Natural water retention measures (NWRM)

Efficiency assessment for water directives

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Introduction

- The water cycle has been accelerated:

Larsson, 2011 (after Wolf, 1956)

Géoportail, 2019

Ramsar Convention, 2015
• Faster water has multiple consequences
• Restoring (or creating) the natural water retention processes in catchments should have multiple benefits:
  – GW recharge
  – Increased low flow
  – More habitats
  – Water purification
  – Lower flow and runoff during strong events

⇒ **Natural Water Retention Measures (NWRM)** for WFD, FD, Nature directives, ...
• Gathers already existing concepts
• 2012 (EC): A blueprint to safeguard Europe’s water resources
  – Recognises the role of NWRM
• 2013 (EC): Green Infrastructure – Enhancing Europe’s natural capital
• 2014 (EC): EU policy document on NWRM
• 2013-2015 (OIEau et al.): pilot project on NWRM
  – Catalogue of measures
  – 125 case studies
  – Practical guide
⇒ nwrm.eu
Definition of NWRM

- Multi-functional measures
- Enhance and preserve the water retention capacity of aquifers, soils, and ecosystems
- [...] using natural means and processes
- Difference with Nature based solutions?

[Diagram showing NBS (Natural Based Solutions) and NWRM (Nature Water Resource Management) with restored wetland and permeable pavement.]
Implementing NWRM
NWRM and EU directives

• NWRM implementation require coordination
  – Between different administrative units
  – Between different types of stakeholders
  – Upstream-downstream
  ⇒ The catchment scale

• Coordination between WFD and FD is the main window
  – NWRM as measures of the PoM, with positive contribution to flooding prevention

⚠️ The interest of NWRM lies in the multiple benefits
Efficiency

- Benefit tables
  - WFD
  - FD
  - HD & BD
  - 2020 Biodiversity strategy

http://nwrm.eu/catalogue-nwrm/benefit-tables
• Efficiency assessment is essential to ease future implementations
• However, there is a general lack of assessment:
  – Evaluation may be too short (some effects require many years to be detected)
  – Evaluation may be too narrow (some co-benefits are neglected)
  – Evaluation may be too small (some effects only appear cumulatively at catchment scale)
Thank you!

http://nwrm.eu/