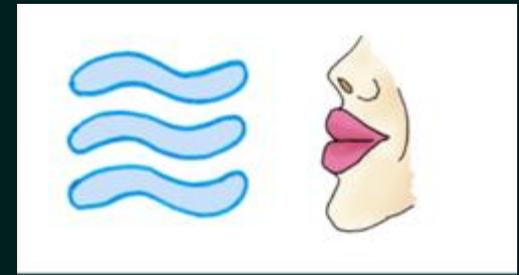


Conference Options to adapt the Dutch rivers to climate change
Nijmegen, 30th January 2014

European Rivers embraced

Evening program: foreign perspectives





Conference Options to adapt the
Dutch rivers to climate change
Nijmegen, 30th January 2014

European Rivers embraced

Evening program: foreign perspectives

“Ober- und Unterlieger”

Peter Heiland
director of
UMWELT & INFRASTRUKTUR
Darmstadt in Germany



- Why we? Must we?
- What can we do?
- Why upstream?
Why we can actually
do not rescue the Netherlands
- What do we need?
- Let's try to do better!?

Why we? Must we?

The dilemma of Upstream-Downstream cooperation

- Legal requirements focus on local / regional protection
- German water law: Each person facing flood risk, first has to take precautions himself (§5 WHG)

Key questions of upstream-people:

- What are the (ARE THERE REALLY) effects of our measures?
- Why shall we increase our risk?
- Why shall we pay money for others?
- What do we get?

Why we? Must we?

Why adaptation is so difficult

The reasonable man adapts himself to the world;
the unreasonable one persists in trying to adapt the world to himself.

Therefore all progress depends on the unreasonable man.

George Bernard Shaw (1856 – 1950)

What can we do?

Potential for risk reduction by
Upstream-Downstream cooperation

- Increase Retention capacity
 - catchment area
 - ponds along the river
- Protect Room for the Rivers

(... forecast, joint models etc.)

Actions with significant
UPSTREAM-DOWNSTREAM effects
(in large river basins / for big floods)

