

BasisRivierbodemLigging BRL Reference River Bedlevel

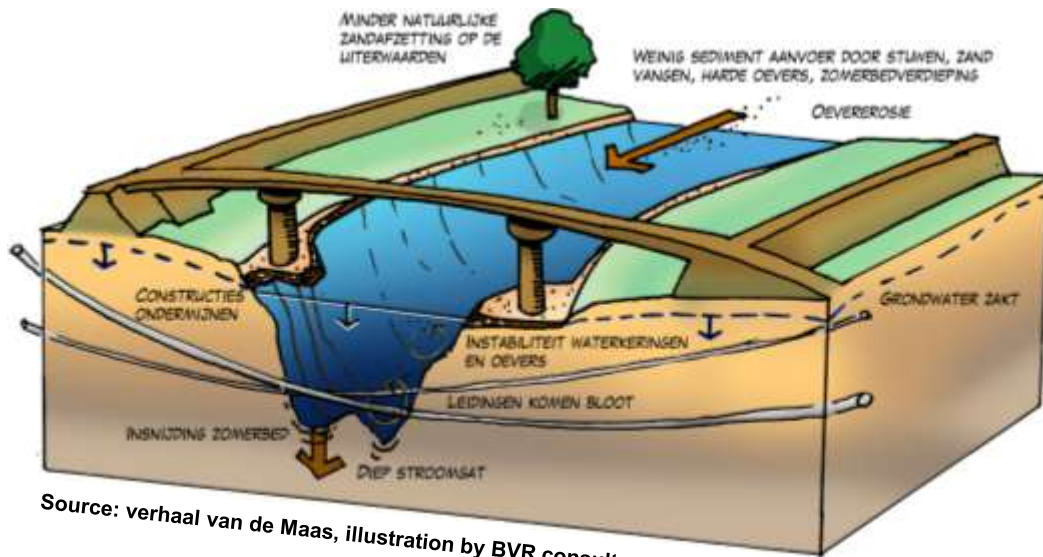
Eveline van der Deijl

1 February 2022

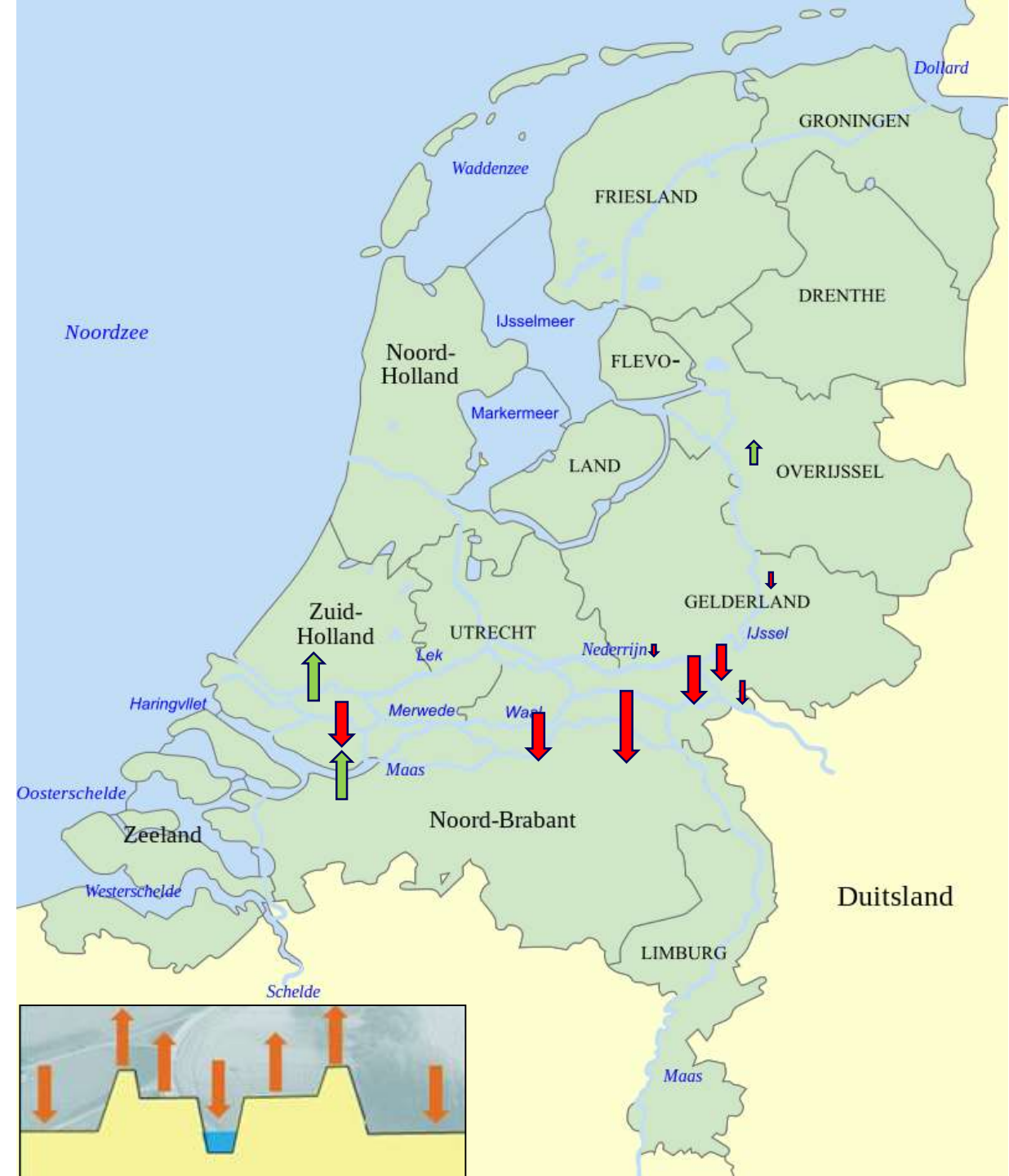
Unstable Riverbed

- Significant human interventions
- Changes in sediment supply
- Climate change
 - > Change in discharge
 - > Sea-level rise

River system/functions under pressure



Source: verhaal van de Maas, illustration by BVR consultant



