



Rijkswaterstaat  
Ministry of Infrastructure and the  
Environment

International Conference on  
Data, Information and  
Knowledge for Water  
Governance in the  
Networked Society  
and  
SWAN progress meeting and  
stakeholder workshop

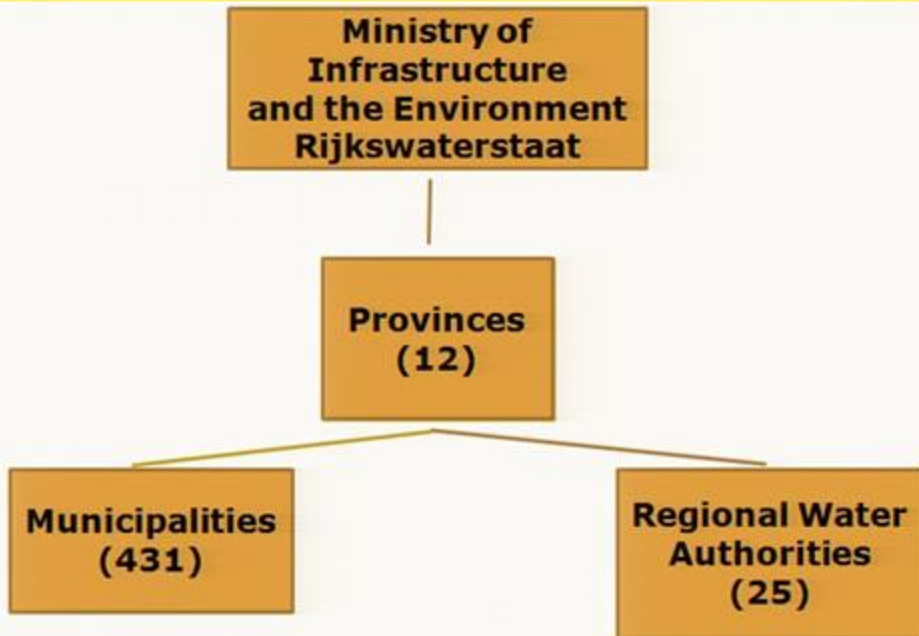
*9-13 June 2014, Sevilla, Spain*

Experiences with  
implementation of WFD  
measures in the Netherlands  
for national water systems

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- Introduction
- Pressures for ecological water quality
- Types of measures
- Integrated interactive approach
- Challenges
- Synergy with flood management and Natura 2000
- Lessons learned
- Recommendations from EC on RBMP
- Blueprint
- The way forward





- To protect the Netherlands against flooding
- To ensure good water quality
- To ensure safe movement of traffic
- To construct, manage and maintain the main roads and waterways
- To generate reliable information



Delta of 4 rivers

Trans-boundary river basins

30 % below sea level

60% flood prone area

Man-made lowland

Densely populated 17 million

Highly industrialised areas

Intensive agriculture

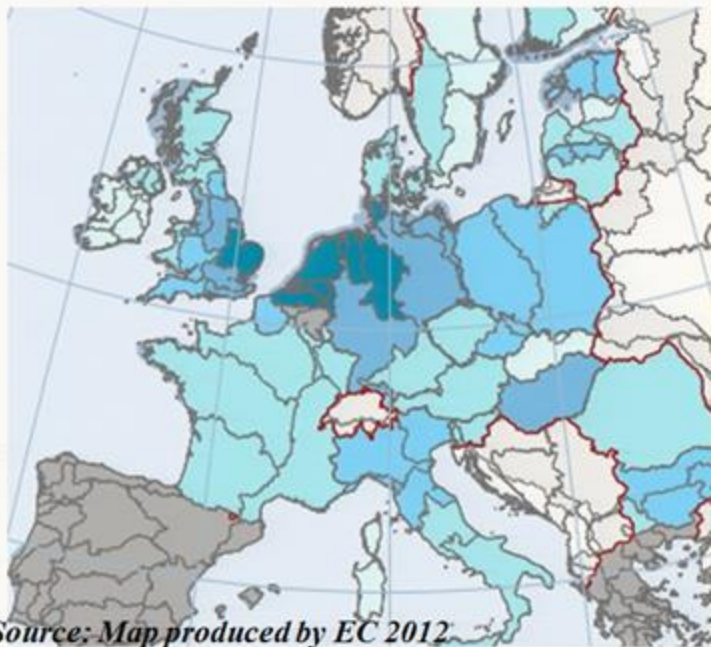
Intensive inland shipping

Many pressures to the environment

Including water quality

## Main pressures on water quality

- Emissions from agriculture: nutrients N, P
- Pollution from diffuse sources: traffic, industry, infrastructure, agriculture
- Pollution load from upstream countries
- Unnatural conditions of most waters (around 95% HMWB and AWB)
- Specific conditions pose a large challenge to comply with WFD objectives (Good Ecological Potential GEP, specific for each water body)