A/B Protection of flood-
plains and revitalisation
of retention areas

C Retention of rainfall /
runoff in the
catchment area

D Reduction of risk /
damage potential
- Preparedness / forecast

E Technical protection
measures /
constructions

ACTUAL EFFECTS?
... for downstream Regions



Impact of upstream measures: Example Elbe

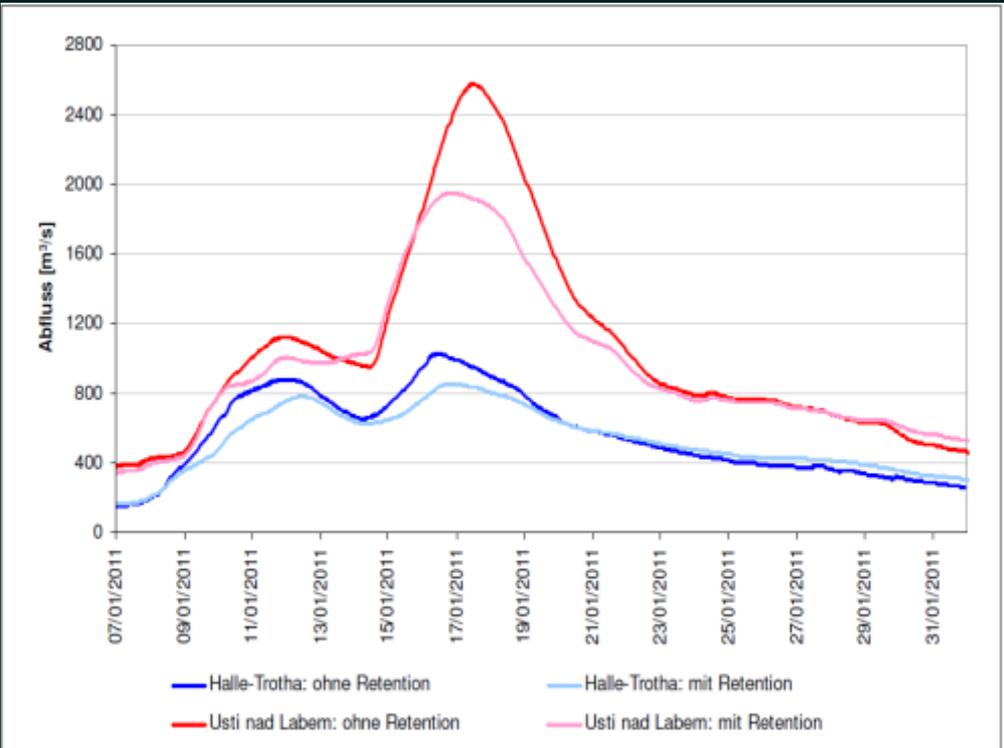


Abb. 2: Abflussganglinien (mit/ohne Maßnahmeneinsatz) an den Pegeln Usti nad Labem und Halle-Trotha

1 Bundesanstalt für Gewässerkunde, 2 T.G. Masaryk Water Research Institute, 3 AquaLogic Consulting, 4 Thüringer Ministerium für Landwirtschaft, Forsten, Umwelt und Naturschutz, 5 Thüringer Landesanstalt für Umwelt und Geologie (LABEL Project 2011)

