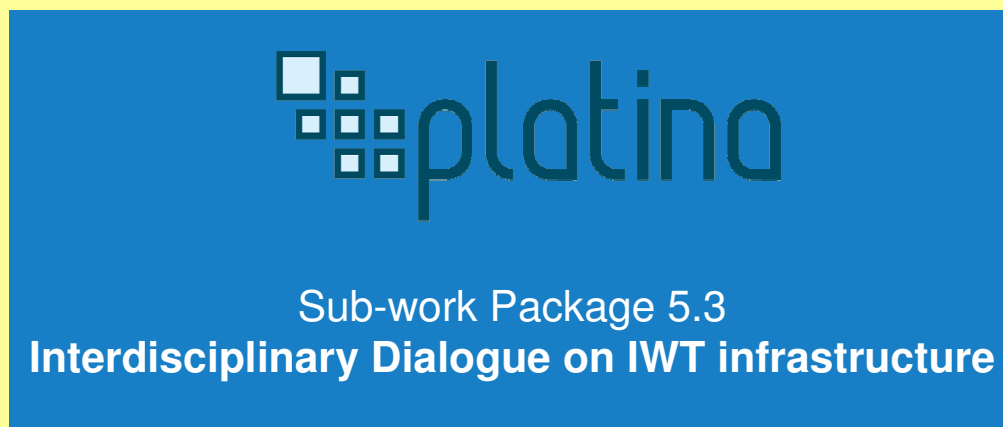


2nd Meeting on the Follow-up of the *Joint Statement on Navigation and Environment in the Danube RB*



Alexander Zinke, ICPDR
Project Manager for Navigation
Zagreb, 9-10 March 2010

Preparation of the Manual



Preparatory Steps since 2008

Assessment of the status quo in IWT planning

Identification of examples of best practise planning

Identification of the concrete needs for better planning

Drafting the Manual in 2009

Detail development

Discussion of first draft Manual at 2 stakeholder workshops
(interdiscipl. dialogue using concrete model cases)

End 2009: Revision of the draft by ICPDR, VIA & BOKU

Early 2010: Finalisation of a *user-friendly* Manual (incl.
commenting of advanced draft) and publication/dissemination.

2011: Review workshop on experience with Manual application.

Manual objectives

Illustrate the ***Joint Statement*** with its principles & criteria

Present **new legal framework conditions** for river management

Present **new approaches in integrated planning**

Provide a **general practical guidance** for integrated planning

Examples ecology-oriented waterway and river bed engineering



Preparation of the Manual - Zagreb & Ruse workshop results



1. Target groups

- + IWT Planners
- + Beneficiaries (various relevant government bodies, competent national and international stakeholders, experts and the EC)

2. Manual contents

- + Suggested structure and subjects meet expectations & needs
- + Tool to find a well coordinated and balanced project result
- + Follow the JS and a „red line“ of process and main themes
- + Add an exclusive list of „**good practise**“ examples
- + A lean and living document (practical annex) to be translated
- + Links, contacts.

