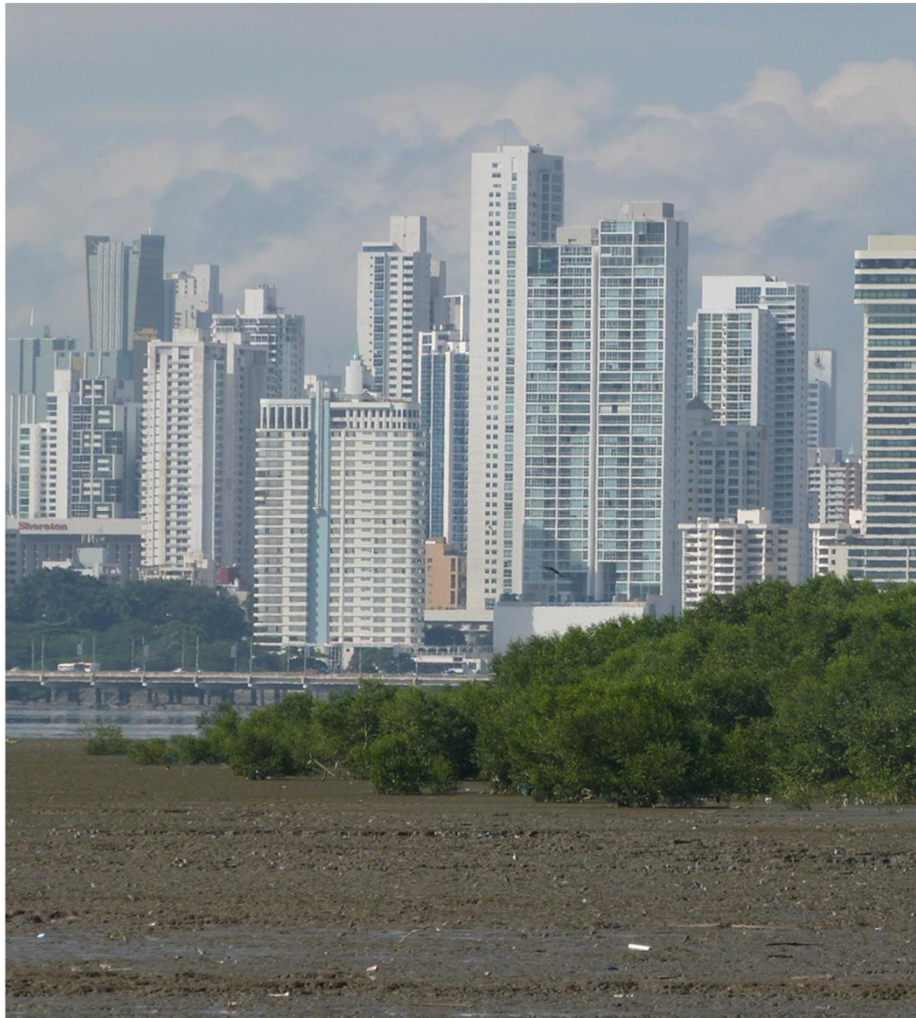
LAND ICE

↓ 281.0 Gigatonnes per year

SEA LEVEL

↑ 3.4 millimeters per year

The future of infrastructure development is changing



- Rising investments in infrastructure
- Increased risks and maintenance costs due to climate change
- More stringent environmental and social regulations
- Demand for solutions that address multiple stakeholder needs
- Sector required to contribute to Agenda 2030