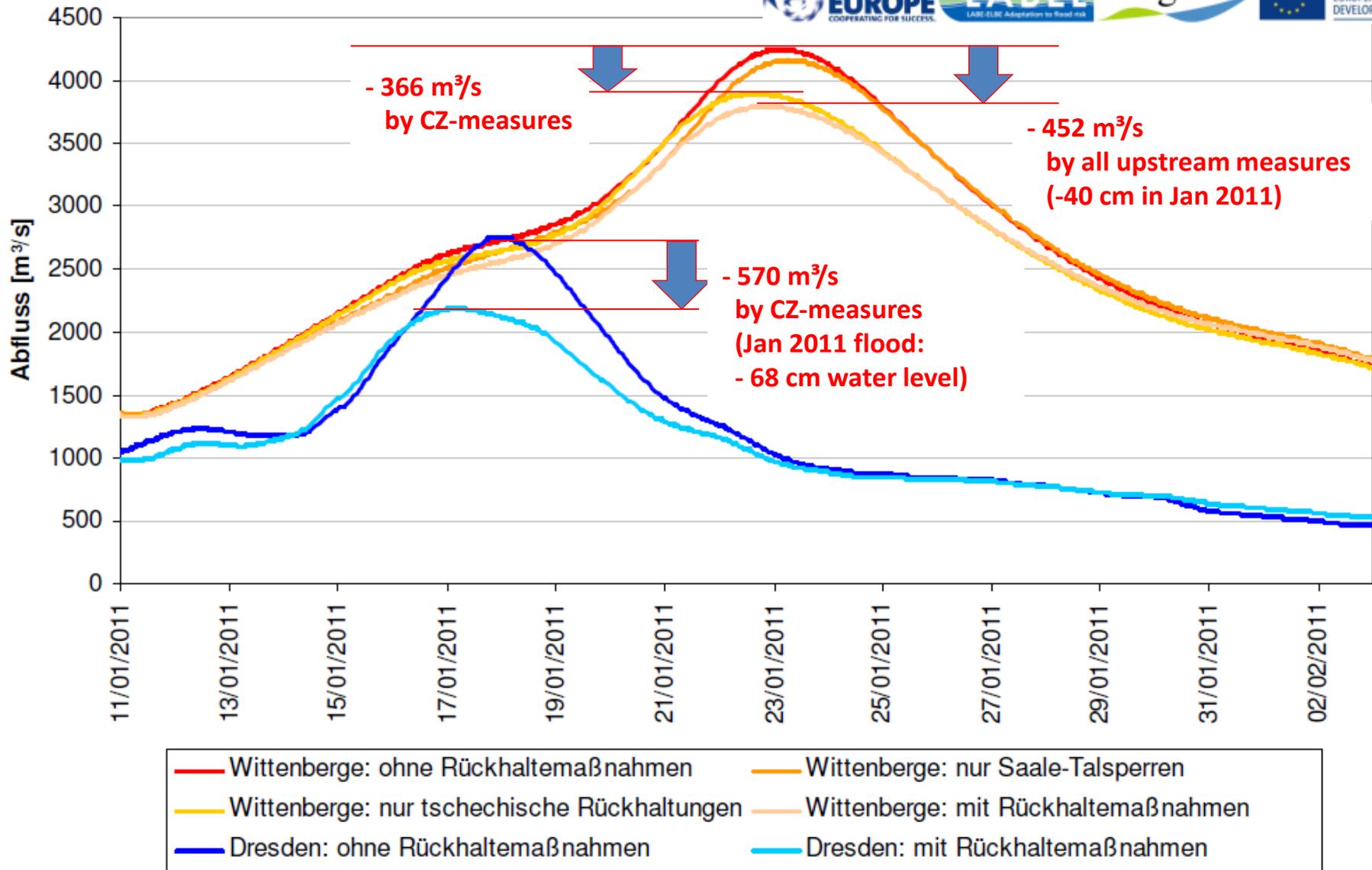
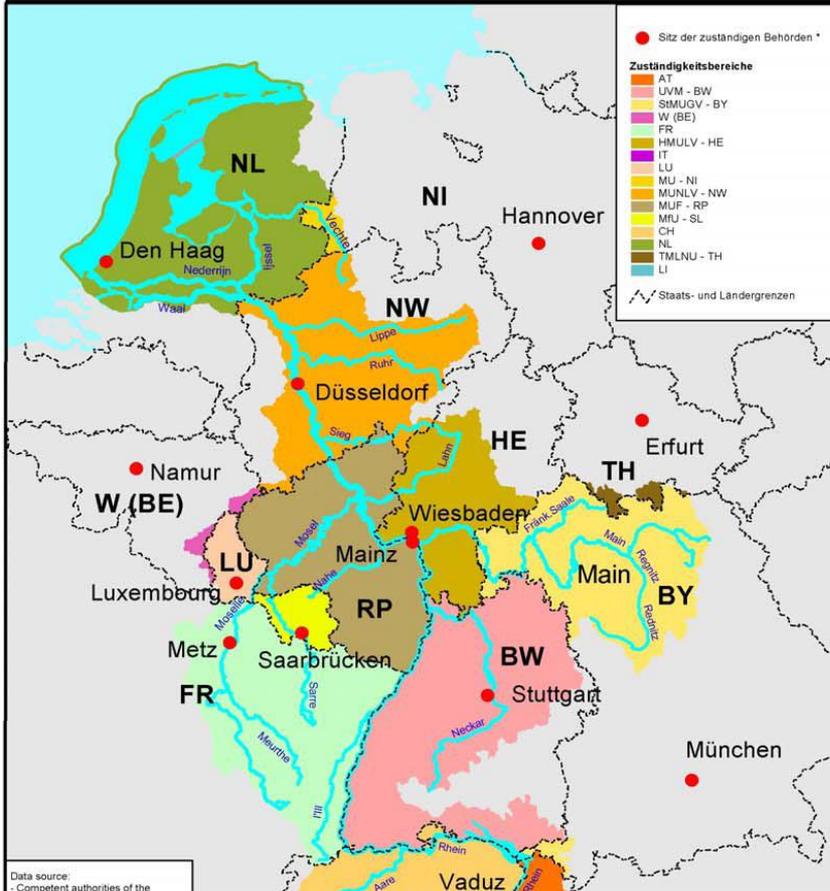


Abb. 3: Abflussganglinien (mit / ohne Maßnahmeneinsatz) an den Pegeln Dresden und Wittenberge

Zuständige Behörden in der Flussgebietseinheit
Rhein gemäß WRRL - Gewässernetz mit Nebenflüssen mit
Einzugsgebieten > 2.500 km²

(08.04.2004)



Potential upstream measures with positive effects on the Lower Rhine / Delta?