Manual Structure

Part A: Introduction, benefits, policy & legal background

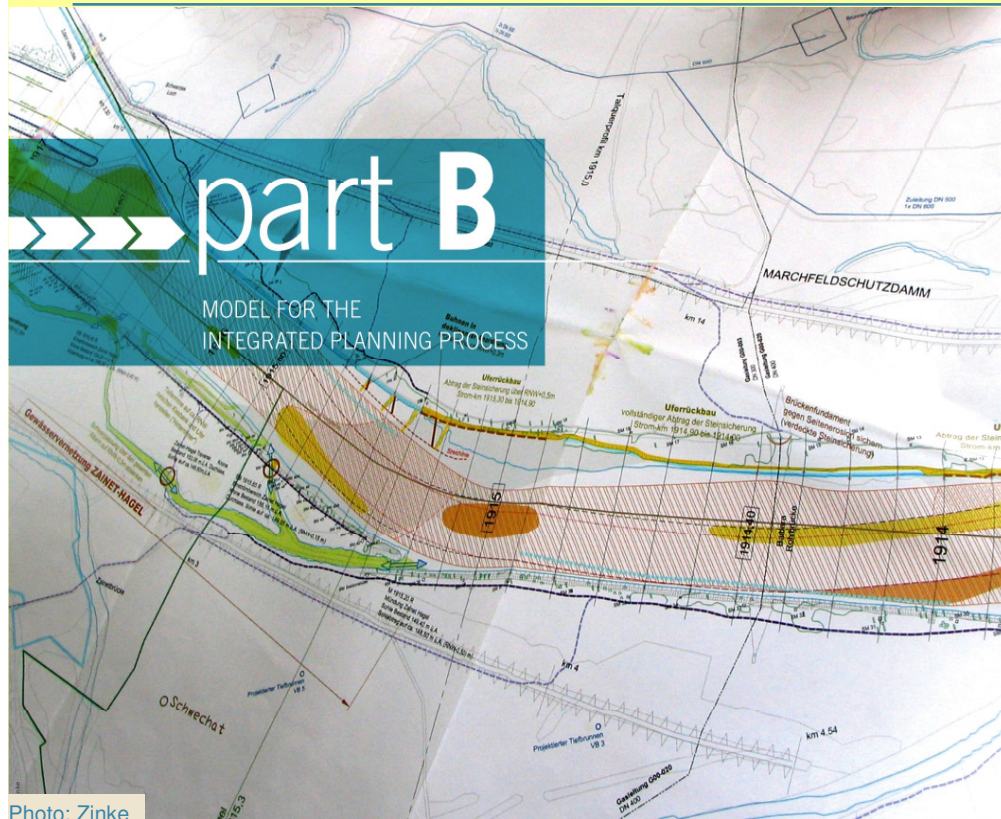
Part B: Illustration of key steps securing successful planning
incl. preparation, organisation, result sustainability

Part C: Basics of river ecology and legal requirements
Illustrating examples of integrated planning and of
measures in- and outside the fairway

References, useful links

Main guidance

(based on other guidances and various experiences)



The essential features for integrated planning are:

- Identify **integrated project objectives** incorporating IWT aims, environmental needs and the objectives of other uses of the river reach such as nature protection, flood management and fisheries;
- **Integrate relevant stakeholders** from the initial scoping phase of a project;
- Carry out an **integrated planning process** to translate the IWT and environment objectives into concrete project measures securing win-win results;
- Conduct **comprehensive environmental monitoring** prior, during and after the project works, enabling an adaptive implementation approach if necessary.

Five planning stages

B.1 Define the scope of the waterway infrastructure project

B.2 Organise the planning process

B.3 Execute the integrated planning

B.5 Implement the project planning

B.4 Monitor the project



1. Prepare the planning



B.1 Define the scope of the waterway infrastructure project

B.1.1 Identify transport needs

B.1.2 Identify environmental needs

B.1.3 Identify other land and water uses and plans

B.1.4 Identify potential transboundary issues

B.1.5 Identify the integrated project objectives and benefits

B.1.6 Ensure financial means for the project

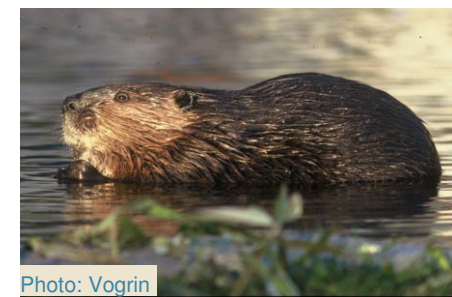
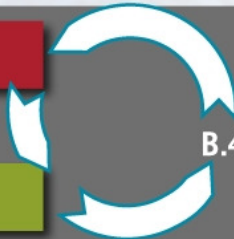
B.1.7 Identify and involve relevant stakeholders; communicate with the public

