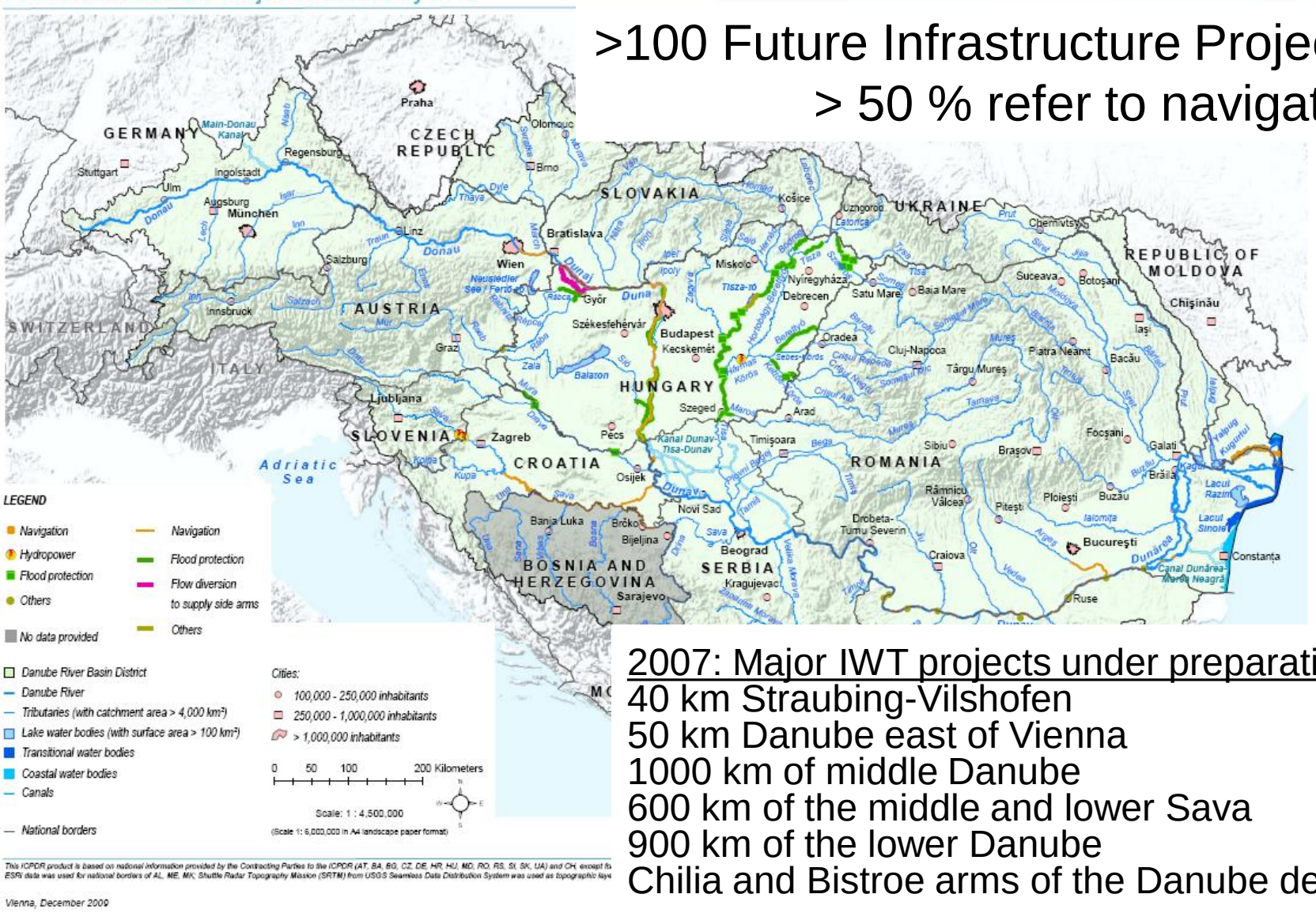
Mixed Environment Transport External Expert Team (METEET)
Training on Integrated Planning of Inland Waterways Transport Projects

The Joint Statement and the PLATINA Manual on integrated planning

Georg Rast

Ukraine – web conference, November 25/26, 2021

This project has received funding from the European Union's CEF under the Grant Agreement N° MOVE/D3/SUB/2019-305/SI2.822021



>100 Future Infrastructure Projects: > 50 % refer to navigation

2007: Major IWT projects under preparation:
40 km Straubing-Vilshofen
50 km Danube east of Vienna
1000 km of middle Danube
600 km of the middle and lower Sava
900 km of the lower Danube
Chilia and Bistroe arms of the Danube delta

Growing concern and motivation since 2005

- How to **ensure sustainable water protection** and non-deterioration of Danube Basin water bodies & Natura2000 if major infrastructure projects will be built?

- How to **make a step** from confrontation and ignorance to reconciliation, cooperation or even win-win results?

- Can we **guide** infrastructure development that it won't conflict with river protection but support it?

PIANC guidance (2003): Sustainable Inland Waterways and Navigation

Special reference to ‚**ecosystem context**‘:

Keep the basic functions of rivers/waterways in mind:

- Evolution through morphologic processes
- Maintenance of hydrologic balance
- Continuity of sediment processes
- Provision of habitat
- Maintenance of chemical and biological processes

Sustainability is most likely to be achieved by limiting ecosystem impacts

or in other words

Impacts on critical characteristics or processes are likely to compromise sustainability over long term

Ref:: Guidelines for sustainable Inland Waterways and Navigation, PIANC EnviCom WG 6, 2003

The PIANC position (2008): ‘Working with Nature’

The *World Association for Waterborne Transport Infrastructure*, i.e. the global competence network of governmental and private experts for waterways, states:

Fundamentally, *Working with Nature* means reversing the order:

- establish project need and objectives
- **understand** the environment
- make meaningful use of **stakeholder engagement** to identify possible win-win opportunities
- prepare initial project proposals/design to **benefit navigation and nature**.

New approach:

- Achieve the project objectives in an **ecosystem context** rather than assess the consequences of a pre-defined project design
- Identify mutually beneficial solutions rather than simply minimise ecological harm

Perspective

Contempory waterway development and management is an important part of a sustainable river management. It requires a **more comprehensive preparatory planning and monitoring** than in the past.

Key is to timely observe and **integrate requirements** from **environment and other river uses** into infrastructure projects.