River functions

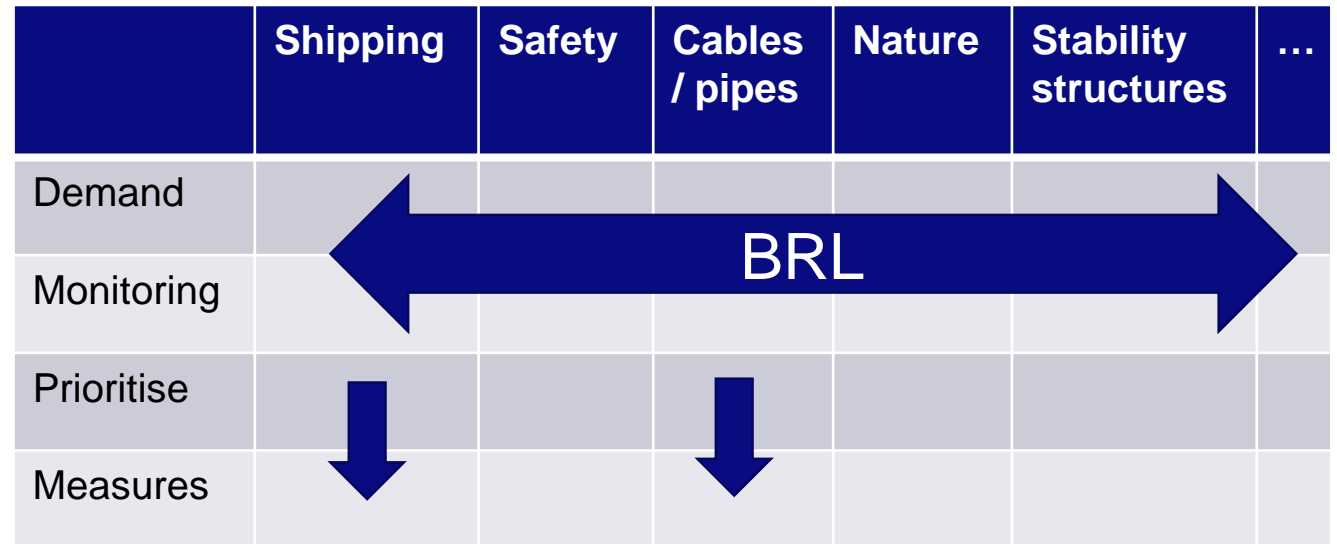
- Rijkswaterstaat:
 - Water Safety (flood protection)
 - Sufficient and clean freshwater
 - Water quality
 - Shipping
 - Other functions (often shared responsibility)
- Other parties:
 - Cables / pipes
 - Dikes
 - Drinking water
 -

	Shipping	Safety	Cables / pipes	Nature	Stability structures	...
Demand						
Monitoring						
Measures						

