

Use of the sediment budget analysis

Wilfried ten Brinke



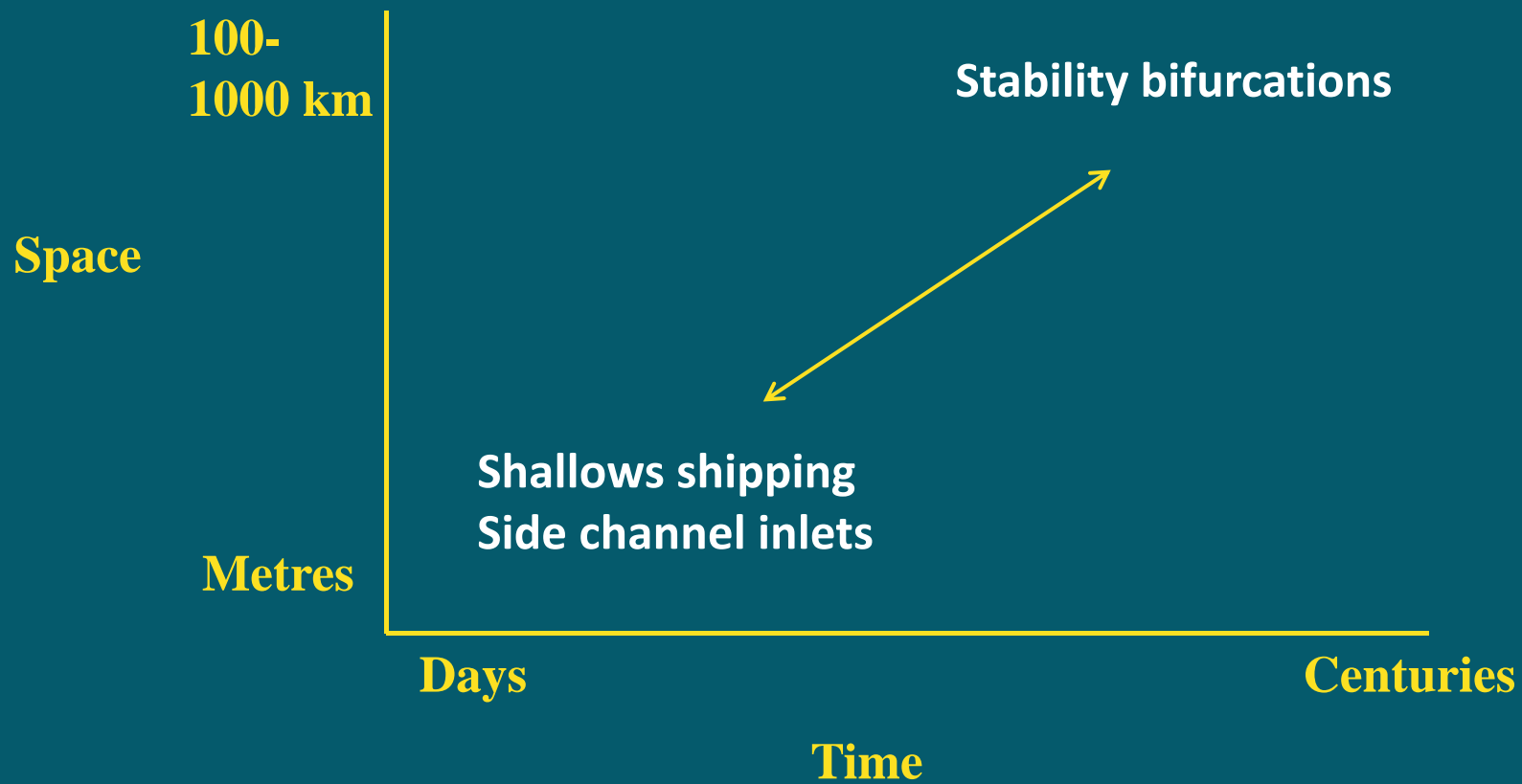
From: Photography Bert Boekhoven