Traditional solutions no longer suffice

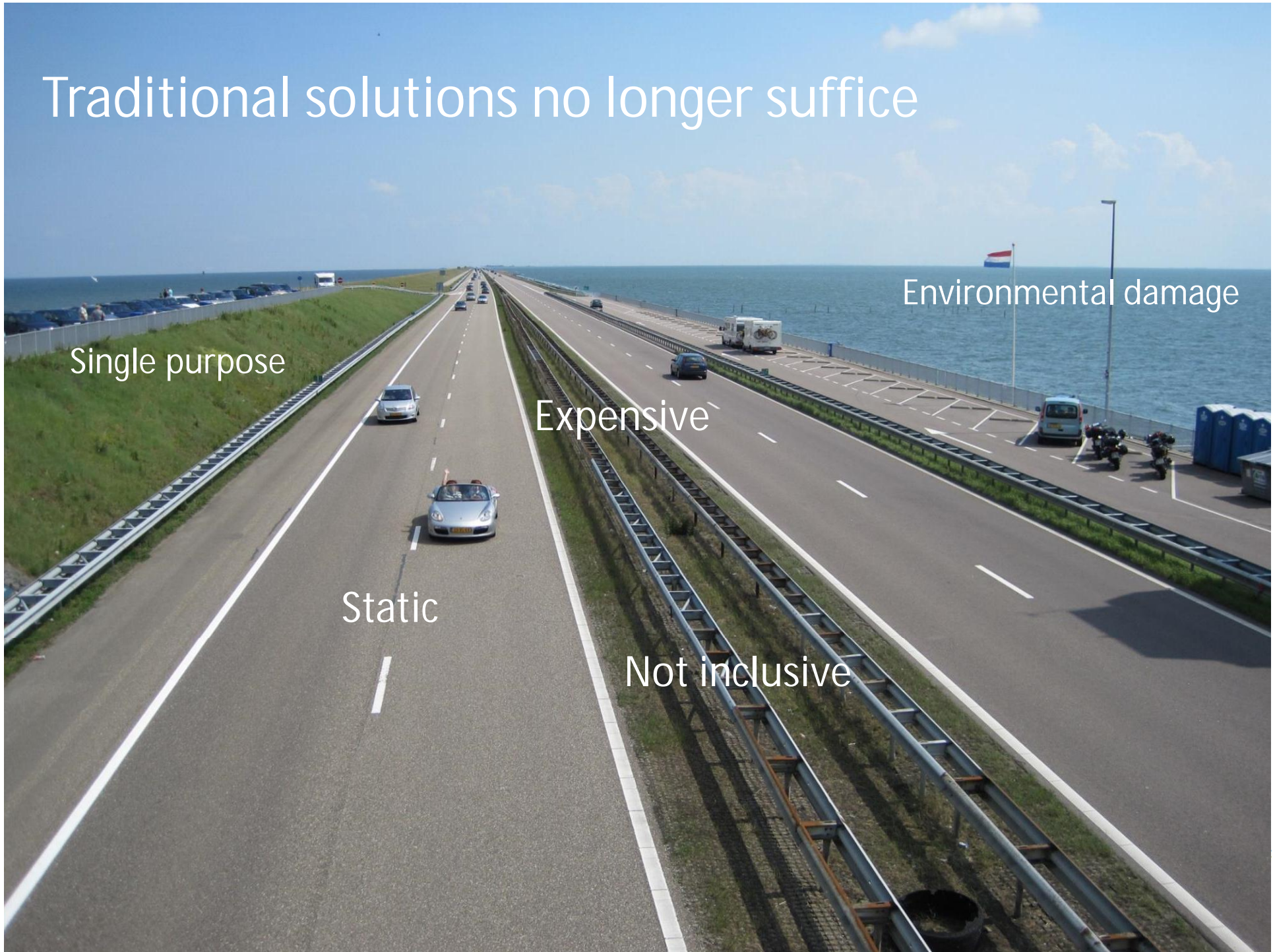
Single purpose

Expensive

Static

Not inclusive

Environmental damage



Major challenges

1. Unintended side-effects: reclamation of floodplain wetlands, leads to massive flooding elsewhere (Panama city, Panama)



2. Mal-function: infrastructure failure due to lack of systems understanding (Paramaribo Suriname)



3. Environmental damages: large estates in vulnerable wetlands (Buenos Aires, Argentina)

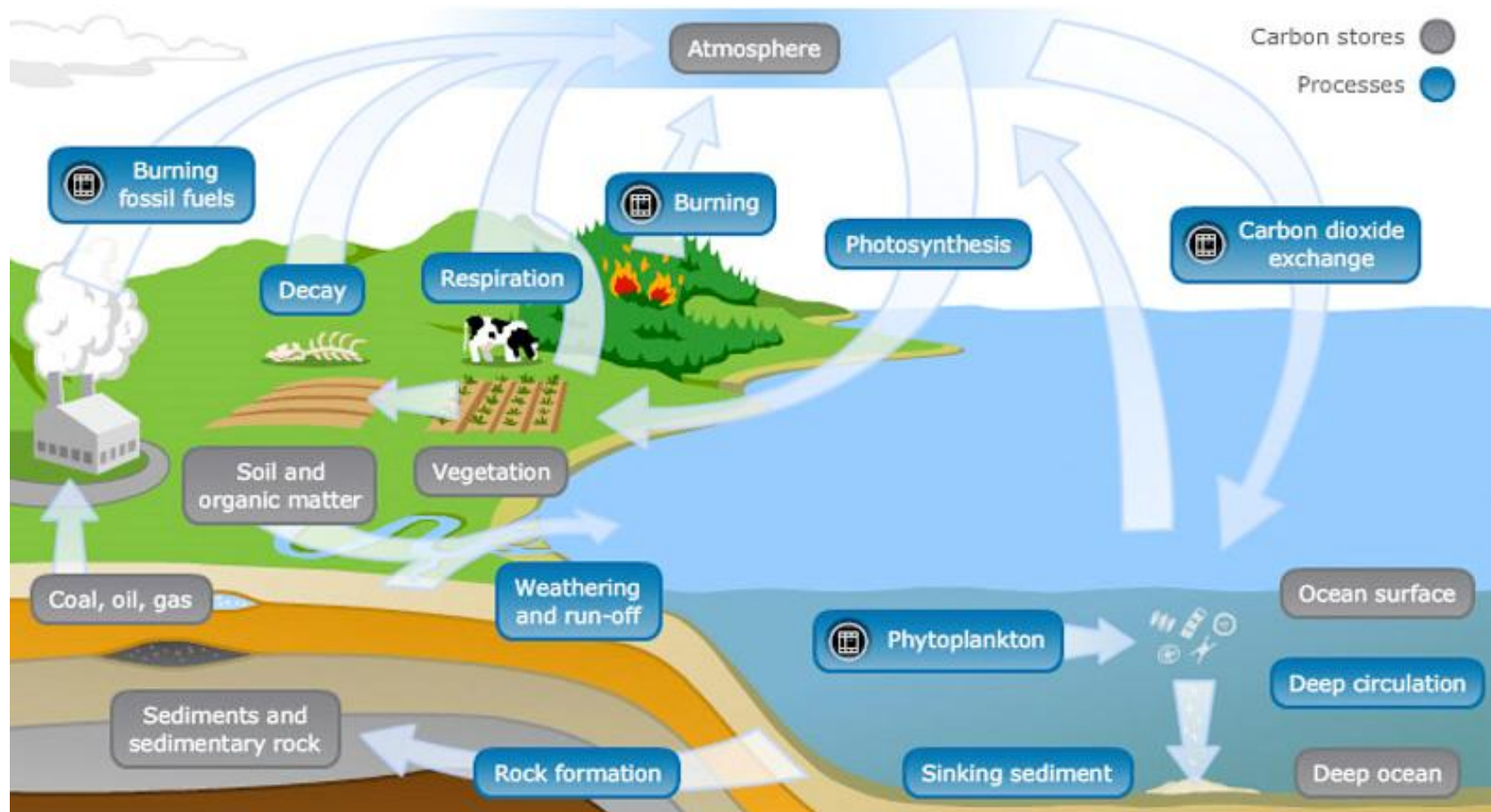


How does this affect the dredging industry?