Maintenance contracts

River functions


- Rijkswaterstaat:
 - Water Safety (flood protection)
 - Sufficient and clean freshwater
 - Water quality
 - Shipping
 - Other functions (often shared responsibility)
- Other parties:
 - Cables / pipes
 - Dikes
 - Drinking water
 -

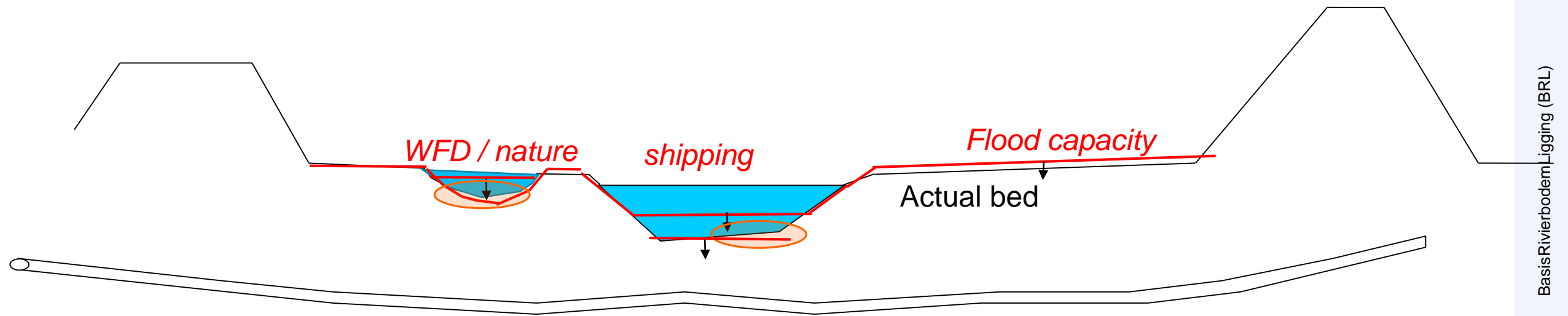


The objective of the BRL-instrument


1. Mapping the requirements of various river functions on the riverbed
2. Testing the current river bed or measures against the function requirements -> (lack of) space for management
3. Signaling conflicts between functions
4. Analyzing & prioritizing

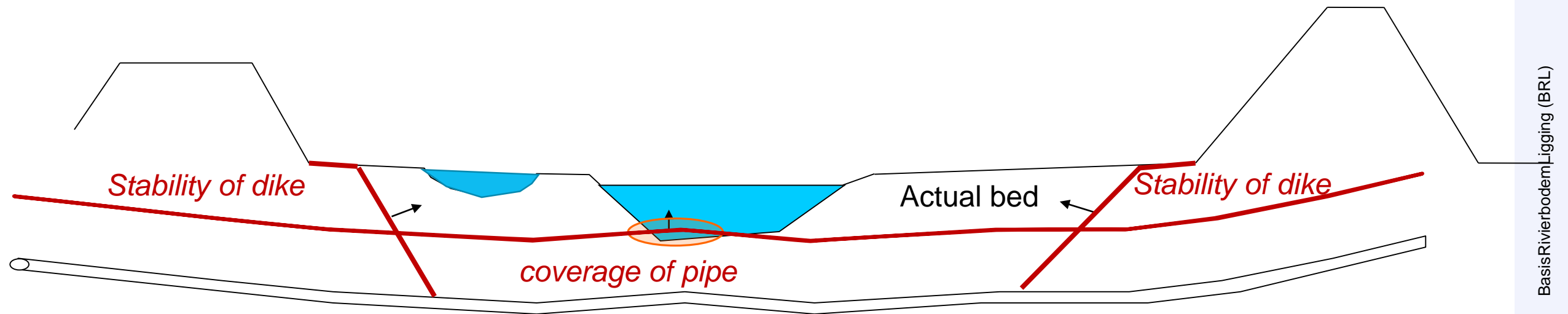
BRL- Space available for management?

- Upper limits (river bed should be below this limit) 
- Exceedence of function
 - > measure needed?
 - > change of function?