NL highest % of HMWB and AWB in EU



- Rhine Action programme
- International River Commissions: Rhine (ICPR), Meuse, Scheldt, Ems
- Rhine Ministers 15 th Conference October 2013
  - much improvement in water quality
  - attention for new micro-pollutants: e.g. pharmaceuticals, hormones, pesticides
  - salmon up to Basel in 2020









- Measures comprise different types of measures for cleaner water and to improve and create habitats for fish, macro fauna, algae and water plants
- Examples are construction of ecological river banks, secondary channels, lowering of floodplains and construction of fish passages
- Pragmatic approach: measures should be feasible and affordable (cost-effective)

Ecological riverbanks



Secondary channel



Fish passage



# Integrated interactive approach WFD

- Flood management
- Navigation
- Nature (floodplains N2000)
- Other: recreation, agriculture, urban development
- Stakeholders participation



# conflicting demands



# Main technical challenges

## Morphological effects:

- Increase of sedimentation in navigation channel
- Uncontrolled erosion undermining groynes or dikes

Increase of flood levels by vegetation





- Tight timeframe
- Budget cuts M€ 150 in 2012: 1/3 of measures had to be postponed
- Coordination of execution of measures by different parties (contractors, Water boards, Ministry of Agriculture)
- Managing different interests from stakeholders
- Compliance with all types of legislation (permits)
- Site-specific issues: acquisition of land, contamination etc.



Millingerwaard Waal:  
secondary channels both  
for WFD and Room for  
the River

Example of synergy with Natura  
2000 goals: creation of shallow  
reed zones in lakes for WFD  
favourable for specific protected  
birds (Great Reed Warbler)



# Pilot Longitudinal dams: multifunctional solution: WFD, flood management and navigation

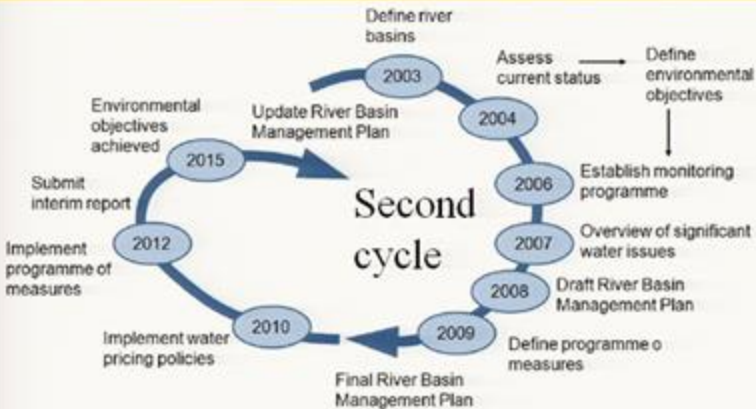


Aufnahmedatum am 26.10.1997  
Wasserstand am Pegel Ruhrort: 246cm  
AMW'90 am Pegel Ruhrort: 394cm

- Favourable conditions for ecology in zone near the banks
- Lowering of flood levels by removing groynes
- Less maintenance of fairway due to increase of flow velocities