B.2 Organise the planning process

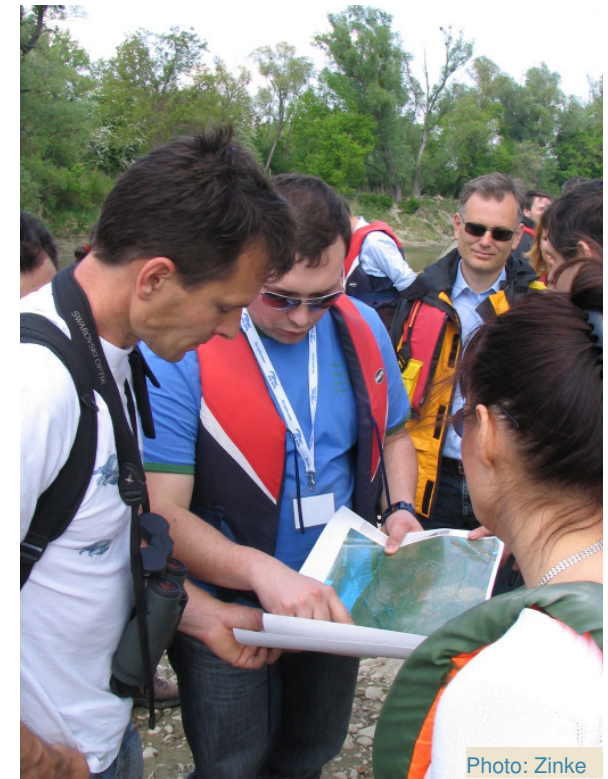
B.3 Execute the integrated planning

B.5 Implement the project planning

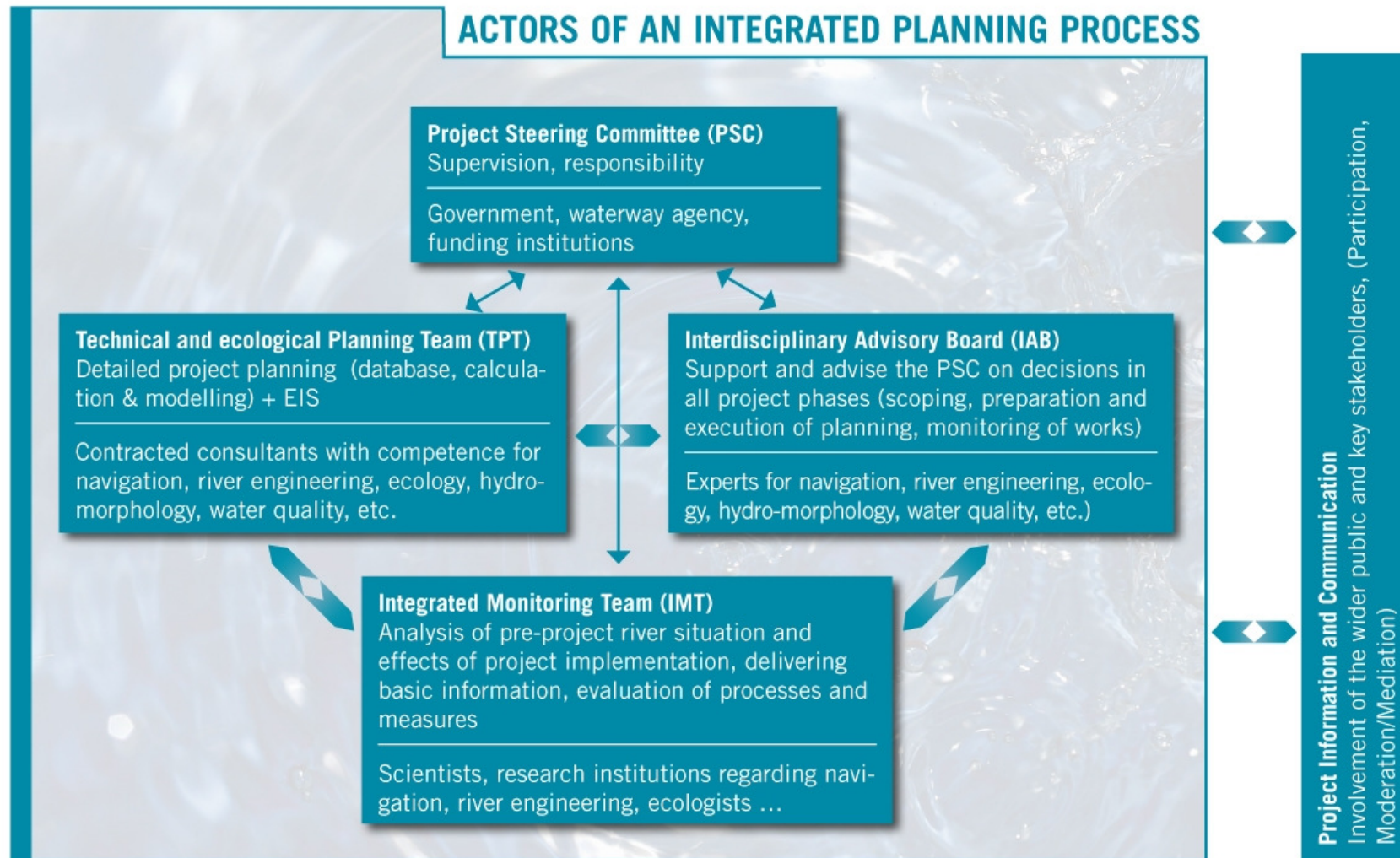
B.4 Monitor the project



2. Set up the planning teams



Recommended planning bodies



3. Do integrated planning



■ ■ ■ ■ Step 1

Define joint Planning Objectives and Principles

■ ■ ■ ■ Step 2

Carry out the detailed planning of measures

- technical and ecological options