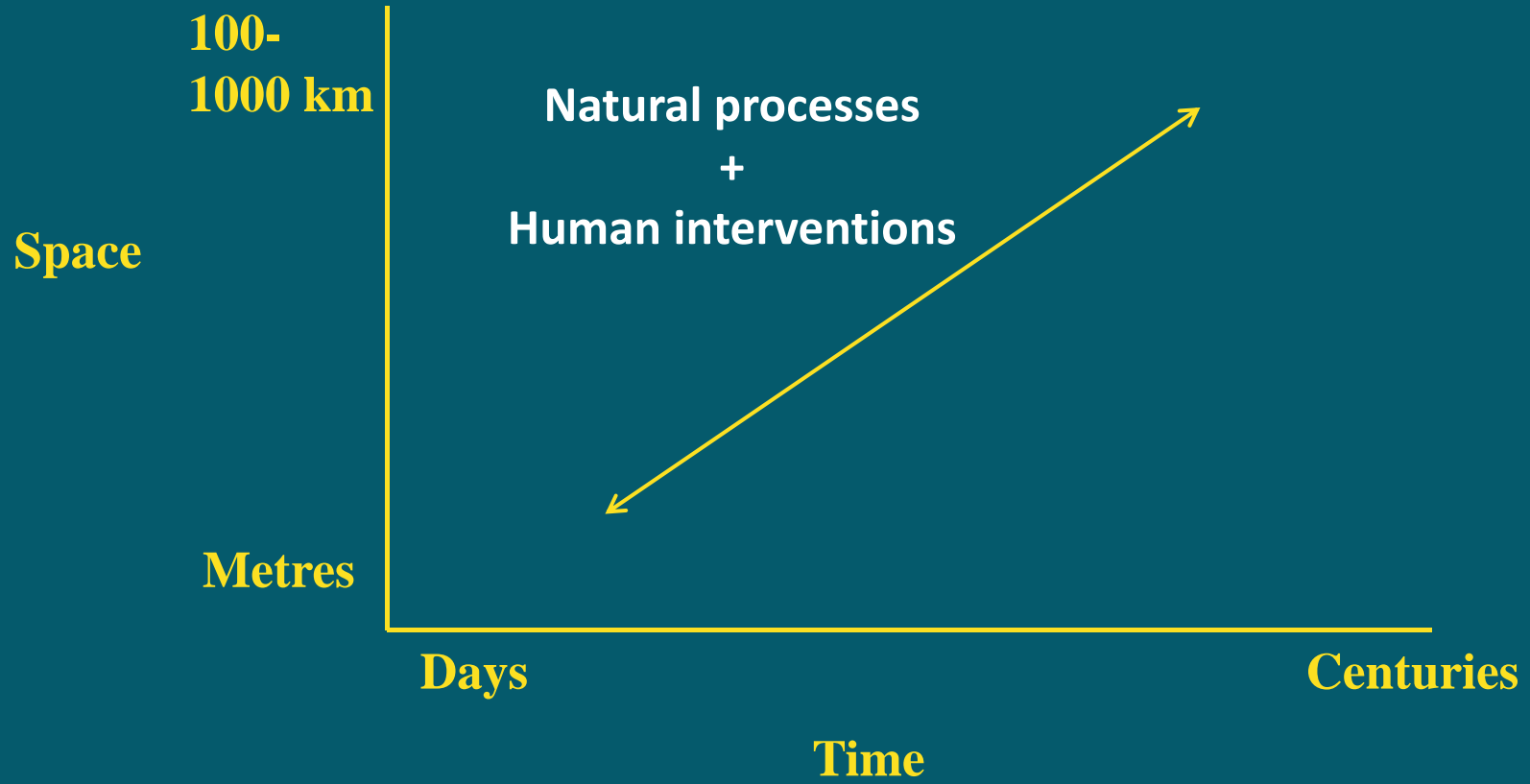


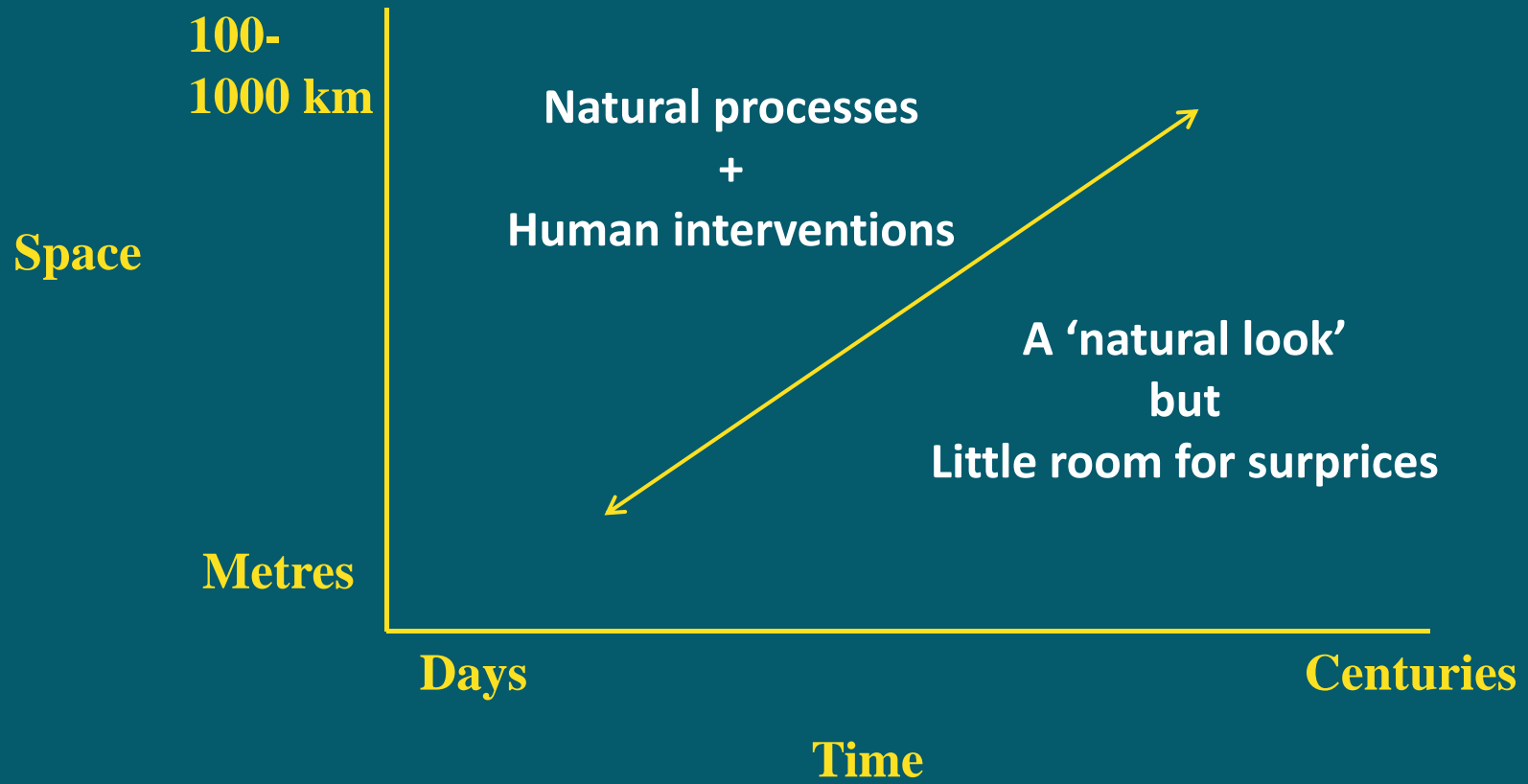
**Centre
for Climate
Adaptation**

