

The PIANC ...

... “Working with Nature” Philosophy for Integrated Waterway Planning and the essential need of hydro-ecological knowledge

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on behalf of PIANC EnviCom

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PIANC ...

- ...the World Association for Waterborne Transport Infrastructure
- ...provides expert and technical guidance for sustainable waterborne transport infrastructure
- ...brings together international experts on technical, economic and environmental issues
- ...keeps the international waterborne transport community connected
- ...is 125 years old



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PIANC ...

- ...operates by topic related Commissions
- ...outputs in Working Groups
- ...produces topical reports
- ...is represented in national and international commissions and organizations
- ...sets strategic initiatives and orientation
- ...thus is a global lobbyist advancing sustainable waterborne transport



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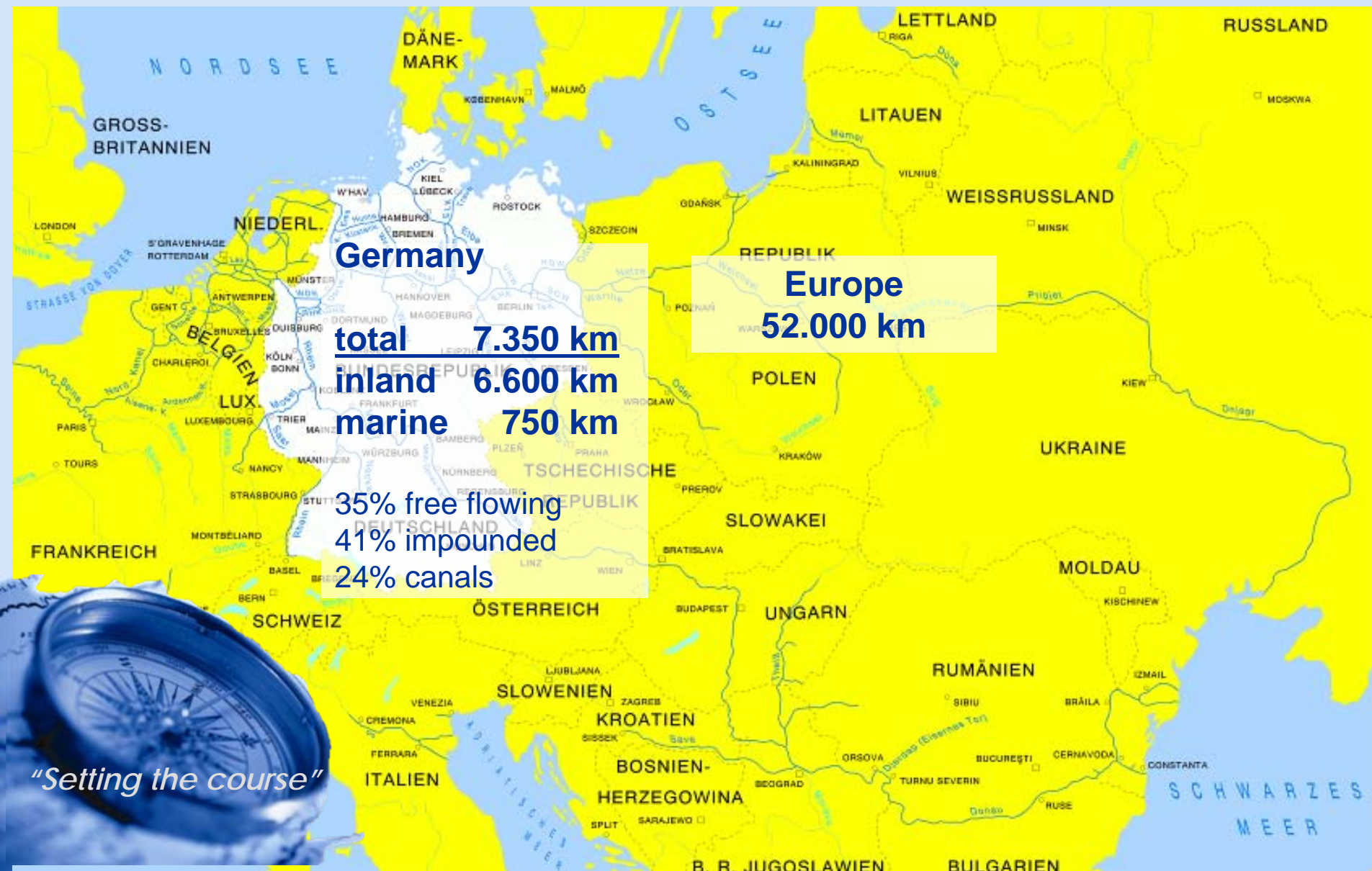
waterways worldwide



