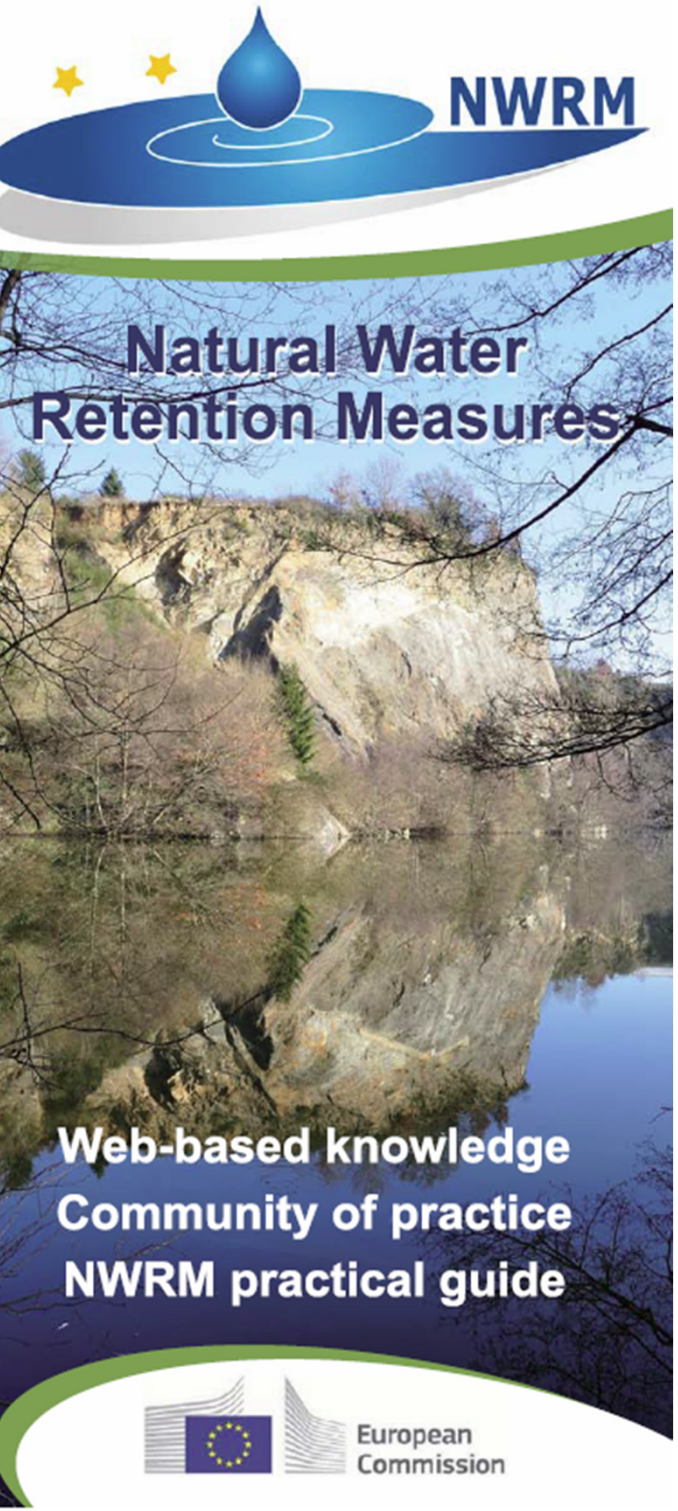


Pilot Project - Atmospheric Precipitation - Protection and efficient use of Fresh Water: Integration of Natural Water Retention Measures in River basin management

Service contract n°ENV.D.1/SER/2013/0010

Thematic issues: Effectiveness, Efficiency and Implementation

Gábor Ungvári
REKK

Office International de l'Eau

ACTeon environment

Where do we go?

The concept of NWRMs is part of a longer progress

- to find the best approach in order to position nature based solutions
- to be considered as serious alternatives to conventional, single sector developments
- The future: to find them superior

It is an important phase, we already have:

- Good conceptual basis
- Supportive virtual / simulation based conclusions
- But lack of comprehensive experience of delivering the expected results
- Lack of implementation practices

Our aim is to get boring:

- Let NWRM be integrated in the „business as usal" everyday sectoral practices

n.amorsi@oieau.Fr

Two types of challanges on sector level

The complexity issue: The complexity of applying a nature based measure can impose constraints from a sector's point o view

- What sectoral constraints are justified?