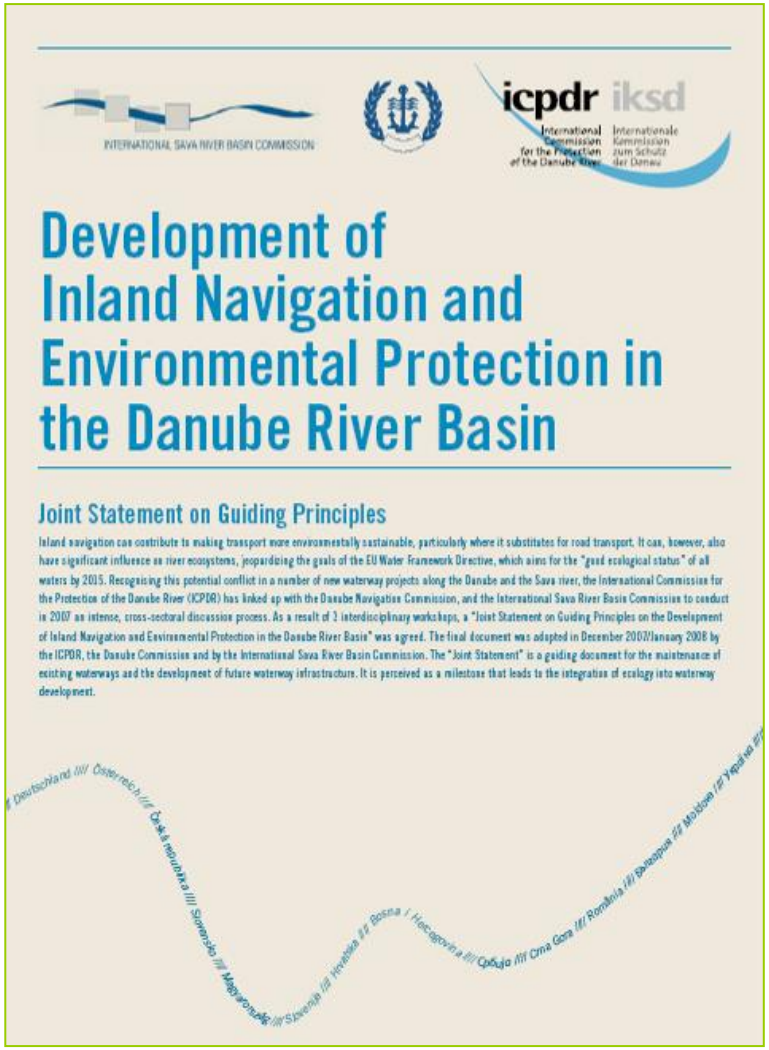
Involvement of stakeholders helps to reduce planning risks

Planning objective is to develop good solutions (win-win results)

First response: Cross-sector dialogue 2007

Stakeholder process (12 basin governments and 22 industry and environmental interest groups) during 3 workshops.

Result: **New commitment** by *ICPDR, Danube Commission and Sava Commission* (2007)


INTERNATIONAL SAVA RIVER BASIN COMMISSION

icpdr iksd

International Commission for the Protection of the Danube River

Internationale Kommission zum Schutz der Donau

Development of Inland Navigation and Environmental Protection in the Danube River Basin

Joint Statement on Guiding Principles

Inland navigation can contribute to making transport more environmentally sustainable, particularly where it substitutes for road transport. It can, however, also have significant influence on river ecosystems, jeopardizing the goals of the EU Water Framework Directive, which aims for the "good ecological status" of all waters by 2015. Recognising this potential conflict in a number of new waterway projects along the Danube and the Sava river, the International Commission for the Protection of the Danube River (ICPDR) has linked up with the Danube Navigation Commission, and the International Sava River Basin Commission to conduct in 2007 an intense, cross-sectoral discussion process. As a result of 3 interdisciplinary workshops, a "Joint Statement on Guiding Principles on the Development of Inland Navigation and Environmental Protection in the Danube River Basin" was agreed. The final document was adopted in December 2007/January 2008 by the ICPDR, the Danube Commission and by the International Sava River Basin Commission. The "Joint Statement" is a guiding document for the maintenance of existing waterways and the development of future waterway infrastructure. It is perceived as a milestone that leads to the integration of ecology into waterway development.

Key Principles of the Joint Statement (JS)

- **Integrated planning process from the beginning** (environment, water management and transport;
  via interdiscipl. teams -> *joint planning objectives*)
- **Minimize the impacts** of engineering interventions, use non-structural measures
- Apply **EIAs** with public participation
- Respect the WFD's **river basin management plans** (protect / restore ecology and reduce negative impacts)
- Define **goals** for IWT **and** the river/floodplain ecological integrity
- Use **best practise** to achieve the required objective.

Joint Statement - *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 deterioration of **flood** water levels (flood risks)

JS – Annex 2: Examples of possible measures

2nd response: EU PLATINA Project (2008 - 2013)

Project within 7th Framework Progr. for Research (22 partners) to develop capacities around the five NAIADES action areas

<u>SWP 5.3: Preparation of an IWT Planning Manual</u>

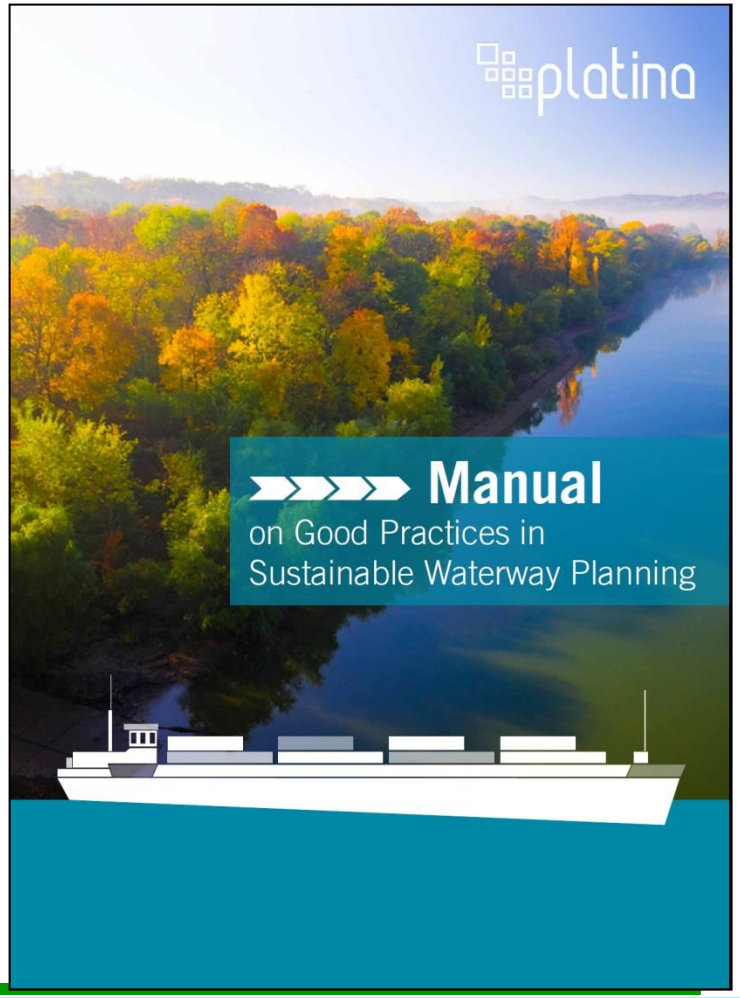
Contents discussed at **2 stakeholder workshops** in 2009 (local needs and concrete model cases)


Photo: Schoor

- Take into account received comments
- Produce a ***user-friendly*** manual and disseminate it widely

Objectives of the PLATINA Manual

- 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** for ecologically-oriented waterway and riverbed engineering