source: world fact book 2011

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European waterways



example: Waterways Germany



inland waterways
6.600 km

~ 31.000 km²
floodplains

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WSV.de
Wasser- und
Schifffahrtsverwaltung
des Bundes



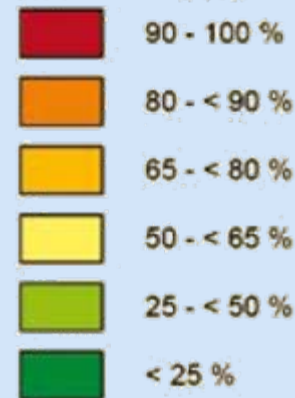
Bundesanstalt für
Geowissenschaften
und Rohstoffe

example: Waterways Germany

condition of floodplains



Verlust von Überschwemmungsflächen



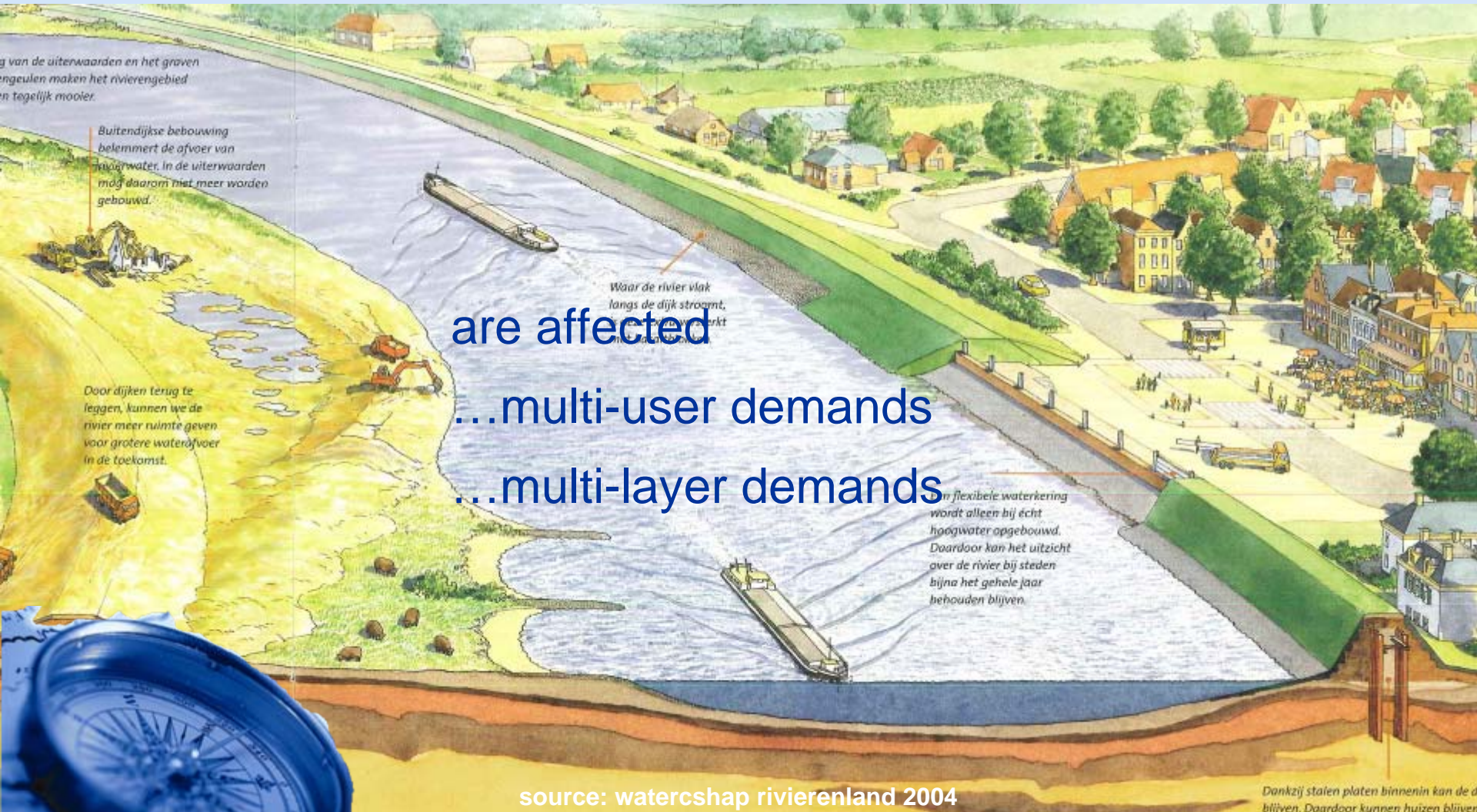
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• Regensburg Sitz eines Wasser- und Schifffahrtsamtes
• Würzburg Sitz einer Wasser- und Schifffahrtsdirektion
| Zuständigkeitsgrenze zwischen Wasser- und Schifffahrtsämtern bzw. -direktionen