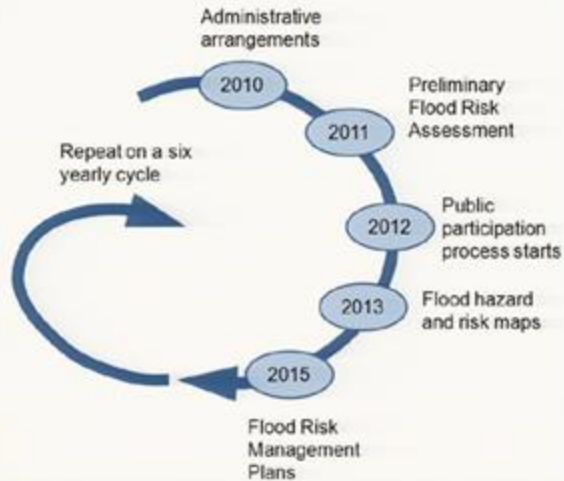


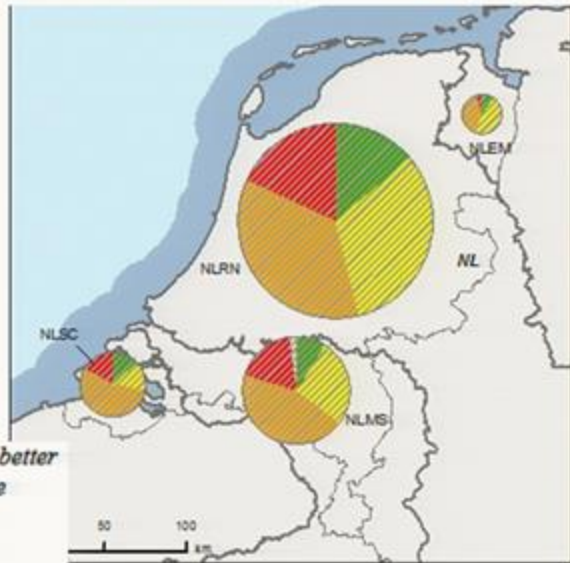
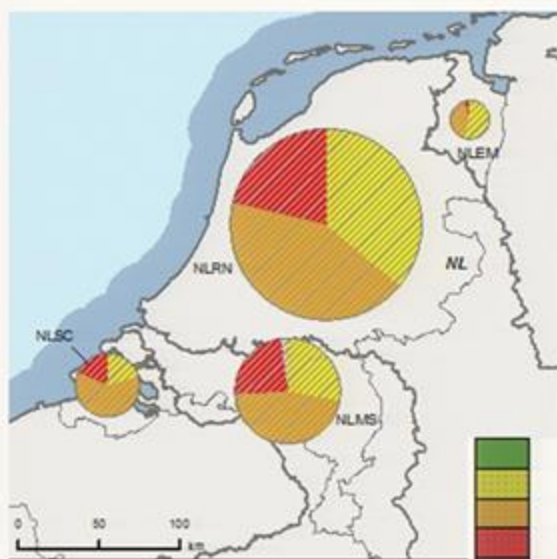
# Synergies between Flood Directive and WFD



Source: CIS and Resource document on the links between the WFD and FD (draft 2013)

More use of opportunities to coordinate planning, information and public participation between WFD and Flood Directive in the second planning cycle of WFD (2015-2021)





*Map of ecological potential of artificial and heavily modified water bodies 2009 and 2015 (Evaluation report RBMP by EC 2012)  
Assessment based on worst case "one out all out"*





- An integrated approach with other sectors is essential
- The optimum situation for ecology is often not feasible because of requirements for flood protection, navigation and cost-efficiency
- Much progress has been made in water quality, which is underestimated by the assessment based on one-out-all-out
- Source control remains crucial; diffuse sources have become more important, especially from agriculture
- International cooperation is essential to reduce the pollution load from upstream

- Solid approach for defining WFD objectives, assessment and monitoring methods
- Extensive but complex public participation process
- Good link between pressures and programme of measures

## Recommendations for second cycle

- Improve transparency between competent authorities
- More progress is needed in improvement of water status
- Reduce number of exemptions to reach objectives
- Present a clear strategy to reduce emissions from agriculture
- Include adaptation to climate change



- Based on extensive evaluation of the existing policies, such as evaluation RBMP by EC

## Main messages

- Better implementation of existing regulations
- Better integration of water policy objectives into other policies
- Filling gaps in policy framework regarding water quantity and efficiency



- Progress is too slow – significant efforts required on putting measures in place
- Chemical monitoring often incomplete
- Climate change, economic and demographic developments likely to exacerbate problems
- Diffuse pollution and hydro-morphology – the most widespread significant pressures to address



- Structured data approach update RBMP 2015 Water Information House
  - Factsheets water body: remaining targets, measures
  - Reporting sheets river sub-basin
- Reduction of diffuse sources e.g. Delta plan agricultural water management to further reduce emissions and international cooperation
- Water quality will be funded by the Delta programme: more synergy
  - climate adaptation measures for safety (FD)
  - fresh water supply
  - and water quality (WFD)
- Ambition is definitely to reach the objectives of the WFD but in 2027
  - Time needed to further reduce diffuse sources
  - Opportunities for maximum synergy with other tasks



- OECD 2014 Water Governance in the Netherlands. Fit for the future?
- EC 2012 Report on the implementation of WFD and RMBP in the NL
- Hakstege 2011 Experiences of preparation and realisation of WFD measures in the NL. Proc. Icid conf. Groningen, 2011

Secondary channel



Gameren River Waal

Thank you for your attention

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