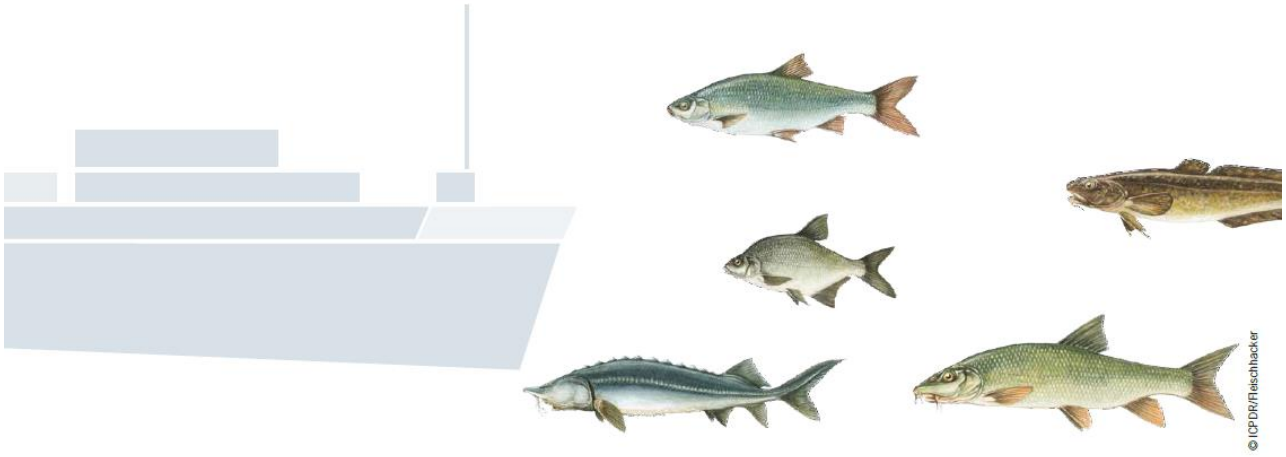


Content of PLATINA Manual

Part A Introduction and Background

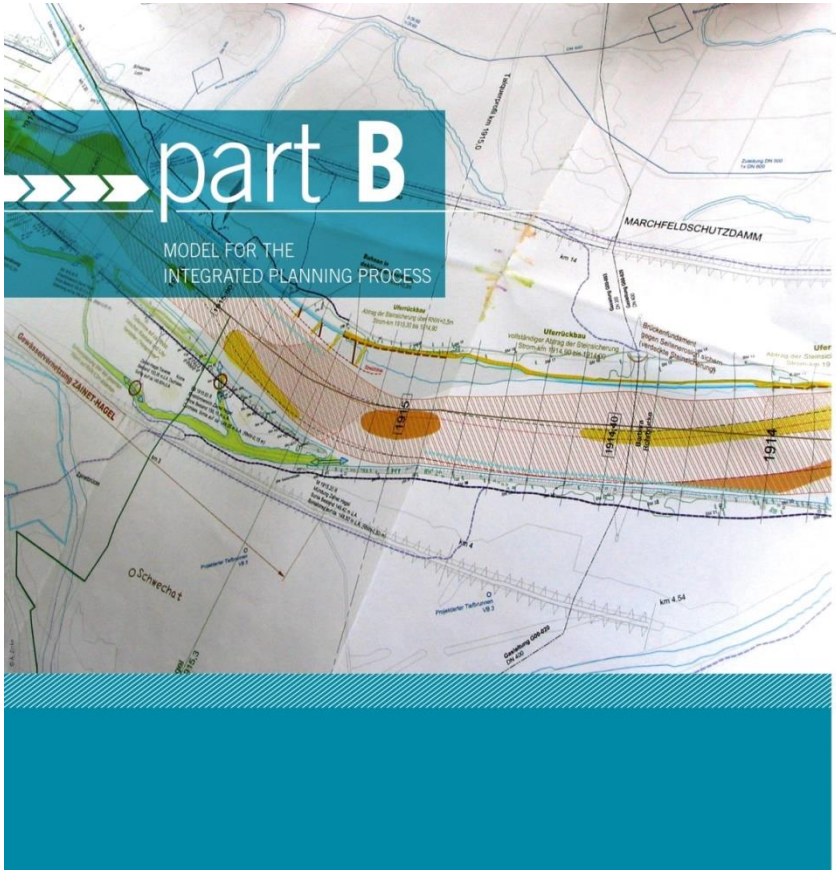
Part B Model for an Integrated Planning Process

Part C Frameworks for Practical Application



Main guidance

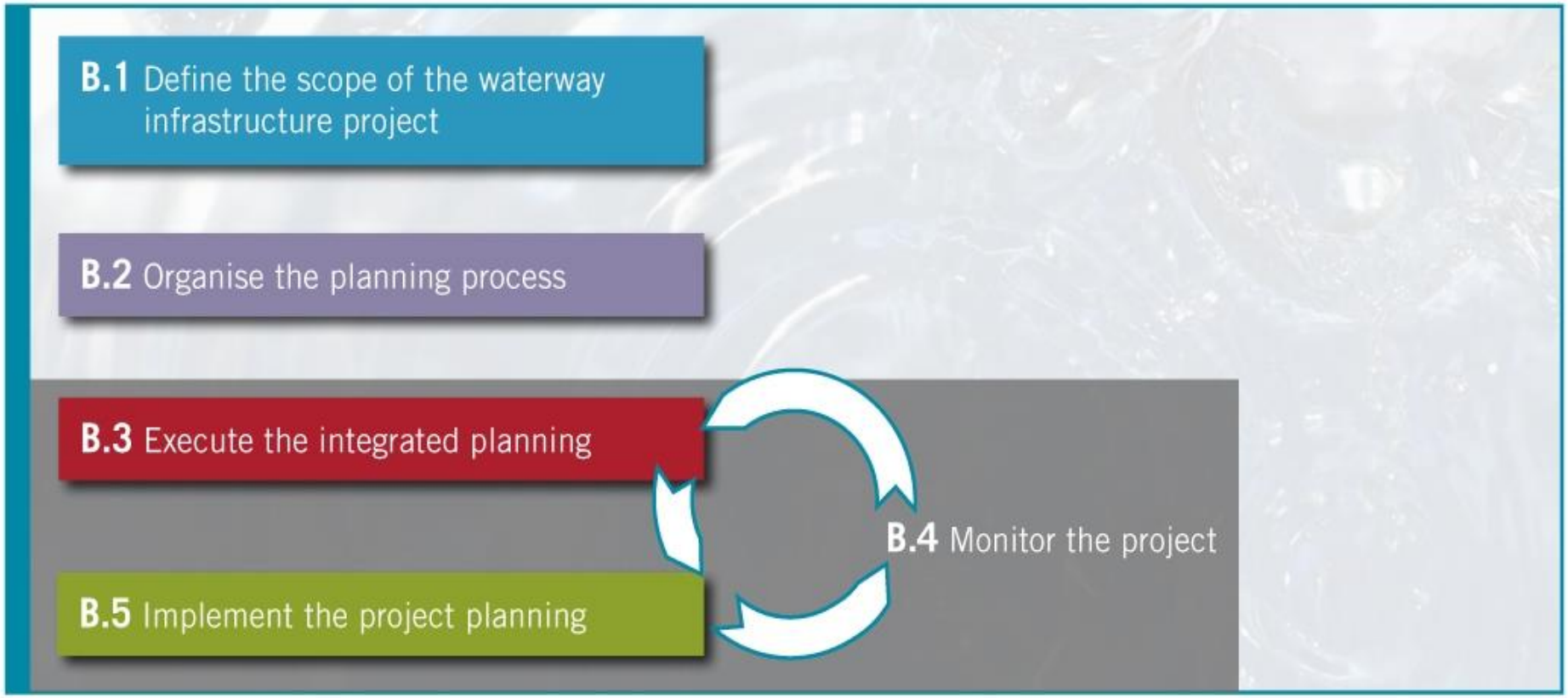
(based on other guidances and various experiences)