- Studies on impacts of measures (IKSR / ICBR etc.)
- Many thousands of measures in Flood Risk Management Plans (EU-directive) – until 2015
- Reliable knowledge about the effects of single measures ... ??
- Local discussion about effects ...!

Data source:
- Competent authorities of the



Abb. 9 Wasserstandsverlauf der Hochwasserereife im Juni 2013 am Pegel Maxau mit und ohne Einsatz der gesteuerten Hochwasserretentionen. [2]

Evaluatie van de effectiviteit van maatregelen ter verlaging van de hoogwaterstanden in de Rijn

Uitvoering van het Actieplan Hoogwater in de periode 1995-2010 en vooruitblik naar 2020 en 2020+

IKSR
CIPR
ICBR

Internationale
Kommissie zum
Schutz des Rheins

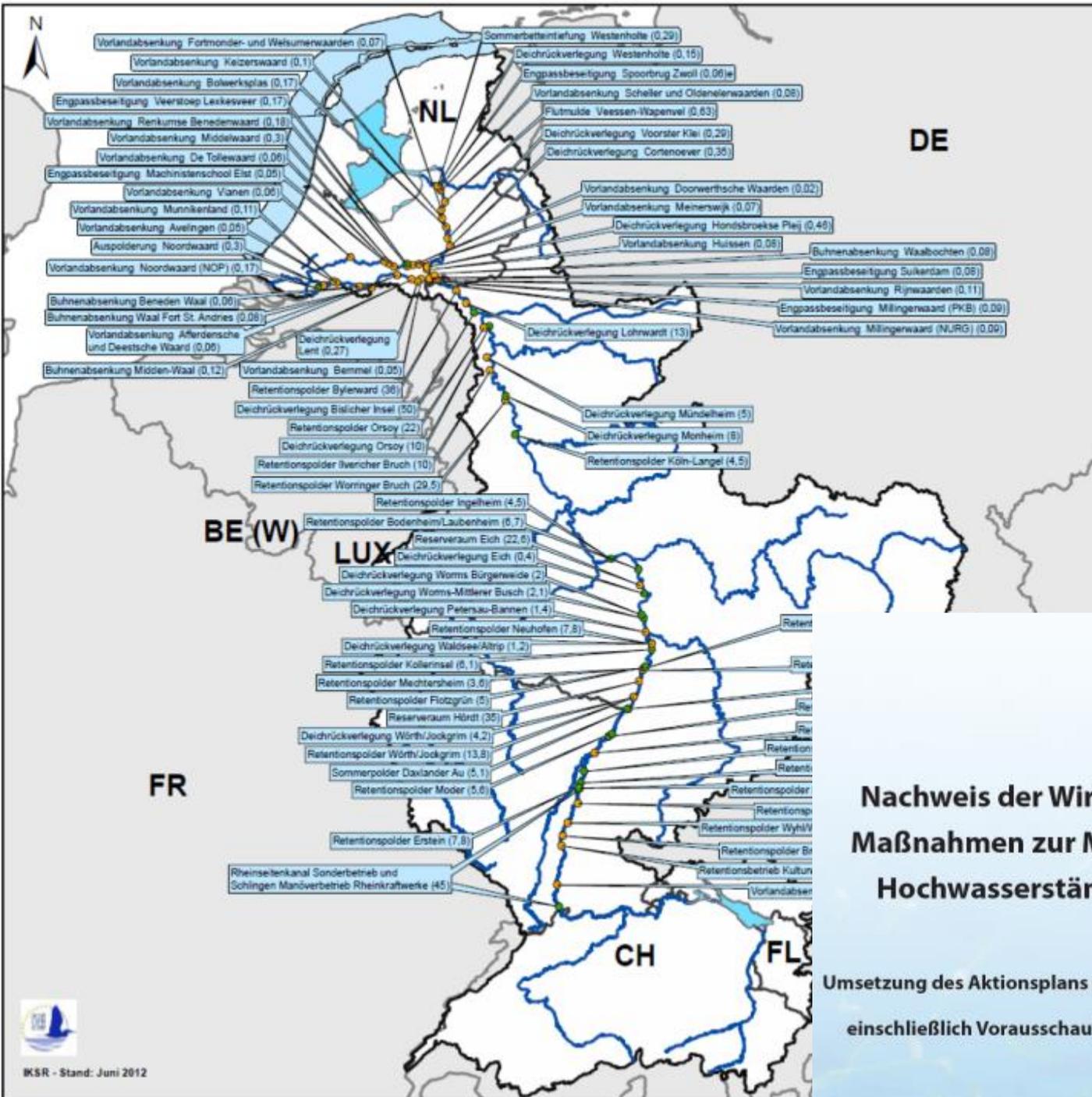
Commission
Internationale
pour la Protection
du Rhin