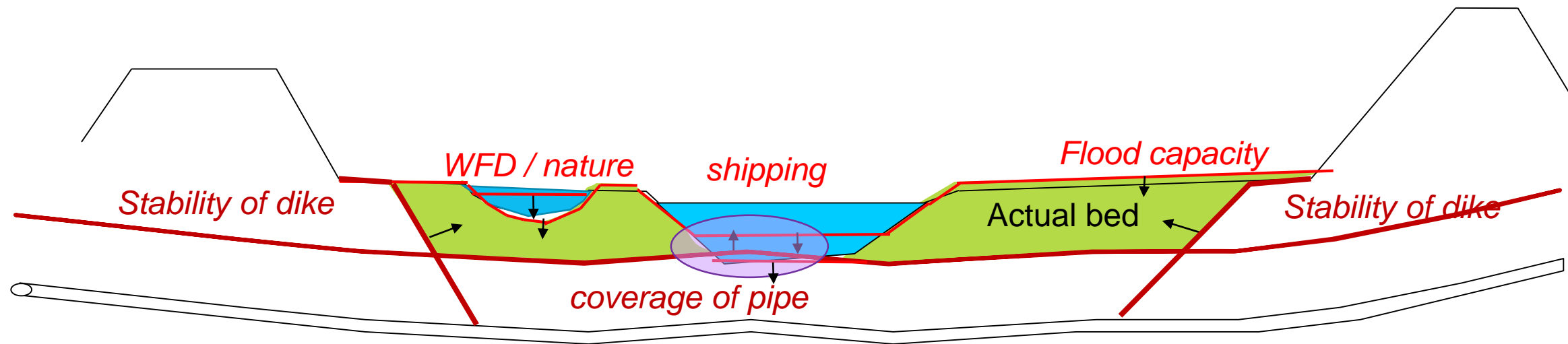
BRL- Space available for management?

- Lower limits (river bed should be above this limit) 
- Exceedence of function
 - > measure needed?
 - > change of function?