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 general planning stages

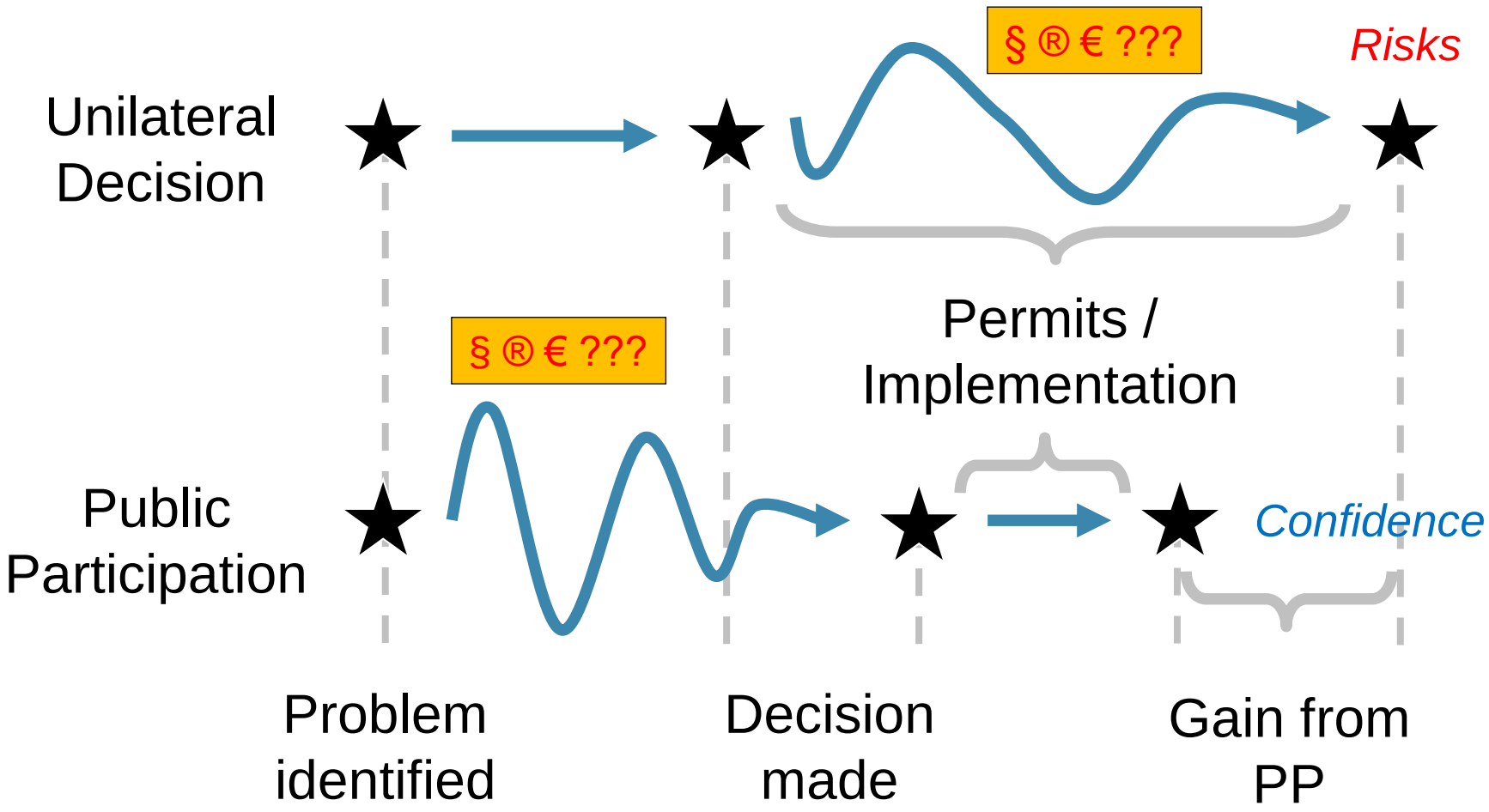


1. Prepare the planning

B.1.7: Identification and involvement of stakeholders and communication with the public

more efforts than by legal requirements

Traditional planning versus integrated planning



After Creighton 2005

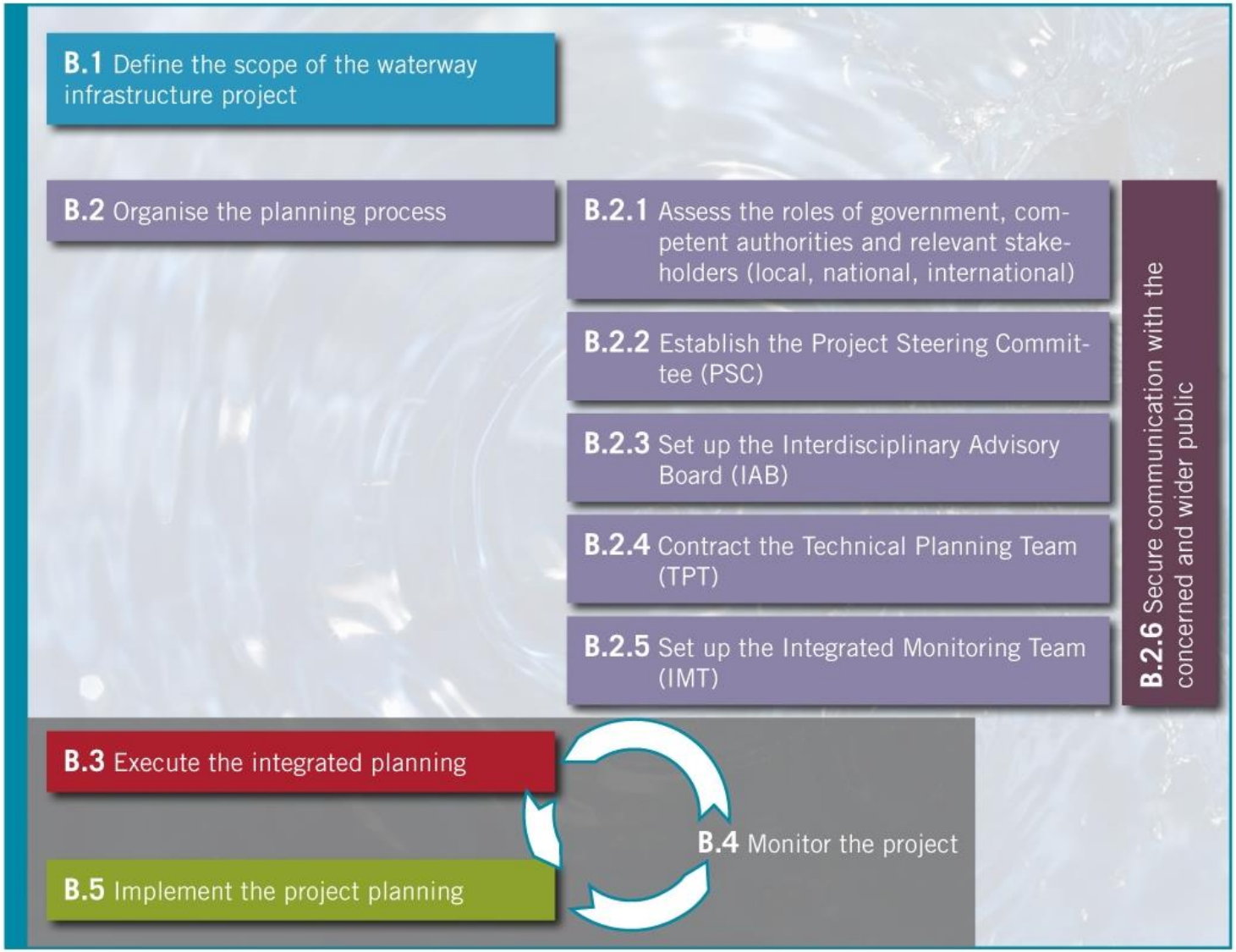
Stakeholder involvement = public participation