- plan alternatives
- variants of chosen alternatives
- local examination and/or testing
- priority ranking

■ ■ ■ ■ Step 3

Conclude the integrated planning process (communicate and adopt results)

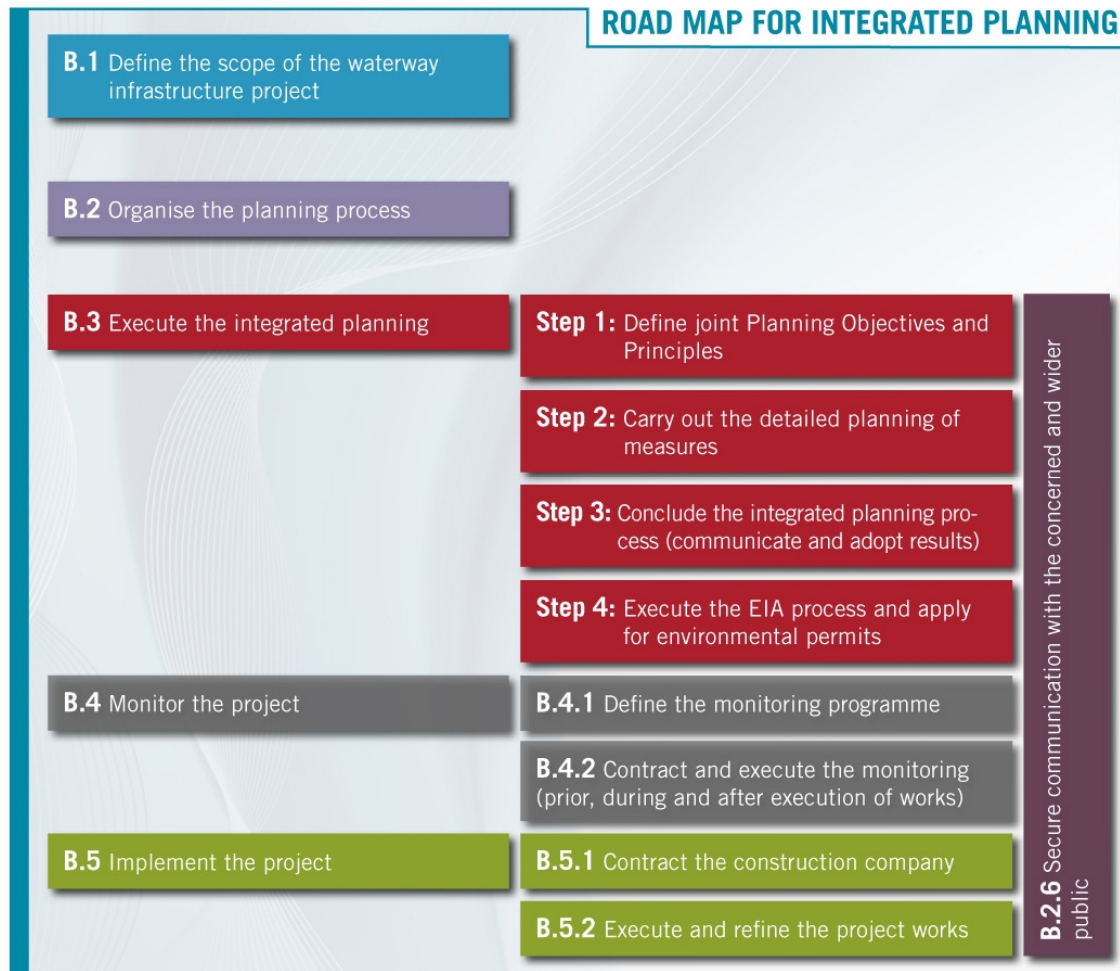
■ ■ ■ ■ Step 4

Execute the EIA process and apply for environmental permits

Project developers should use these steps to create a dedicated **Road Map** for the planning process of their IWT project.