waterway ecosystems



are affected
...multi-user demands
...multi-layer demands

source: watercshap rivierenland 2004

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source:
RIZA, RWS-DON, RWS-DLB 1999

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waterway engineering

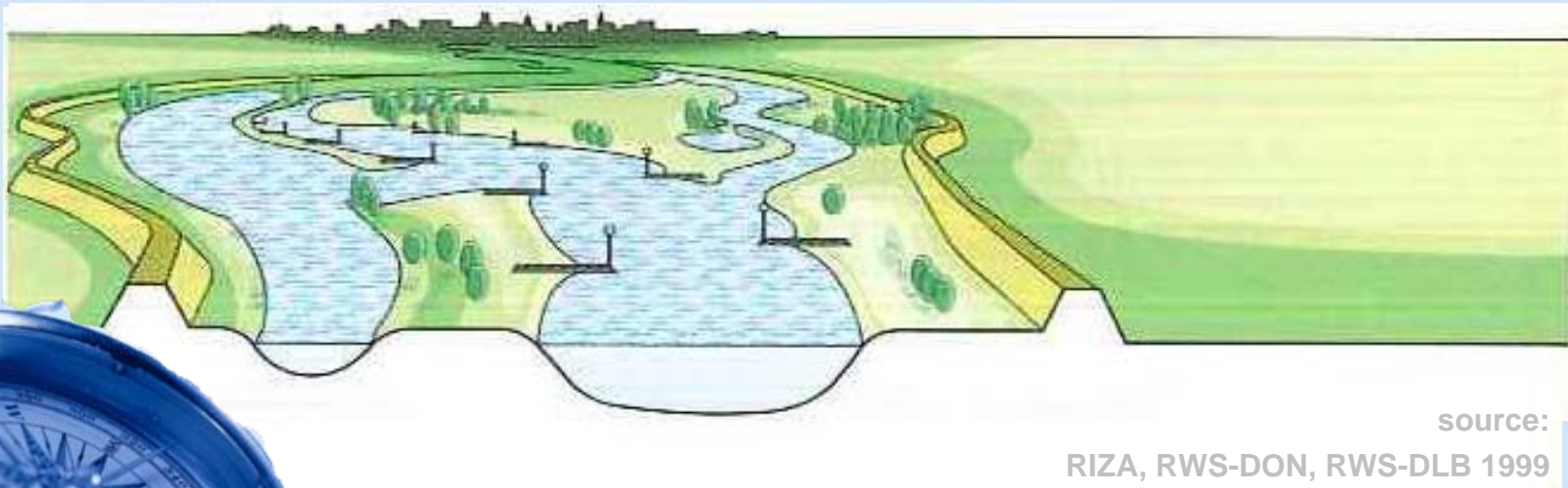
which planning ?

which construction ?

sound and comprehensive
expert knowledge needed

... ..