- ✓ Public participation is a process, not just 1-2 information events
- ✓ It seeks early, critical and constructive comments over the full lifespan: from the project design to the implementation phase > win-win solutions
- ✓ Objective: inform the public and get its support
- ✓ Public participation gives stakeholders the opportunity to influence decisions that may affect their business and life. It results in trust and co-ownership!

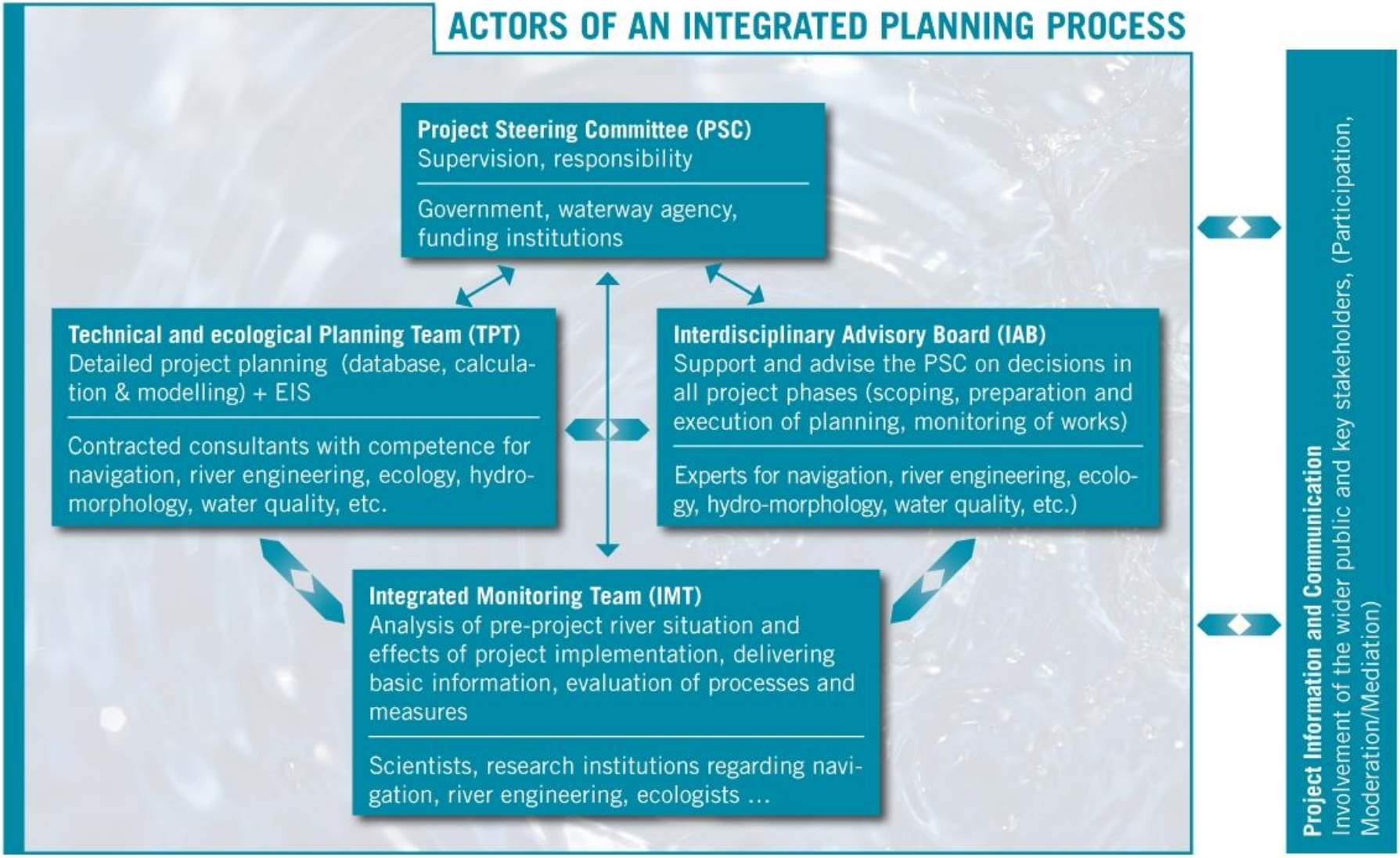
Recommendations for stakeholder participation

- Invest sufficient resources and time into stakeholder analysis from the beginning
- Develop a communication concept/plan
- Explain technical and ecological terms for general public
- Think about competence and capacity of key stakeholders involved (provide training if needed)
- Employ an independent moderator for stakeholder meetings
- Agree on rules of procedure for stakeholder forums