4. Monitor

5. Implement



Photos: Zinke





B.3 Execute the integrated planning

B.4 Monitor the project

B.5 Implement the project planning

All photos: ICPDR

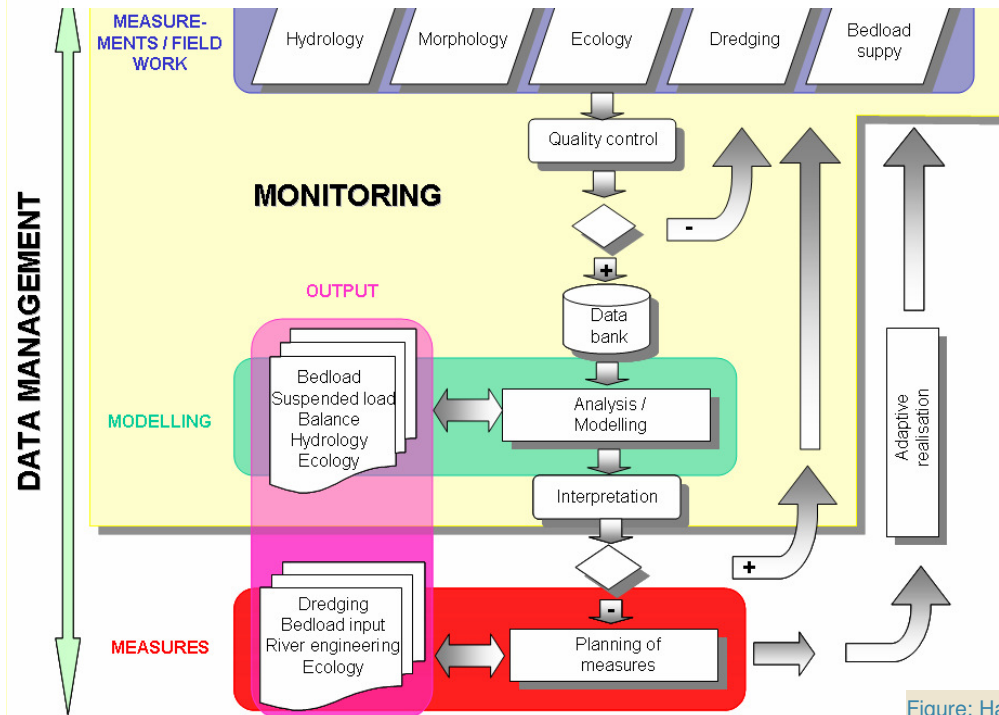


Figure: Habersack

Keep an eye on responsibilities and tasks

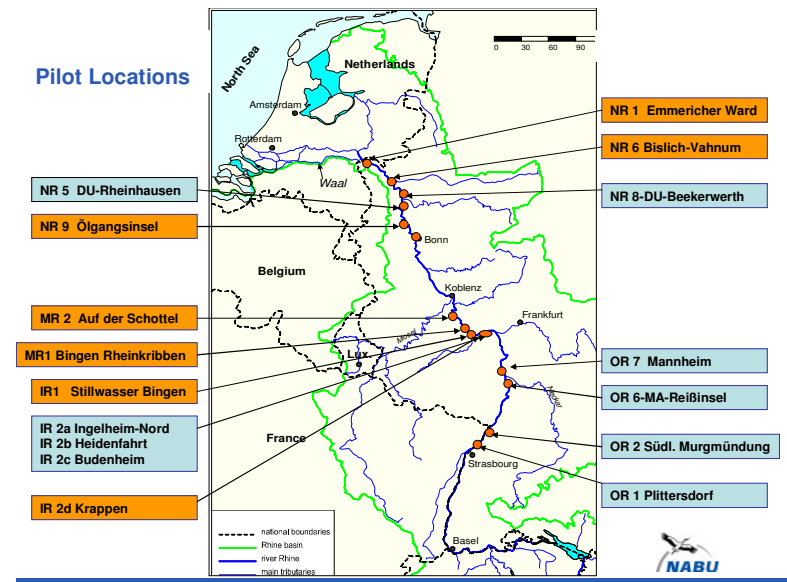


RESPONSIBLE BODY	ACTIVITY	
PSC	B.1 Define the scope of the waterway infrastructure project	Overall project responsibility
PSC	B.2 Organise the planning process	
TPT with support of PSC & IAB	B.3 Execute the integrated planning	
IMT with support of IAB & TPT	B.4 Monitor the project	
PSC	B.5 Implement the project	PSC