Internationale
Commissie ter
Bescherming
van de Rijn

STRUKTUR & UMWELT
öhm und Partner

Aqua-δ





Hochwasserretentionsmaßnahmen am Rheinhauptstrom

- Stand der Maßnahmenumsetzung**
- Fertiggestellt
 - Im Bau/Geplant

- Gewässer**
- Fließgewässer
 - Küsten- und Übergangsgewässer

Anmerkungen zu den Zahlenangaben

Für die Retentionsmaßnahmen zwischen Basel und Lobith: Volumina in Mio. m³

Für Wasserstandsabsenkende Maßnahmen am Deltarhein ab Lobith: Wasserstandreduzierung in

Nachweis der Wirksamkeit von Maßnahmen zur Minderung der Hochwasserstände im Rhein

Umsetzung des Aktionsplans Hochwasser 1995 – 2010 einschließlich Vorausschau für 2020 sowie 2020+



Internationale Kommission zum Schutz des Rheins

Commission Internationale pour la Protection du Rhin

Internationale Commissie ter Bescherming van de Rijn

Maatregelen voor de retentie van hoogwater in de hoofdstroom van de Rijn

Stand van de uitvoering van de maatregelen

- Afgerond
- In uitvoering / in planning

Wateren

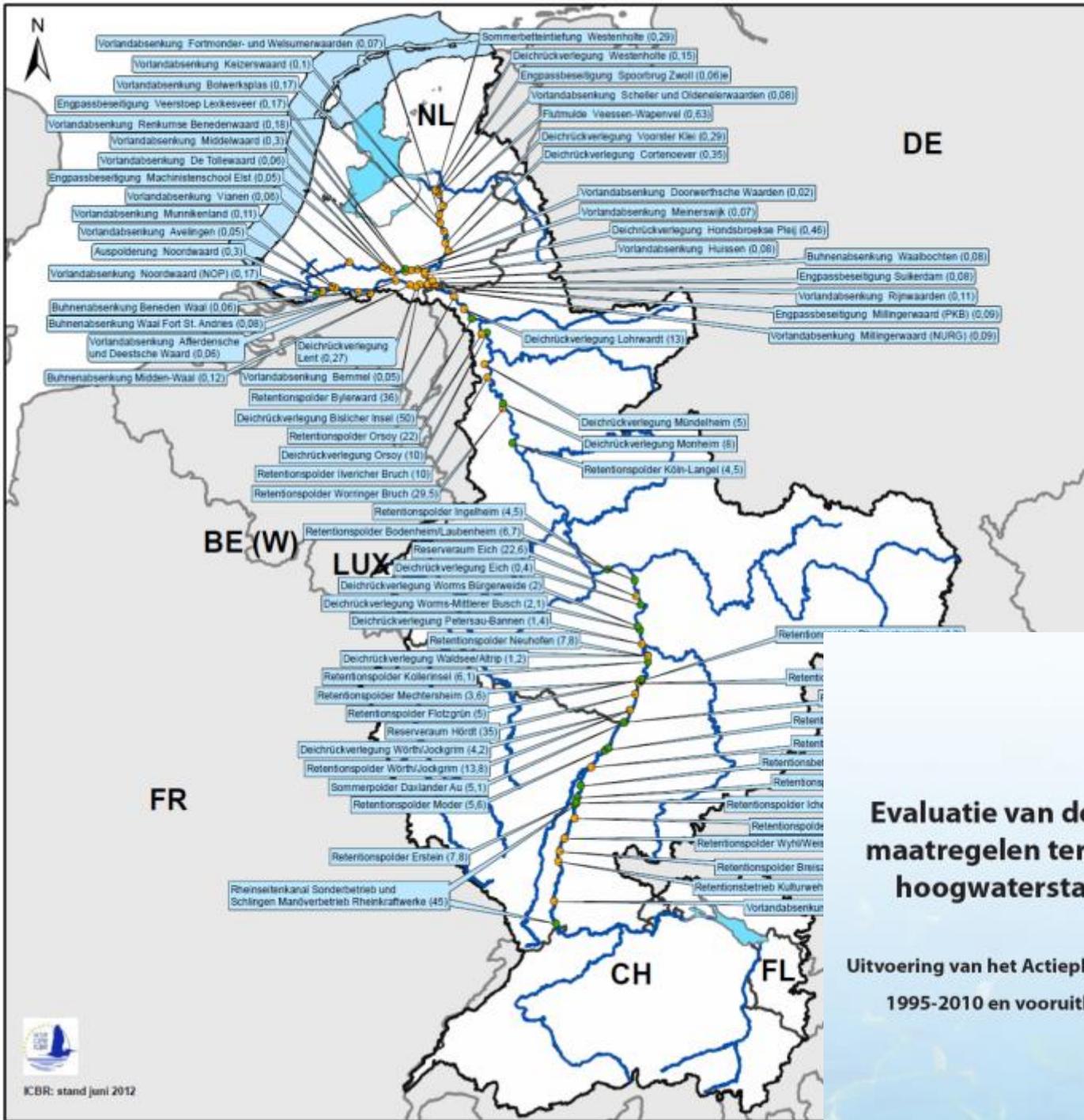
- Rivieren
- Kust- en overgangswateren

Toelichting bij de cijfers

Voor de waterstandverlagende maatregelen in de Rijndelta vanaf Lobith: verlaging van de waterstand in m

Voor de retentiemaatregelen tussen Bazel en Lobith: volumes in miljoen m³

Opmerking: De Franse of Nederlandse naam van de maatregelen is te vinden in de bijgevoegde tabellen.



Evaluatie van de effectiviteit van maatregelen ter verlaging van de hoogwaterstanden in de Rijn

Uitvoering van het Actieplan Hoogwater in de periode 1995-2010 en vooruitblik naar 2020 en 2020+



Internationale Kommission zum Schutz des Rheins

Commission Internationale pour la Protection du Rhin

Internationale Commissie ter Bescherming van de Rijn



Why upstream?

Why we can actually
do not rescue the Netherlands

Money money money ...

- Financing of retention measures mainly by the regions in which measures are situated
- No compensation