... .. in the planning process !



source:

RIZA, RWS-DON, RWS-DLB 1999

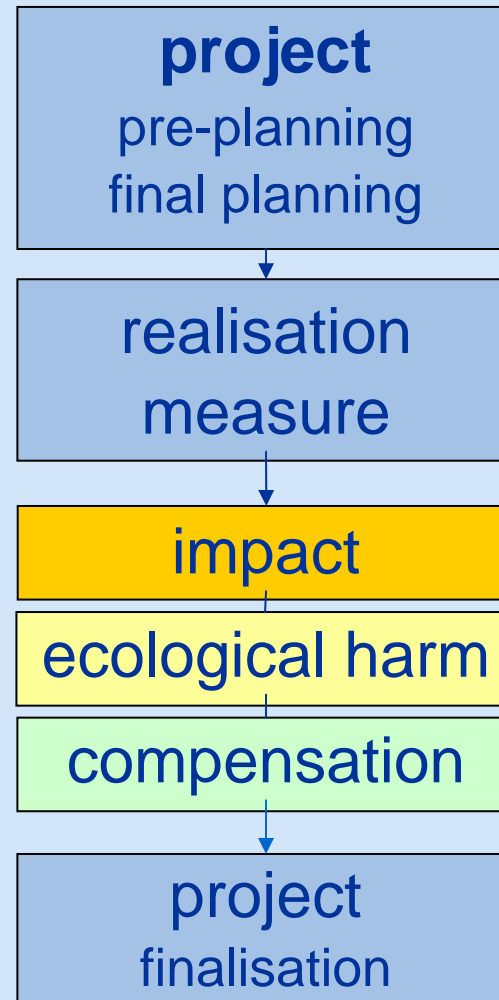
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waterway planning

the customary way ...

CONTROL

stakeholder
involvement
§§



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waterway planning

new approach ...

PIANC philosophy “Working with Nature” WwN

MANAGEMENT instead of CONTROL

2008 - revised 2011

a practical framework for sustainable navigation
infrastructure development



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WwN Philosophy

Working with Nature is ...

...an integrated process, applied early in a project,
within strategic planning context

...ment to identify

win-win-solutions

which respect nature and are acceptable to both
project proponents and environmental stakeholders



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WwN Philosophy

doing things in a different order ...

1. Establish project need and objectives
2. Understand the environment
3. Make meaningful use of stakeholder engagement;
identify win-win options
4. Prepare project proposals/design to benefit
navigation and nature



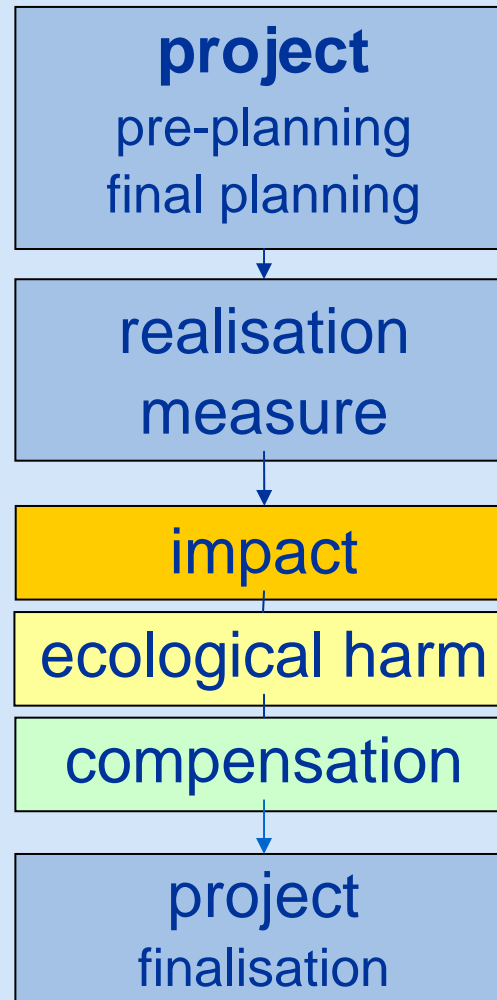
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WwN Philosophy

the customary way ...