Take important aspects into account



Combining Environm. Impact
Assessment (SEA/EIA-D),
Nature Impact Assessmt. (BH-D)
WFD assessment - Art. 4 (7)



A RIVER BANKS / NEAR BANKZONE

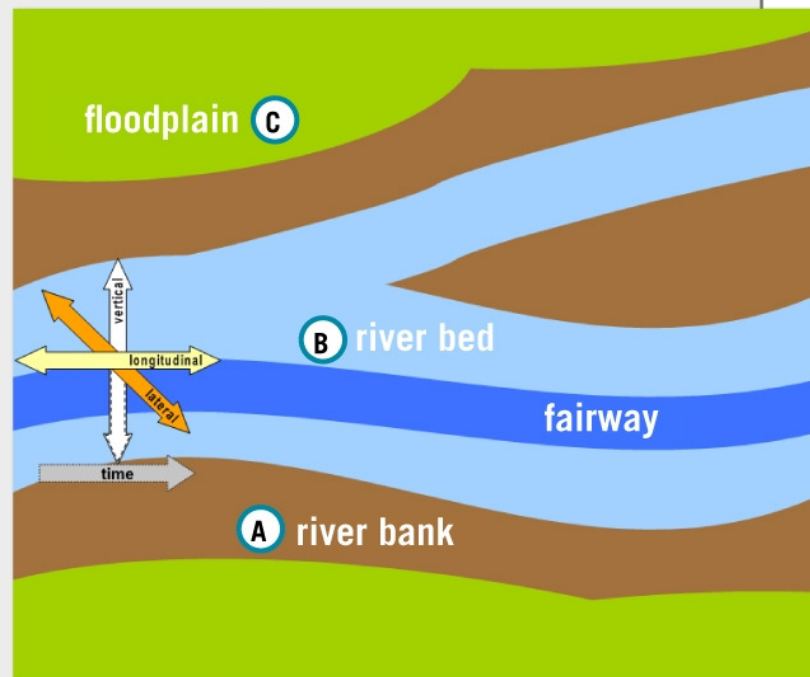
1. Alternative groyne types
2. Restored / unprotected banks

B RIVER BED / FAIRWAY

1. Granulometric bed improvement
2. Chevrons

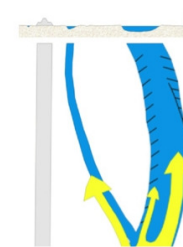
C FLOODPLAINS

1. Reconnection of side-arms
2. Preservation / restoration of floodplains



Classification of river engineering measures according to their location

LOCATION		FLOODPLAINS		C 1		
Type of measure		Reconnection of side-arms				
Goals of measure	TECHNICAL	Emphasizing flood retention (hydrological), lowered water level at higher discharges Sediment input Reduced shear stress in main channel				
	ECOLOGICAL	Permanent connection of the side-arm system (at low flow) Improvement of the ecological conditions (especially at the river banks and the side-arms) Sustainable sediment budget in the side-arm system Permanent refugial areas, protection against wave influences				
Requirements	TECHNICAL	Connectivity at low flow No aggradation at the upstream connection/end More sediment output than input				
	ECOLOGICAL	Leitbild-oriented hydrology (low flow <-> floods) and morphodynamics No/minor restrictions for the side-arm development No discontinuities of bed-, water level- and energy slope				
Effects	<div><div>L</div> low influence</div> <div><div>M</div> medium influence</div> <div><div>H</div> high influence</div>		Technical effects (fairway)		Ecological effects (side-arms)	
	HYDRAULICS	water level	L*	decreased water level at high flow	H	increased water level -> permanent connection with main channel
		flow velocity	L*	decreased flow velocity at high flow	H	habitat diversity, refugial habitats, higher flow velocities
		shear stress	L*	decreased shear stress at high flow	H	drift of macroinvertebrates to suitable habitats, higher shear stress
	SEDIMENT TRANSPORT	transport capacity	L*	decreased transport capacity at high flow	H	increased transport capacity
	RIVER MORPHOLOGY		M	minor technical measures for bed stabilisation	M	increased morphodynamics, habitat diversity
Notes / Risks	Sedimentation of side-arms					
	Not enough morphodynamics					
Monitoring		Monitoring of morphology, flow velocity / discharge measurements, suspended sediments				
Interrelation with other measure types		Restoration of floodplains, restoration of banks, groynes				
Examples / Photos						