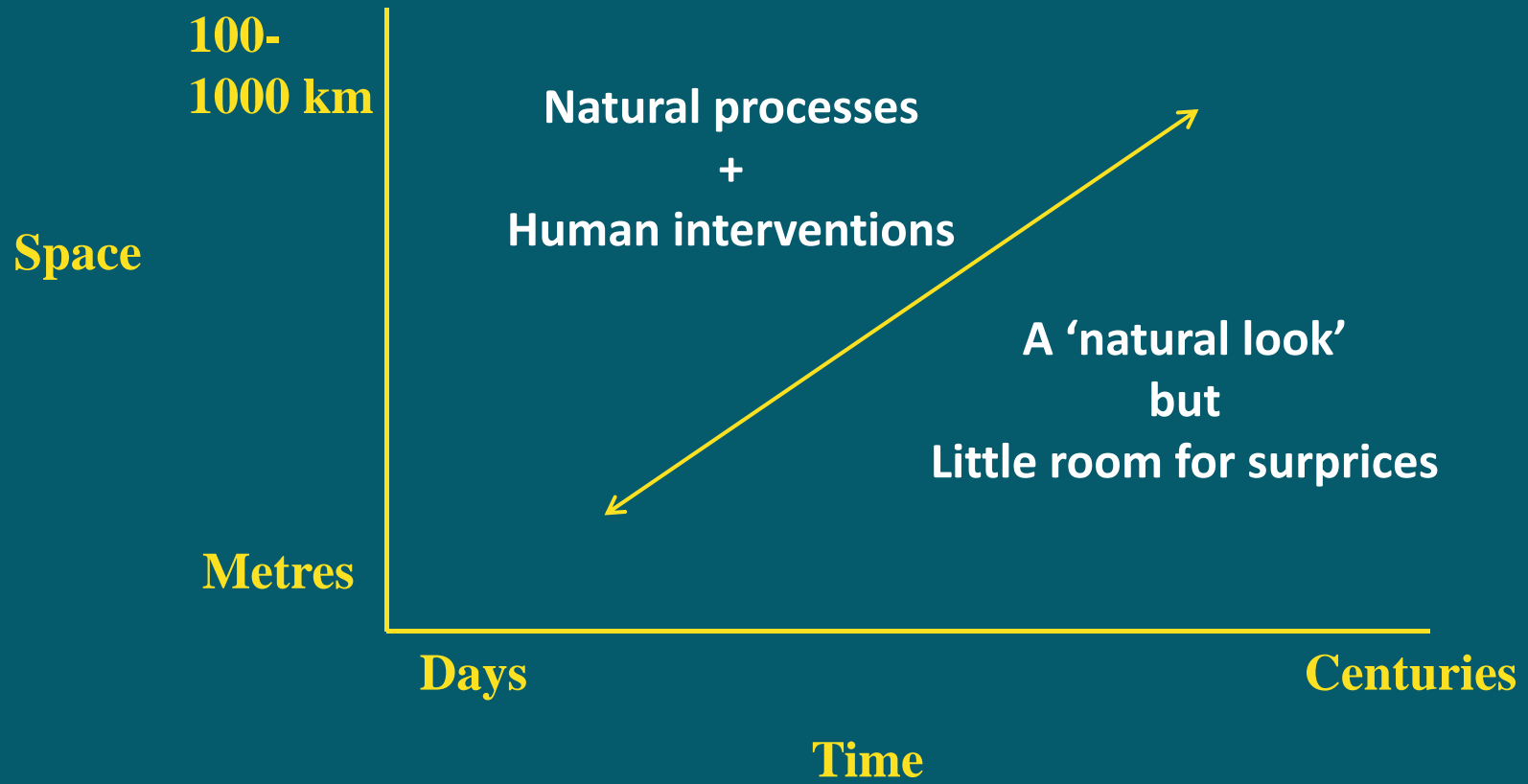
info@climateadaptation.eu
www.climateadaptation.eu
info@blueland.eu
www.blueland.eu