The competitiveness issue: Nature based measures have to deliver comparable sector level results in all of the aspects:

- Natural effectiveness
- Economic efficiency
- Implementability of the measures

First - The complexity issue – to justify the constraints

Water retention plays a key role in the formation of the base: the supporting ecosystem services

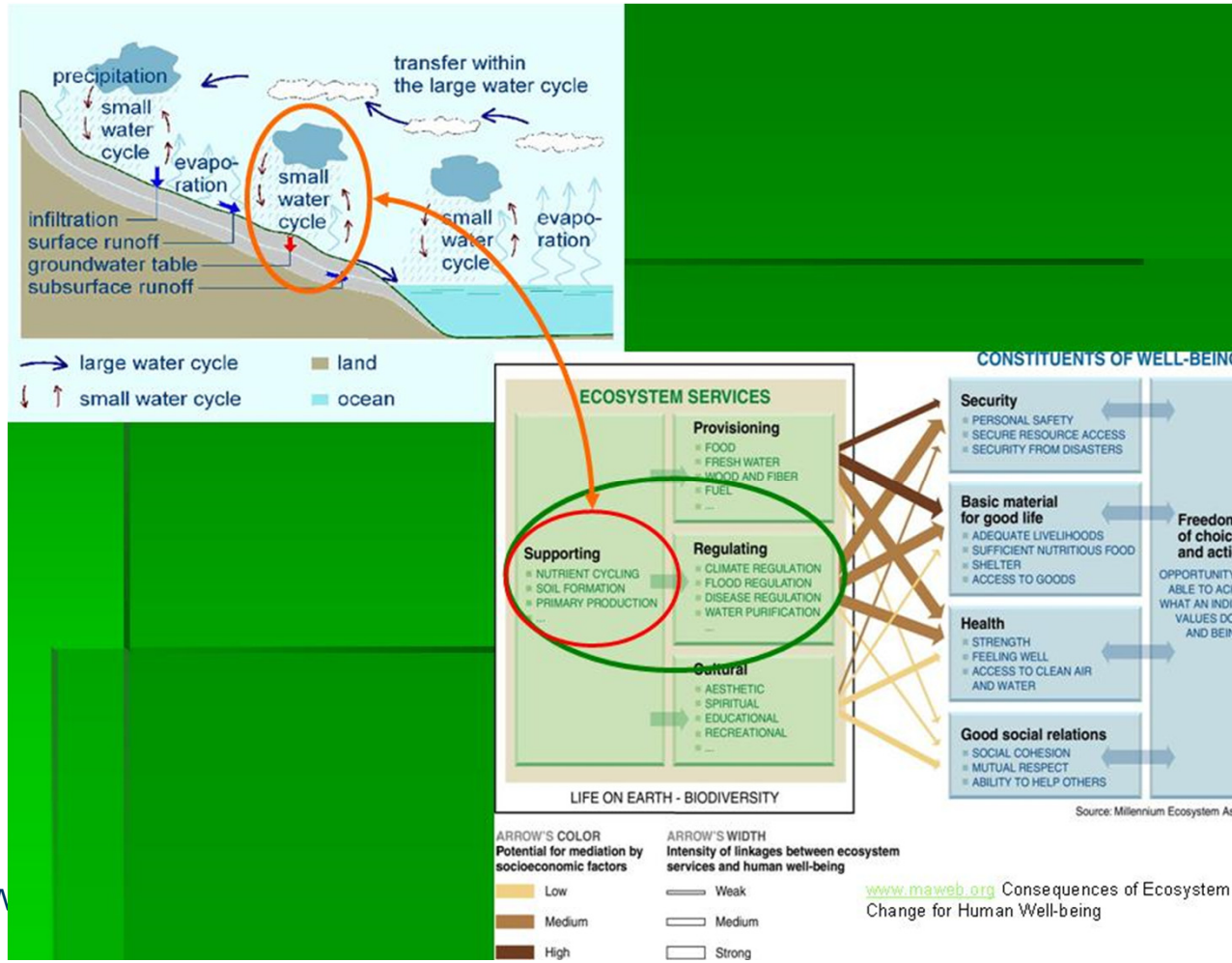
Key feature: capacity of the small water cycle in the landscape

