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Agriculture and climate change

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Contents

- Where are we now
- Challenges
- Basis of our work
- Way forward

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Technological changes for good and bad

- Water toilet meant clean water became dirty and sewage a problem for waterways
- Chemical –technical agriculture greatly improved productivity, enabled a much larger population and created unprecedented wellbeing
- BUT with a heavy environmental cost

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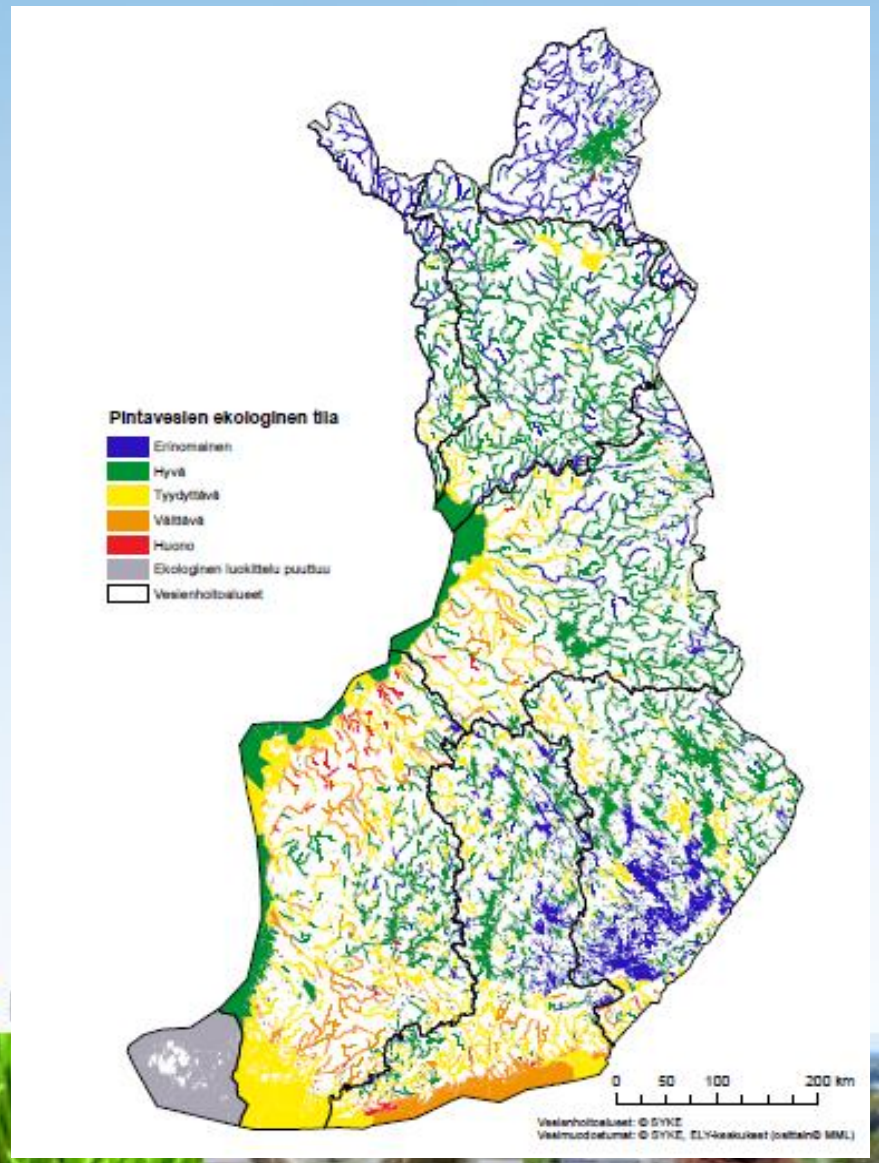
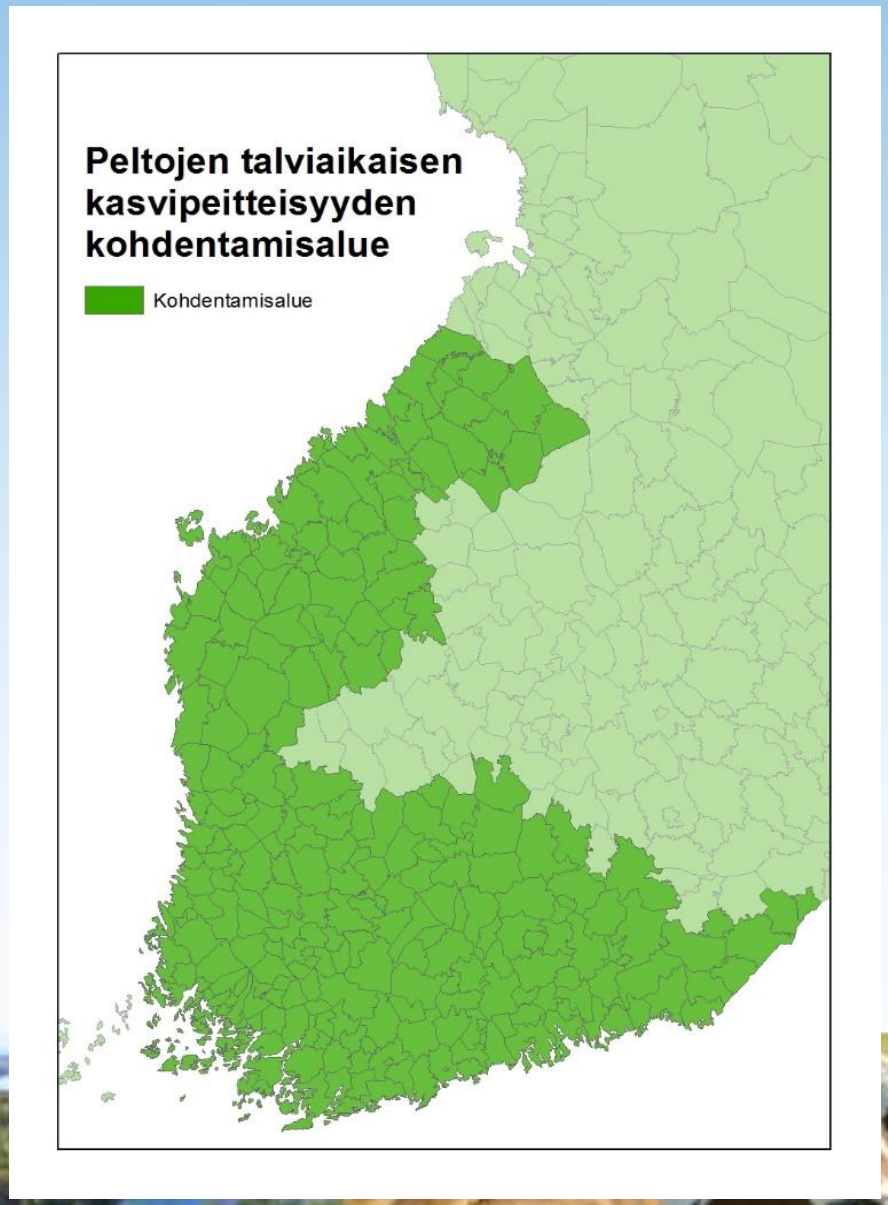
Ecological status of surface waters 2015 and target area for plant cover on arable land in winter

