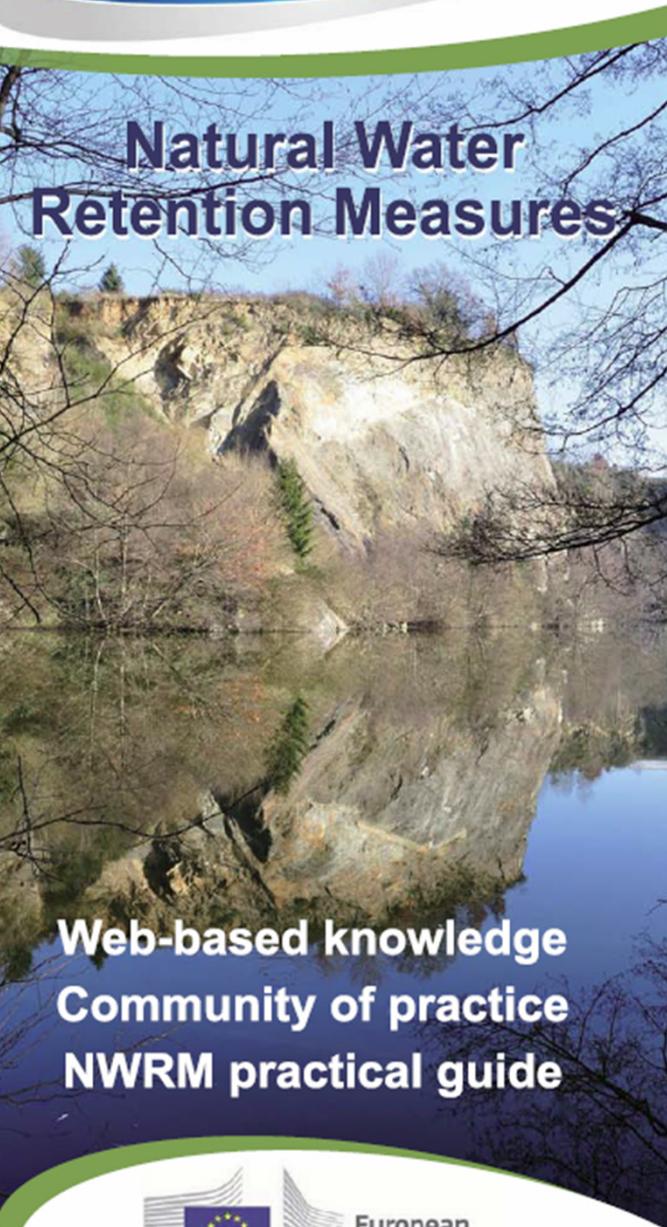




NWRM



Natural Water Retention Measures

Web-based knowledge
Community of practice
NWRM practical guide



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 Group Session on Land use Agriculture - Forestry

Gábor Ungvári
REKK

Danube Region Workshop
28-29 January 2014





Scope of the group session – steps ahead

We need to reach out for more information on experiences of:

- the partial effect of measures
- their overall effect on the ecosystem base of the services
- cases from which information can be restructured

Patchwork approach

- Encourage to bring in all pieces of information – even if it is not complete
- The parts could add up to a new quality of synthesised information on the subject
- The project's role is to „translate” these information elements for the Natural Water Retention Measures database
- To prepare it to be suitable for the basic reference for policy application



Land use measures in Agriculture and Forestry

Agriculture:

- Improved practices
- Source control – „Cross Over” measures – Conversion of land use
- Restoration – Conversion to previous land use type

Forestry:

- Forest harvesting (improving practice)
- „Cross Over” measures – small scale purpose fitting buffer strips
 - ◆ (riparian forest, hedgerows)
- Afforestation
 - ◆ For local benefits
 - ◆ Regional benefits

Theme groups for today:

- Improved practices in Agriculture
- Conversions of specific traces of agricultural land to forests or wood strips
- Improved practices in Forestry
- Landscape wide complex effects

Improved practice - agriculture

- Soil conservation crop practices: crop rotation
- Soil conservation crop practices: strip cropping
- Soil conservation crop practices: intercropping
- No tillage



- Reduced/conservation tillage
- Early sowing
- Green cover
- Controlled traffic farming



Conversions of specific traces of cultivated land

Agricultural land – plot scale

- Beetle banks
- Hedgerows
- Buffer strips
- Field margins and headlands
- Traditional terracing

Conversion - pattern scale

- Riparian trees in agricultural landscape (Cross Over)
- Maintenance of riparian forest buffers (Cross Over)
- Restoring and maintaining meadows and pastures



Improved practices in Forestry

Practice

- “Water sensitive” driving
- Appropriate design of roads and stream crossings
- Sediment capture ponds
- Coarse woody debris
- Re-meandering of forestry-affected rivers

Management

- Continuous Cover forestry



Landscape wide complex effects

Intra landscape (quantity-quality-distribution)

- Afforestation of riparian areas
- Afforestation of montane areas
- Afforestation of reservoir catchments
- Land use conversion for water quality improvement

Precipitation-Quantity regional issues

- Targeted planting in Mediterranean (water shortage) areas for “catching” precipitation
- Forests as large-scale water pumps



Natural effectiveness of the measures

The measures?

- Any measures excluded?
- Any listed measure that do not belong here?

The effects

- Are there enough convincing direct experiences? – measured ones?
- Potential risks appropriately assessed?
- What type of experiences can we tap on?
 - ◆ Examples from the Danube region?
 - ◆ Are there other trials than the recent EU induced processes?



Economic Efficiency Issues

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?



Implementation challenges

Technical challenges of implementation – managing multi-stakeholder processes

- What organisation will be „the hero of the catchment”
- Accessible knowledge base or lack of knowledge
- Providing finance – initial + maintenance
- Technicalities – how to manage the processes, consolidate interests..

Conceptual challenges 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



Discussion: Instruments to promote NWRMs

The underlying question to enforce behaviour change

- The legal settlement and the common sense of pressures
- 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?

- Standards
- Voluntary agreements
- Information campaigns, education
- Subsidies
- Taxes, fees (e.g. stormwater fee)
- Economic instrumentss (e.g. local markets for ecosystem services)
- What else?



Discussion

MEASURES

- Any measures excluded OR Any listed measure that do not belong here?
- Are there enough convincing direct experiences? – measured ones?
- Potential risks appropriately assessed?
- What type of experiences we can tap on?

ECONOMIC EFFICIENCY

- Direct cost advantage?
- Opportunity cost types?
 - Lost yield
 - Production cost change
- Additional benefits?
 - Avoided costs
 - Lower flood risks
 - Enhanced recreational potential
- Properly assessed cost and benefits
- What else?

IMPLEMENTATION CHALLENGES

- Technical challenges
 - ◆ knowledge
 - ◆ Provide Financial sources
 - ◆ Institutional lead
 - ◆ Technicalities
- Conceptual challenges
 - Social, cultural – acceptability
 - Generation issues
 - Lack of interest
 - Dispersed public gains – concentrated individual costs
- What else?

INSTRUMENTS

- Standards
- Voluntary agreements
- Information campaigns, education
- Subsidies
- Taxes, fees (e.g. stormwater fee)
- Economic instruments (local markets for ESS)

Thank you for attention