It drives:

- **Primary production**
- **Nutrien cycling**
- **Soil formation / erosion**

Water circulation in the landscape as

- **Production input**
- **Transport medium**



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n.amorsi@oieau.Fr

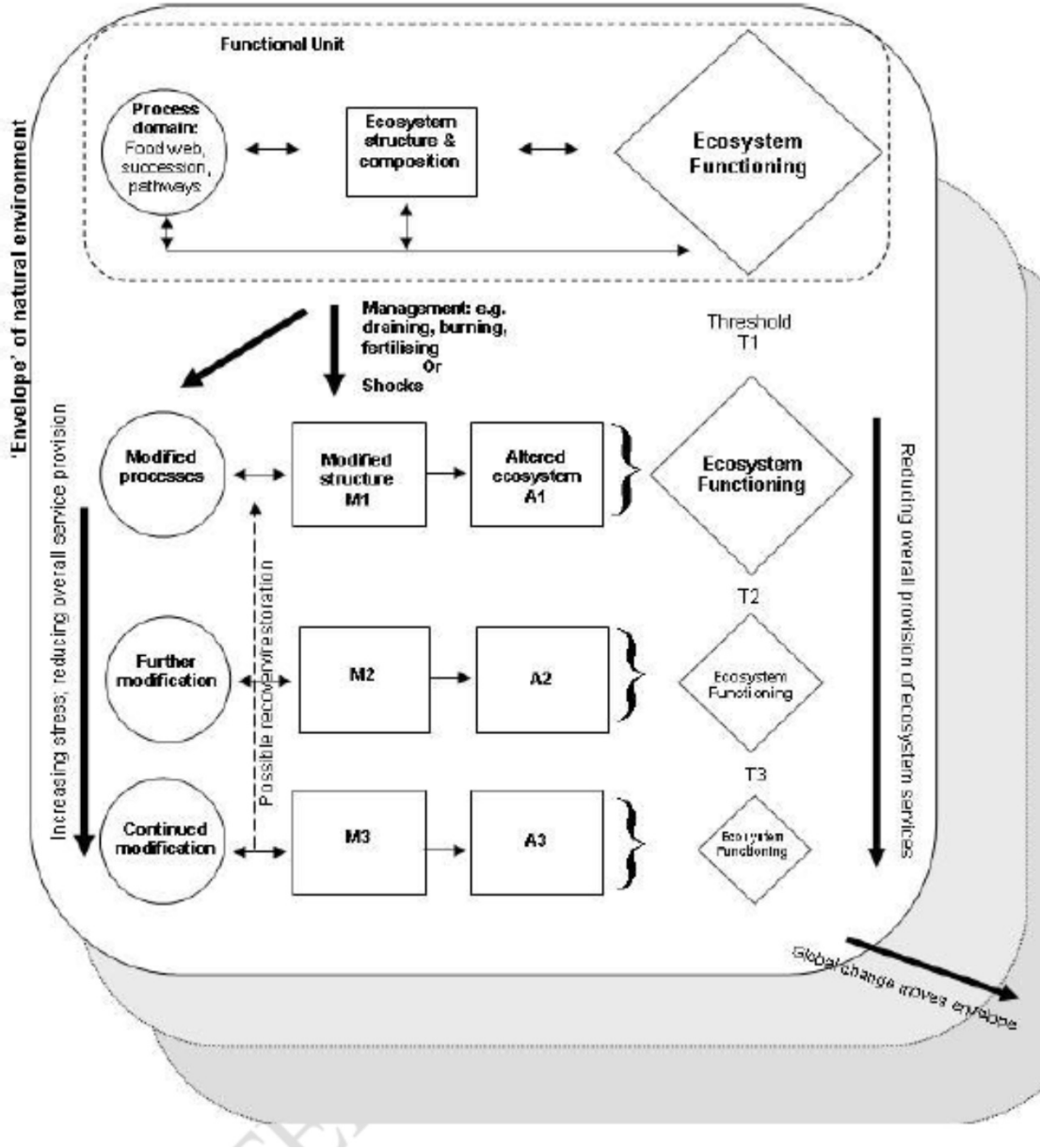
First - The complexity issue – the TEEB's thresholds – U turn?

