Centre for Economic Development, Transport and the Environment

SYKE
Finnish Environment Institute

Working group
Implementation of measures in agriculture

Oulu 19-20th March 2014

What are common challenges in all countries concerning agriculture?

- High nutrient load and significant and extensive hydromorphological changes in the body of water (e.g. ditches)
- High internal loading (FI)
- How to implement PoM (voluntary measures)
- Time lag, slow response in nature
- Climate change because increased runoff
- Economy of farmers and the importance of food production

What are the key measures to mitigate agricultural pressures?

- Good knowledge base such as risk maps
- Prevent nutrient leaching and erosion from field
- Water pollution control structures to catch nutrients and suspended sediments
- Training, guidance and social learning (e.g. environmental plans of each farm)
- Environmental river engineering - Nature-like drainage

What are the key obstacles in implementation of measures?

- Difficult to control diffuse loading, lack of effective measures
- Present legislation, SE (ditching companies)
- Slow response in nature
- Problems with agri-environmental subsidy (compensation), less money CAP-period
- Financing is not predictable

How do you finance measures for agriculture?

- Farmers finance partly as higher production costs and/or lower productivity
- Agricultural environmental aid (agri-environmental subsidy) - compensation for farmers (EU+national Agricultural Fund for Rural Development)
- Piloting new innovative measures can apply for project funding

How has cooperation with stakeholder organized in practice?

- Larger stakeholder cooperation group (13, Area of ELY-center)
  - Smaller group for planning agricultural measures for PoM
  - River groups (not nation wide)
- Water councils in Norway (100)
- Water councils in Sweden (100), also geographical or thematic subgroups

Working group
Implementation of measures in agriculture

Oulu 20th March 2014

How do you estimate agricultural pressures?

- FI: national model based on hydrological model
  - VEMALA for all rivers and lakes national level
  - VIHMA – impact of crop and cultivation technique
- NO: different models
  - Model more detailed in agri hot spot areas
  - Erosion model on national level
  - Areal differences
- SE: national model based on hydrological model (vattenweb.smhi.se 1999-2011) and also regional models
- Outcome: we compare principles of models and land use data more detailed after the meeting

When agriculture is identified as significant pressure?

- FI: If it alone or with another pressure causes ecological state worse than ”good”.

  Approx. > 20 kg P/km^2/year total diffuse loading
- NO: information comes later
- SE: 4 kg P/km2/year from agriculture

How is the gap between the current status (nutrient status) and the environmental goal practically calculated

- FI: Present nutrient loading from the VEMALA-model, loading should reduce in same proportion as concentration in water, needs for decreased loading as kg and %
- SE: Same kind of calculation principle applied, decreased loading as precise kg
- NO: Like Sweden

$$\text{Load reduction} = \frac{\text{present concentration} - \text{target consentration}}{\text{present concentration}} * \text{present loading}$$

How to take into account climate change?

- FI: VEMALA-model calculate climate scenarios on loading on watershed scale, in VIHMA-model (measures) different kind of winters, try to prioritise measures that take into account harmful effects of climate change like winter time vegetation cover
- SE: increased pressure to ditch more and widen ditches and erosion due to increased runoff, have to support more two stage ditches
- NO: artificial ditches (tubes) for cereals are located in very deep under ground, big erosion risk, rehabilitate ditches back to surface

Exemptions in agriculture and how to deal with "unreasonable costs" in relation to this?

- We need agriculture and domestic food production, agriculture is often the only source of livelihood in rural areas

- When all the possible measures to certain extent are not enough exemptions are needed