Reference Integrated River Engineering Project Danube East of Vienna (viadonau & DonauConsult, 2009) (<http://www.donau.bmwit.gv.at>) (Danube/AT)

*depends on discharge in side-arms

JS

Criteria for river engineering

The designers of technical measures should apply:

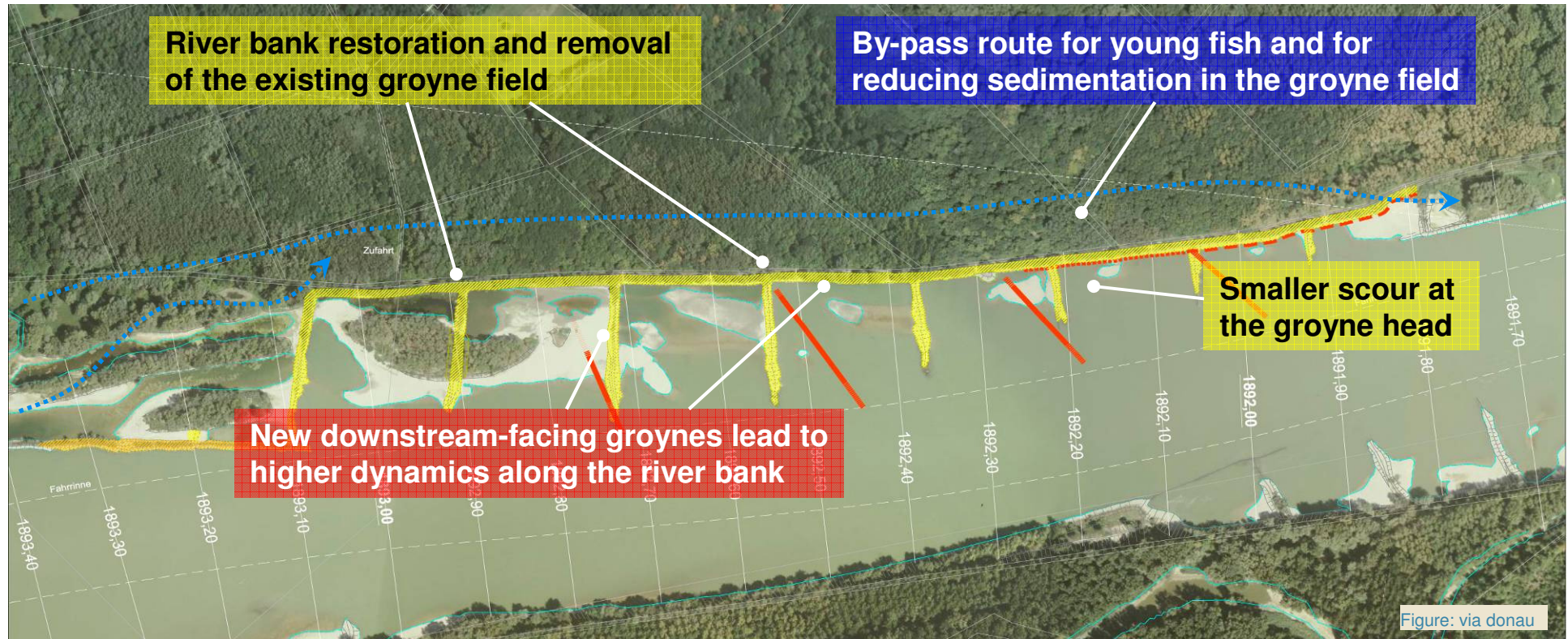
- Case-by-case approach
- Working with nature
- Integrated design (hydraulics, morphology and ecology)
- Adaptive form of measures
- Use of restoration potential
- Ensure no worsening of flood water levels

JS – Annex 2: Examples of possible measures



Ex. reconstruction of Groynes

Austrian Danube Pilot Project Witzelsdorf



- Removal of old groynes and river bank restoration
- Construction of new groynes