Morphodynamics

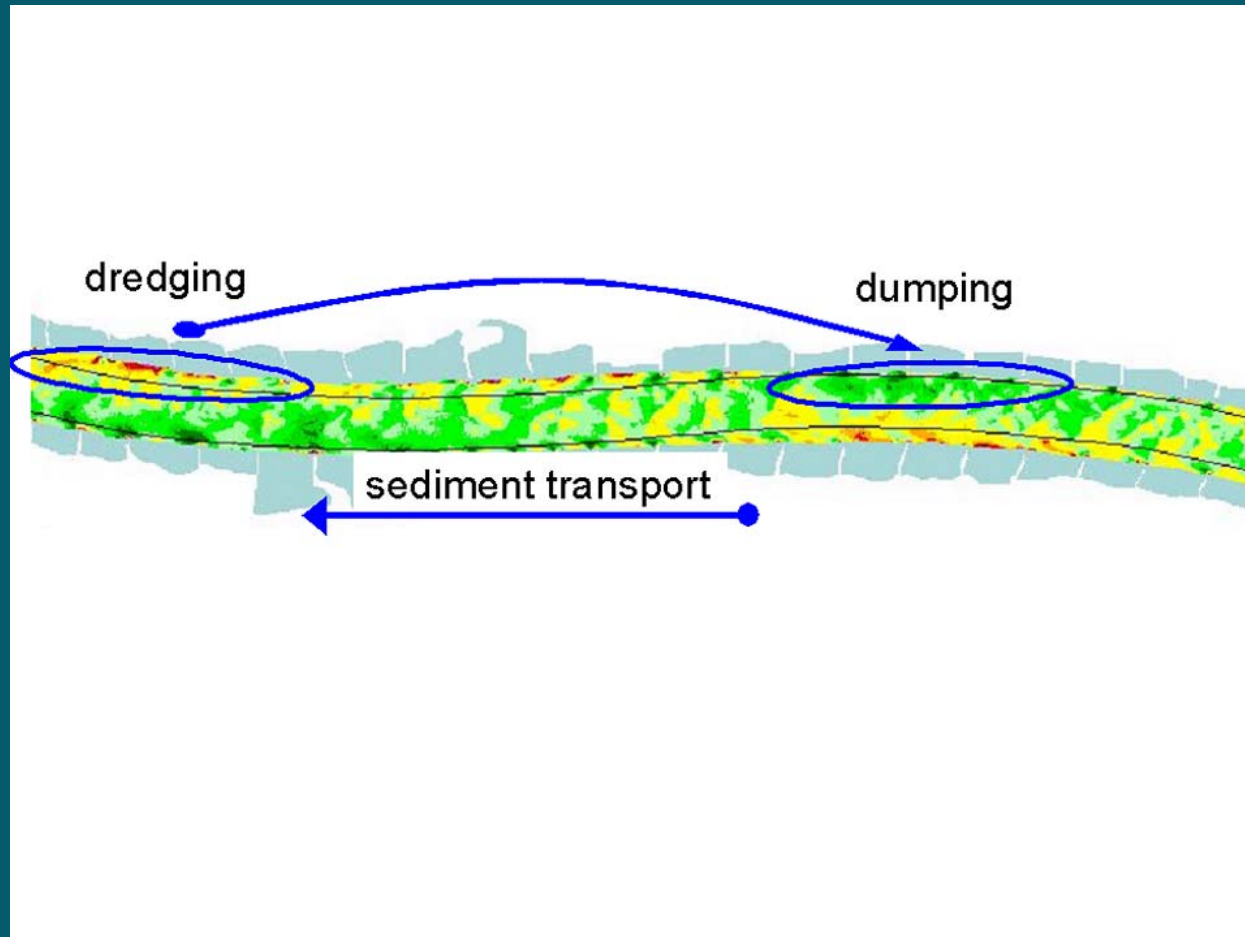








Working against natural processes!



Space

**100-
1000 km**

Metres

Days

Centuries

Time

**Tailor-made solutions that serve different
and sometimes opposing interests
(shipping, safety, nature, ...)**

**You need to know the morphodynamics of your river
(in time and space)**

**You need to know the interaction of morphological sub-units
and of processes at different time scales**

Drawing-up a sediment budget helps you to reach that goal

It's complicated!

