



# Pilot Project - Atmospheric Precipitation - Protection and efficient use of Fresh Water: Integration of Natural Water Retention Measures in River basin management

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## Natural Water Retention Measures or NWRM: what are they?

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**If you close your eyes and think of the  
“before NWRM” time....**

**How would you have named measures  
prior to hearing the name NWRM for  
the first time?**



## Working Definition (under progress...)

'Natural Water Retention Measures aim to **restore and maintain water-related ecosystems by natural means**. They are **Green Infrastructures** intended to maintain and restore landscape, soils and aquifers in order to **improve their natural properties**, the **environmental services** they provide, and to favour climate change **adaptation** and **reduce vulnerability** to floods and droughts'

Or

'Natural water retention measures are measures that aim to **safeguard and enhance the storage potential** of landscape, soil, and aquifers, by restoring ecosystems, natural features and characteristics of water courses and **using natural processes**.'

Or...





# What does that actually mean?

## Natural Water Retention Measures should:

- Influence the (water) storage potential of the landscape, soils or aquifers
- Regulate the flow of water (run-off...) to reduce extremes

## Do they actually have to be 'natural'?

- Key is restoring or providing natural processes
- The features that provide this may not necessarily be natural – most of these measures are man-made anyway...
- Is aquifer recharge an NWRM?
- Is a runoff storage tank an NWRM?



# Classifying NWRM

## We can distinguish between:

- Restoration measures. Direct interventions over:
  - Rivers and connected wetlands
  - Lakes and connected wetlands
  - Aquifers
- Changes or adaptation of land-use practices in:
  - Agriculture
  - Forestry
  - Urban
  - Natural areas



# Restoration measures



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# Change or adaptation of land-use practices



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# Classifying NWRM

- Initial list of categories and sub-categories of NWRM in concept note
- Expanded from Stella (2012)
- Potential overlaps or gaps in measures – or measures that have nothing to do with “NWRM”!
  - we’re interested in yours thoughts and suggestions
- Is it possible to have a comprehensive list (and do we need it) ?





# What makes NWRM “of interest” and effective?

## Hydrological effectiveness

- Slowing and/or reducing flow
  - ◆ Reduce flood peaks
  - ◆ Retain water for dry periods
- Individual measures may have limited effects
  - ◆ Combining measures so the right measure is at the right place (spatial) => highest cumulative & downstream benefits

## And other environmental (+) impacts

- E.g. Retaining polluting substances, sediments...



## NWRM and the WFD

- NWRM relate to a **diversity of pressures** (hydrological, morphological, water quality, biodiversity... )
- They can be **cost-effective** solutions (see budgetary constraints) for achieving the WFD objectives
- They bring **multiple benefits** (that need to be accounted for in economic assessments...)
- They can be the basis for new (water-related) **financing mechanisms** (e.g. Payments for Ecosystem Services)





## A key challenge: finding the right planning process for specific NWRM

- NWRM are measures that can be specifically **considered in the WFD and Floods Directive** planning processes
- They can also be part of **planning processes of parallel policies/initiatives**
  - Climate change adaptation
  - Agriculture/rural development
  - Forestry management
  - Biodiversity/nature protection
  - Urban planning (SUD...)
  - ...



## In conclusion

- Many NWRM are **not new!**
- But they are a **novelty in the WFD** planning process...
- ... And are **not yet “streamlined” in other (sector) policies** – that need to recognise and account for their “water benefits”
- A challenge ahead – for the **second and/or third RBMP process?**





**Many thanks for your attention**

**For more information...**

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