Restored river banks



Improving riverine ecology
while maintaining or
improving navigability



Photo: B. Boekhoven, RWS-NL



Photos: via donau



Reconnected side-arms

Down-sized groynes



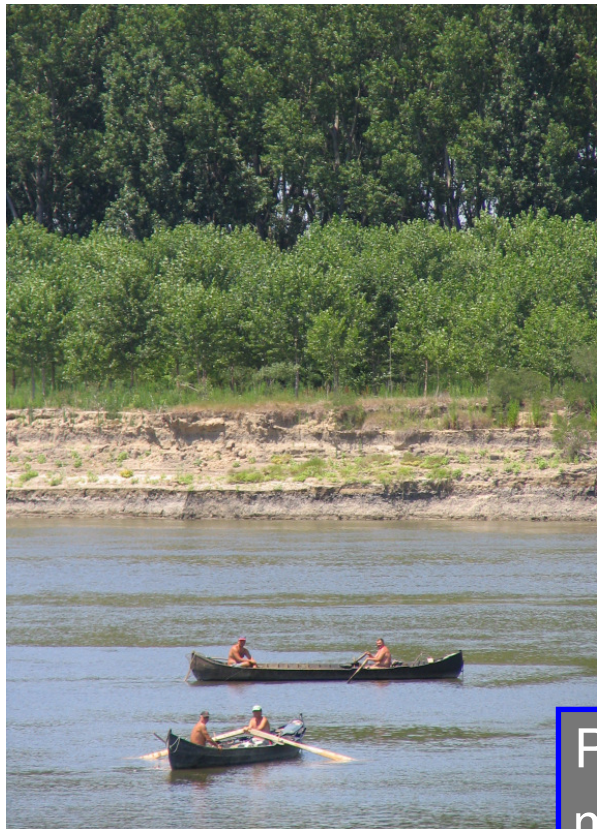


Photo: Fallander



Planning goal: Improve the multi-functional river-scape

Photos: Zinke



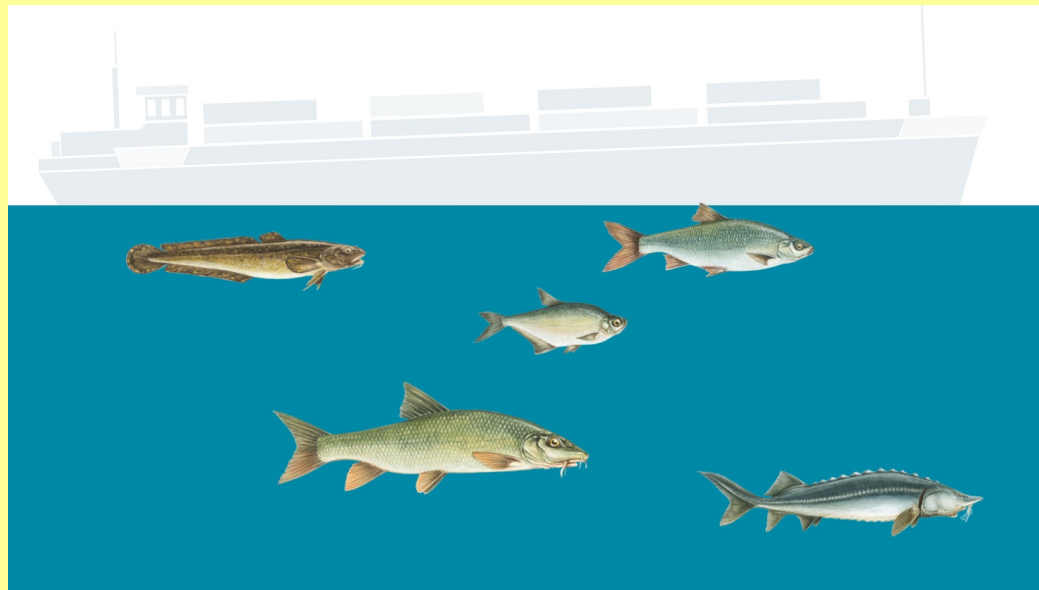
Perspective



Today, **waterway administrations** face a widening scope of tasks and responsibilities (e.g. WFD *implementation*). Modern waterway management requires them to do different planning, plans and works than in the past, and to dispose of a diverse range of technical staff. Agencies can become a service point for various users, supervisor of complex river projects, competence center for fairway management and river ecology.

The Manual aims to be one of the new tools

Developed by



*Your
comments?
(by 26 March)*

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