Carbon footprint?

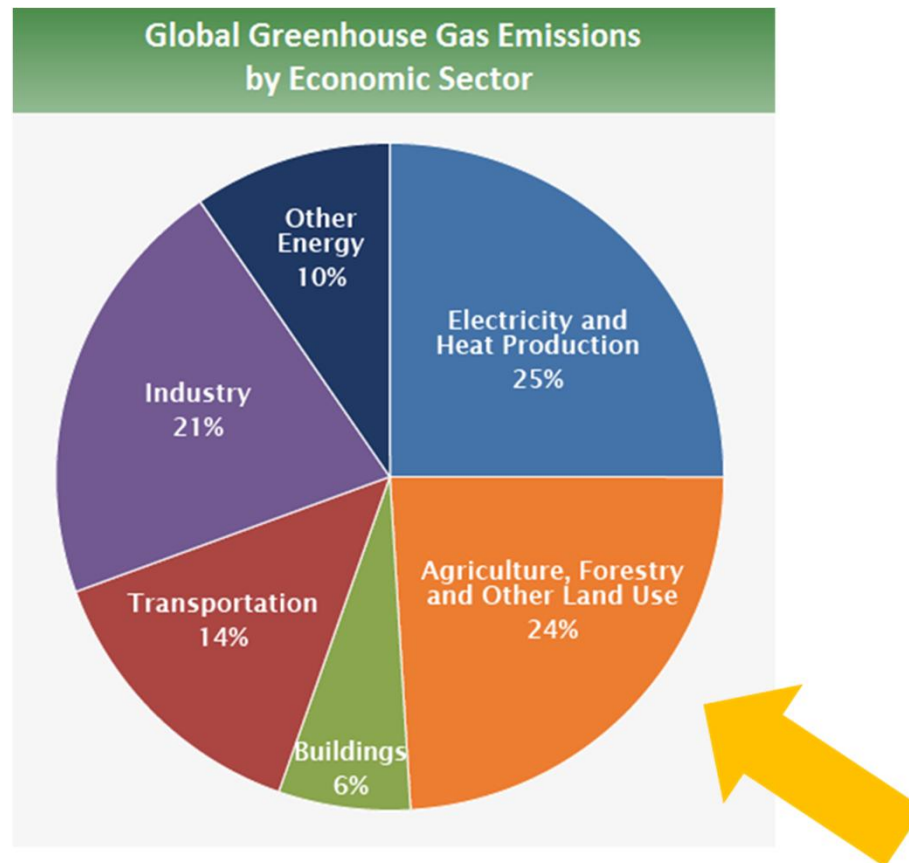
Dredging interacts with the C cycle on and off-site



Global GHG cycle – ecosystems & sediments are key

The big unknown: carbon emissions from sediments

- Dredging measures may result in massive greenhouse gas emissions due to disturbance of carbon rich deposits
- They are not accounted for and most projects do not take measures to reduce these emissions



