WORKING WITH NATURE IN GERMANY

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Legal Constraints for WwN

Germany
- Federal Nature Conservation Act (BNatSchG)
- Federal Soil Protection Act (BBodSchG)
- Federal Water Act (WHG)
- Environmental Impact Assessment Act (UVPG)
- Administrative Law (legal plan approval procedure)

Europe
- EC-WFD
- Biodiversity Strategy
Internal Constraints for WwN

Waterways- and Shipping Administration

- HABAG  Handling of Dredged Material
- HANATSCH  Handling of Natural Asset
- WaWiU  Ecological Amelioration
  (according to EC-WFD)
Individual Incentive

Waterways- and Shipping Administration

- Problems and Delay in Plan Approval Procedure
- Come to Convenience with Stakeholders
- New Findings: Engineering + Ecology + Sociology
- Societal Acceptance of Navigation Projects
- Avoid „I am the disturber“ Image
- be one of the Modernists
- PIANC WwN
Example Projects

Source

- Database German Federal Institute of Hydrology

Case Studies for the Improvement of the Ecological Status of Federal Waterways
Database BfG

68 Projects in Germany

48 compensation (not WwN)
WwN Main Criteria

The Project ...

(1) understands the environment before design begins
(2) works with natural processes
(3) delivers a net gain for environment
(4) uses stakeholder engagement to identify win-wins (integrated project planning)
Example 1 Inland Waterway
Example 1 Inland Waterway

Flood Spillway Rees

River Rhine

WSV NRW City of Rees
Flood Spillway Rees – Rhine

City of Rees

- extensive grassland
- flood protection levee/dike
- floodplain lake
- extensive grassland
- camping site
- River Rhine
- Bed Erosion

Photo: WSA Duisburg-Rhein

WSV.de
Flood Spillway Rees – Rhine

Navigational Targets
• maintain navigable water levels
• reduce risk of bed erosion
• minimize expensive bed load supply

Win-Win Targets
• relieve City of Rees from danger of flood damage
• enhance nature’s value within construction area
• societal integration of recreation, farming, nature conservation
Flood Spillway Rees – Rhine

WwN related issues

• recording natural asset and processes
• pre-planning + stakeholder involvement
• selection of ecological meaningful alternative
• detailed engineering including “nature”
• clear win-win-situations
• monitoring from the beginning
Flood Spillway Rees – Rhine

WwN Main criteria

- understands the environment before design begins
- works with natural processes
- delivers a net gain for environment
- uses stakeholder engagement to identify win-wins
Example 2 Inland Waterway
Example 2 Inland Waterway

Stabilisation Concept
River Bed

River Elbe

Waterways- and Shipping Administration
Stabilisation River Bed - Elbe

170 km Stretch affected by Bed Erosion

picture + photos: WSA Dresden
Stabilisation River Bed - Elbe

Navigational Targets

• restore navigable water levels / navigation channel
• reduce risk of bed erosion
• „reconstitute“ balanced sediment budget
• minimize expensive bed load supply
• minimize investments for training constructions
Win-Win Targets

• avoid ecological damage (Natura2000, UNESCO)
• enhance ecological development
• ensure drinking water abstraction
• ensure potential for farming and forestry
• ensure potential for fishery
• facilitate potential for tourism
• societal integration of recreation, farming, nature
Stabilisation River Bed - Elbe

WwN related issues

- integrated planning
- multi-institutional-administrational committee
- hydro-eco-morphological pre-checks
- mutual set up of realization concept
- selection of preferred areas and local pilots
- monitoring
Stabilisation River Bed - Elbe

WwN Main Criteria

- understands the environment before design begins
- works with natural processes
- delivers a net gain for environment
- uses stakeholder engagement to identify win-wins
Example 3 Inland Waterway
Example 3 Inland Waterway

Tentative technical-biological Bank Protection

River Rhine

WSV
T.T.B. Bank Protection - Rhine

Pilot Project

initial rip-rap

plots
4 rip-rap + tech.-biol.
4 technical-biological
1 pristine
Navigational Targets
• (nature like) bank protection
• sustaining waterway´s functionality and safety of navigation

Win-Win Targets
• net gain for nature in waterway´s adjancencies
• legal task of maintenance according to EC-WFD
• integration of recreation and nature conservation
T.T.B. Bank Protection - Rhine

WwN related issues

- initial recording of bank ecological asset
- near bank habitat succession partly involved
- stakeholder consultation
- monitoring
WwN Main Criteria

- understands the environment before design begins
- works with natural processes
- delivers a net gain for the environment
- uses stakeholder engagement to identify win-wins
Example 4 Coastal / Maritime
Example 4 Coastal / Maritime

Fish Pass
Weir
Geesthacht
tidal
River Elbe
Energy
Company

© OpenStreetMap contributors
Fish Pass Geesthacht – Elbe

compensation for coal-fired power plant

length 550 m
45 pools

45 species
1,2 mio (since 2010)
Fish Pass Geesthacht – Elbe

Navigational Targets
• navigation related legal obligation
• establish longitudinal fish connectivity due to WHG according to EC-WFD

Win-Win Targets
• net gain for aquatic nature (fish)
• legal task of maintenance according to EC-WFD
• integration of tourism
WwN related issues

- analyses of fish asset and individual needs
- expert consultation (e.g. universities)
- monitoring
Fish Pass Geesthacht – Elbe

WwN Main Criteria

- understands the environment before design begins
- works with natural processes
- delivers a net gain for the environment
- uses stakeholder engagement to identify win-wins
Example 5 Coastal / Maritime
Example 5 Coastal / Maritime

New Tidal Area
Kreetsand

River Elbe

Hamburg Port Authority
Tidal Area Kreetsand – Elbe
Tidal Area Kreetsand – Elbe

- Shallow water
- 0.12 sq mi
- 1 mio m$^3$
Tidal Area Kreetsand – Elbe

shallow water

0.12 sq mi

1 mio m³
Tidal Area Kreetsand – Elbe

Navigational Targets

• sustaining waterway’s and port’s functionality
• reduce dredging necessities
• prevent further silting up by reducing upstream sediment transport
• effect: enlargement of tidal volume, decrease flood current, dissipate tidal energy
Tidal Area Kreetsand – Elbe

Win-Win Targets

• Concept for a sustainable Development of the tidal River Elbe
• integrate tasks of Natura2000
• net gain for marsh development and river morphology
• development metropolitan area (IBA Hamburg)
• flood protection
• societal integration of recreation and nature
WwN related issues

- initial analyses of natural asset and processes
- overlying innovative river engineering concept
- integrated planning process
- clearly defined stakeholder involvement
- win-win for port users, water management, nature conservation and local recreation
- beneficial use of dredged material
- monitoring
Tidal Area Kreetsand – Elbe

Main WwN Criteria

- understands the environment before design begins
- works with natural processes
- delivers a net gain for environment
- uses stakeholder engagement to identify win-wins
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