2. Organise the planning process



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

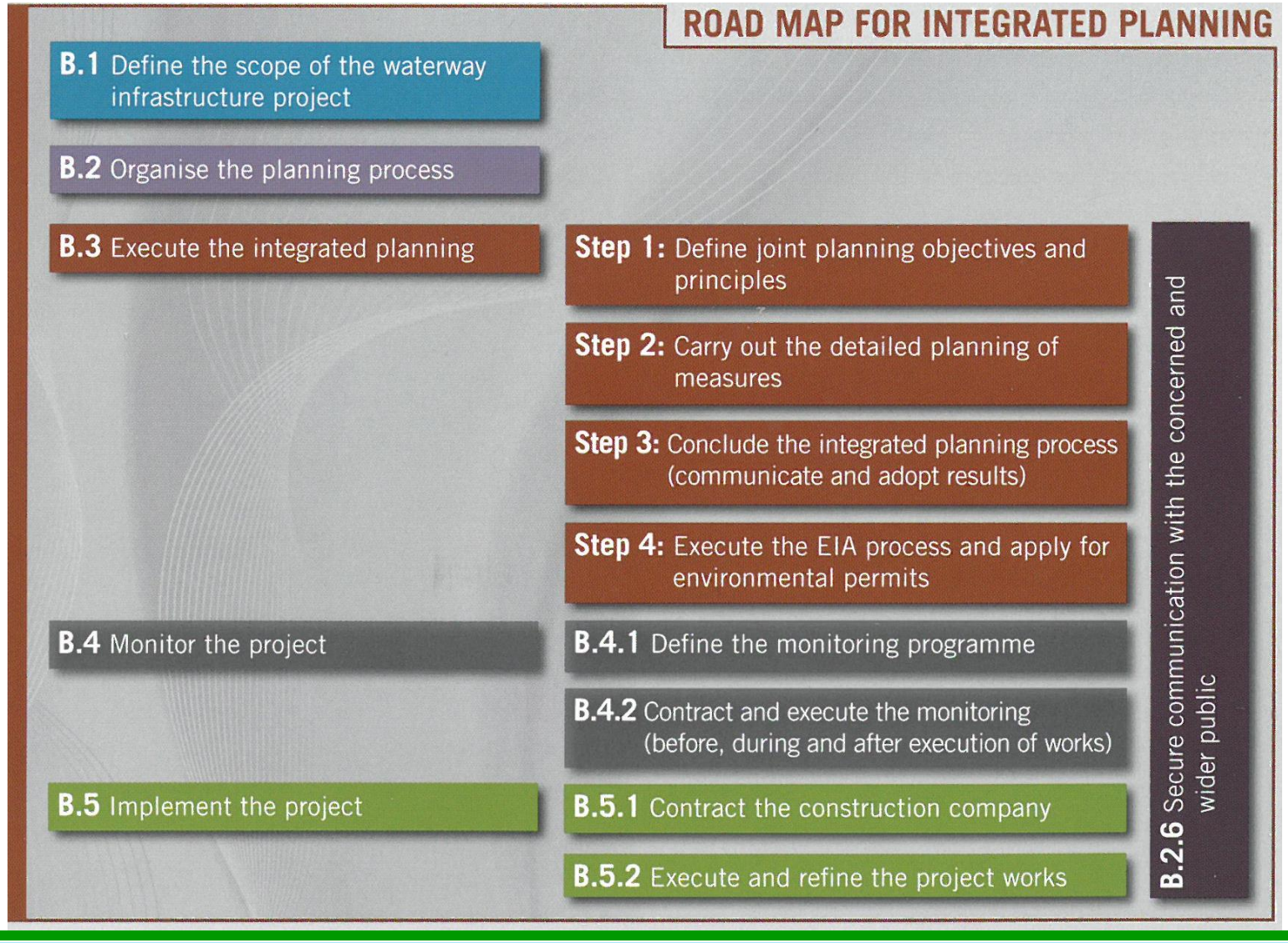
Conclude the integrated planning process (communicate and adopt results)

Step 4

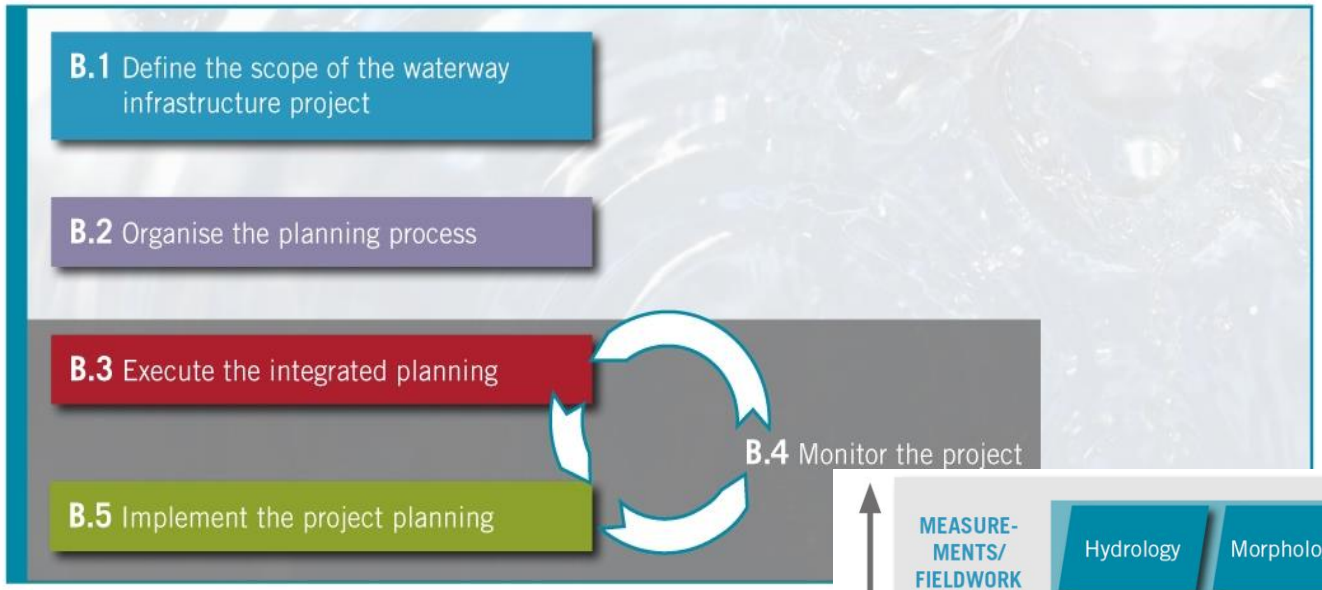
Execute the EIA process and apply for environmental permits