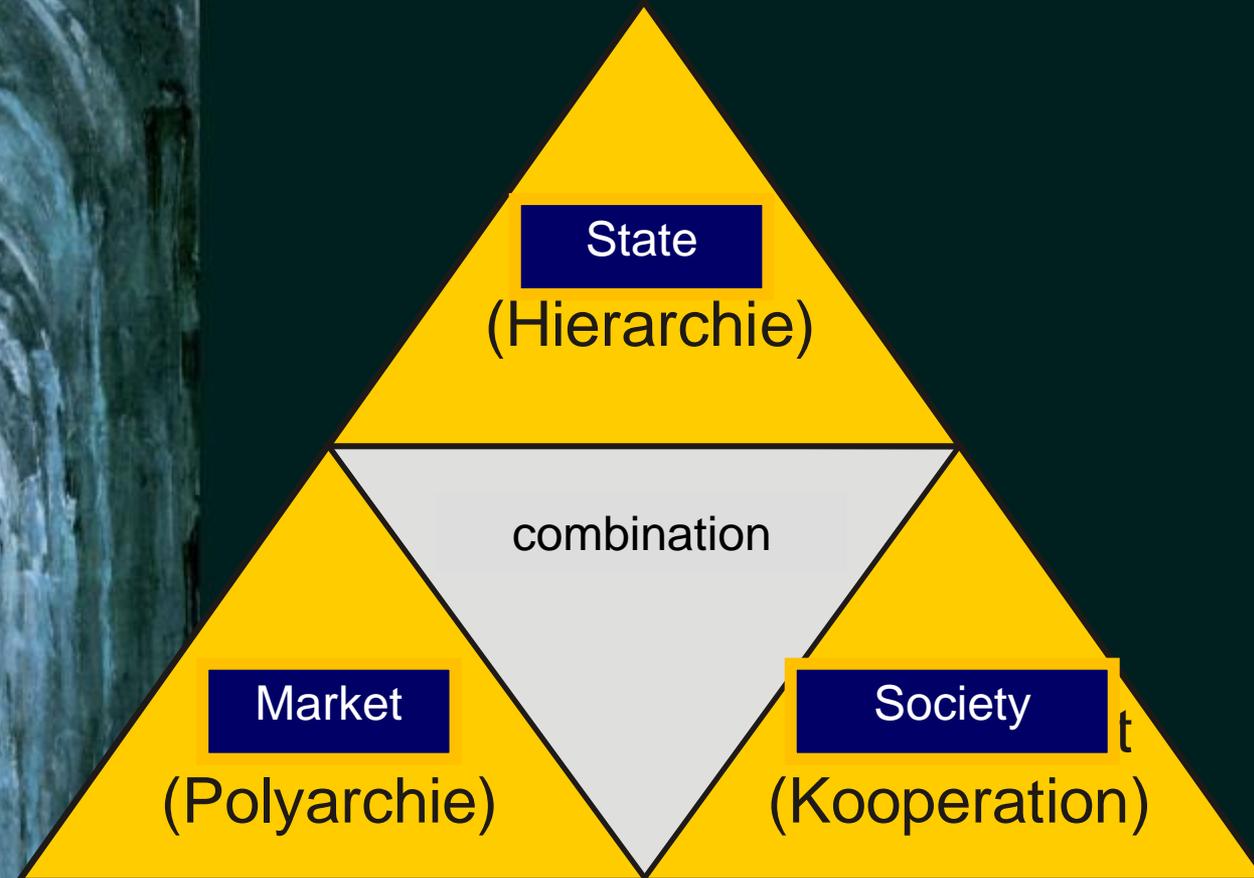
Solidarity ...

- ends at local borders (or backyards)

Uncertainty

- Positive effects ...?
- Negative effects at the locations?
- ... other problems .. / cooperation ...?

Instruments of Environmental and Spatial Policies



**Focus:
Formal /
legal**

**Protection of
Room for the
Rivers ...**

**Regulative Instruments
(„forbid“ / „allow“)**

**combination in a
joint
strategy**

**Economic
Instruments:
(compensation, negotiation,
incentives, taxes)**

**Discursive
Instruments:
(Inter-/ regional Co-
operations, Commissions)**

**Focus:
informal**

New retention
measures,
individual
measures ...

Regulative Instruments
(„forbid“ / „allow“)