Coastal wetlands are huge carbon sinks

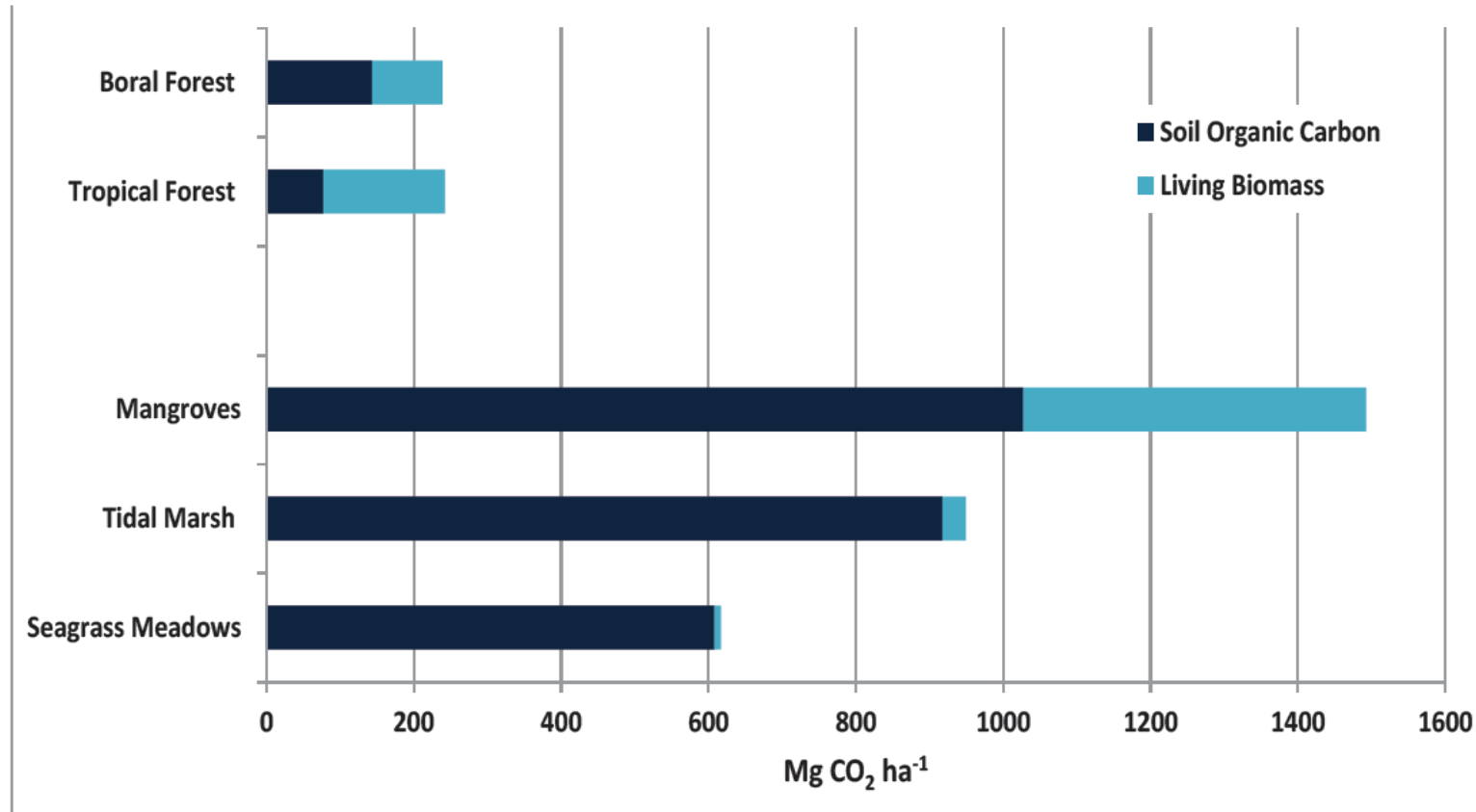
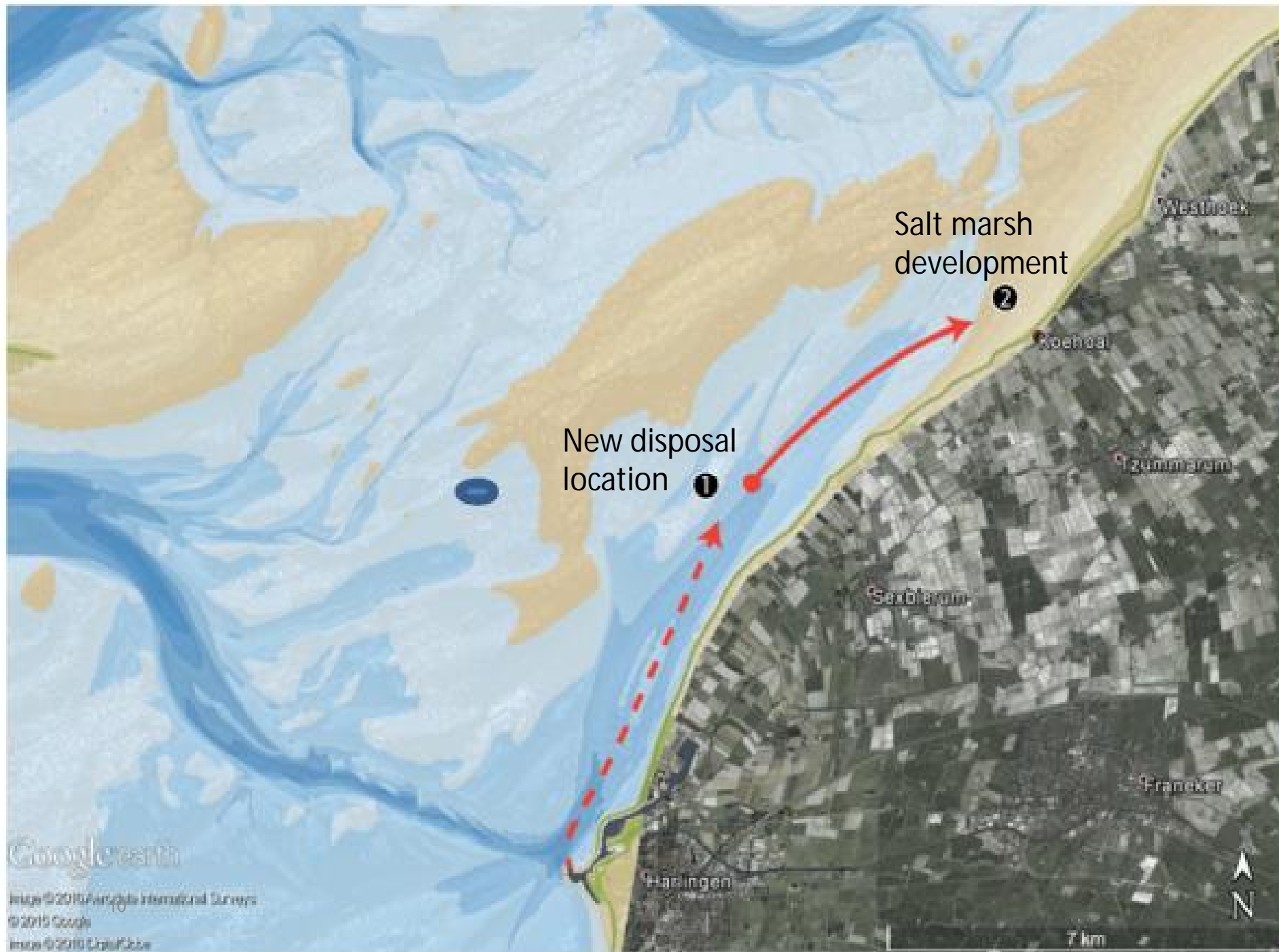


Figure 2. Mean carbon storage above and belowground in coastal ecosystems versus terrestrial forest (Fourqurean et al. 2012; Pan et al. 2011; Pendleton et al. 2012).