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

3. Roadmap for integrated planning



4. Monitoring before/during/after implementation




Photos: ICPDR

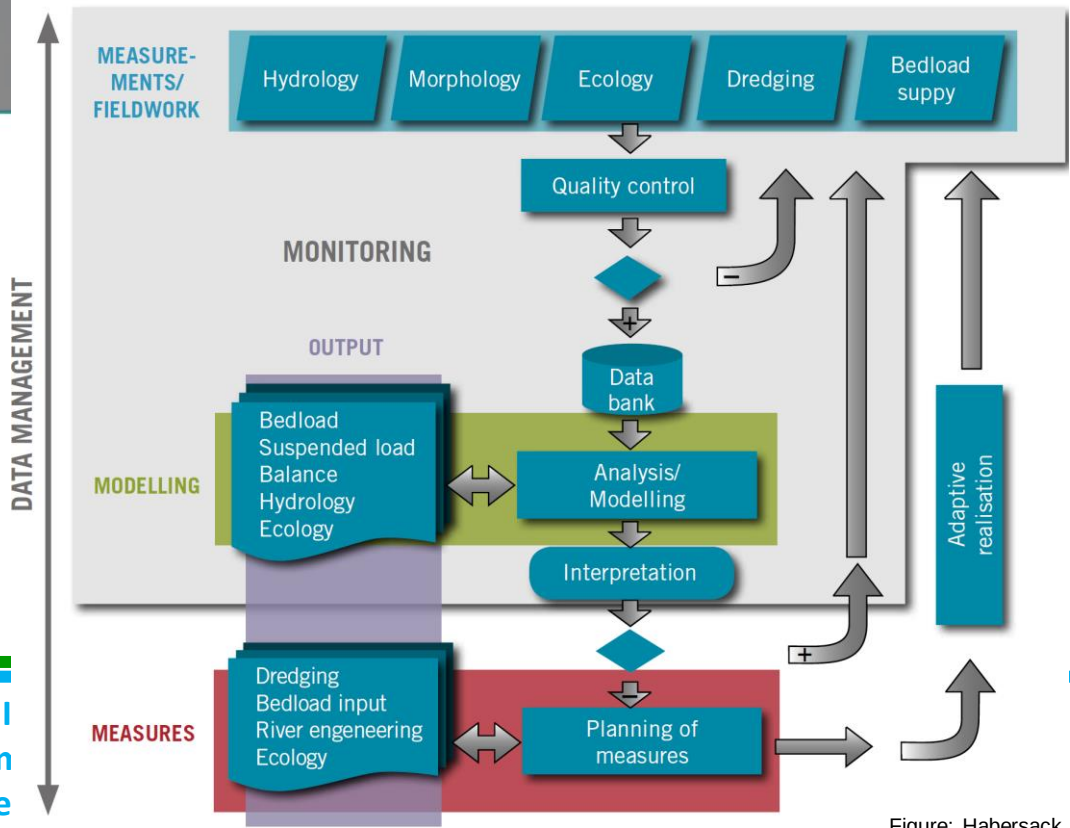
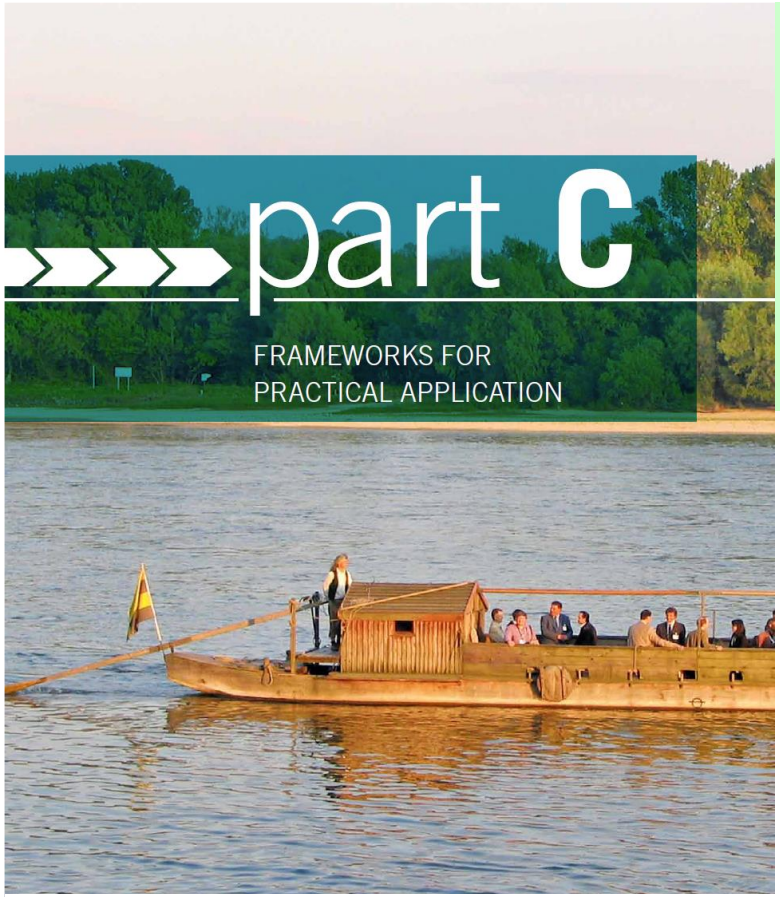


Figure: Habersack

Integrated Planning of I
- Joint Staten
Ukraine – web confe

Take important aspects into account



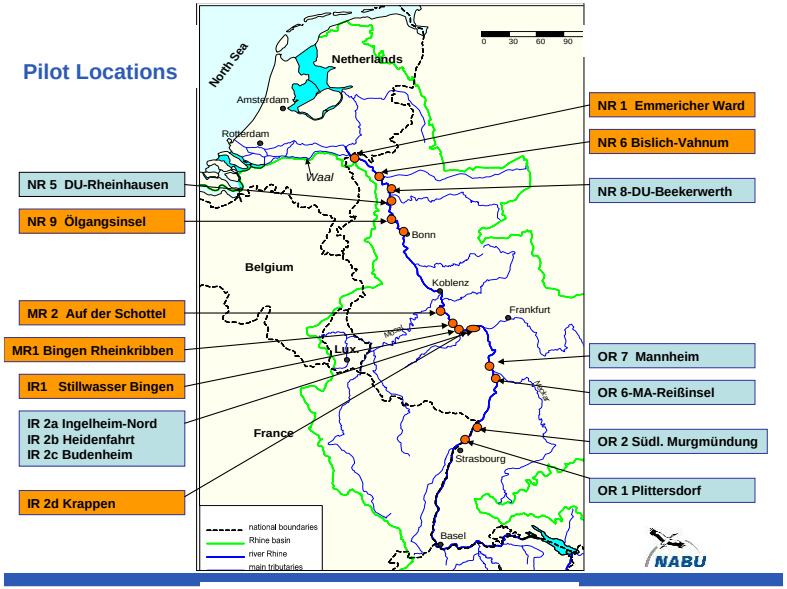
Make use of available knowledge & practical experience

Combining

Environm. Impact Assessment (SEA/EIA),

Appropriate Assessment (BHD)

WFD assessment incl. Art. 4 (7)

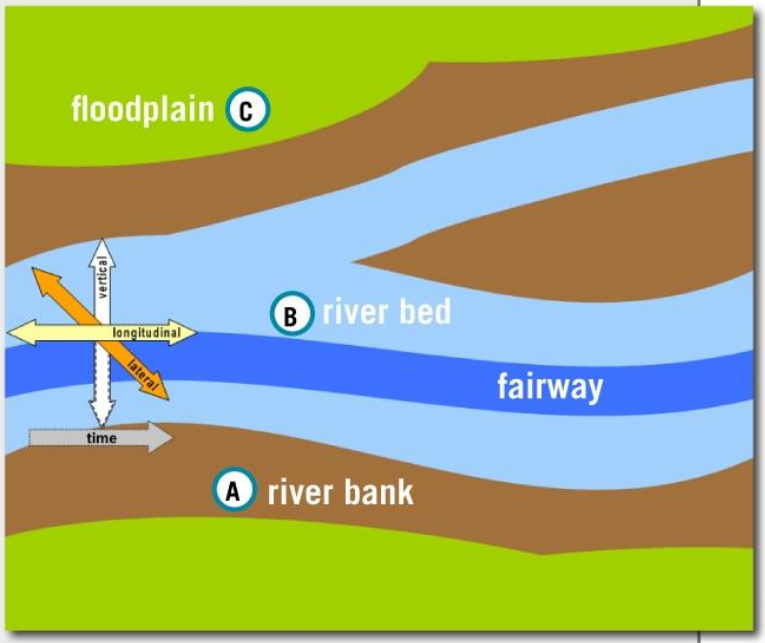


Living Rhine project

A RIVER BANKS / NEAR BANKZONE
1. Alternative groyne types
2. Restored / unprotected banks