CONTROL

stakeholder
involvement
§§



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WwN Philosophy

the new approach ...
MANAGEMENT

stakeholder
involvement

§§



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WwN Philosophy

can we do it ? ...

- ... significant progress made in recent years
- ... advances in science and technology, modelling and design
- ... understanding of ecosystem dynamics
- ... better able to handle uncertainty



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WwN Philosophy

challenges ...

- ... effort to raise awareness of concept
- ... recognise we don't have all the answers, especially for dynamic natural ecosystems
- ... research on ecosystem dynamics, cause and effect relationships; collect data



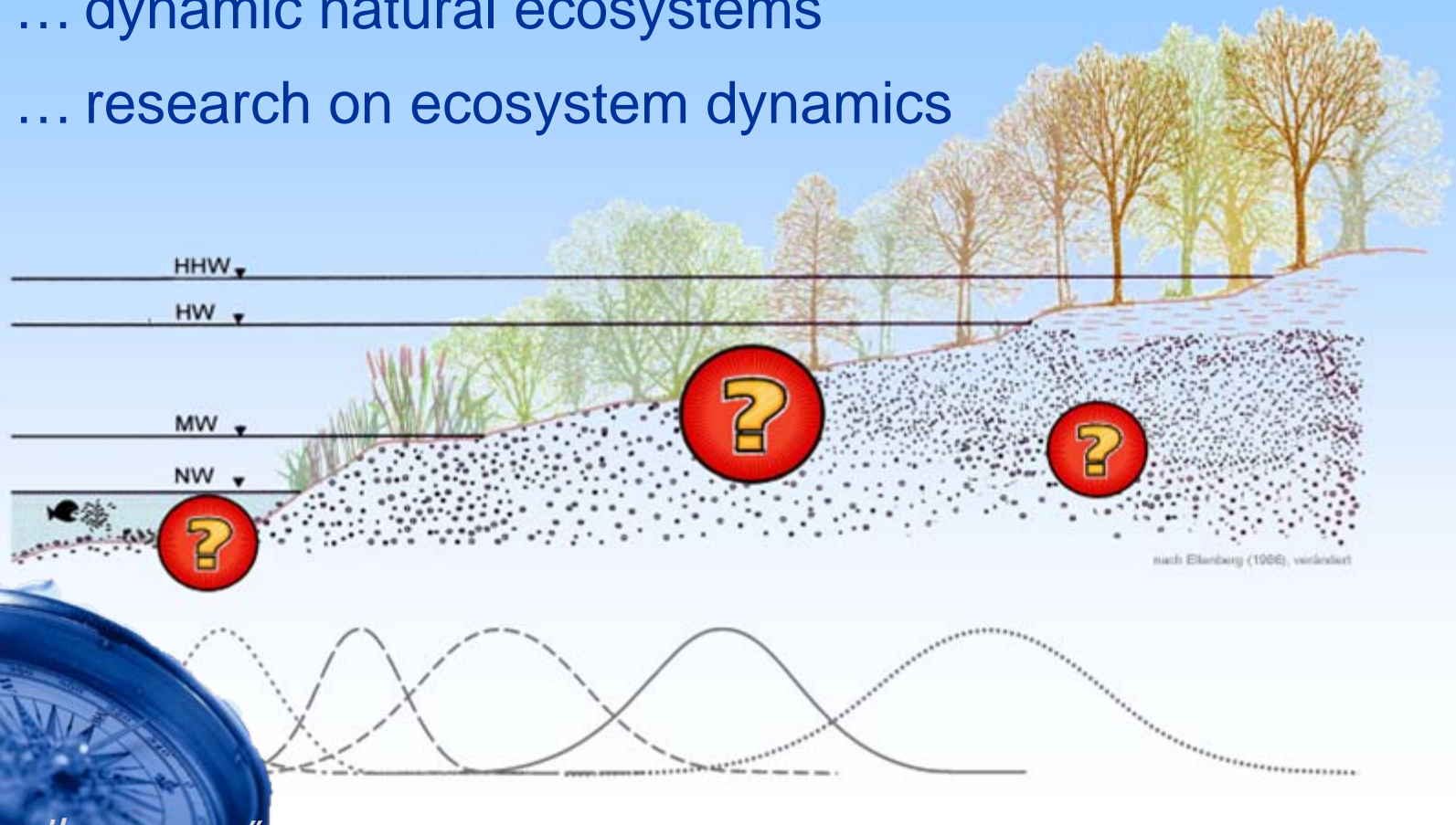
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WwN Philosophy