Potentially affected (+ or -) by dredging



Need for a transition



From Building *in* Nature

To Building *with* Nature

*Aligning economic development
with care for the environment*

Building with Nature in the Netherlands slowly taking off



Sand nourishment Galgeplaat



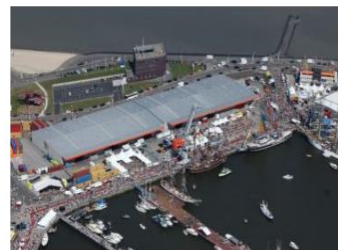
Mud motor for salt marsh development



Marker Wadden



Sand Motor Delfland Coast

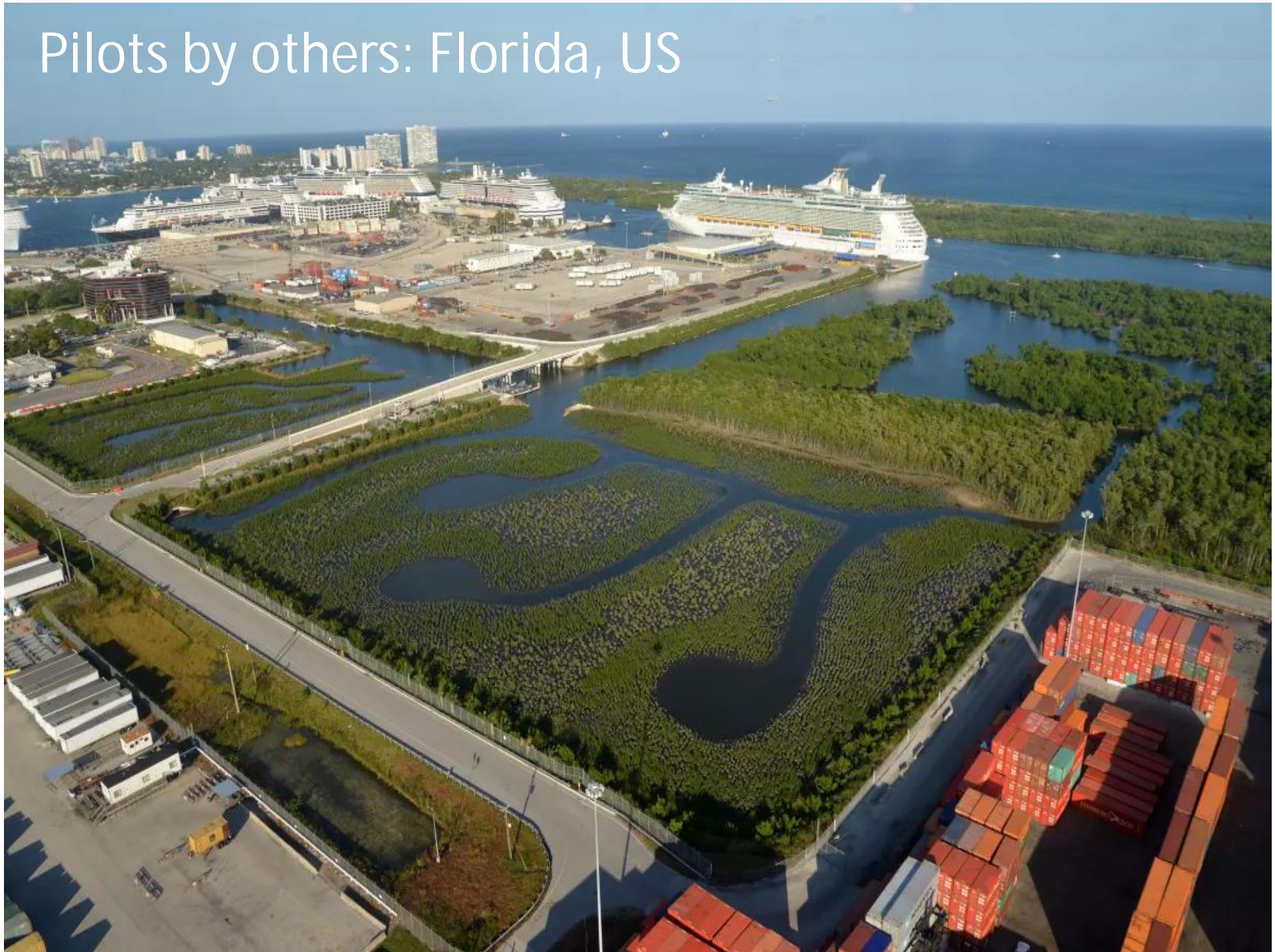


Sustainable development Port of Delfzijl (Marconi)



Hybrid Flood Defence Houtribdijk

Pilots by others: Florida, US



Different solutions for different contexts



The challenge: from pilot to market uptake

Perception:

Agree on need



Commitment to engage

Research:

Knowledge & Ideas



Joint learning and innovation

Pilot:

Show that it works



This is where we are now...

Project:

Make it happen

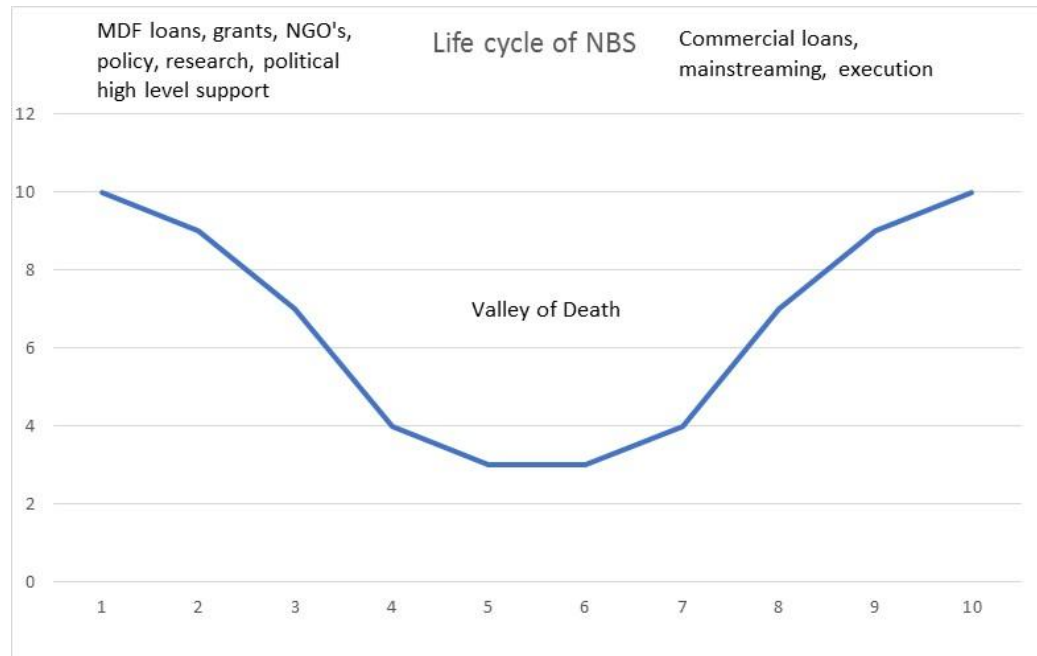


Uptake by the market

Grant funding

Investment

How to move from pilot to market uptake?

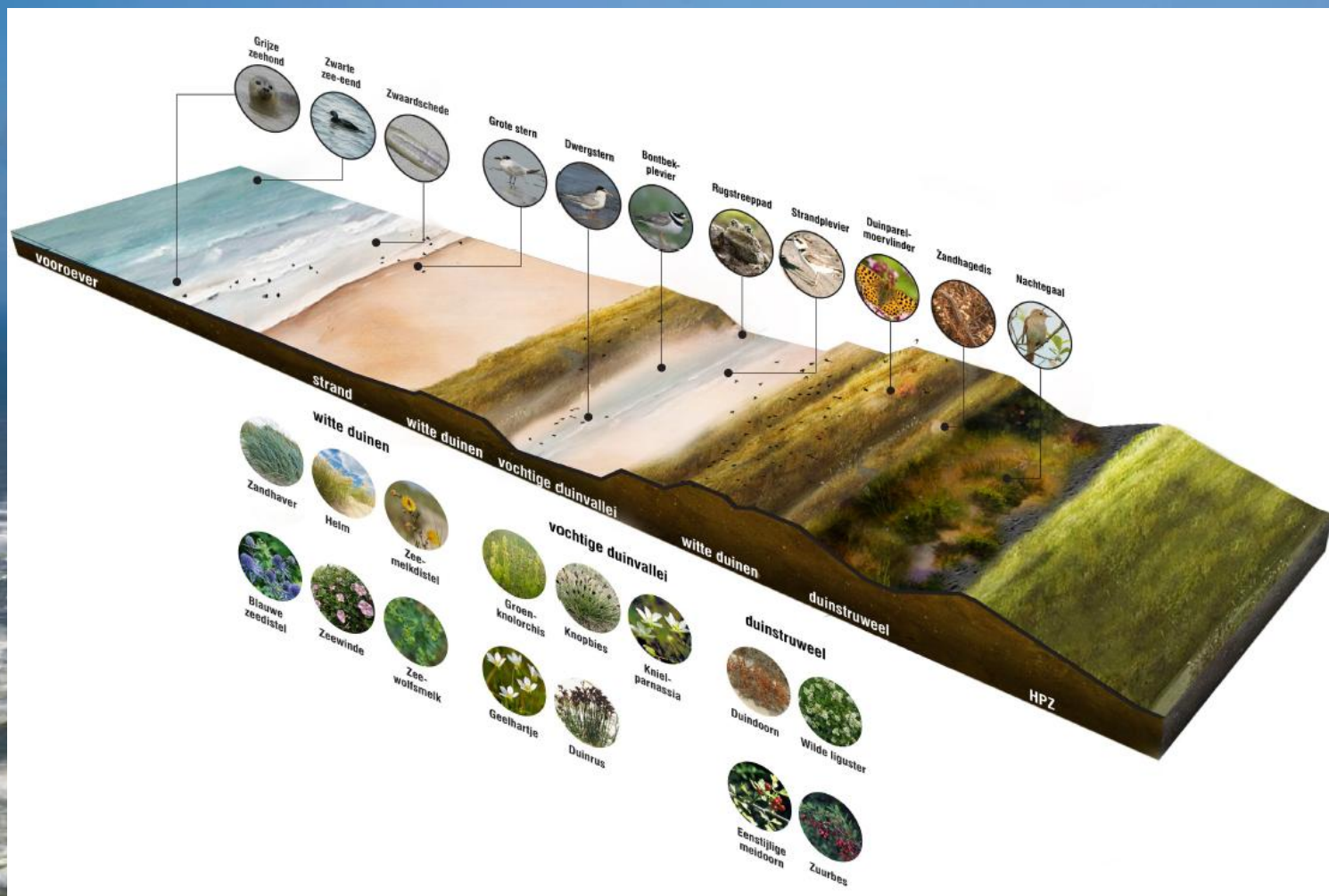


Overcoming the *valley of death* requires us to gradually phase out grants as an enabling environment emerges. The pre-competitive and competitive domains are part of a continuum, not two separate domains!