From: Photography Bert Boekhoven



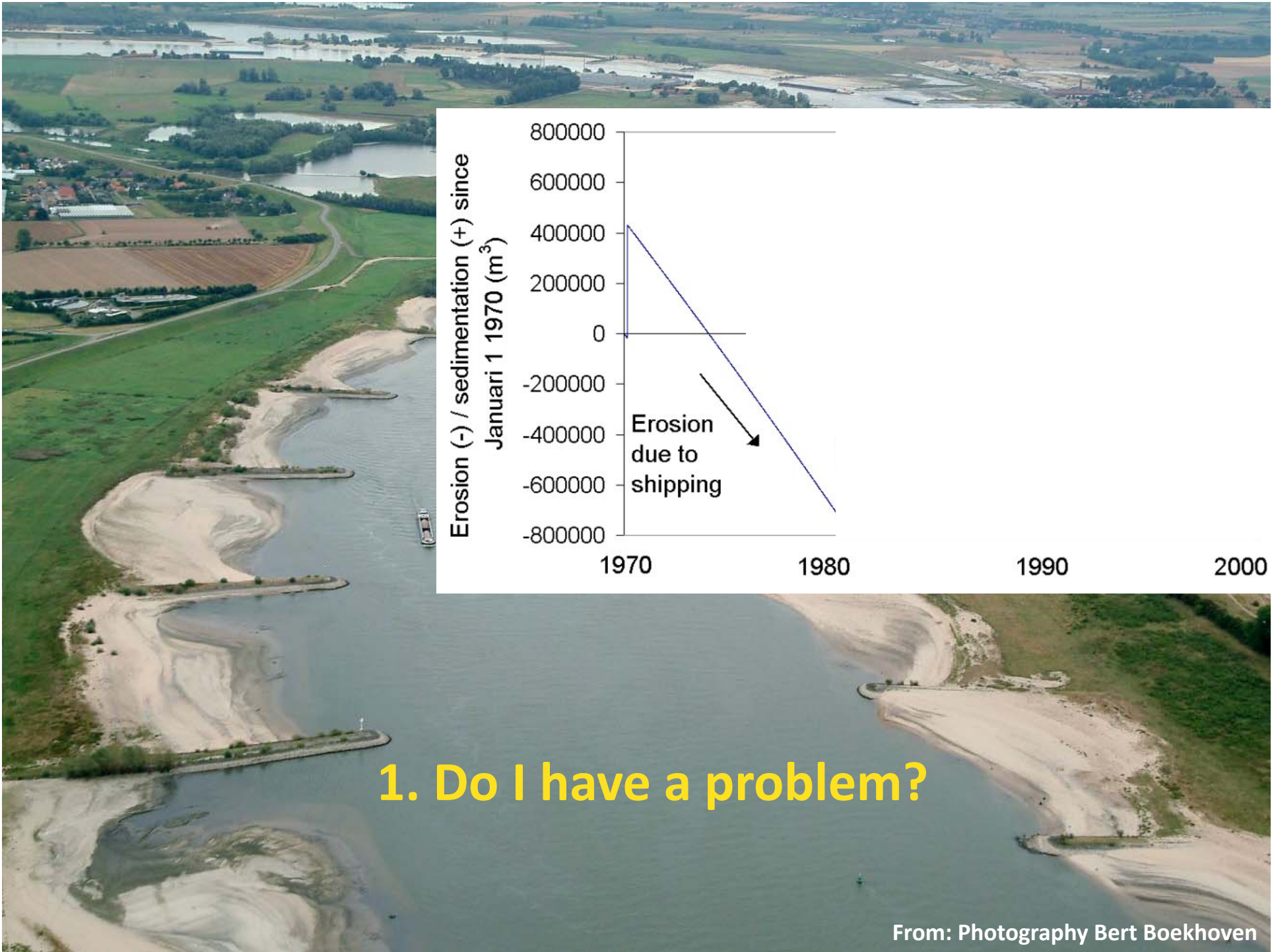
A bit of puzzle



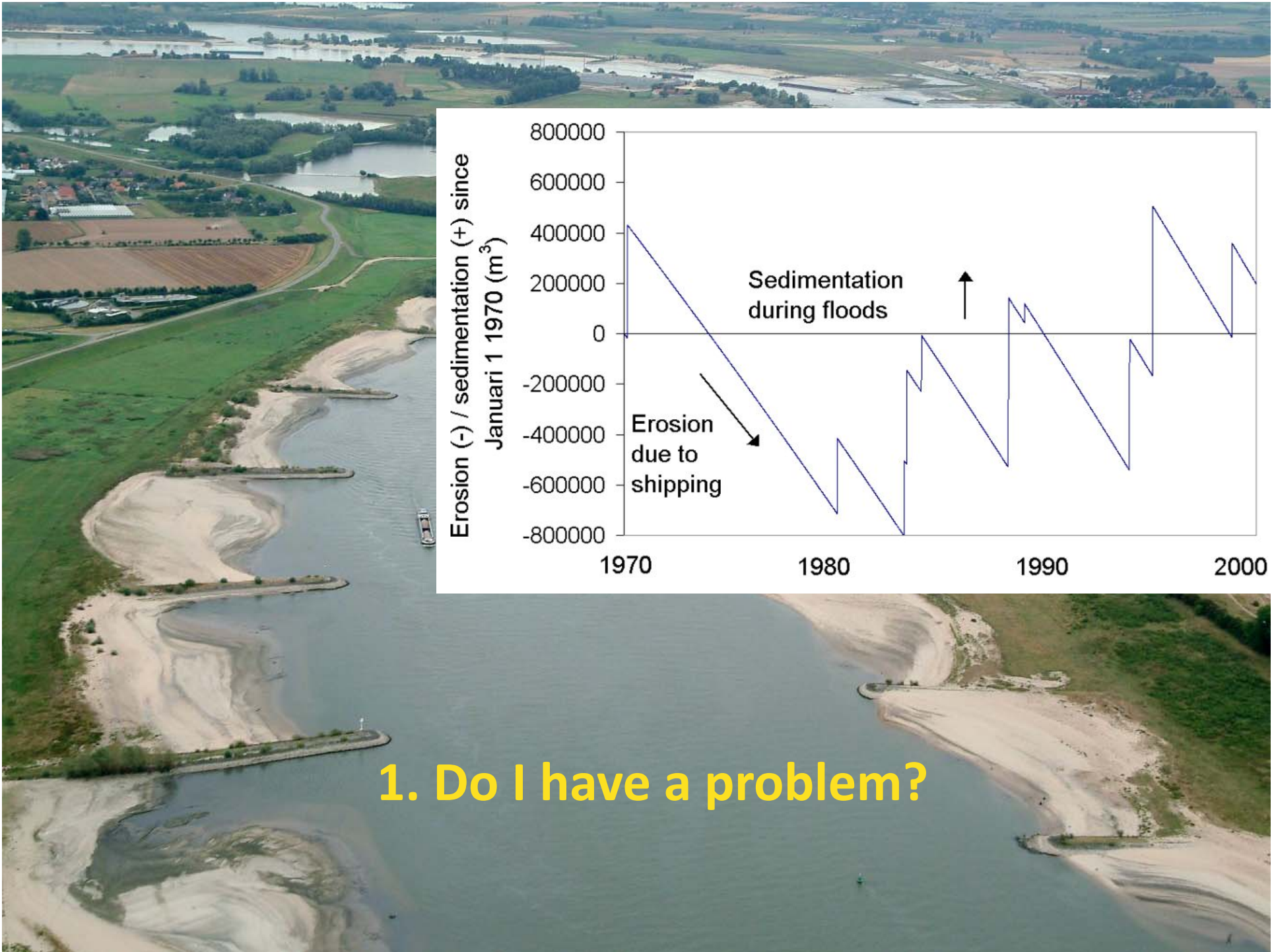
By drawing-up a sediment budget you create some order in the apparent chaos

It helps you to

- Determine whether you have a problem
- Find the right solutions
- Assess the consequences of interventions