challenges ...

... dynamic natural ecosystems

... research on ecosystem dynamics

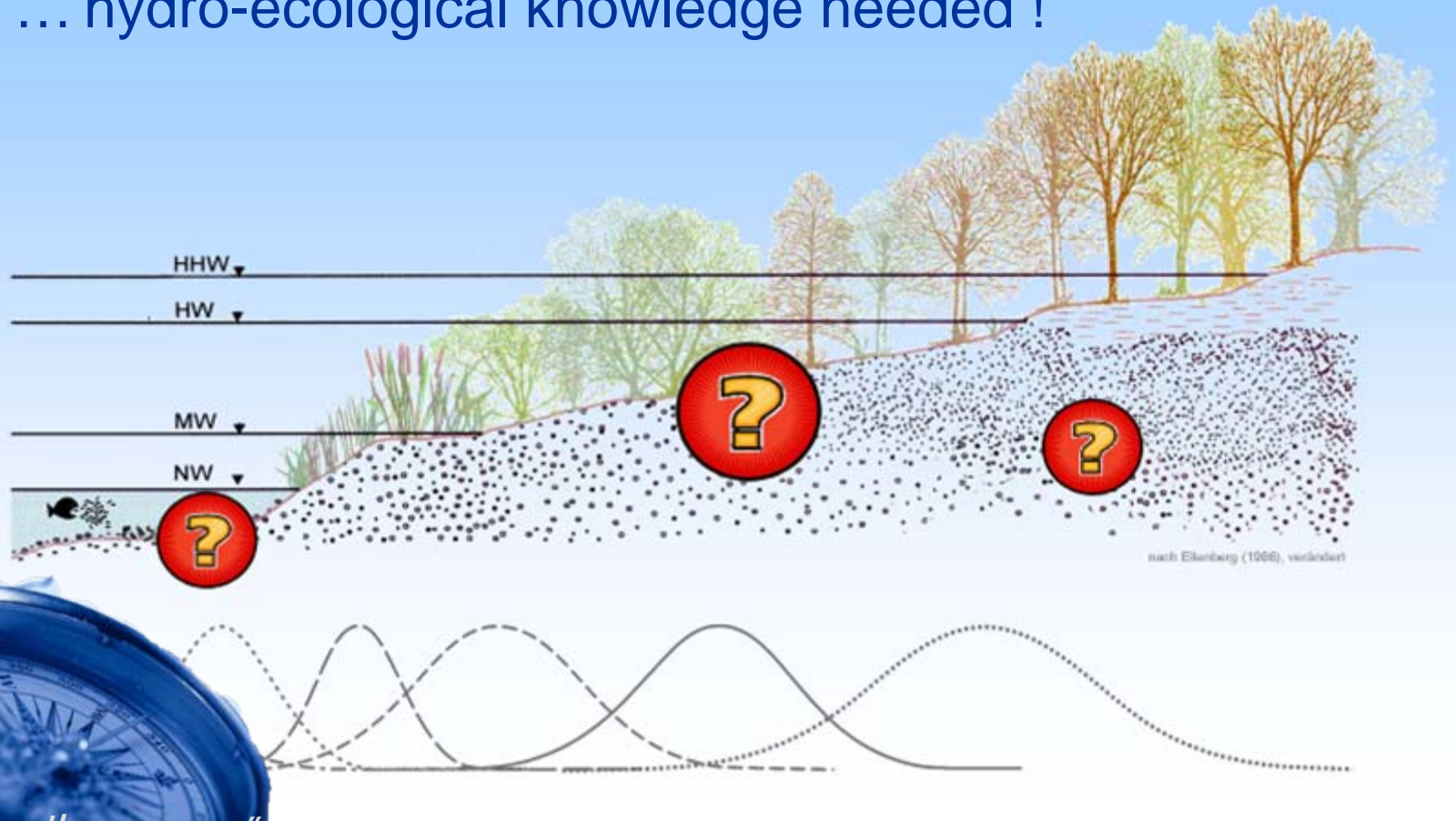


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WwN Philosophy

challenges ...

... hydro-ecological knowledge needed !



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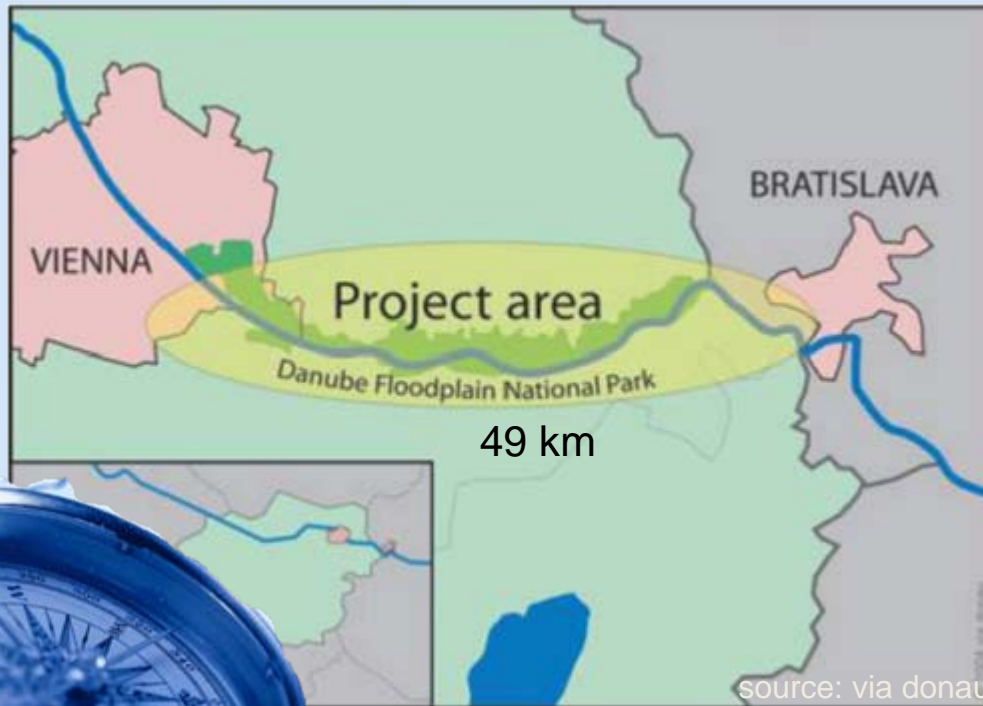
example_River Danube



integrated river engineering

...improves the ecological and nautical situation

...requirements of the “National Park Donau-Auen”



joint statement

ICPDR

DC

SRBC

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www.donau.bmvit.gv.at

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example_River Rhine



flood spillway Rees

...navigation (bed erosion) and flood control (Rees)

...nature development within engineering area



win-win

- navigation
- farming
- recreation
- nature
- flood control

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example_Port of Le Havre



inland transport connection

...adjacent nature reserve

...initial project design according to WwN

win-win

- navigation
- nature



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WwN and application

instruments

- ...expert knowledge
- ...ecological modelling
- ...integrated modelling (DSS, iDSS)
- ...communication
- ...public relation
- ...further research



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WwN and need for research

Hydro-Ecology

- ...sound database (+ field research)
- ...capable analyses tools
- ...sound interrelation abiotics – biotics
- ...modelling
- ...relation hydro-ecology and economics
- ...ecosystem services (ES)
- ...assessment and valuation procedures



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WwN

Homepage

www.pianc.org/workingwithnature.php



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