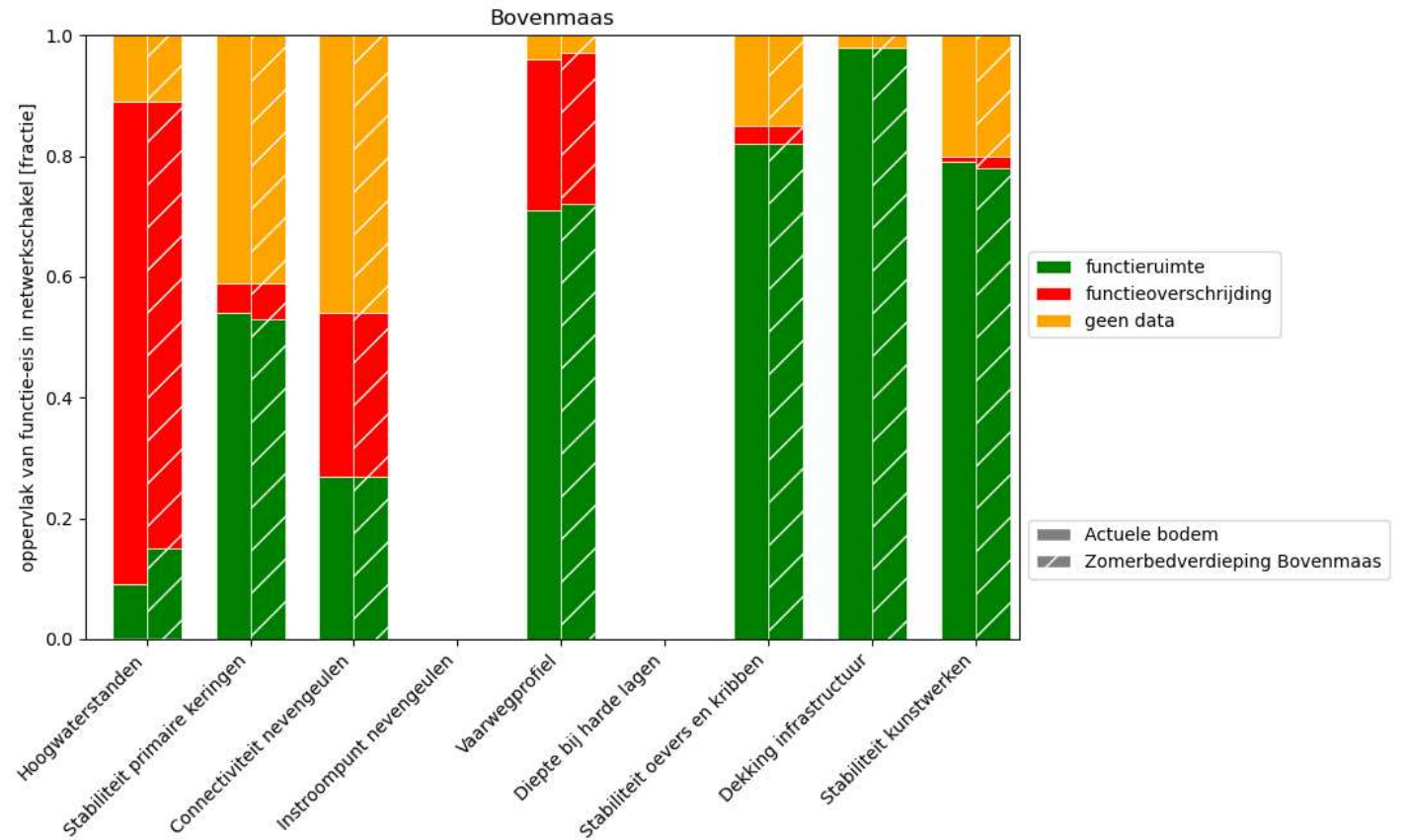
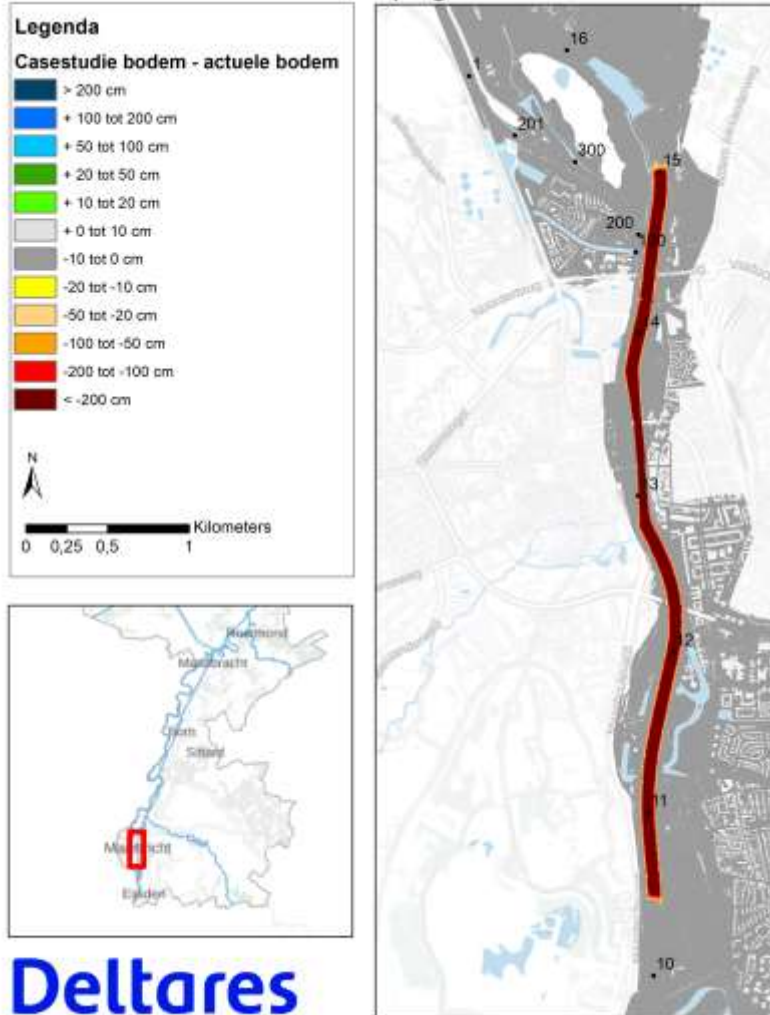
BRL- Space available for management?

- Upper limits (river bed should be below this limit) 
- Lower limits (river bed should be above this limit) 
- Space for management
- Function conflicts