1. Do I have a problem?



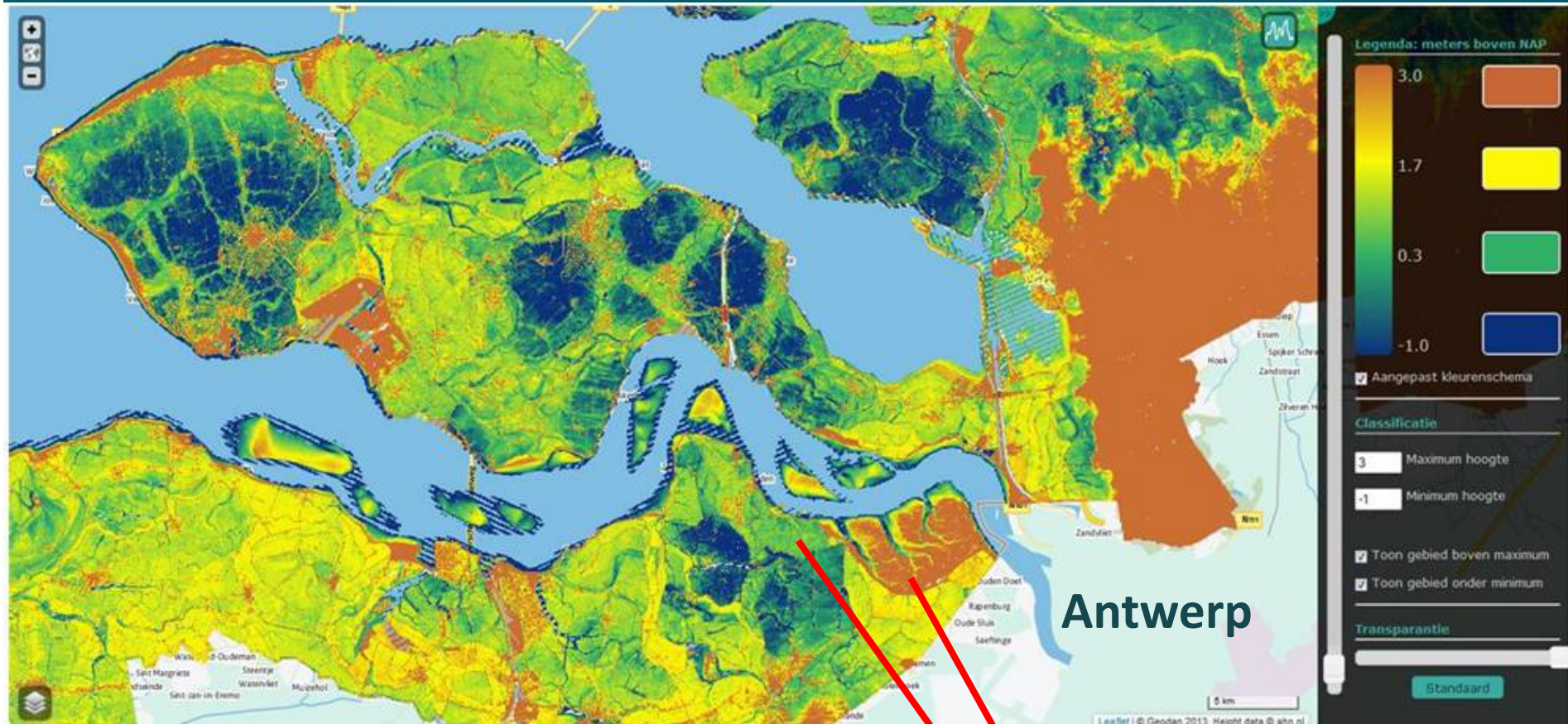
1. Do I have a problem?

The importance of floods



1. Do I have a problem?

The Western Scheldt



2. Find the right solutions

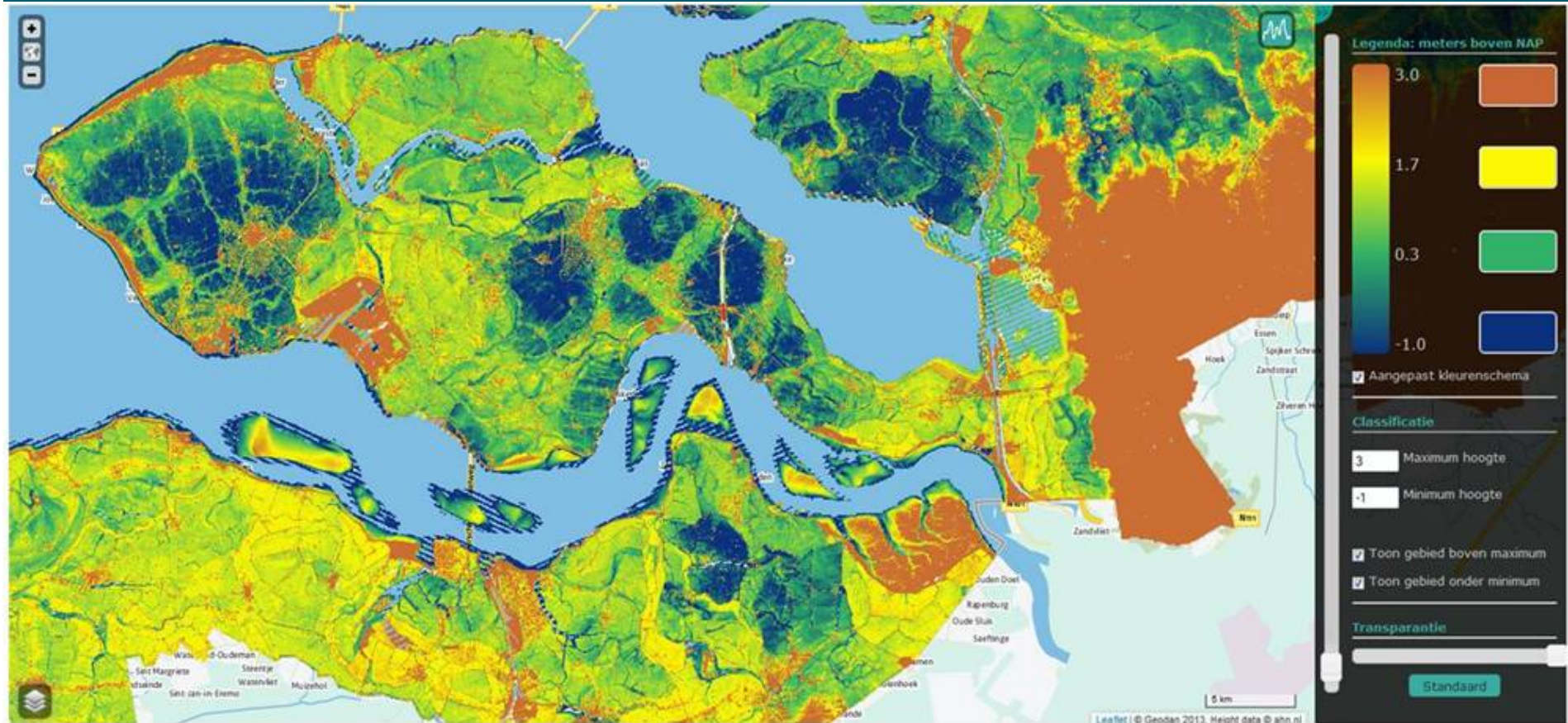
High: intertidal area

Low: agricultural land



From: Bart van Damme

'Ompolderen'



