

UNFCCC COP24

Climate change adaptation and mitigation in Europe

*The interest of Natural Water Retention Measures for
climate change adaptation (... and beyond)*

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The interest of Natural Water Retention Measures for climate change adaptation

CONCEPT: What are Natural Water Retention Measures (NWRM)?

- Measures that protect water resources “by restoring or maintaining ecosystems as well as natural features and characteristics of water bodies using natural means and processes”* (ecosystem services). It is not necessarily targeting a return to a near-pristine state!



The *Marais Poitevin*, Green Venice of the Poitou-Charente region (France).
An man-made landscape of waterways, canals, meadows and fens that
teem with wildlife

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FROM CONCEPT TO PRACTICE: What are NWRM targeting?

- “Retention” is the core function targeted
- One obvious benefits for climate change adaptation which is:
 - To reduce vulnerability to floods and droughts (below, e.g. the dyke relocation in “Lenzener Elbtalauen”, Elbe river floodplain near Lenz, Germany*)



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FROM A CONCEPT... TO ITS LIMITS!

- NWRM are no magic bullets! As compared to grey infrastructures, green infrastructures may be considered as less effective.
 - Less effective to store water than a reservoir-dam,
 - Less effective to drain water than drainage pipes.

Kouris dam,
*Cyprus**



*Sources: Thulborn-
Chapman

Drainage pipes



FROM CONCEPT TO MULTIPLE BENEFITS

- As compared to grey infrastructures, green infrastructures have little negative impacts and provide multiple functions and benefits.
- Indeed, climate change adaptation is NOT the only benefits of NWRM:
 - Natural water purification processes (e.g. use of artificial wetlands to remove excess in nutrients)
 - Soil conservation (e.g. reducing runoff with swale= erosion control; flooding plains= richer soils)
 - Biodiversity conservation (e.g. retention ponds or buffer strips= creation of water related habitat)
 - Recreation!
- Making best use of scarce financial resources has become a driver to policy making, so addressing multiple benefits through relatively cheap measures is a plus.
- This also explains why “room for nature” and “soft measures” are gaining momentum to make policy operational.



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FROM CONCEPT TO IMPLEMENTATION: the NWRM project (DG-Env, IOWater)



- Increased interest in NWRM, but little experience and no guidance.
- In order to bridge the gap, DG ENV financed a project (Sept. 2013-Nov. 2014):

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

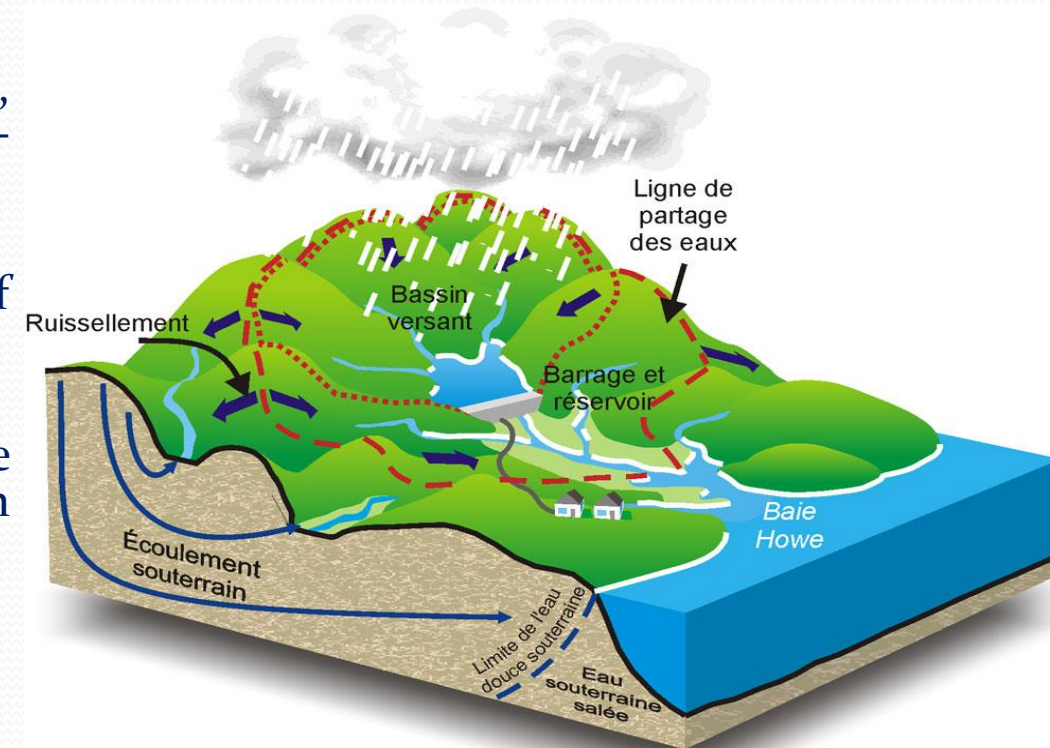
- Two objectives:
 - A knowledge base on NWRM, developed within the Water Information System for Europe
 - An active European “community of NWRM practitioners” (experience sharing between regional networks, production of practical manual supporting NWRM design & implementation)

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BASIN MANAGEMENT APPROACH: the NWRM project (DG-Env, IOWater)



- The project followed the most important principle of IWRM: water knows no boundaries!
- NWRM, as any other feature of water resources management, should be planned at the most relevant scale: basins and sub-basins.
- This basin approach encompasses rivers, lakes and aquifers of the hydrographic basin, either national or transboundary.
- This approach was adopted for the implementation of the project. Four regional networks facilitated by consortium partners were established as part of the EU NWRM initiative:
 - The Danube river basin,
 - The Mediterranean sea region,
 - Northern Europe/the Baltic Sea,
 - Western Europe.