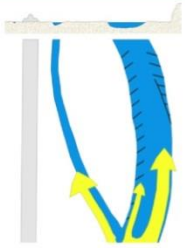
B RIVER BED / FAIRWAY
1. Granulometric bed improvement
2. Chevrons

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	L low influence M medium influence H high influence		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						

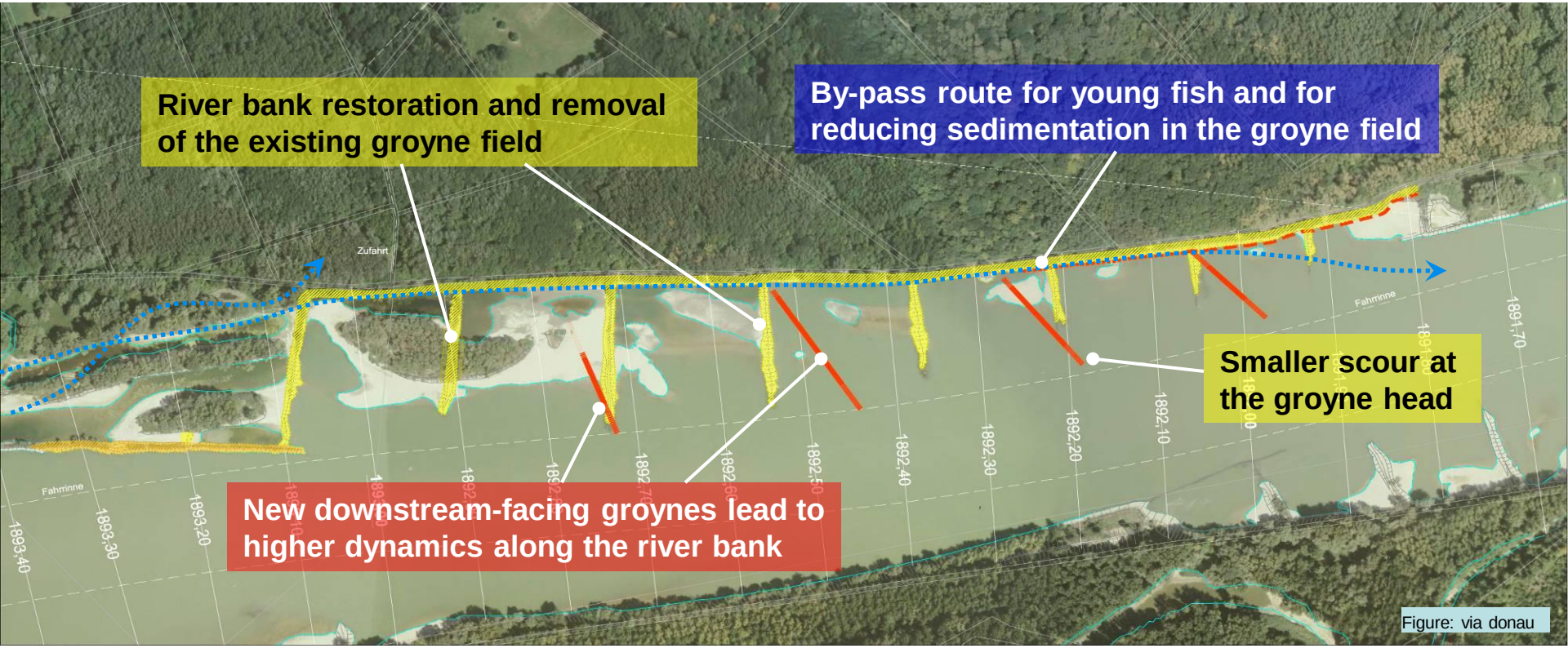


Reference	Integrated River Engineering Project Danube East of Vienna (viadonau & DonauConsult, 2009) (http://www.donau.bmvit.gv.at) (Danube/AT)

*depends on discharge in side-arms

Example: Reconstruction of groynes

Austrian Danube - Pilot Project Witzelsdorf



Removal of old groynes and river bank restoration

Construction of new groynes

Road Map for integrated planning

Improving riverine ecology while maintaining or improving navigability

Restored river banks

Photos: via donau

Photo: B. Boekhoven, RWS-NL

Reconnected side-arms

Down-sized, declinant groynes

The *Joint Statement* and the *Manual* are general tools based on a respectful dialogue

Developed by

icpdr iksd
International Commission for the Protection of the Danube River
Internationale Kommission zum Schutz der Donau

BOKU IWHW

viadonau

INE Inland Navigation Europe

Comments & contributions

EC – DG MOVE & DG ENV

DE, HU, SK Ministries of Transport & of Environment

Intl. Sava Commission

WWF-DCP, IAD, ÖKM, Virus

Well Consulting, IMDC

PIANC

Download at *www.icpdr.org* or *www.naiades.info*

Mitigation
acc. Habitats-Directive art. 6(3)

Mitigation is part of the project design assessment acc. to art. 6(3)

Mitigation measures are those aimed at reducing the project´s impact below the level of significance. They usually refer to the timing and way of implementation of the project. They must always be linked to particular target habitat types and target species.

Mitigation measures focus on the cause of the impacts and reduce the latter below the level of significance. They are always connected with the target habitats or species. They are implemented at the project´s location.

Compensatory measures compensate for the loss (deterioration) of particular habitat types and species. They resolve the consequence of the project and are implemented outside the project location.

Compensation
acc. Habitats-Directive art. 6(4)

Compensation is an exemption acc. to art. 6(4),
after all practicable mitigation measures were implemented.

Need of justification:

- no alternative, economically viable and environmentally better options;
- Overriding public interest demonstrated

As a rule a proof about implementation and of functionality of compensatory measures must be given prior to the authorization of such a project

The need for particular project has to be compared with particular EN site in order to compare its societal value (other imperative reasons of public interest) with the relative ecological value of the site. This is always a case-by-case comparison: the same project may be overriding compared to a site with relatively more common and widespread target habitats or species while not overriding if the impacted site hosts habitats or species with high ecological value.

Mitigation versus Compensation

Compensatory measures aim at replacing the target habitats and species of the affected site by identical habitats and species with the same or even bigger area/population. These compensatory measures can be implemented within the existing site of EN, outside any existing EN site in a form of newly established habitats, or in a form of adding new site with the natural occurrence of the required habitat types or species to the EN.

Implementation of compensatory measures involves several factual and administrative steps starting from identification of suitable land, its acquisition, change in land use, implementation of the measures and providing proof of their functionality.

Compensatory measures for sites important for conservation of birds should provide substitute habitats for the same bird population like at the original EN site which is to be deteriorated or destroyed.

Compensatory measures must strictly be distinguished from mitigation measures;

if compensation is not possible a permission should normally also not be possible

Mixed Environment Transport External Expert Team (METEET)
Training on Integrated Planning of Inland Waterways Transport Projects

Ukraine – web conference, 25/26th of November 2021

Thank you
for your kind attention

Georg Rast

This project has received funding from the European Union's CEF under the Grant Agreement N° MOVE/D3/SUB/2019-305/SI2.822021