3. Assess the consequences of interventions



3. Assess the consequences of interventions

Interventions



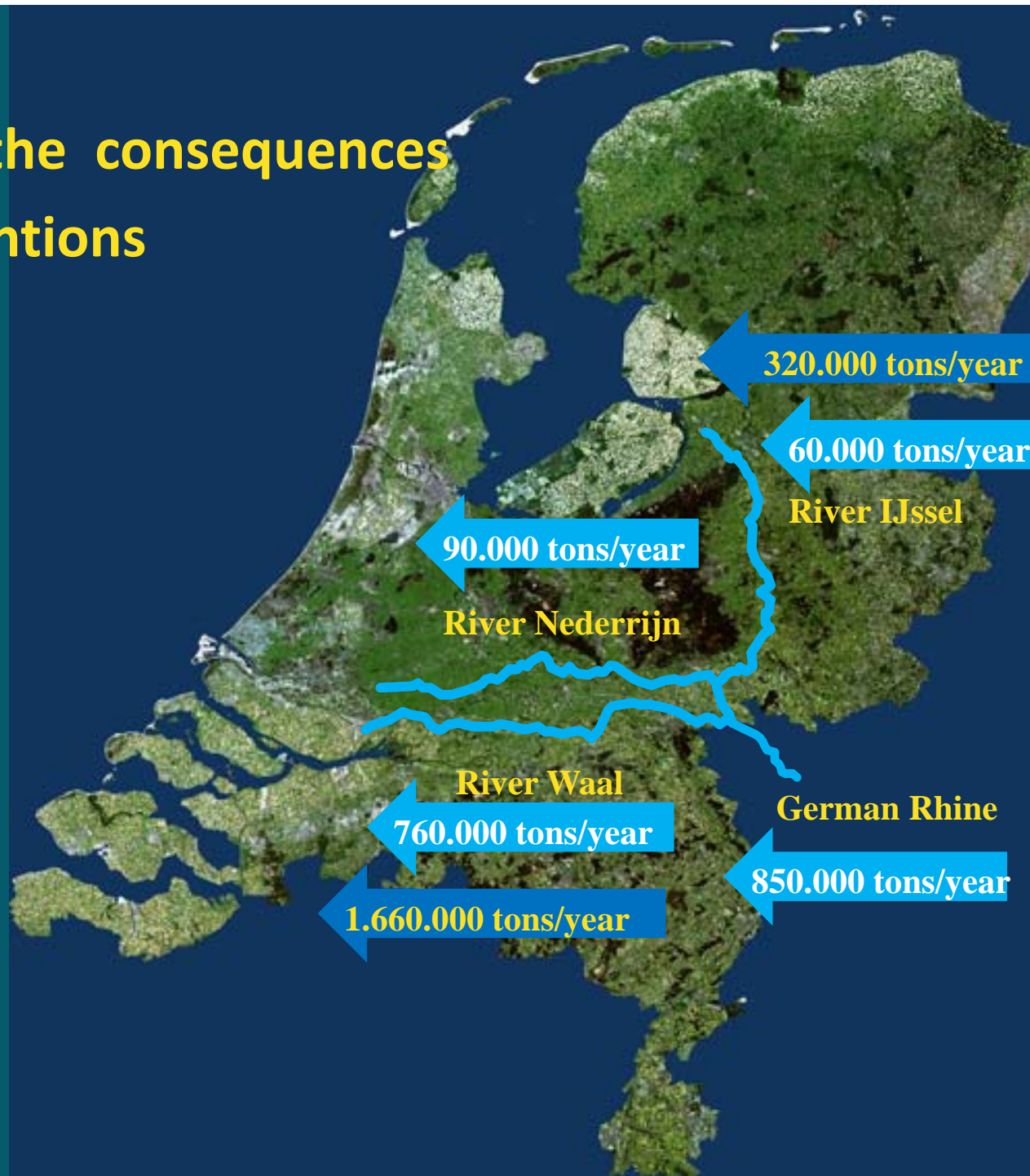
Morphological calculations



Sand transport formulae

Or mud?