RESULTS OF THE NWRM PROJECT (DG-Env, IOWater)

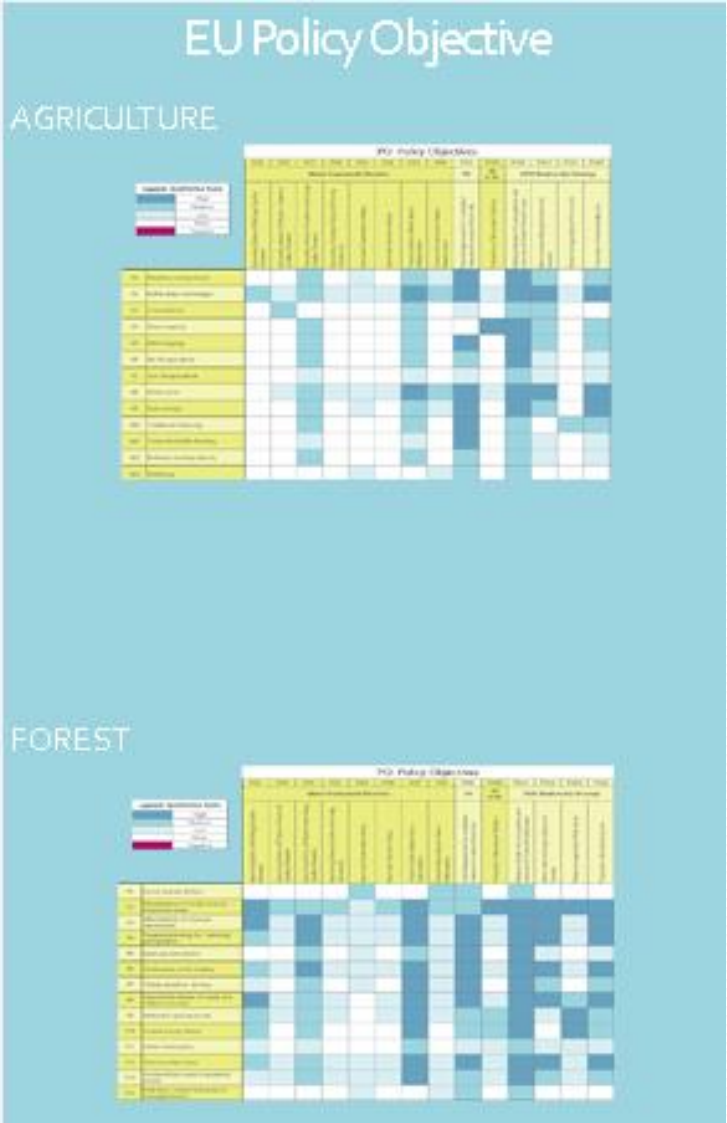


- By the fall of 2014, IOWater (coordinator of this project) has developed, with 10 other European partners, a web platform (www.nwrm.eu) providing guidance on NWRM through:
 - A catalogue of 53 measures covering four sectors (Forestry, Urban area, Agriculture and Nature / Hydromorphology),
 - Case studies on best practices,
 - A practical guide translated into the 14 languages of the European Union.
- Dissemination of the results among a wide range of water actors, including in:
 - the working groups of the WFD Common Implementation Strategy,
 - the EUROPE-INBO annual General Assembly (Bucarest, Nov. 2014)
 - The Conference on Water in Mountainous regions (Megève, Oct. 2014)

"NWRM" partners:

- International Office for Water 
- ACTeon Environment 
- Baltic Environment Forum 
- I.A.CO Environmental & Water Consultants 
- Instituto Madrilenio De Estudios Avanzados 
- Regional Environmental Center 
- Regionális Energiagazdasági Kutatóközpont 
- Scotland's Rural College 
- Swedish University of Agricultural Sciences 
- ENV'ECO (environmental economics consultancy) 
- AMEC Environment & Infrastructure UK 

Benefits table (1/2)



Benefits table (2/2)

[illegible]

Conclusion & recommendations

- NWRM are a highly relevant contribution to climate change adaptation
- NWRM deliver multiple benefits beyond climate change
- Such benefits can be greatly expanded when NWRM are implemented following a basin approach
- An EU-financed, IOWater-coordinated NWRM project has recently :
 - Set up a community of practitioners exchanging experiences and best practices in the field of NWRM
 - Delivered valuable guidelines to assist in implementing NWRM



The 7th World Water Forum
12-17 April 2015, Daegu-Gyeongbuk, KOREA

Thanks for your attention!
경청해 주셔서 감사합니다!

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