



**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