Some examples of upscaling
Building with Nature

From pilot to project: multiple function sea defence as mainstream solution



Hondsbossche Sea Defence, The Netherlands

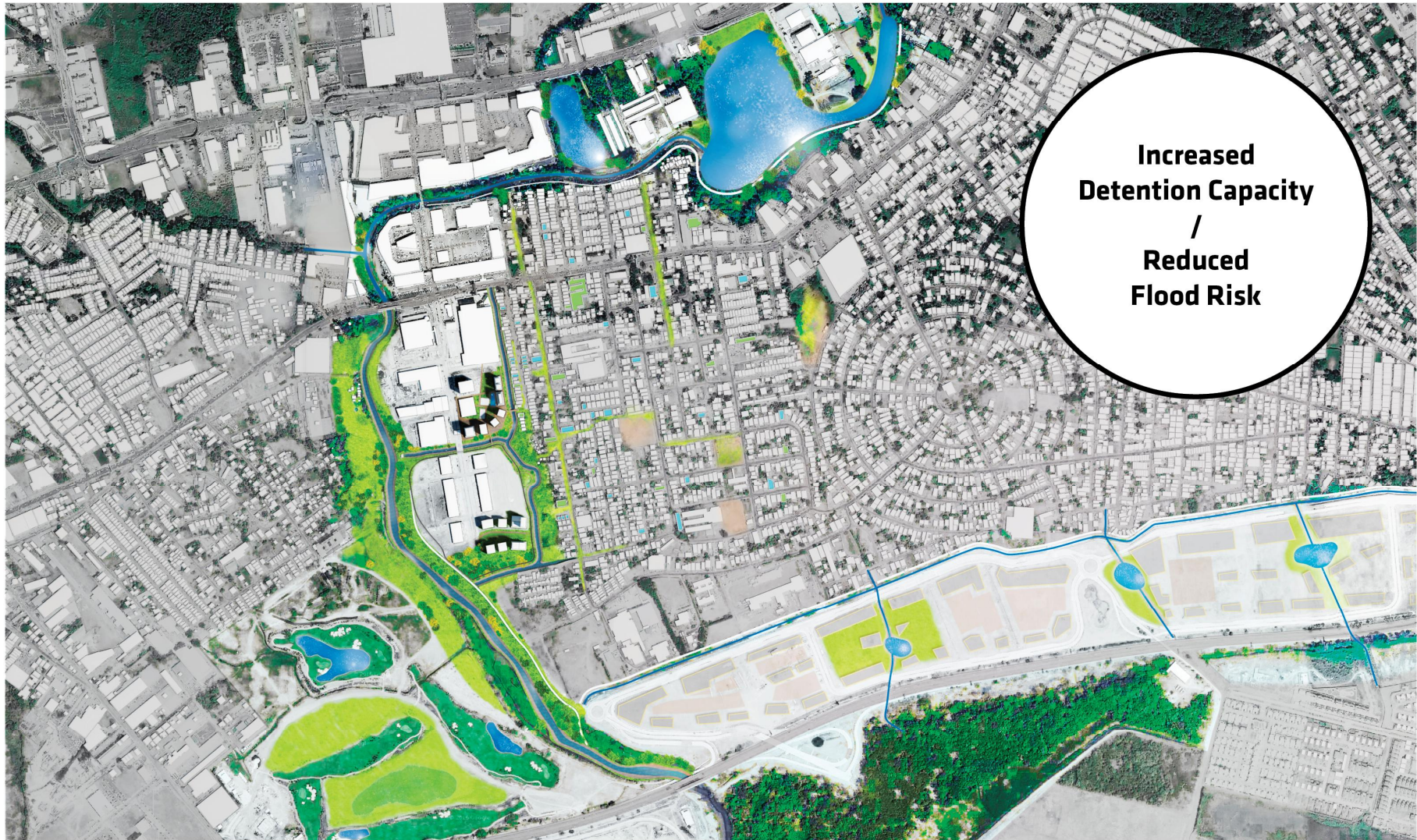
Pilots now leveraging government investments for scaling and replication: Java, Indonesia



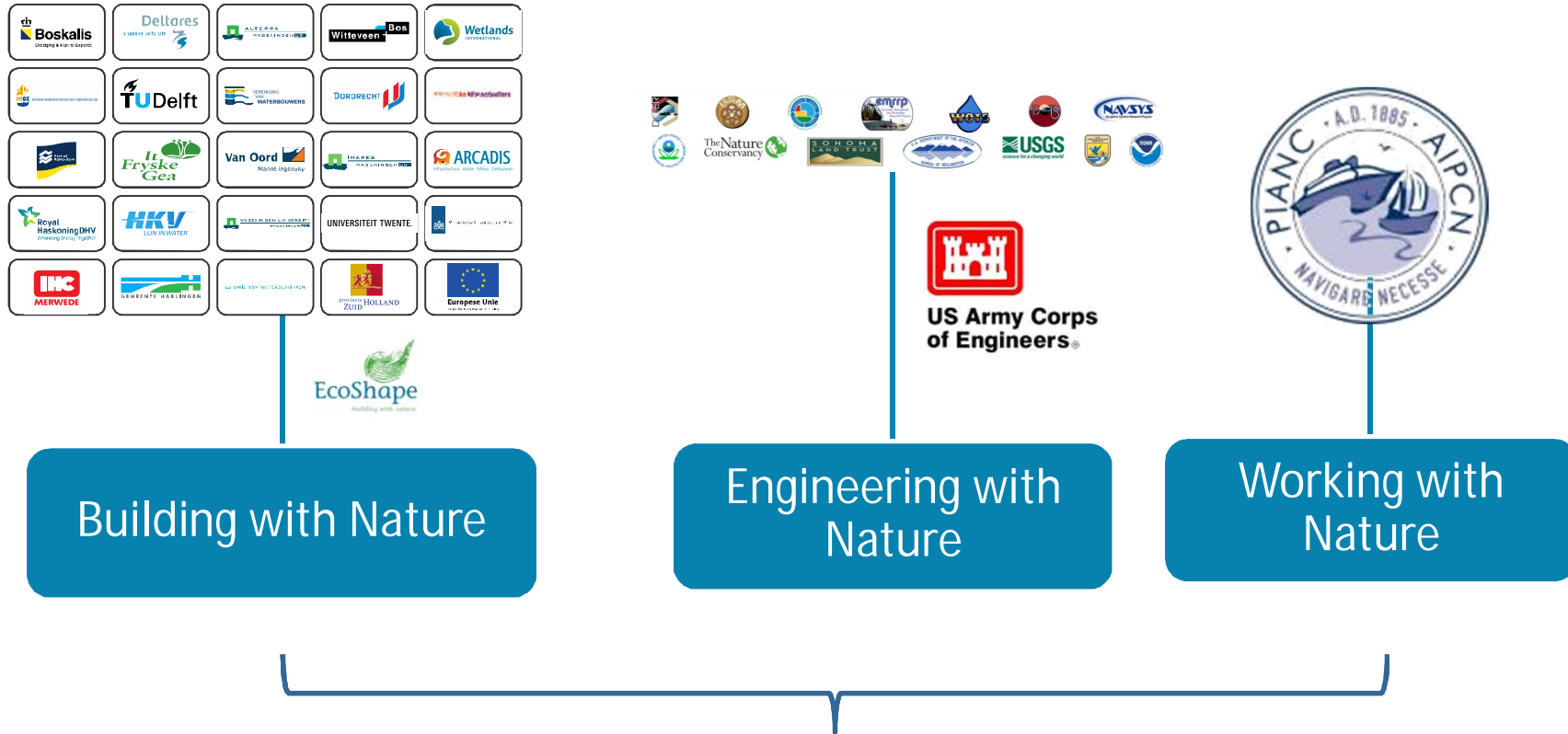
Effective and equitable flood risk management using nature-based solutions in cities e.g. Panama City