BRL Case – deepening of summerbed Bovenmaas

Zomerbedverdieping Bovenmaas



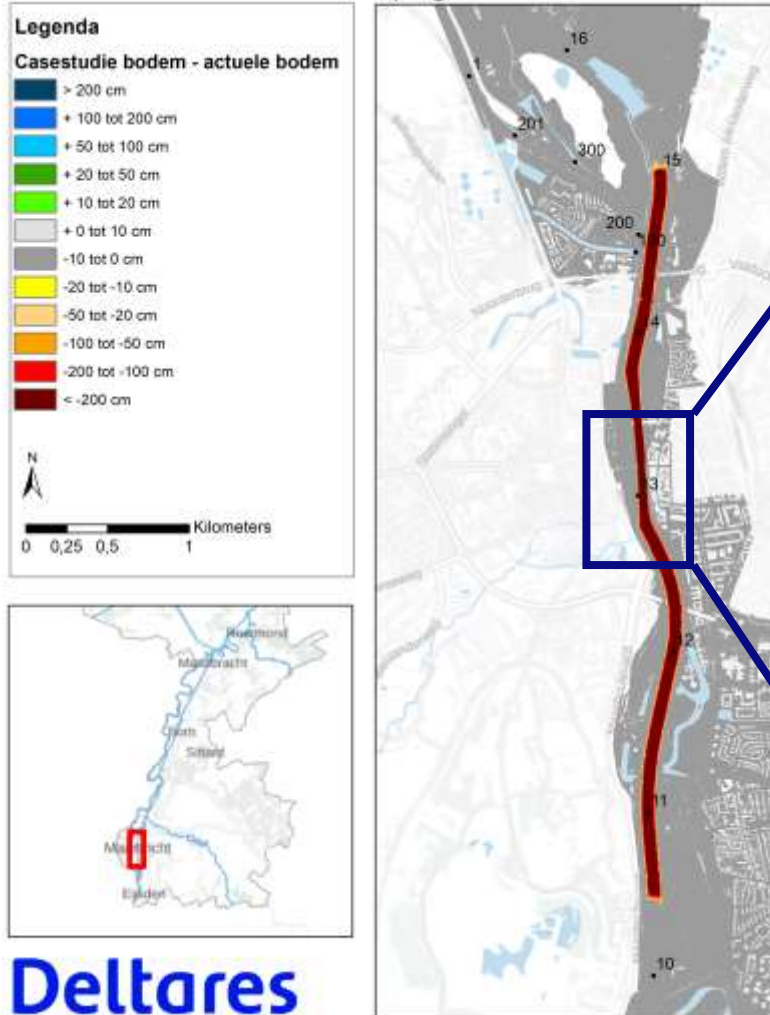
Deltares

Deltares

Rijkswaterstaat
 Ministerie van Infrastructuur en Waterstaat

BRL Case – deepening of summerbed Bovenmaas

Zomerbedverdieping Bovenmaas



Deltares

Deltares

Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

Space or exceedence after deepening?