Land and water use decreased the ecosystem service base

- Deforestation,
- burning,
- draining,
- overgrazing,
- fertilizing,

Cascading through the thresholds

- How do we climb back?
- The time-lag of system wide positive effects Vs the cost until it emerges



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n.amorsi@oieau.Fr

Second: The Competitiveness issue – Natural Effectiveness

The project's role:

- Find the good examples,
- but there is the need to restructure the knowledge we have on the effects of a declining ecosystem

How effective are the *Natural Water Retention Measures* to reach the objectives of the WFD (quantity, quality, hydromorphology, etc.)?

- Can you provide convincing arguments to prove the superiority of NWRMs as means to improve and protect water bodies' status?

Do you have evidence for an extended use of *Natural Water Retention Measures* in your country and area of expertise?

Second: The competitiveness issue – Economic Efficiency

Two lines of strategy to generate / identify benefits

Substitute conventional practices with nature based ones to reduce costs of

- Damages
  - floods, heatwaves…
- Deteriorating production circumstances (agriculture, forestry)
  - Water-logging, water shortage, salinity, fires, erosion
- Implementation of new regulations
  - water quality (nutrient load), CO2 emission

Find new innovative ways to benefit ecosystem services

- Difficult to generalise – site and person specific

Example 1: Using more space to mitigate flood risk

Using flood reserviors – polders to flatten flood waves

How can the structure create new wealth?

Vs

Compensation of damages

Second: The competitiveness issue – Economic Efficiency

Two lines of strategy to generate / identify benefits

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- Implementation of new regulations
  - water quality (nutrient load), CO2 emission

Find new innovative ways to use ecosystem services

- Difficult to generalise – site and person specific

Example 2: Reduction of damage exposure to wind

Toppled by wind

More resilient plot structure = constant cover forestry

In Börzsöny Mountain

Picture: http://www.wwf.hu/media/file/1316442487_PhD07.pdf

n.amorsi@oieau.Fr

Second: The competitiveness issue – Economic Efficiency

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Find new innovative ways to use ecosystem services

- Difficult to generalise – site and person specific

Example 3: Creating recreational ecosystem services

Innovative reuse

Creating new green spaces on top of an abandoned railway line - Manhattan

A new sphere with high value recreational ecosystem services

http://www.thehighline.org/galleries/images

n.amorsi@oieau.Fr

Economic Issues. Information to gather / discuss

Narrow „measure" focus on water body:

- Is there any cost advantage in implementing NWRMs for Good Ecological Status instead of traditional water management measures?

Wider, „impact" focus - costs:

- In addition to capital, operation and maintenance costs what other opportunity costs would need to be considered?
  - Yield changes, production cost changes, employment opportunities?

Wider, „impact" focus - benefits:

- E.g. avoided water treatment costs, reductions in flood prevention costs, enhanced recreational services…

Are these additional benefits properly identified in existing studies?

How could the identification and assessment of these benefits be improved?

Second, the Implementation issues

Technical challanges of implementation – managing multi-stakeholder processes

- What organisation will be „the hero of the catchment”
- Accessible knowledge base
- Providing finance
- Technicalities – how to manage the processes, consolidate interests…

Conceptual challanges of implementation – social and culture driven!
Main barriers in your country? vs How to become acceptable – good cases?

- Acceptability issues - Whose problem, whose responsibility is it?
- Generation issues – future gains vs present costs
- Issue of dispersed public gains vs concentrated individual costs

The underlying question of political courage to change behaviour

- The knowledge on the long term negative effect of conventional land use practices urban and non-urban as well is accumulating
  - Does the public have to buy reduction of their environmental pressures from land owners or force them to comply?

The goal of the Thematic Group Sessions

To discuss the sector specific details / ambiguities on

- Theoretical issues
- Collection of the relevant cases and
- Re-evaluation of sector based experiences along comprehensive lines

In order for Natural Water Retention Measures to be competitive compared to other water policy measures by their standards on:

- Natural effectiveness
- Economic efficiency
- Implementability of the measures

Thank you for attention