

## National experience and expectations for meeting multiple agri-environment objectives by water retention measures

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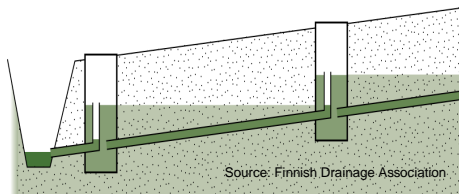


### Natural water retention measures (NWRM)

- Controlled drainage, namely controlled subsurface drainage
  - recycling drainage water, subsurface irrigation
- Environmental river engineering and restoration
  - re-meandering, 2 stage channels
  - sedimentation ponds, bottom dams
- Wetlands
  - protection, restoration and creation
- Buffer zones, floodplains etc. areas that are prone to flooding or can be artificially flooded
- *Runoff regulation and flooding of forest and peat land areas*
- *NWRMs in urban areas*



## Natural water retention measures



Controlled drainage



Environmental river engineering



Wetland



Temporarily flooded floodplain

### NWRM potential, target and actual uptake

#### - controlled drainage

- 600 000 ha, 26% of total agricultural land (2,3 million ha), could be theoretically implemented
- 50 000 ha implemented since 1995
- WFD target is to get 90 000 ha more by 2015
- Investment support max 20% of accepted costs (RDP 2007-2013)
  - additional 20% deduction of the interest
  - small maintenance support based on management contracts
- Uptake rate has remained low
  - around 7000 ha subsurface drainage per year, of which controlled drainage only 1 000 ha
- *How to boost the uptake rate?*
  - RDP 2014 - 2020
    - *higher support level?*
    - *targeting to the hot spot areas (acid sulphate soils) or not?*
    - *reducing requirements (eligible farm, slope %)?*



## NWRM potential, target and actual uptake - **wetlands**

- 50 000 wetlands could be theoretically implemented
- approximately 500 implemented
- WFD target is to get 1 600 more by 2015
- Investment support raised from 4 000 e / ha to 11 500 e / ha in 2010
  - maintenance support based on management contracts
- Uptake rate has improved, but still far behind the target
- *How to boost the uptake rate?*
  - *Emphasis on planning, advise and collaborative projects*
  - *RDP 2014 - 2020*
    - *targeting and prioritising based on regional needs?*
    - *reducing requirements (20% of agricultural land, 5 % of the size of the catchment)?*



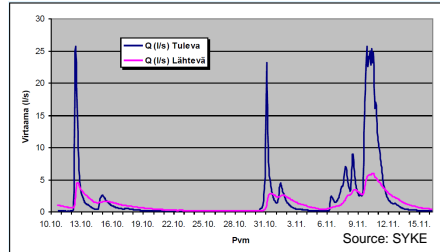
## NWRM potential, target and actual uptake - **environmental river engineering**

- 60-70 drainage renovation projects per year in agricultural areas
- Investment support max 50% of accepted costs (State Aid)
  - additional 20% for expensive structural or water protection measures
  - 100% for discretionary environmental measures
    - sedimentation ponds, bottom dams, but also re-meandering, 2 stage channels
- Uptake rate of environmental measures remains very low
  - only approx. 5 projects per year include environmental measures
- *How to boost the uptake rate?*
  - *lot of research and demonstration projects exist*
  - *several guidances published, advisors and planners trained*



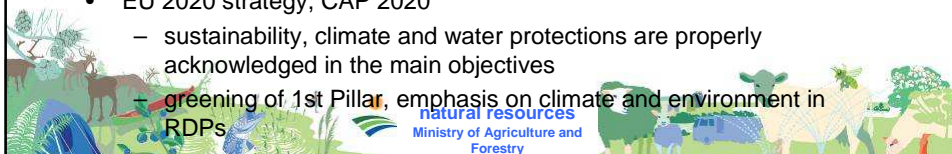
## NWRMs water retention potential and role in flood protection

- Wetlands retention potential / impact on runoff peaks?
  - wetland area / volume vs. catchment area / inflow
  - 40-80% reduction of flood peak in optimal cases
- Runoff regulation of forest and peat land areas
  - large areas, easy set up
  - 30-80% reduction of flood peak
  - high reduction of sediment



## EU promotes green infrastructure and natural water retention measures

- JRC 2012: Evaluation of the effectiveness of NWRM measures
  - agriculture: grassland, buffer strips, grassed water ways, crop practices, wetlands, re-meandering, ponds and polders
  - change of low flows and floods up to 20%
  - each macro-region needs a different set of measures
  - states that two most effective measures to reduce flood peaks in Scandinavia are re-meandering and wetlands
- Commission 2012: Blueprint to Safeguard Europe's Water Resources
  - underpins the benefits of NWRM and aims at overcoming obstacles
  - policy coherence and integration, better utilisation of CAP 2020, Structural and Cohesion Funds
- EU 2020 strategy, CAP 2020
  - sustainability, climate and water protections are properly acknowledged in the main objectives
  - greening of 1st Pillar, emphasis on climate and environment in RDPs



## The Problem of scale in human-environment relationship

- The phosphorus load from Finland to the Baltic Sea is only 3,8% and the nitrogen load 3,7%, respectively
- The impact of NWRM measures on the runoff to the Baltic Sea is non-existent
- 90% of nutrients and sediment load to waters outside of growing season
- Producing more with less environmental impact?



Photo: Wepling et. al. 1999, WWF Finland



## NWRM and multifunctional agri-environmental measures are worth promoting

- Importance of clean water, robust and healthy natural habitats and home environment
  - 68% of EU citizens think that water-related problems are serious, and 75% consider that EU should propose additional measures to address water problems (Eurobarometer 2012)
- Climate change and other global trends need actions
  - more runoff outside growing season, dry periods in the summer
- It is possible to meet environmental, social equity and economic demands by multifunctional agri-environmental measures
  - measures often low cost and deliver sustainable agriculture, and always more attractive
  - less effective but more efficient



## NWRM and multifunctional agri-environmental measures are worth promoting

### Need to continue

- developing attractive and efficient policy instruments, to give a proper incentive and reflect the values of the society
- replacing traditional approach by integrated approach, where appropriate
  - emphasis on catchment planning, interplay with different measures, combined financing
  - highlight the multifunctionality
- researching and setting up demonstrations
  - need look more carefully at the processes on the field
- fostering participatory approach, local involvement and advice
  - farming, forest, peat production etc. communities working together
- innovating, crossing sectoral borders
  - nutrient retention produces biomass, biomass is energy...
  - energy crops can be more flood and drought tolerant and require less fertilisation