↓ depth and width of fairway

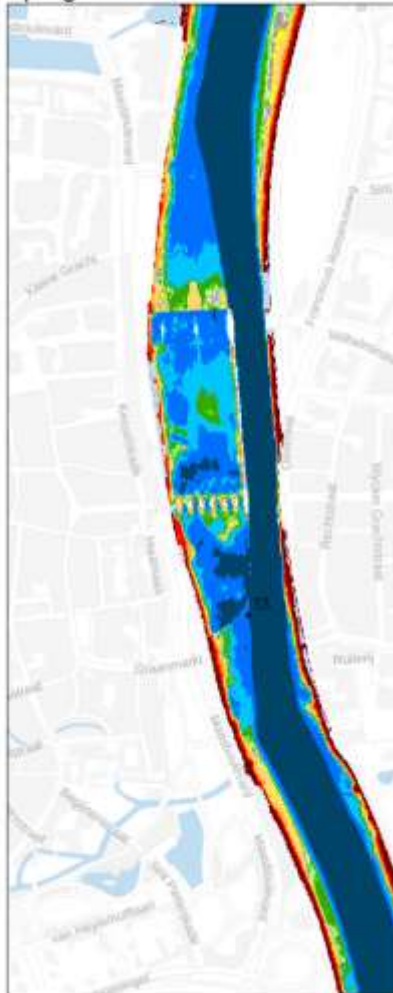
↑ Stability of river banks/groins

↑ Stability of structures

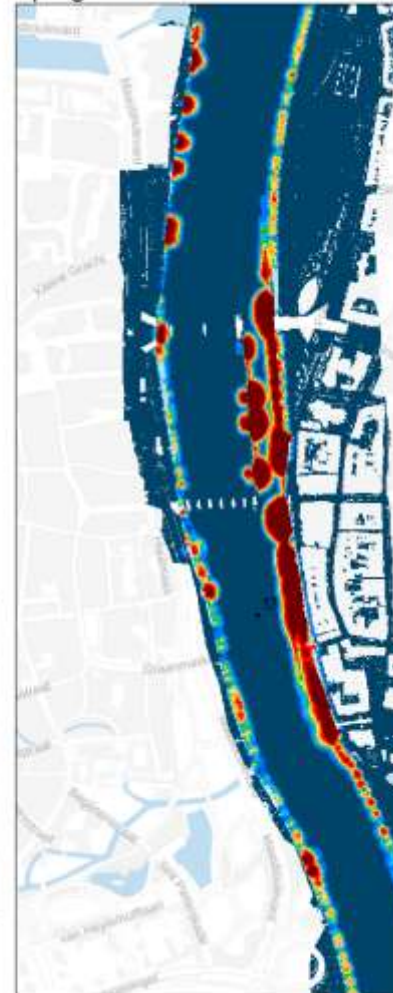
Zomerbedverdieping Bovenmaas

Zomerbedverdieping Bovenmaas

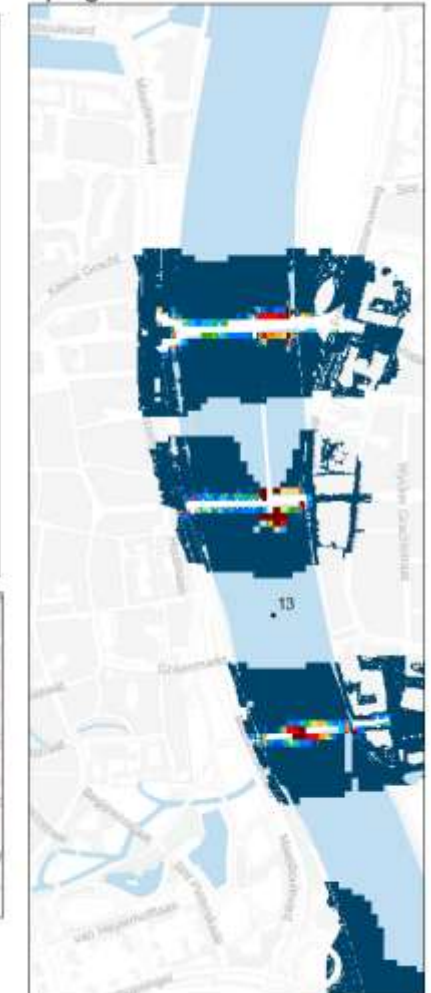
Zomerbedverdieping Bovenmaas



Deltares



Deltares



Deltares

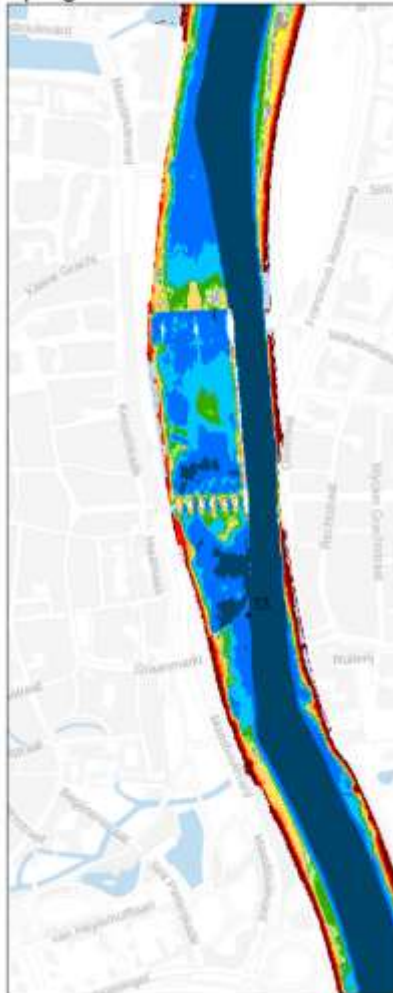
Space or exceedence after deepening?