**combination in a
joint
strategy**

**Economic
Instruments:**
(compensation, negotiation,
incentives, taxes)

**Discursive
Instruments:**
(Inter-/ regional Co-
operations, Commissions)

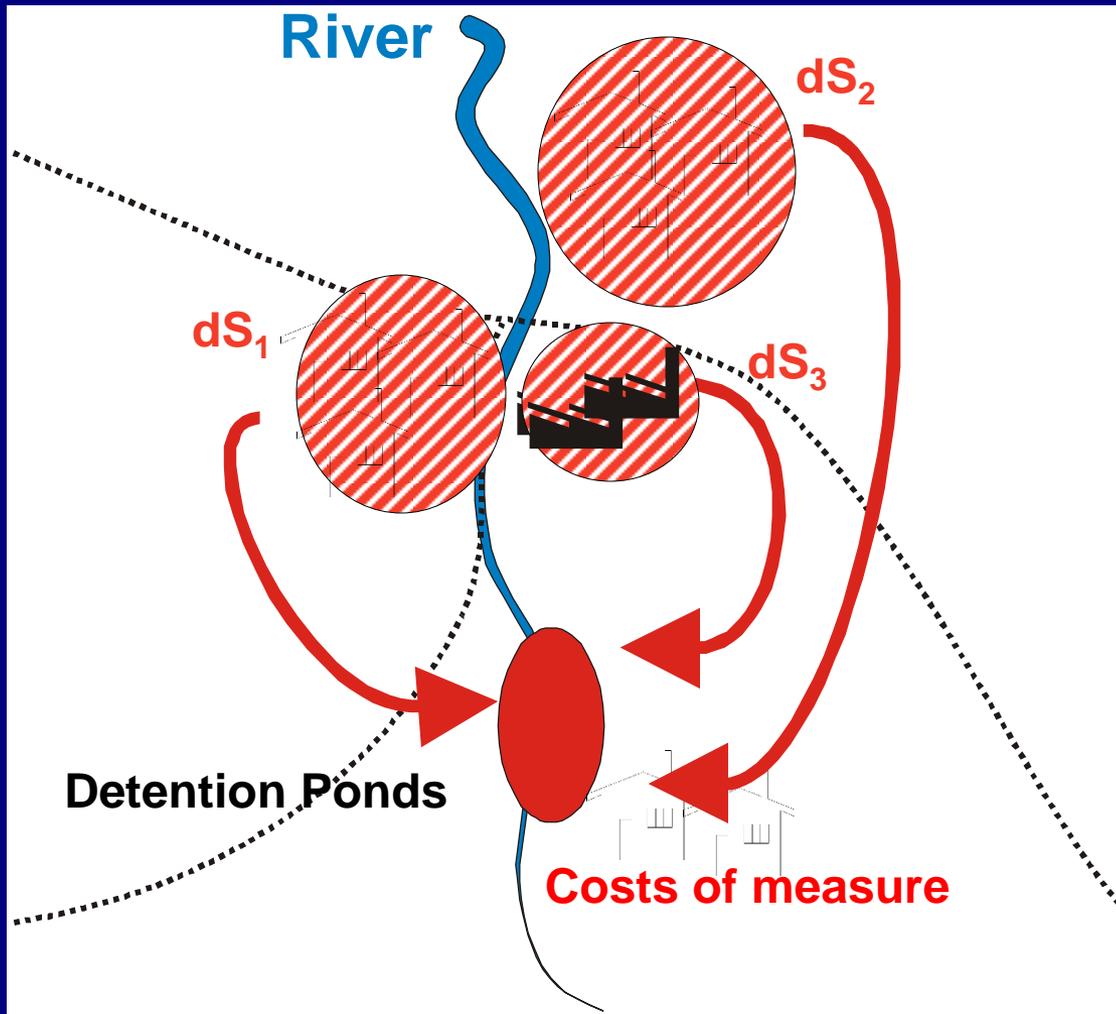
What do we need?

The framework for improvements
in river basin cooperation

Important preconditions:

- River Basin Community / platform
- Upstream regions must have a benefit / incentives
- Mechanisms for compensations, budget transfers, „negotiations ...“
- Create a „market“ for retention volume? – difficult / reverse effects?
- Simple, clear impact analysis
- Raise solidarity

Compensation / negotiation strategy



$dS =$
value of reduced potential
damage

Offer of benefitters
(downstream)
 $= \sum dS_i$

difference:
local + state
financing

[Rahmenzeitplan](#)

Let's try to do better!?

Suggestions for improved upstream-downstream cooperations

We have to find ways to ...

- Demonstrate impacts (simple)
- Communicate damage reduction potentials (Euro)
- Create instruments to finance upstream measures
- Platforms to negotiate offers / incentives
- Create „benefit for the mayor“ and his people upstream



Our Motto:

**Rivers connect people and countries –
and they speak all languages fluently!**



ORAS HS GR, Nijmegen, 30th January 2014

Thank you for your attention!

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INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