3. Assess the consequences of interventions



3. Assess the consequences of interventions: we don't like mud!



From: G.J. van Pijkeren



From: Rijkswaterstaat

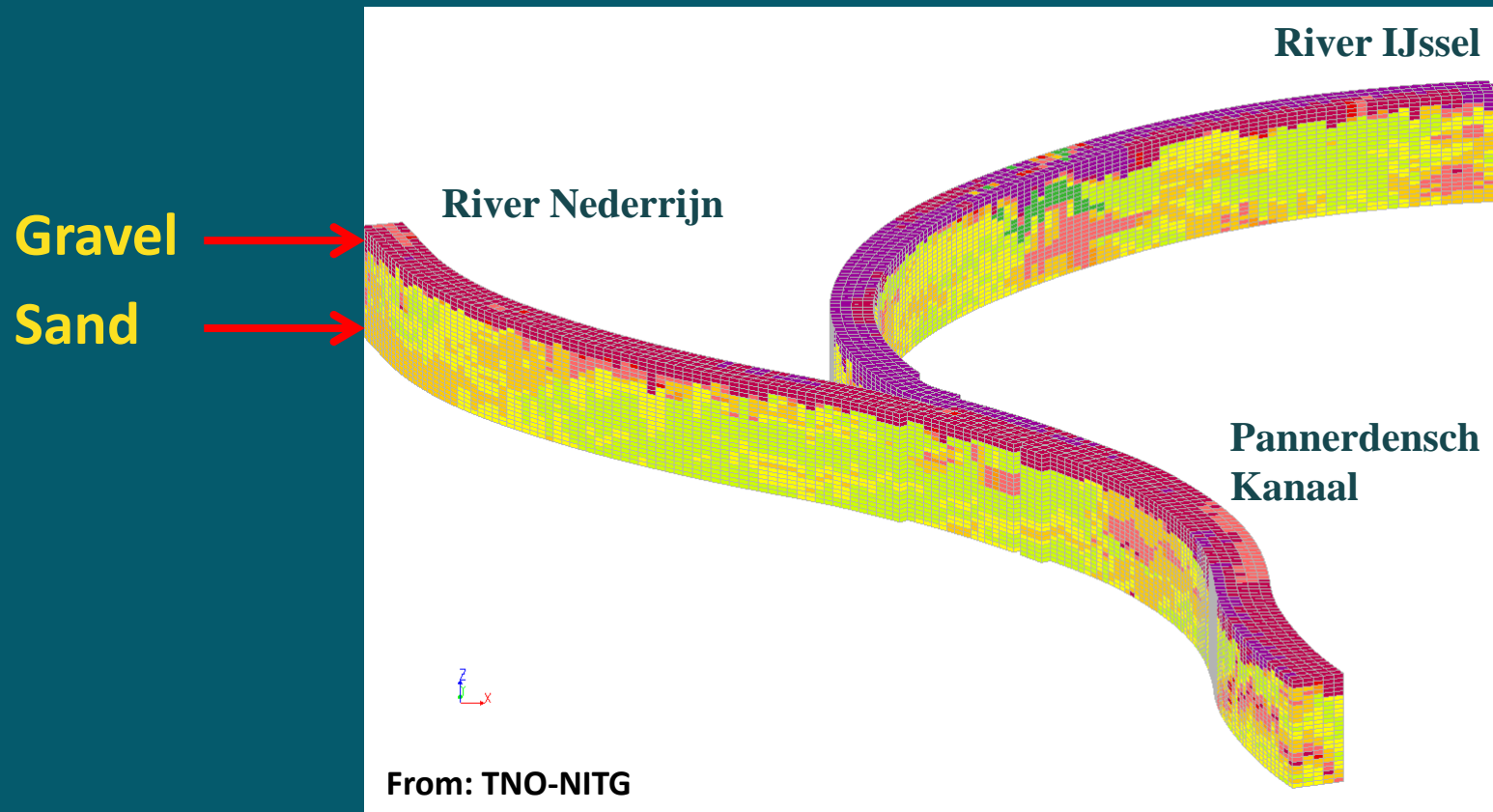


A look ahead: river morphological knowledge will continue to be crucial

- For instance: 75% of total flood risk Netherlands along the rivers

A look ahead: river morphological knowledge will continue to be crucial

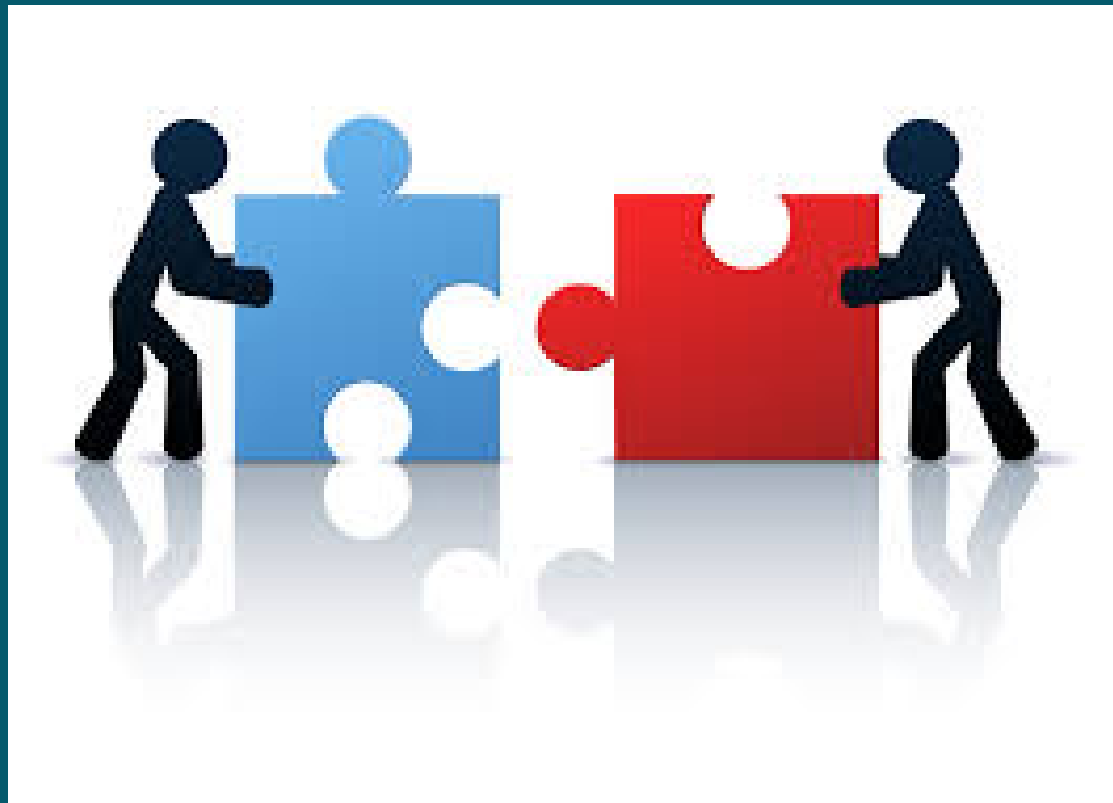
- For instance: 75% of total flood risk Netherlands along the rivers



Use of the sediment budget analysis

- You need to know the morphodynamics of your river
- Drawing-up a sediment budget helps to reach that goal
- This calls for continuous investments in field oriented research (next to modelling and flume studies)
- We need to train new generations

**The future needs people who know
how to puzzle!**



Thank you!