↓ depth and width of fairway

↑ Stability of river banks/groins

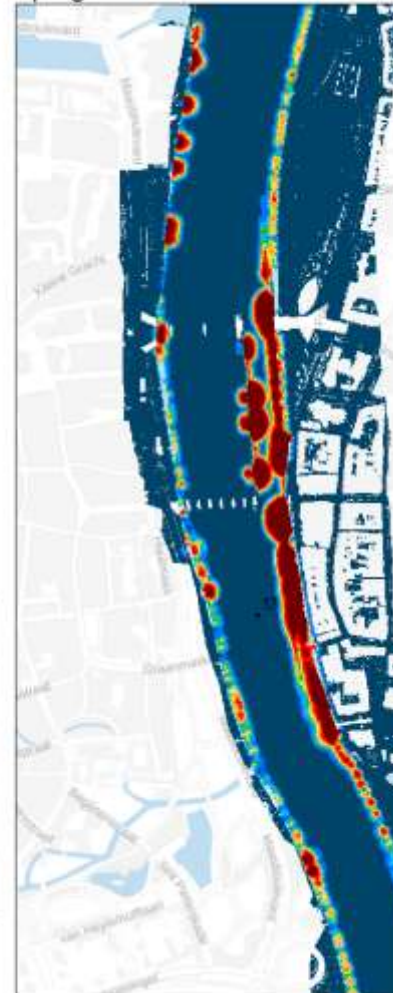
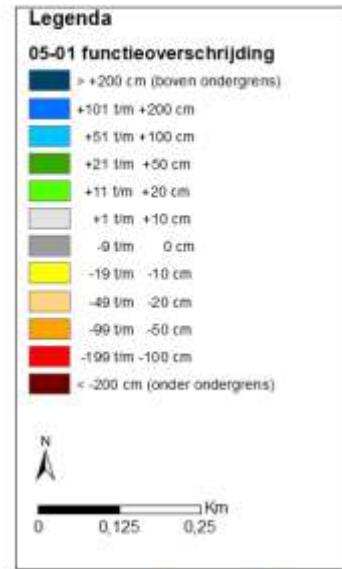
↑ Stability

Zomerbedverdieping Bovenmaas



Deltares

Zomerbedverdieping Bovenmaas

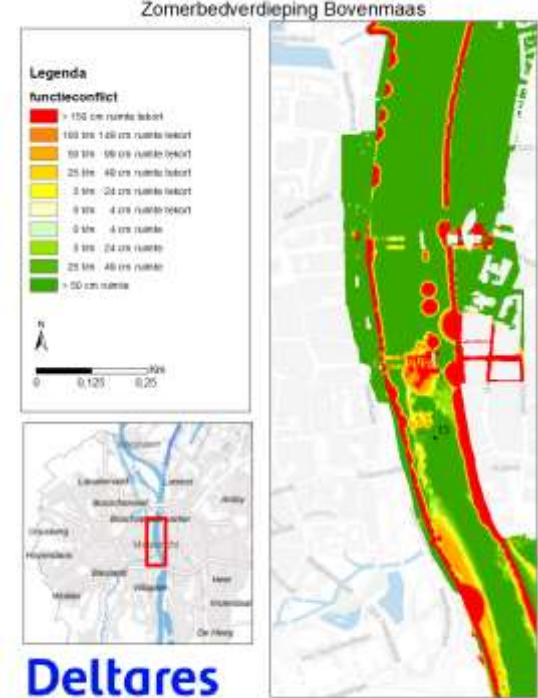


Deltares

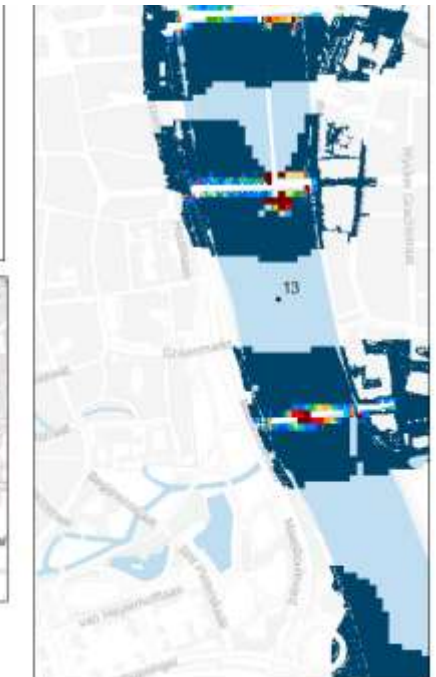
Zomerbedve



Deltares



Deltares



BRL Work in progress

- Change in bed level -> groundwater -> nature / agriculture / fresh-water supply
 - Hydraulic model -> waterlevels -> groundwater model -> effect modules -> limits for bed level
- Prevention of (further) salt intrusion
- Regional fresh water supply
- ?

What should we add?

New function?

Data?

Contact

 www.deltares.nl

 Eveline.vanderDeijl@deltares.nl

 [linkedin.com/company/Deltares](https://www.linkedin.com/company/Deltares)
[linkedin.com/in/eveline-vanderdeijl](https://www.linkedin.com/in/eveline-vanderdeijl)

 [facebook.com/deltaresNL](https://www.facebook.com/deltaresNL)