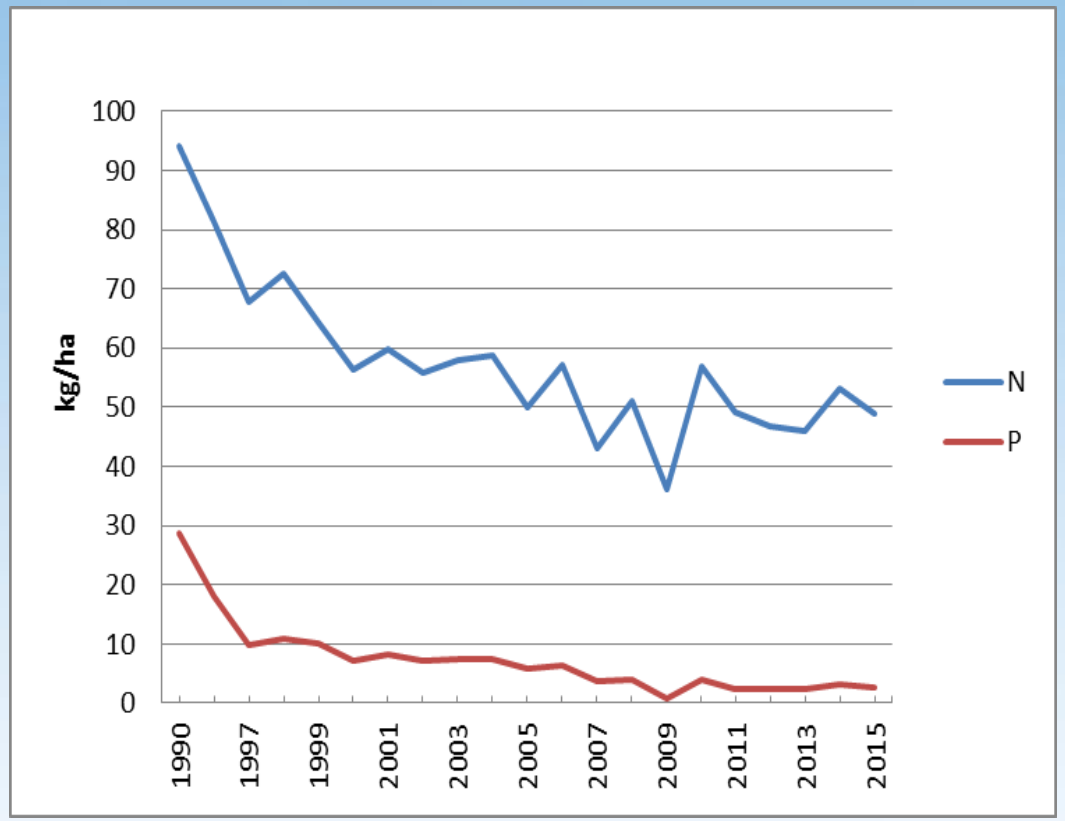




What has been done

50 000 farms – 45 000 participate in environmental measures

P and N fertilizer use has gone down



Climate change – a big new challege

- Increasing amount and intensity of rainfall
- Increases in extreme weather events
- Shorter period of frozen soil
- Increasing occurrence of early summer drougts

->increasing pressure of nutrient leakege to the waterways

->increasing negative impact on yields

-> need for **holistic water management at microcatchment level**

-> need for **new type of governance - new type co-operation - new water management technologies**

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Three big strategic areas of action

- Good soil managemet - improved organic matter content, structure, soil nutrient satus, levelling of fieds, year round plant cover
- Comprehensive water management - micro-chatchment level land use and water management planning, nature – based solution
- Nutrient recycling- closing the nutrient loops in the whole food system, distributing nutrients from intensive livestock areas, creating technologial and logistic solutions for organic fertilizer products

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Goverment key programme on nutrient recycling 2018-2020

- The aim: to secure that 50 % of the nutrients in manure and sewage sludge are processed in sensitive areas by 2025.
- Advice, support to project development, information on nutrient recycling to everybody from farmers to consumers.
- Financing for technology development for organic fertilizer products and logistical systems.
- A specific program for nutrient recycling for horse manure

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Management of diffuse pollution from agriculture is a not easy

- Farms are local, different from each other and farming is dependent of weather.
- Farming is knowledge intensive and very complex.
- Over 50 000 farmers, whose innumerable decisions influence their environmental footprint.

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Holistic approaches

- Measures in river basin management plans and in rural development programme are co-ordinated.
- Agri-environmental measures in rural development programme.
- Invest support for environmental investments and environmental entrepreneurs.
- Advisory services - Training and development projects.
- Local action groups (LEADER) – water protection associations.

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New government – more actions

- CAP 27 will have a strong climate focus.
- New River Basin management plans are prepared in close co- operation between Ministry of Environment and Ministry of Agriculture and Forestry
- Investments in nutrient recycling, continuing the succesfull programs
- New actions on holistic water managemet investing in micro-basin planning and land-magement co-operation

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Goverment water protection programme 2019-2023

As a country of vast waters, Finland has a major responsibility for water resources. We have done long-term work to protect them. Now it’s time to speed up our actions. Government has launched a new **programme to enhance the effectiveness of water protection** with 69 mill. euros financing for five years.

- Innovative methods in agriculture; gypsum, structural lime and fibre sludge
- Water restoration projects and strengthening the expert network
- Managing urban waters and reducing the amount of harmful substances in them
- Reducing the risks posed by shipwrecks in the Baltic Sea
- Studies and research on the Baltic Sea and inland waters

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Basis for our work

- Good co-operation – agricultural and environment officials, producers, advisers and research institutions.
- River basin management plans are made in an inclusive bottom-up process.
- Legislation is the basis – Nitrate directive and environmental permits for animal husbandry.

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Patience and perceverance is needed

- Short term measures build up into long term changes – water protection is a collective patience challenge.
- Deterioration and improvement of water quality are non-linear processes.
- Changes are slow – but coming.

Solutions

- Good soil management
- Nutrient recycling
- Better targeting of measures
- New water management systems and practices
- Technical capacity on planning water management
- Co-operation acros sectors
- Actions at national, water-shed, local and field level
- Bottom-up, inclusive processes

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THANK YOU

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