Sustainable flood risk management plan

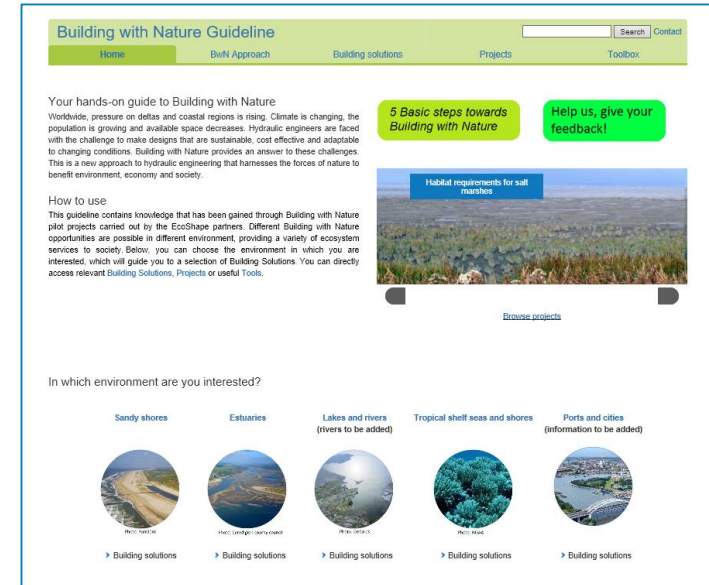
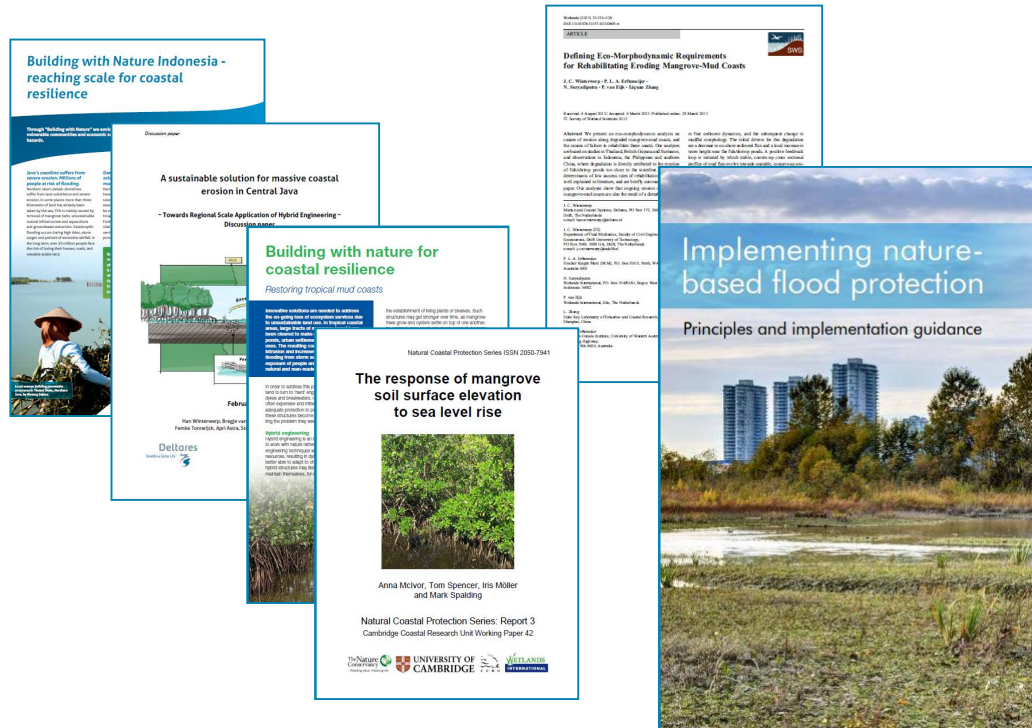


Combine forces for a global paradigm shift?



Outreach towards investment banks, multilateral agencies, governments

Addressing the knowledge gap



Translate available materials in a region-specific context and develop new ones as needed

Apply this at scale in some of the biggest river and delta systems with big development pressures?



- Maintain a free-flowing La Plata basin, while meeting economic development needs?

Conclusions

- Building with Nature offers opportunity to:
 - Reduce risks and costs
 - Create a net positive impact and shared value
 - Create a licence to operate
 - Competitive advantage
- It's time to move from pilots to market uptake



What can you do?

- Help transform the sector by promoting more sustainable and inclusive approaches
- Propose Building with Nature type solutions to clients
- Work together in creating demand for Building with Nature
- Work with us to understand and address carbon emissions from dredging and coastal infrastructure development



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